Literacy and Numeracy within the Learning Toolkit+ TEACHER GUIDE Kenya 3rd Edition

The Centre for the Study of Learning and Performance



This publication may be copied and redistributed as long as:

- 1. It is not modified in any way;
- 2. Appropriate credit is given to the CSLP;
- 3. It is used for non-commercial, educational purposes only.

A free PDF may be downloaded at: https://www.concordia.ca/research/learning-performance/tools/learning-toolkit.html#resources.

Any questions may be emailed to ltkhelp@education.concordia.ca

Every reasonable effort has been made to acquire permission for any copyright material used in this text, and to acknowledge all such indebtedness accurately. Any errors and omissions called to the CSLP's attention will be corrected in future versions of the guide.

Content: Jennifer Head, Liz Warwick, Vanitha Pillay, and Anne Wade Creative Director: Leigh Glynn-Finnegan Cover design: Tess Kuramoto and Jennifer Head

This material is copyright © 2019 by the CSLP. All rights reserved.

ISBN: 978-1-5251-0761-0



Acknowledgments

This is the third edition of the *Literacy and Numeracy within the Learning Toolkit+: Teacher Guide* [Kenya Edition]. Its publication builds on decades of research and work carried out by a dedicated team from around the world. We would like to acknowledge the contributions of:

Centre for the Study of Learning and Performance

- Principal Investigator and LTK Theme Leader: Philip Abrami
- Manager: Anne Wade
- **Design and Development**: Leigh Glynn-Finnegan (Creative Director), Steve Kanellopoulos (Lead Programmer), Jeong-Jea Hwang (Programmer), Irina Patrocinio-Frazao (Programmer), Jean-Charles Verdier (Programmer), Constanza Roman (Web Developer)
- Instructional Design: Liz Warwick (Lead), and Jennifer Head
- **Professional Development**: Lina Shoumarova
- Research: Larysa Lysenko
- ELM Subject Matter Experts: Steven Rosenfield, Helena Dedic

Kenya Team

- Director: Jonathon Marsh, Professional Development, Aga Khan Academies Unit
- Africa Coordinator: Maina WaGĩokõ, Vice-Principal, Professional Development and Outreach, Aga Khan Academy (Mombasa)
- Project Coordinator: Enos Kiforo
- Professional Development: Rose Iminza
- LTK Ambassadors: Daniella Adhiambo, Grace Alwala, Esther Charo, Roselyne Cherotich , Rose Iminza, Mary Nyale, Joyce Sillah, and Rosemary Waga
- ICT Ambassadors: Eugene Auka and Charles Sakari

Please see also previous contributors at http://grover.concordia.ca/resources/acknowledgements/en/

We also want to thank the many participating Kenyan teachers for the provision of rich content and sound input in the preparation of this pedagogical material.







LTK^{C2} TOC Table of Contents

Acknowledgments	3
INTRODUCTION	9
The Kenva Collaborative Project	10
Improving Literacy and Numeracy in Kenya Schools Project	10
The Learning Toolkit+ (LTK+)	11
Using ABRA with Tusome	12
Using ELM with PRIEDE	12
ABRACADABRA	13
INTRODUCTION TO ABRACADABRA	
What Is ABRACADABRA?	14
French ABRACADABRA	14
Why ABRACADABRA?	14
Evidence-Based Practice	15
Phonological Foundation	16
HOW TO USE THE TOOL	
Mastery	16
Extension Activities	16
PUPIL MODULE	
Accessing ABRACADABRA	17
Adding a User	19
Navigation Icons	19
Characters	20
Activities	20
Stories	20
Genres	21
Choosing an Appropriate Reading Level	21
Students' Stories	21
ABRA ACTIVITIES: SOUNDS, LETTERS, AND WORDS	
(ALPHABETICS)	
What Is Alphabetics?	22

What is Alphabetics:	
Stages of Alphabetics	22
Why Is Alphabetics Important?	22
How Does ABRACADABRA Support Alphabetics?	22

TOC LTKO

103

ABRA ACTIVITIES: READING (FLUENCY)

What Is Fluency?	38
Why Is Alphabetics Important?	38
How Does ABRACADABRA Support Alphabetics?	38

ABRA ACTIVITIES: UNDERSTANDING THE STORY

(COMI REITENSION)	
What Is Comprehension?	46
Why Is Comprehension Important?	46
How Does ABRACADABRA Support Comprehension?	46
How Do I Teach Comprehension?	47

ABRA ACTIVITIES: WRITING (TYPING)

What Is Writing?	56
Stages of Writing	56
Why Is Writing Important?	56
How Does ABRACADABRA Support Writing?	57

ABRA & TUSOME

Alignment of ABRA with Tusome	59
-------------------------------	----

TEACHER MODULE

Assessment	75
Teacher Resources	80
Teacher Aids	82
ABRACADABRA Basics	82
Getting Pupils Started Using ABRACADABRA	84
Tracking Student Activity with ABRACADABRA	86
Managing Classes and Pupils in ABRACADABRA	88
Using Stations/Centres in the Classroom	89
Using ABRACADABRA in Large (Split) Classes	94
Different Pupil/Different Needs: Using ABRACADABRA in a Mixed-	
Ability Classroom	96
Echo Reading: Tips for Success	97
Troubleshooting on a Lab Desktop (PC)	99
Troubleshooting on Mac Laptop	101
PARENT MODULE	

Parent Resources

TK	TOC	
		1
KEAI		1
	What Is DEADS	1
	Filtere	1
	Filters	1
	Search	1
	Accessing Stories]
	TEACHER AIDS	
	Using READS to Support Comprehension and Vocabulary Skills	1
	Using READS to Support Writing Skills]
FIM		1
	INTRODUCTION TO FLM	1
	What is ELM2	
	A Framework for Success	-
	Fuidence Based Practice	-
	L'idence-Dased i factice	
	PUPIL MODULE	
	Accessing ELM]
	Themes, Ideas, Steps	1
	Meet the Hosts]
	Accessing Ideas	1
	Progress]
	My Animal Friends	1
	My Profile]
	Online Themes	1
	NUMBER CONCEPT	
	Count	1
	Compare	1
	Add	1
	Subtract	1
	Decompose	1
	Place Value	1
	GEOMETRY	
	Identify Shapes	1
	incruity orapes	

PATTERNS

Translate Patterns	162
DATA	1.6.4

ТОС	LTK
NUMBER LINE	
Number as Displacement	167
ELM & PRIEDE	
Alignment of ELM with PRIEDE	169
TEACHER MODULE	
Manage Feature	177
Teacher Resources	181
PARENT MODULE	
Parent Resources	. 182
ePEARL	183
INTRODUCTION TO ePEARL	
What Is ePEARL?	184
What Is Self-Regulated Learning?	. 184
ePEARL Structure	185
ePEARL Features	186
A Closer Look at Level 1	. 186
USING ePEARL WITH OTHER TOOLS	
ABRA-ePEARL Link	. 192
ELM-ePEARL Link	193
LTK+: Managing Classes and Pupils	195
LTK Management	196
My Account	. 196
My Classes	197
My Students	198
Cooperative Learning	199
INTRODUCTION TO COOPERATIVE LEARNING	
What is Cooperative Learning?	. 200
5 Steps to Cooperative Learning	. 202
TEACHER AIDS	
Quick Guide: Cooperative Learning Activities	203
Fostering Social Skills and Managing Classroom Conflict	206
liosaw	208
Student Teams-Achievement Divisions (STAD)	200
Teame-Came-Tournamente (TCT)	· <u>2</u> 07 911
Sukumawiki	211 012
JUNUIIIdWIKI	213
References	215



INTRODUCTION

LTKODUCTION The Kenya Collaborative Initiative

This guide, *Literacy and Numeracy within the Learning Toolkit+: Teacher Guide [Kenya 3rd Edition]*, has been published as part of a collaborative initiative led by the Centre for the Study of Learning and Performance (CSLP) and the Aga Khan Academy in Mombasa designed to teach the foundational skills of literacy and numeracy to Kenyan children using technology.

Centre for the Study of Learning and Performance (CSLP): Based in Montreal, Canada and hosted by Concordia University, the CSLP (www.concordia.ca/cslp) is an internationally recognized, multi-institutional research centre of excellence dedicated to both the generation of new knowledge and knowledge mobilization. The centre includes more than thirty researchers, about twenty full-time staff, and dozens of graduate students, all with an interest in improving teaching and learning, especially through innovative uses of technology.

Aga Khan Academy (Mombasa) and Professional Development Center: As part of its mandate, the Aga Khan Academy (www.agakhanacademies.org/mombasa) in Mombasa provides professional development opportunities and facilitates the formation and growth of communities of practice in Kenya. The strong and active partnership between the AKAM and the CSLP is an example of their joint efforts to provide impactful outreach. These efforts and the Academy's strong reputation have established a vast network of government and schoolbased officials that have been instrumental in the implementation of our literacy project.

Our Partners: This project would never have come into existence without the support and efforts of our partners including: the Aga Khan Academies, the Aga Khan Foundation (Canada and East Africa); World Vision (Canada and Kenya), the Kenyan Ministry of Education, Science and Technology, and its agencies (ICT4E; Kenya Institute for Curriculum Development); CAMARA, Shanzu Teachers Training College; University of Nairobi, along with many others.

Improving Literacy and Numeracy In Kenya Schools Project

This project expands on a Social Sciences and Humanities Research Council (SSHRC) Partnership Development Grant (Government of Canada) awarded in 2013, with a subsequent successful Strengthening Education Systems East Africa (SESEA) grant (Aga Khan Foundation, Eastern Africa) awarded in 2015, along with current grants from Canada's International Development Research Centre (IDRC) and SSHRC. In alignment with the Kenyan Government Vision 2030 and the Kenyan Ministry of Education's expressed directives, the CSLP and the Aga Khan Academies have worked collaboratively for the past six years on a project to improve foundational skills and increase the effective integration of technology in Kenyan schools.

Specifically, we want to learn how to effectively scale up and sustain use of the various tools within the Learning Toolkit+ with young learners and their teachers in Kenyan schools.

Our approach is to provide ongoing professional learning support in order to develop local expertise in the use of the Learning Toolkit+ specifically, and more generally in the effective integration of technology into teaching and learning.

The Learning Toolkit+ (LTK+)

The CSLP has been involved in the design, development, validation, and dissemination of knowledge tools for teaching and learning, bundled together in the LTK+, including several that support the development of literacy and numeracy skills. The tools in the LTK+ are designed according to evidence-based principles gleaned from theory and research, including systematic reviews of research, and refined with input from practitioners. The tools are also validated in field-based, longitudinal experiments to the highest standards of methodological quality. All of the tools are bilingual (English/French) and they are available at no charge to the community. A brief description of the tools in the LTK+ follows.

The award-winning **ABRACADABRA** (ABRA) software provides an engaging, interactive environment for learning literacy among young children. In a recent investigation of the quality of early literacy software (Wood et al, 2013), ABRA scored highest among 23 software tools. Taking a balanced reading approach, ABRA's Pupil Module contains 33 alphabetics, fluency, comprehension, and writing activities, linked to 20 stories of various genres. The Teacher Module offers explanations, lesson plans, and printable resources. An assessment feature enables teachers to review pupil and class performance. A Parent Module allows pupils' parents access to multimedia resources and tips on how to support the use of ABRA.

A Repository for E-Books and Digital Stories, or **READS**, consists of over 650 multi-lingual stories, including many African stories. READS is embedded in the LTK+ and it may be used to enhance pupil's fluency and comprehension skills.

Emerging Literacy in Mathematics, or **ELM**, is designed to increase numeracy proficiency (e.g., understanding of numbers, arithmetic operations, fractions, etc.) and decrease math anxiety among young learners. The Teacher Module features extensive professional development materials and a tracking component for detailed reports of pupil progress.

Electronic Portfolio Encouraging Active Reflective Learning, or **ePEARL**, is an online learning environment that fosters self-regulated learning. Level 1 is linked to the stories and illustrations within ABRACADABRA, and provides the opportunity for beginning readers and writers to track their learning process and skill development through use of a built-in recorder and text editor.

See www.concordia.ca/cslp for further information.

Using ABRA with Tusome

For Kenya's young people to succeed in the world, they need a strong educational foundation including skills in literacy, numeracy, digital literacy, critical thinking, and problem solving as outlined in the government's Vision 2030 blueprint.

For children in the primary school years, the focus is on building strong reading and writing skills, which are critical to future success. Therefore, the government has implemented the Tusome (Let's Read) program, and has trained teachers on the literacy skills needed in today's society.

Children can benefit from additional development and practice of key literacy skills offered through the ABRA software program. ABRA provides interactive and engaging computer-based activities that support the building blocks of literacy: alphabetics, fluency, comprehension, and writing. As well, children using ABRA gain valuable digital literacy skills, increasing their ability to comfortably use technologies such as computers and tablets.

ABRA activities are not meant to replace classroom teaching with Tusome, but rather to enhance Tusome's lessons with additional computer-based activities. To be effective, ABRA should be used at least one hour per week, and ideally up to two hours.

Using ELM with PRIEDE

Kenya's investment in education, embodied in the principles found in Vision 2030, builds on the need for all young people to have foundational skills in numeracy. It is critical that in the early years, young children learn both basic mathematical operations as well as the ability to make sense of numerical data and processes.

To ensure that Kenyan children can take their place in a highly-numerate word, the government has implemented the PRIEDE program, which develops the building blocks of numeracy. However, additional support these skills can be had when children use ELM, a software program providing interactive, engaging computer-based mathematical activities.

ELM offers children additional development and practice in areas such as number concept, geometry, data, and patterns. ELM both supports and extends the skill development offered through PRIEDE. As well, children using ELM gain valuable digital literacy skills, increasing their ability to comfortably use technologies such as computers and tablets.

To be effective, ELM should be used at least one hour per week, and ideally up to two hours.

ABRACADABRA

INTRODUCTION TO ABRA

Introduction to ABRACADABRA

What is ABRACADABRA?

ABRACADABRA (**A** Balanced Reading Approach for Children Designed to Achieve Best Results for All, affectionately known as ABRA) is a free, interactive literacy program designed for primary pupils, their educators, and parents and is available on the web or as part of the Learning ToolKit+ (LTK+). Taking a balanced reading approach, ABRA aids beginning readers through literacy activities and digital stories. Teachers are also supported through ABRA's assessment capabilities and resources meant to provide professional development training. Currently ABRA contains 33 alphabetic, fluency, comprehension, and writing activities linked to 20 interactive stories and 15 stories written by schoolchildren.

French ABRACADABRA

Recently, ABRA was adapted into French for the development of early French literacy skills. Currently, the French ABRA version contains 15 alphabetic, fluency and comprehension activities linked to 15 interactive stories. An assessment module is also available for teachers to get a pupil or class portrait for pupil(s)' progress within the program.

Why ABRA?

For decades, researchers and practitioners worldwide have been searching for the key to unlock the mysteries of how children learn to read and write. To date, considerable evidence has been collected that suggests children must not only be exposed to a variety of instructional methods, but that these experiences must be presented in explicit and systematic ways if literacy is to be fully attained.

Research shows that children's engagement and motivation affect their academic success. While skills and drills are important components in literacy achievement, these exercises must be done in meaningful and engaging ways for learners. This involves providing appropriate opportunities, texts, and activities wherein pupils can apply what they have learned in authentic contexts.

The Centre for the Study of Learning and Performance (CSLP) continues to develop ABRA in an effort to help battle the alarmingly high percentage of low ability readers in countries throughout the world. These developments are a direct result of a multidisciplinary team of educational professionals who continue to guide ABRA. This team consists of researchers, policy makers, school administrators, language arts consultants, and teachers from across the world whose input helps steer the overall direction of this project. The CSLP continues to practice its policy of working with the educational community and partnering with ABRA stakeholders to develop the best possible resource for the field.



Evidence-Based Practice

The recommendations from the National Reading Panel and other front-runners in the field of language and literacy have remained the foundation of the ABRA software.

Throughout the years about 20 validation studies have been performed to explore the impact of ABRA on various facets of children's reading. The studies feature broad international contexts including Canada, Australia, Kenya, Hong Kong and Mainland China, and England. Some of these are modest studies while others are large-scale and longitudinal investigations complete with random assignment of classes to ABRA and control groups. Independent research and evaluations (McNally, Ruiz-Valenzuela, & Rolfe, 2016; Bailey, Arciuli, & Stancliff, 2016; 2017) have also contributed to our knowledge base on ABRA efficiency.

We have summarized the findings of the high-quality fifteen ABRA studies conducted between 2008 - 2017. From the total of about 7,000 pupils who participated in these studies, 3,153 elementary pupils were exposed to ABRA instruction. Although pupils in regular classrooms were the focus of these studies, a few explored ABRA effects on the literacy skills of pupils with special needs such as autistic spectrum disorder (Bailey, Arciuli, & Stancliff, 2016; 2017).

In the studies conducted, ABRA and control groups were compared 91 times on different reading outcomes including phonemic awareness, phonics, fluency, vocabulary and reading, and listening comprehension. We used average effect sizes as a simple way to quantify the difference between ABRA and control groups on the six reading-related skills. An effect size shows the extent to which average pupils' reading improvement in ABRA classes would exceed that of pupils from non-ABRA control classes. These metrics can be translated into an average percentile gain that suggests how an average pupil with the score of 50 would increase his or her percentile scores after ABRA had been part of instruction.

The effects of ABRA were found to be positive on all six reading-related outcomes and particularly noticeable in phonics, phonemic awareness, reading and listening comprehension. Specifically, the percentile scores of an average pupil grew from 50 to 65 in phonemic awareness (effect size: +0.38), to 58 in phonics (effect size: +0.19), to 57 in reading comprehension (effect size: +0.18), and to 61 in listening comprehension (effect size: +0.27). For more details on the ABRA studies, please visit:

www.concordia.ca/research/learning-performance/tools/learning-toolkit/abracadabra/researchers



Phonological Foundation

A solid phonological foundation is necessary to create a good literacy program and is a good predictor of future reading success. This foundation includes phonemic awareness, which is the ability to identify and manipulate sound units in words, and phonics, which involves connecting letters or groups of letters to their specific sound(s).



How to Use the Tool

Mastery

In ABRA, pupils are said to have mastered a particular activity when the rate of correct response is 90%-100% for three consecutive entries. When this is achieved, they are encouraged to move on to the next level. It is highly recommended that teachers use the Assessment Report on a regular basis to monitor progress of their students.

Extension Activities

ABRA has been designed to be used by teachers in their classrooms as an instructional tool. Teachers will connect the skills being learned online to those being learned in other aspects of their literacy instruction curriculum. It is, therefore, important to help create a link between what the pupils are learning in ABRA and how they might use these skills in their daily literacy. There are many different ways that the system can be used. There are online components the teacher can use with a projector, as well as various printable resources and flashcards.

Pupil Module

Accessing ABRACADABRA

LTK+ LOBBY PAGE

The lobby page will display certain tools depending on the level set by the LTK+ administrator. Early Years teachers should have access to Level 1. These teacher will have access to:

- ABRACADABRA .
- ELM •
- **ePEARL** •
- READS

Click on the icon to access the tool. In this case, click on ABRACADABRA.

Tip: If ABRA is not viewed on the LTK lobby, the account might not be set to level 1 or 2. To change level: Manage \rightarrow My Account \rightarrow My ePEARL Account. If ABRA is still not being viewed, please contact the system administrator as ABRA may be turned off at the administrator level.

🔰 Learning Tol Kit





Edit

ENIFR





Press *Play!* to access the activities and stories.

In the bottom-right corner, this screen provides shortcuts to ePEARL (pupil's portfolio) and READS (repository of electronic books).



MY PROFILE

Clicking on the *My Profile* button (from the splash page) can change the icon associated with the account. This icon is the graphical representation of the user or the user's character.



To change the icon, click on an alternative image and then select the accept button.



ADVENTURE ROOM

Once pupils click on *Play!*, they are brought to the Activities and Stories page, called the *Adventure Room*. There are four categories of activities and four story genres to choose from.



Add a User

Pupils can add up to three classmates and do activities and read stories with them. When pupils take turns working on an activity, they can click on their avatar at the bottom of the screen, which will then display them as the active user.



Navigational Icons

As pupils go through ABRA, they will meet these navigational icons. Teacher and pupils should be familiar with these icons to make their experience with the software enjoyable.



Characters

Each character is associated with a reading skill. In the Characters' section, accessible through the Pupil Module, a biography is presented for each of the characters, associating them with their preferred reading skill.

PUPIL MODULE



Activities

There are a total of 33 activities and 20 stories in this section. Activities are leveled and some are practiced within the context of a story. Each activity is preceded by a brief demo.

Stories

The Pupil Module is the heart of the ABRA software. All instructional activities are developmentally appropriate and revolve around a progressive model of instruction providing foundations in four literacy domains: Alphabetics (Sounds, Letters, and Words), Fluency (Reading), Comprehension (Understanding the Story), and Writing. Built-in scaffolding and multiple levels of difficulty allow for flexibility.





Genres

ABRA helps expose children to different literary genres. A genre can be defined as a category of literature that is distinguished from others by characteristics such as style, form and content. Research shows that the more experience children have with different genres the more successful they will be when reading and writing in these various genres.

ABRA features four genres:



Folk tales are oral stories that have passed from generation to generation. They explain issues relating to life, nature, values, culture, etc. Fairy tales are make believe stories that take place in a distant land and often feature magical or imaginary creatures.

Writing that uses verse and rhymes to awaken the imagination and emotion as the reader interacts with the text.

Made up or "not true" stories created by an author.



True stories about real people, places, events.

Choosing an Appropriate Reading Level

Make sure to assign the appropriate level or else the pupil will feel discouraged. Generally speaking, if a pupil can read the text with 90-95% accuracy then the text is at the right level of instruction.

90% accuracy or less	Too difficult / frustration
90-95% accuracy	Perfect / appropriate level for instruction
95% accuracy or more	Proficient / independent reading

Student Stories (Created and Written by Pupils)

A total of 15 pupils' stories are available. These stories were written by pupils as part of a story contest. These stories are recorded in Canadian, Australian and Kenyan accents for the entertainment and education of pupils worldwide. Their levels of difficulty vary.

ALPHABETICS



ABRA Activities: Sounds, Letters, and Words (Alphabetics)

What Is Alphabetics?

Alphabetics is the ability to associate sounds with letters and use these sounds to create words. The sounds associated with letters are referred to as phonemes (smallest units of spoken language) while the written letters associated with these sounds are called graphemes. There are 26 graphemes in English but there are over 40 phonemes.

Stages of Alphabetics

Children begin their path to reading by developing their phonemic awareness by learning to distinguish between different sounds, or phonemes. Through practice and modeling pupils begin to associate these sounds with print and recognize the correspondence between letters and sounds.

The ability to manipulate these phonemes, either individually (letter by letter) or in chunks such as in rhyming families, is a more sophisticated skill in the area of phonics. Here, the learner begins to segment words by breaking them apart into units that make them easier to read and then blending these units together. Decoding (the ability to interpret symbols, such as letters) then begins to take place as the learner is able to access strategies to read words.

Why Is Alphabetics Important?

Research suggests that children who do not have a solid foundation in these alphabetic principles are less skilled readers as they progress through school. Providing children with multiple opportunities to practice sounds and words is crucial for growth in the next steps in literacy, fluency, and comprehension skills. In addition, research shows that it is more advantageous when alphabetic skills are presented with various phonetic or writing activities.

ALPHABETICS

How Does ABRACADABRA Support Alphabetics?

ABRA has 17 different activities specifically aimed at reinforcing the alphabetic principles. Each activity has multiple levels so that teachers in classrooms with a wide range of pupil needs can match pupil skill and activity difficulty level. There is scaffolding built within each activity to encourage autonomous use of the tool.

Many of the alphabetic activities are associated with the stories embedded in the software. This helps to build the context necessary for practicing specific vocabulary and all reading related skills. Many activities are appropriate for pupils who are struggling or at the beginning stages of alphabetic skills development. These activities focus predominantly on listening skills, auditory discrimination and letter naming. For those pupils who are ready for more advanced practice, the activities support word family manipulation, decoding games, and blending tasks with text support. Of course, there are fun games that are appropriate for all levels and provide practice such as Letter Bingo and Letter Sound Search. Detailed information on each activity is provided in the following pages.

PRE-ALPHABETIC	PHONEMIC AWARENESS	PHONICS
Alphabet Song	Auditory Blending	Basic Decoding
Animated Alphabet	Auditory Segmenting	Same Word
Letter Bingo	Blending Train	Word Changing
Letter Sound Search	Matching Sounds	Word Counting
	Rhyme Matching	Word Families
	Same Phoneme	Word Matching
	Syllable Counting	



Alphabet Song

ACTIVITY OBJECTIVE

The pupil will practice the alphabet by singing the alphabet song.

GROUP FACILITATION TIPS

Use a projector and speakers to work on this activity with the entire class.

CONTENT/LEVELS

Level 1: Sing it with us. Level 2: Keep singing even when we don't. Level 3: Sing by yourself, karaoke style.

LINKED STORIES

This is a story-independent activity.

Animated Alphabet

ACTIVITY OBJECTIVE

Pupils will be able to hear the sounds made by certain single and clustered letters. These letters will also be used in fun sentences.

GROUP FACILITATION TIPS

This activity can be done by a whole class or as an individual activity. If there are letters or sounds pupils are learning or practicing, this activity can be used to support their learning.

CONTENT/LEVELS

The first page presents the 26 letters of the alphabet. The second page has 11 consonant and vowel clusters for more advanced practice.

LINKED STORIES

This is a story-independent activity.









Auditory Blending



ACTIVITY OBJECTIVE

Given a phonemic breakdown, the pupils will identify a word; i.e., /c//a//t/ = "cat".

GROUP FACILITATION TIPS

Pupils can do this activity in pairs and take turns (one word per turn) to tell the word and find its matching picture.

CONTENT/LEVELS

Level 1: 2-sound (phoneme) words. Level 2: 3-sound (phoneme) words. Level 3: harder 3-sound words. Level 4: 4-sound words. Level 5: harder 4-sound words. Level 6: 5-sound words. Level 7: harder 5-sound words.

LINKED STORIES

Darryl! Don't Dawdle Feelings Henny Penny How a Bean Sprouts I Can Move Like a... The Dove and the Ant The Dove and the Mell The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff When I Open My Eyes



Auditory Segmenting

ALPHABETICS

ACTIVITY OBJECTIVE

Given the pronunciation of a word, e.g. "cat", the pupil will identify the breakdown /c/a//t of the word.

GROUP FACILITATION TIPS

Pupils can do this activity in pairs and take turns (one word per turn) listening to a word then finding the spaceship that has the breakdown of the given word.

CONTENT/LEVELS

Level 1: 2-sound (phoneme) words. Level 2: harder 2-sound (phoneme) words. Level 3: 3-sound words. Level 4: harder 3-sound words. Level 5: 4-sound words. Level 6: harder 4-sound words. Level 7: 5-sound words.

LINKED STORIES

Darryl! Don't Dawdle Feelings Henny Penny How a Bean Sprouts I Can Move Like a... The Dove and the Ant The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff When I Open My Eyes





Basic Decoding

ACTIVITY OBJECTIVE

Given the visual representation of a word, the pupil must say the sounds of the letters then blend them together to read the word. They must then find the picture to match the word read.

GROUP FACILITATION TIPS

This activity combines the sounding out of letters and blending them to make words. Teachers or another pupil can assist with scaffolding or picture matching when necessary.

CONTENT/LEVELS

Level 1: 2-sound (phoneme) words. Level 2: 3-sound (phoneme) words. Level 3: harder 3-sound words. Level 4: 4-sound words. Level 5: harder 4-sound words. Level 6: 5-sound words. Level 7: harder 5-sound words.

LINKED STORIES

Darryl! Don't Dawdle Feelings Henny Penny How a Bean Sprouts I Can Move Like a... The Dove and the Ant The Dove and the Mell The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff When I Open My Eyes



ABRA

ALPHABETICS

Blending Train

ALPHABETICS

ACTIVITY OBJECTIVE

Given the phonemic breakdown of a word, pupils will identify the word it makes; e.g., /r/ /o/ /d/ = "rod".

GROUP FACILITATION TIPS

Pupils can do this activity in pairs. They take turns (one word per turn) listening to the breakdown of a word then putting the sounds together to tell the word they make.

CONTENT/LEVELS

Level 1: 2-sound (phoneme) words. Level 2: harder 2-sound (phoneme) words. Level 3: 3-sound words. Level 4: harder 3-sound words. Level 5: 4-sound words. Level 6: harder 4-sound words. Level 7: 5-sound words. Level 8: harder 5-sound words.

LINKED STORIES

Darryl! Don't Dawdle Feelings Henny Penny How a Bean Sprouts I Can Move Like a... The Dove and the Ant The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff When I Open My Eyes





Letter Bingo

ACTIVITY OBJECTIVE

Given the pronunciation of the letter name, the pupil must determine if the letter is on his/her bingo card.

GROUP FACILITATION TIPS

Teachers can use this activity to see if pupils can match the letter name with its corresponding grapheme. This can be a group or individual activity. If played as a group, pupils should take turns finding one letter.

CONTENT/LEVELS

Level 1: Upper case letters. Level 2: Lower case letters. Level 3: Challenge - Often problematic lower case letters (e, d, p, q, g, l, m, n, u, v).

LINKED STORIES

This is a story-independent activity.

Letter Sound Search

ACTIVITY OBJECTIVE

Given the pronunciation of a letter sound, the pupil must identify and find its associated letter.

GROUP FACILITATION TIPS

This activity can be used in pairs or by an individual pupil. If done in pairs, a pupil finds one

letter then lets the other pupil have a turn. If the pupil cannot find it, the other pupil can give him or her a clue as to where the letter is; e.g., "it is in a corner".

CONTENT/LEVELS

Level 1: 10 letters camouflaged in an easy background. Level 2: 14 letters camouflaged in a medium background. Level 3: 14 letters camouflaged in a hard background.

LINKED STORIES

This is a story-independent activity.









ALPHABETICS



Matching Sounds

ACTIVITY OBJECTIVE

The pupil will identify sounds that are the same.

GROUP FACILITATION TIPS

In this activity, pupils can take turns matching a set of sounds. As there is only two sounds to match per set, it won't take too long per turn.

CONTENT/LEVELS

Level 1: Distinguishable sounds. Level 2: Similar sounds.

LINKED STORIES

This is a story-independent activity.

Rhyme Matching

ACTIVITY OBJECTIVE

The pupil will identify words that rhyme.

GROUP FACILITATION TIPS

Pupils can work as a group to match rhyming words. Pupils take turns controlling the computer and matching one or two pairs of words per turn.

CONTENT/LEVELS

8 cards: 4 pairs of CVC words.12 cards: 6 pairs of CVC words.16 cards: 8 pairs of CVC words.

LINKED STORIES

Darryl! Don't Dawdle Feelings Henny Penny How a Bean Sprouts I Can Move Like a... The Dove and the Ant The Frogs and the Well The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff Waterfall When I Open My Eyes







Same Phoneme

ACTIVITY OBJECTIVE

The pupil will be required to distinguish between phonemes (letter sounds) that are the same or different.

GROUP FACILITATION TIPS

This activity can be used by individuals or in pairs (alternating after doing a pair of words). As well, it can be done as a whole class activity where pupils are asked to close their eyes and raise their hands when the teacher calls out two sounds and then ask "sounds the same" or "sounds are different."

CONTENT/LEVELS

All letter sounds are presented in this activity.

LINKED STORIES

This is a story-independent activity.



ALPHABETICS



Same Word

ACTIVITY OBJECTIVE

Pupils will be able to distinguish between words that are the same or different.

GROUP FACILITATION TIPS

This activity can be done individually or in pairs. This is a great activity to test pupils' listening ability.

CONTENT/LEVELS

Level 1: First letter is different (e.g. cat and rat). Level 2: Last letter is different (e.g. bad and bat). Level 3: Middle letter is different (e.g. fan and fin).

LINKED STORIES

Darryl! Don't Dawdle Feelings Henny Penny How a Bean Sprouts I Can Move Like a... The Dove and the Ant The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff When I Open My Eyes





Syllable Counting

ACTIVITY OBJECTIVE

The pupil will be able to count the number of syllables in a word and feed the yeti (friendly folklore animal) the corresponding number of popsicles.

GROUP FACILITATION TIPS

This activity can be done individually, in groups, or as a whole class activity. The game helps the teacher teach as well as evaluate pupils' ability to hear and count how many sounds are in a word. Clapping can be encouraged to support the counting.

CONTENT/LEVELS

Activity presents 1 to 4 syllable words only.

LINKED STORIES

Darryl! Don't Dawdle Feelings Henny Penny How a Bean Sprouts I Can Move Like a... The Dove and the Ant The Dove and the Mell The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff When I Open My Eyes



ALPHABETICS

ALPHABETICS

Word Changing

ACTIVITY OBJECTIVE

The pupil must change individual letters in a word to form a new word.

GROUP FACILITATION TIPS

This activity can be done individually or in pairs. If a child makes a mistake, the teacher or another pupil can encourage the player to pay attention to the required sound.

CONTENT/LEVELS

Level 1: CVC (Consonant-Vowel-Consonant) words. Only the first letter is manipulated. Level 2: CVC words. All letters are manipulated.

Level 3: CVC words with long vowel sounds. Only the first letter is manipulated.

Level 4: CVC words with long vowel sounds. All letters are manipulated.

LINKED STORIES

Darryl! Don't Dawdle Feelings Henny Penny How a Bean Sprouts I Can Move Like a... The Dove and the Ant The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff When I Open My Eyes





Word Counting

ACTIVITY OBJECTIVE

The pupil will be able to count the words in a sentence and feed the yeti (friendly folklore animal) the corresponding number of snowballs.

GROUP FACILITATION TIPS

This activity can be done individually, in groups, or as a whole class activity. This activity is useful when the teacher wants to ascertain whether beginning readers hear/listen well, know what words are, and can tell how many words are in a sentence. This information is particularly useful at the beginning of the school year. Clapping can be encouraged to support the counting.

CONTENT/LEVELS

Level 1: 2, 3, and 4 word sentences (40%, 40%, and 20%) Level 2: 2, 3, 4, and 5 word sentences (20%, 30%, 30%, and 20%).

LINKED STORIES

Darryl! Don't Dawdle Henny Penny How a Bean Sprouts The Dove and the Ant The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff





ALPHABETICS

Word Families

ACTIVITY OBJECTIVE

The pupil will be able to create different words from the same word family.

GROUP FACILITATION TIPS

ALPHABETICS

The teacher can choose a specific word family they want pupils to work on or have the computer randomly pick the word families.

CONTENT/LEVELS

Level 1: Single letter and phonemes (e.g. _at, _in, _ot). Level 2: Single and clustered letters and phonemes (e.g. _est, _ick, _ight). Advanced: The teacher or the pupil chooses the word family on which to work.

LINKED STORIES

Darryl! Don't Dawdle Feelings Henny Penny How a Bean Sprouts I Can Move Like a... The Dove and the Ant The Frogs and the Well The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff Waterfall When I Open My Eyes




Word Matching

ACTIVITY OBJECTIVE

The pupil will match words that have the same beginning or ending sound.

GROUP FACILITATION TIPS

Pupils can work in pairs to match words. If they get a pair correct, they continue. If they get it incorrect, they hand over control of the mouse to another pupil.

CONTENT/LEVELS

Pupils have the choice of playing with 8 cards (4 pairs), 12 cards (6 pairs), and 16 cards (8 pairs).

Level 1: Same beginning sounds. Level 2: Same ending sounds.

LINKED STORIES

Darryl! Don't Dawdle Feelings Henny Penny How a Bean Sprouts I Can Move Like a... The Dove and the Ant The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff When I Open My Eyes



ALPHABETICS

FLUENCY

ABRA Activities: Reading (Fluency)

What Is Fluency?

Fluency is ability to read with accuracy, speed, and expression. Fluency readers not only decode words with little or no effort (automaticity), they also read with at a correct pace and with proper expression. Strong fluency skills are key are understanding the meaning of texts.

Why Is Fluency Important?

Research suggests that pupils who struggle to acquire the skill of automatically reading words will struggle with being able to attend to the meaning of a text.



In addition, children who have trouble reading accurately at an appropriate pace tend to experience motivational problems. The reading load increases as pupils' progress through the grade levels, making lack of fluency a major obstacle to school success.

How Does ABRACADABRA Support Fluency?

Activities in ABRA allow for extensive practice in reading fluency. The six^{*} activities cover all of the sub-skill areas, including expression and speed. Through games, pupils can test their pace against ABRA's cartoon characters. Good reading models are built into the story-related activities so pupils can hear appropriate examples and evaluate if, how, or where they can improve. In addition, the program models how to decode words within the context of a story, thus giving pupils access to consistent and readily available help. The more learners are able to practice a specific skill, the better the chance they have of developing fluency.

Accuracy	Expression	High Frequency Words
Reading Practice	Speed	Students' Stories *
Tracking		

* *Note*: *The Students' Stories are not counted as a Reading activity, but are included in this section to help support pupils in building this skill.*

Accuracy

ACTIVITY OBJECTIVE

After listening to the computer read a passage, the pupil must read the same page accurately.

GROUP FACILITATION TIPS

This activity should be done individually. As the computer reads, the pupil follows. When the child reads, s/he can click on a word if help is needed. At the end of each passage, the words clicked will be reviewed in a game-like feature to help the pupil become more familiar with them.

CONTENT/LEVELS

This activity can be done at all levels.

LINKED STORIES

Darryl! Don't Dawdle Feelings Henny Penny How a Bean Sprouts I Can Move Like a... The Dove and the Ant The Dove and the Well The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff Waterfall When I Open My Eyes





Expression

ACTIVITY OBJECTIVE

The computer reads a text using different expressions and the pupil must decide if the passage was read appropriately. The pupil must then read the same text practicing correct use of expression.

GROUP FACILITATION TIPS

FLUENCY

Before beginning this activity, provide pupils with examples of expressive reading done well and poorly. For example, explain how a story should be read if a person is happy, sad, surprised, etc. ABRACADABRA does not teach punctuation marks, so the teacher should guide pupils to pay attention to these marks because they assist in knowing how to read a passage well.

CONTENT/LEVELS

This activity is appropriate for all reading levels. Even with picture books, reading or speaking with proper expression should be modeled when texts or pictures warrant it. For

example, if a fire scene is illustrated, speak about it with some excitement or emotion such as sadness or fear in your voice.

LINKED STORIES

Darryl! Don't Dawdle Feelings Henny Penny I Can Move Like a... The Dove and the Ant The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff Waterfall When I Open My Eyes





High Frequency Words

ACTIVITY OBJECTIVE

Given a list of high frequency words, pupils will have to read them out loud within a certain time period before another word pops up.

GROUP FACILITATION TIPS

Pupils can do this activity in groups. Have pupils line up and take turns reading a word. Remind pupils that their word recognition speed ability is an important element in their becoming good readers.

CONTENT/LEVELS

Level 1: A set of four words are randomly presented four times with gradually less time to read them. Level 2: A set of seven words are randomly presented four times with gradually less time to read them.

LINKED STORIES

How a Bean Sprouts I Can Move Like a... The Dove and the Ant The Frogs and the Well The Little Red Hen



FLUENCY

Reading Practice

FLUENCY

ACTIVITY OBJECTIVE

This activity allows children to practice reading different stories. Children can work alone, in pairs, or in small groups.

GROUP FACILITATION TIPS

Research shows that children build fluency skills when they read stories out loud several

times while receiving feedback from a teacher, peer, or parent. Try pairing children, so they can take turns reading the story and getting feedback from the listener.

CONTENT/LEVELS

All story levels (easy to advanced) can be used in this activity.

LINKED STORIES

Invisible Alligators The Brave Monkey Pirate The Wiener Dog Magnet





Speed

ACTIVITY OBJECTIVE

Using an algorithm of good reading speed, the computer will monitor a pupil's reading rate. The pupil will read a given text at an appropriate pace.

GROUP FACILITATION TIPS

This game is best played after pupils are familiar with a story or are comfortable with reading or sounding out words. The game can be done with one to four players. Each pupil chooses a character and names it. The computer selects who will read and monitors the person's reading rate. If a pupil needs help, they can click on the word but this slows down her/his reading speed.

CONTENT/LEVELS

All story levels (easy to advanced) can be used in this activity.

LINKED STORIES

Darryl! Don't Dawdle Feelings Henny Penny How a Bean Sprouts I Can Move Like a... The Dove and the Ant The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff Waterfall When I Open My Eyes



FLUENCY

Students' Stories

FLUENCY

ACTIVITY OBJECTIVE

Pupils can choose amongst 15 stories written by pupils and narrated in three distinct English accents: Canadian, Australian, and Kenyan. This can be used as a further opportunity to practice fluency skills and expression in varying contexts.

GROUP FACILITATION TIPS

Pupils can read alone, in pairs or in small groups. Teachers can ask pupils to guess where they think the accent is from. Cross-curricular teaching and an opportunity to learn about other cultures and contexts are an important element of this activity.

CONTENT/LEVELS

All story levels (easy to advanced) can be used in this activity.

LINKED STORIES

A Magical Adventure A Tall Tale Adventures of Bertie Balloon Animal Antics Counting Cuddly Koalas Fishing Wonder Lea's Birthday Party Little Wing Perfect Little Christmas Tree Rhyme Time The Birthday Disaster The Littlest Mouse The Story of Elli and Ella Wally's Vacation Why Koalas Live in Trees





Tracking

ACTIVITY OBJECTIVE

While reading a story, the pupil will be able to read with one-to-one correspondence and without skipping words.

GROUP FACILITATION TIPS

Pupils can take turns reading the story and controlling the computer. Remind pupils that they can click on the words that they do not know so that the computer can read them.

CONTENT/LEVELS

This activity is appropriate for all stories and levels.

LINKED STORIES

Canadian Wild Animals Counting to Ten Darryl! Don't Dawdle Feelings Henny Penny How a Bean Sprouts I Can Move Like a... My Town The Dove and the Ant The Four Seasons The Frogs and the Well The Fruit Family The Little Red Hen The Three Billy Goats Gruff Waterfall When I Open My Eyes Where am I?



FLUENCY



ABRA Activities: Understanding the Story (Comprehension)

What Is Comprehension?

Comprehension is the cognitive process in which the reader interacts with a text in an attempt to ascertain its meaning. Reading comprehension is the culmination of all the pupils' reading skills; it involves good oral comprehension, vocabulary, and decoding skills. Depending on the grade level of the pupils, the importance of each of these prerequisite skills varies. Comprehension is also affected by prior knowledge, which can help children relate to various texts.

Why Is Comprehension Important?

Reading for meaning is the ultimate goal of learning how to read. This is the element that takes children from being good decoders to being good readers and literate beings. It is therefore understandable that the acquisition of reading comprehension is a complex, and vital, process.

How Does ABRACADABRA Support Comprehension?

The tool focuses on developing eight specific skills that contribute to overall comprehension. The activities each have various levels and range from simpler tasks, such as placing the elements of a well-known story in order, to summarizing an entire text. Other activities allow pupils to respond to a question prompt, to think critically about a text and to respond appropriately given the context of the story. Additional vocabulary activities help pupils to build a bank of words that they can read (decode) and understand.

ABRACADABRA

How Do I Teach Comprehension?

Research suggests that there are several strategies that have a positive influence on children's ability to understand what they read. The National Reading Panel suggests practicing skills such as asking and generating critical questions, using story maps, and monitoring comprehension through cooperative learning opportunities.

There is also evidence that modeling appropriate strategies, such as context clues and providing multiple opportunities to read texts, helps children develop their comprehension skills. Also, pupils should have time to read individually, with peers and with adults.

COMPREHENSION STRATEGIES	VOCABULARY
Comprehension Monitoring	Vocabulary
Prediction	Vocabulary (ESL)
Sequencing	
Story Elements	
Story Response	
Summarizing	



Comprehension Monitoring

ACTIVITY OBJECTIVE

As they are reading a story, pupils identify on each page the incorrect word, meaning the one that does not make sense.

This activity is best done after children are familiar with a story so they can tell which word does not make sense in the text.

GROUP FACILITATION TIPS

Pupils can work as a group (reading the story and looking for the nonsense words) and take turns controlling the computer. If a word is

not known, they can click on it to get help.

CONTENT/LEVELS

There is one nonsense word per page in every story.

LINKED STORIES

Darryl! Don't Dawdle Henny Penny How a Bean Sprouts The Dove and the Ant The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff





Prediction

ACTIVITY OBJECTIVE

Based on information from the story, the pupil will predict future events. They should also be asked to justify their responses.

GROUP FACILITATION TIPS

This activity can be done as an oral or written project, individually, group, or whole class. Pupils can read the story as a group using the tracking function or have the page read by the computer using the audio icon. If done orally, encourage pupils to discuss their ideas with

peers. The teacher can add questions that may not be embedded in the program.

CONTENT/LEVELS

Prediction questions are asked at the end of certain pages in the story.

LINKED STORIES

Henny Penny The Dove and the Ant The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff Waterfall





▷ 🖒 🕅 🙆



Sequencing

ACTIVITY OBJECTIVE

After reading a story, the pupil will place story events in their correct order.

GROUP FACILITATION TIPS

Pupils can work as a group (reading the story and looking for the nonsense words) and take turns controlling the computer. If a word is not known, they can click on it to get help.

CONTENT/LEVELS

Level 1: 3 story events are displayed in random order. Level 2: 5 story events are displayed in random order.

LINKED STORIES

Henny Penny How a Bean Sprouts The Dove and the Ant The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff Waterfall





Story Elements

ACTIVITY OBJECTIVE

The pupils must answer questions about events that took place in a story. They are given multiple-choice questions and must choose one of three possible answers.

GROUP FACILITATION TIPS

This activity can be done individually or in small groups. When working in groups, they can take turns selecting answers and hitting the piñata.

CONTENT/LEVELS

Pupils are asked six questions about the story. Because there are audio prompts to assist, this activity can be done by all pupils once they are familiar with the story.

LINKED STORIES

Darryl! Don't Dawdle Henny Penny The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff Waterfall





Story Response

ACTIVITY OBJECTIVE

Pupils are given open-ended questions about the story that they will discuss with one another.

GROUP FACILITATION TIPS

This activity should be done in small groups. After pupils have discussed a question, they can play an online hockey game in which they take turns scoring goals.

CONTENT/LEVELS

Six questions are presented in a set—three of which are general while the remaining three are story-specific.

LINKED STORIES

Darryl! Don't Dawdle Feelings Henny Penny The Dove and the Ant The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff Waterfall When I Open My Eyes





Summarizing

ACTIVITY OBJECTIVE

The pupil will answer story-related questions to help him/her summarize the story at the end.

GROUP FACILITATION TIPS

This activity is best done in pairs or in small groups. Pupils read the story (using the tracking function) or have the pages read by the computer (audio feature). If necessary reword the question and encourage discussion amongst the pupils.

Summarizing prompts are not available for all stories, but teachers can develop their own questions for ABRA and READS stories.

CONTENT/LEVELS

Story related questions are asked after certain pages in the story. Pupils must identify key elements in the story and monitor their thinking so they can summarize the story in a meaningful way.

LINKED STORIES

Henny Penny The Dove and the Ant The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff Waterfall



COMPREHENSION



Vocabulary

ACTIVITY OBJECTIVE

Given the definition of a word, the pupil must determine which of two sentences uses the word appropriately.

GROUP FACILITATION TIPS

This feature can be used to preview vocabulary words from a particular story before reading it or to work with words from a story after it was read.

CONTENT/LEVELS

Vocabulary words are drawn from the individual stories.

LINKED STORIES

Darryl! Don't Dawdle Feelings Henny Penny How a Bean Sprouts I Can Move Like a... The Dove and the Ant The Frogs and the Well The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff Waterfall When I Open My Eyes





Vocabulary (ESL)

ACTIVITY OBJECTIVE

The pupil will be able to match given words with their corresponding pictures, then use the words appropriately in given sentences.

GROUP FACILITATION TIPS

This activity is best done individually or in pairs. If done in pairs, pupils can take turns controlling the mouse as they each do a set. The other pupil is there to support and provide assistance if necessary.

CONTENT/LEVELS

The first half of this activity gives pupils a set of five words and asks them to select the matching picture. The second part presents five incomplete sentences and the pupil must

select which of these words best fits the sentence.

LINKED STORIES

Darryl! Don't Dawdle Feelings Henny Penny I Can Move Like a... The Dove and the Ant The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff Waterfall When I Open My Eyes





COMPREHENSION

ABRA Activities: Writing (Typing)

What Is Writing?

Writing is defined as a system in which graphemes (letters or symbols) that represent a language are placed on a surface (encoded) to be read (decoded) by someone familiar with the code. It is a powerful, multifaceted tool for both personal and interpersonal communication.

Stages of Writing

Writing progresses through at least seven different stages: from children giving meaning to their scribbles, pictures and drawings to conventional spelling. When children begin their formal schooling they may fall anywhere on this continuum in terms of writing ability.



Why Is Writing Important?

Writing is a means by which we communicate with others. When children see different types of writing that is modeled and used around them, they soon want to engage in its production. Children usually begin writing (albeit through scribbling) before they start to read. Research shows that writing supports reading development and vice versa. When pupils encode their thoughts using conventional or invented spelling on paper or via a word processing program, they use skills that support reading and writing development. With the disparity that exists between the number of phonemes and graphemes in the English language (26 and over 40, respectively), pupils need explicit and systematic phonics instruction to learn how this code works and how to reproduce it. ABRA is a tool that supports this development.

How Does ABRACADABRA Support Writing?

ABRA's writing component is designed for children to apply phonetic principles and their literacy experiences to the writing of words and sentences. Through two activities, children are asked to write words and sentences they have encountered in the different texts in the program.

Scaffolding mechanisms are built in so that pupils can complete the writing activities on their own. When words are spelled incorrectly, ABRA will provide prompts to support and encourage pupils until the words are spelled properly.

Spelling Sentences

Spelling Words

Spelling Sentences

ACTIVITY OBJECTIVE

The pupils will use keyboarding skills to spell words to make a sentence.

GROUP FACILITATION TIPS

Before doing this activity, acquaint pupils with basic keyboarding skills, especially letters, the space bar, backspace, and enter keys.

This activity should be done after a story has been read because the words tested are storyspecific. It is best done by individual pupils or in pairs where they alternate having control of the keyboard.

CONTENT/LEVELS

Level 1: 2-word sentences. Level 2: 3-word sentences. Level 3: 4-word sentences. Level 4: 5-word sentences.

LINKED STORIES

Darryl! Don't Dawdle Feelings Henny Penny How a Bean Sprouts I Can Move Like a... The Dove and the Ant The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff Waterfall When I Open My Eyes







Spelling Words

WRITING

ACTIVITY OBJECTIVE

The pupils will spell regular and irregular words using the keyboard.

GROUP FACILITATION TIPS

Before doing this activity, acquaint pupils with basic keyboarding skills, especially letters, the space bar, backspace, and enter keys.

This activity is best done by individual pupils or in pairs where they alternate having control of the keyboard.

CONTENT/LEVELS

Level 1: 2-sound (phoneme) words. Level 2: harder 2-sound (phoneme) words. Level 3: 3-sound words. Level 4: harder 3-sound words. Level 5: 4-sound words. Level 6: harder 4-sound words. Level 7: 5-sound words. Level 8: harder 5-sound words.

LINKED STORIES

Darryl! Don't Dawdle Feelings Henny Penny I Can Move Like a... The Dove and the Ant The Frogs and the Well The Little Red Hen The Three Billy Goats Gruff When I Open My Eyes





ABRA & Tusome

Alignment of ABRA with Tusome

In this section, teachers will find a plan for using both ABRA and TUSOME in their classroom each week.

SUGGESTIONS FOR USE

• Set aside at least one hour per week for using ABRA (sessions can divided into two 30 min. blocks if more suitable to schedule).

ABRA & TUSOME

- Use ABRA in the classroom with tablets or the lab. If necessary, pupils can work in pairs to complete the ABRA activities.
- If teachers have limited time, focus on the computer-based activity in the plan. If teachers have more time, work on the computer and classroom-based activities suggested in Extension Activities.

ABRA & TUSOME Week 1 TUSOME OVERVIEW

THEME: WILD ANIMALS

Alphabetic Activities	Learner Story (Fluency, Comprehension)	Writing
 Letter/Sound Knowledge (m, s, h, b, c) Word Blending Vocabulary 	 At the Zoo Pupils answer questions about the story 	 Practice writing mat, Tam, met

Day 1-5	Extension Activities
 Alphabetics - Letter Sound Search No ABRA related book for this activity Given the pronunciation of a letter sound, the pupil must identify and find its associated letter. The teacher can have pupils focus on lower, upper, or mixed letters depending on the pupils' needs. 	 Comprehension Ask informal questions about the story: Who is/are the main characters? What happened first/second/last? Where does the story take place? Did you like the story? Why? Explain.
⇒ Choose Level 1: Lower case letters	
Fluency - Tracking <u>ABRA Story</u> : <i>I Can Move like A</i> This story compares the antics of a child to those of different animals. This story uses a child's active imagination and feeling of omnipotence as a child describes the things she or he can "do". Children can use illustrations, context clues, rhyming words and spelling patterns to read unfamiliar words.	
Teacher reviews the chosen story, then reads story to pupils. If time, pupils in pairs take turns reading the story to each other (echo reading).	

Week 2 TUSOME OVERVIEW

ABRA & TUSOME

THEME: SHOPPING

Alphabetic Activities	Learner Story (Fluency, Comprehension)	Writing
 Letter/Sound Knowledge (y, z, v, wh) Word Blending Vocabulary 	 <i>Nan and Sam</i> or <i>Mangoes</i> Pupils answer questions about the story 	• Practice writing bit, bite, ripe, like, take

Day 1-5	Extension Activities
 Alphabetics - Letter Sound Search No ABRA related book for this activity Given the pronunciation of a letter sound, the pupil must identify and find its associated letter. The teacher can have pupils focus on lower, upper, or mixed letters depending on the pupils' needs. 	 Comprehension Ask informal questions about the story: Who is/are the main characters? What happened first/second/last? Where does the story take place? Did you like the story? Why? Explain.
Fluency	
story.	
Teacher reviews the chosen story, then reads story to pupils. If time, pupils in pairs take turns reading the story to each other (echo reading).	



THEME: TRAVEL

Alphabetic Activities	Learner Story (Fluency)	Writing
Sound RecognitionOral Blending	 Rose and the Big Bike and Rose Has a Scar Practice reading car, bar, far, jar, scar, tar, ball, tall, wall, far, tar 	 Grammar: Language Pattern Use of "wants to" in sentences

 Comprehension Ask informal questions about the story: Have you ever taken a trip with your family? Where did you go and what did you do once you go there? Share your experience with other pupils.



Week 4 TUSOME OVERVIEW

THEME: ENVIRONMENT

Alphabetic Activities	Learner Story (Fluency, Comprehension)	Writing
 Letter/Sound Knowledge (gr, dr) Word Blending Vocabulary 	 Bad Smell at the Lake, Sam and the Pig and Pat and the Big Dogs Practice reading ship, boy, toy, lake, rake. green, drag, grass, dream, dry, chin, ring, drop, greet, grain, drive, drop, drive, drag, drum 	 Grammar: Language Pattern Use of "good at" in sentences

Day 1-5	Extension Activities
 Alphabetics - Blending Train <u>ABRA Story</u>: <i>The Little Red Hen</i> Given the phonemic breakdown of a word, pupils will identify the word it makes; e.g., /r/ /o/ /d/ = "rod". 	Comprehension - Sequencing In pairs to do the activity. After reading a story, the pupil will place story events in their correct order.
⇒ Choose Level 3: 3-phoneme words with short vowel sounds.	story pages), displayed in random order.
Fluency - Tracking <u>ABRA Story</u> : <i>The Little Red Hen</i> An industrious hen solicits the help of a dog, cat, and pig to get the ingredients necessary to bake a loaf of bread. The animals are too lazy so they decline to help but eagerly agree to eat the bread once the work is done.	 Pupils in pairs do the activity. The pupils will spell regular and irregular words using the keyboard. All pupils can do this activity. Teachers must decide where pupils need help and assign the appropriate spelling level.
Teacher reads the story to pupils.	\Rightarrow Choose Level 3: 3-phoneme words with short vowel sounds.



TUSOME OVERVIEW

THEME: HEALTH AND HYGIENE

Alphabetic Activities	Learner Story (Fluency, Comprehension)	Writing
 Letter/Sound Knowledge (nk, nd, nt, st, sp) Word Blending (s) Vocabulary 	 Baby Sara, Esther and the Spider and Baby Sara takes a Bath Practice reading sank, bank, sand, send, bend, band, sent, bent, hand, pink, drink, stand, want, hand, step, drink, spit, still, hand, spin, sink, star 	 Grammar: Language Pattern Use of "clean" in sentences

Day 1-5	Extension Activities
 Alphabetics - Auditory Blending Given a phonemic breakdown, the pupil will identify a word; i.e., /c/ /a///t/ = "cat". 	Comprehension - Story Response In pairs to do the activity. Pupils are given open-ended questions about the story that they will discuss with one another.
⇒ Choose Level 4: 4-phoneme words with blends mainly at the beginning, short, long, and r-controlled vowel sounds.	
Fluency - Tracking <u>ABRA Story</u> : <i>When I Open My Eyes</i> This poem-like text outlines the morning rituals of a child from the moment she wakes up to the time she leaves the house.	

Week 6 TUSOME OVERVIEW



THEME: FOOD

Alphabetic Activities	Learner Story (Fluency, Comprehension)	Writing
 Letter/Sound Knowledge (st, sk, sp, ea) Word Blending (s) Vocabulary 	 The Milk Mask, Maina Falls and Mary and the Wasp Practice reading ream, bead, meat, peas, sea, seat, bean, seam, ream, steam, speak, cheat, dream, beat, team, read 	 Grammar: Language Pattern Use of "wants to" in sentences

Day 1-5	Extension Activities
 Alphabetics - Blending Train <u>ABRA Story</u>: <i>How a Bean Sprouts</i> Given the phonemic breakdown of a word, pupils will identify the word it makes; e.g., /r/ /o/ /d/ = "rod". 	 Comprehension Ask informal questions about the story: What are the unusual shapes? What are root vegetables? What was Raju actually doing?
⇒ Choose Level 4: 3-phoneme words with clusters, short, long, and r-controlled vowel sounds.	Writing Pupils write short sentences with "wants to" and words from the story.
Fluency <u>In READS</u> : Choose the story <i>The Day the</i> <i>Vegetables Came to School</i> .	
Teacher reviews the chosen story, then reads story to pupils. If time allows, pupils in pairs take turns reading the story to each other (echo reading).	

ABRA & TUSOME Week 7 TUSOME OVERVIEW

THEME: PARTS OF THE BODY

Alphabetic Activities	Learner Story (Fluency, Comprehension)	Writing
 Letter/Sound Knowledge (-ear) Word Blending (/y/ /ia/) Vocabulary 	 <i>A Sore Ear</i> Pupils read story and answer questions about story 	 Practice writing: back, duck, sock, check, year, dear, near, hears, well

Day 1-5	Extension Activities
 Alphabetics - Auditory Blending <u>ABRA Story</u>: When I Open My Eyes Given a phonemic breakdown, the pupil will identify a word; i.e., /c/ /a/ 	Comprehension - Vocabulary Given the definition of a word, the pupil must determine which of two sentences uses the word appropriately.
 → Choose Level 5: 4-phoneme words with blends mainly at the end, short, long, and r-controlled vowel sounds. 	Writing Pupils write two new sentences that rhyme with the story (poem) <i>When I Open My Eyes</i> using parts of the body.
Fluency - Tracking <u>In READS</u> : Choose the story <i>Listen to my</i> <i>Body</i> .	
Teacher reviews the chosen story, then reads story to pupils, asking pupils to take turns reading the story aloud.	

Week 8 TUSOME OVERVIEW

ABRA & TUSOME

THEME: SCHOOL

Alphabetic Activities	Learner Story (Fluency, Comprehension)	Writing
 Letter/Sound Knowledge (r,l,-all,-ar) Word Blending Vocabulary 	 A Shirt for School Pupils read story and answer questions about story 	Pupils make correct sentences

Day 1-5	Extension Activities
 Alphabetics - Letter Sound Search No ABRA related book for this activity Given the pronunciation of a letter sound, the pupil must identify and find its associated letter. The teacher can have pupils focus on lower, upper, or mixed letters depending on the pupils' needs. ⇒ Choose Level 2: Lower case letters. Fluency (READS) In READS: Choose the story Joy Goes to School. 	 Comprehension Ask informal questions about the story: Who is the main character? What did Joy do first? Why did she wash and brush her teeth? Writing Pupils write short sentences with "where's the". Pupils exchange their sentences (questions) and answer them. Suggest using objects from the two stories they have read in this unit.
Teacher reviews the chosen story, then reads story to pupils. If time allows, teacher asks one pupil at a time to read a page of the story.	

ABRA & TUSOME Week 9

TUSOME OVERVIEW

THEME: THE FARM

Alphabetic Activities	Learner Story (Fluency, Comprehension)	Writing
 Letter/Sound Knowledge (r,l,-all,-ar) Word Blending Vocabulary 	 A Shirt for School Pupils read story and answer questions about story 	• Pupils make correct sentences

Day 1-5	Extension Activities
 Alphabetics - Auditory Blending <u>ABRA Story</u>: <i>The Little Red Hen</i> Given a phonemic breakdown, the pupil will identify a word; i.e., /c/ /a///t/ = "cat". 	Comprehension - Sequencing <u>ABRA Story</u> : <i>The Little Red Hen</i> In pairs to do the activity. After reading a story, the pupil will place story events in their correct order
⇒ Choose Level 5: 4-phoneme words with blends mainly at the end, short, long, and r-controlled vowel sounds.	⇒ Choose Level 2: 5 story events (summary of story pages), displayed in random order.
Fluency ABRA Story: <i>The Little Red Hen</i> An industrious hen solicits the help of a dog, cat, and pig to get the ingredients necessary to bake a loaf of bread. The animals are too lazy so they decline to help but eagerly agree to eat the bread once the work is done.	Writing Pupils write short sentences with "she/he can" related to the story.
Teacher reviews the chosen story, then reads story to pupils. If time allows, teacher asks one pupil at a time to read a page of the story.	



Week 10 TUSOME OVERVIEW

THEME: CLOTHES

Alphabetic Activities	Learner Story (Fluency, Comprehension)	Writing
 Letter/Sound Knowledge (-er, -ir, -ur) Sound Recognition Vocabulary 	 Clothes for Girls and Boys Pupils read story and answer questions about story 	 Pupils copy words for dictation

Day 1-5	Extension Activities
 Alphabetics - Blending Train <u>ABRA Story</u>: When I Open My Eyes Given the phonemic breakdown of a word, pupils will identify the word it makes; e.g., /r/ /o/ /d/ = "rod". ⇒ Choose Level 5: 4-phoneme words with blends mainly at the beginning, short, long, and r-controlled vowel sounds. 	 Comprehension - Story Response <u>ABRA Story</u>: When I Open My Eyes Pupils are given open-ended questions about the story that they will discuss with one another. This activity uses certain stories from the literary and informational genre categories. Six questions are presented in a set—three of which are general while the remaining three are story-
Fluency	specific.
Teacher reviews the chosen story. Pupils take the time they need to read the story on their own.	Writing Pupils write a short paragraph about what they wear to school.



TUSOME OVERVIEW

THEME: TRAVEL

Alphabetic Activities	Learner Story (Fluency, Comprehension)	Writing
 Letter/Sound Knowledge (-or) Word Blending Vocabulary 	 What People Do Pupils read story and answer questions about story 	• Pupils complete blank sentences

Day 1-5	Extension Activities
 Alphabetics - Word Matching <u>ABRA Story</u>: <i>The Dove and the Ant</i> The pupil will match words that have the same beginning or ending sound. Pupils have the choice of playing with 8 cards (4 pairs), 12 cards (6 pairs), and 16 cards (8 pairs). 	Comprehension - Prediction Based on information from the story, the pupils will predict future events. Asking children to predict what can happen is a skill that all children can do. They should also be asked to justify their responses.
 ⇒ Choose Level 1: Same beginning sounds. Fluency - Tracking ABRA Story: The Dove and the Ant This is a cute story of how a friendship develops between a dove and an ant. Crisis situations can be catalysts that forge fast friendships. A bird comes to the rescue of an ant and the ant, in spite of its size, returns the favour. This funny story can help children learn that help can come in a variety of packages. In READS: Choose the story All Types of Aircrafts. Teacher reviews the chosen stories. Pupils take the time they need to read the story on	Writing Pupils choose two types of aircrafts from the READS story and make a short story.



Week 12 TUSOME OVERVIEW

THEME: THE HOME

Alphabetic Activities	Learner Story (Fluency, Comprehension)	Writing
 Read Letter Sounds (-oi, -ore) Oral Blending Vocabulary 	 <i>Cleaning Up, What To</i> <i>Do</i> Pupils read story and answer questions about story 	• Pupils complete blank sentences

Day 1-5	Extension Activities
 Alphabetics - Matching Sounds No ABRA related book for this activity The pupil will identify sounds that are 	Comprehension - Sequencing <u>ABRA Story</u> : <i>The Little Red Hen</i> In pairs to do the activity. After reading a
the same.	their correct order.
⇒ Choose Level 2: Similar sounds.	
	Writing
Fluency	Pupils write short sentences with the words:
In READS: Choose the story Lacey's New	boil, dry, and clean.
Home or Going Home.	
Teacher reviews the chosen stories. Pupils	
take the time they need to read the story on	
their own.	

ABRA & TUSOME Week 13

TUSOME OVERVIEW

THEME: WEATHER

Alphabetic Activities	Learner Story (Fluency, Comprehension)	Writing
 Letter/Sound Knowledge (-ow) Word Blending Vocabulary 	 Ann and the Weather Pupils read story and answer questions about story 	GrammarVocabulary

Day 1-5	Extension Activities
 Alphabetics - Auditory Blending <u>ABRA Story</u>: Waterfall Given a phonemic breakdown, the pupil will identify a word; i.e., /c/ /a///t/ = "cat". ⇒ Choose Level 5: 4-phoneme words with blends mainly at the end, short, long, and r-controlled vowel sounds. 	Comprehension - Story Elements <u>ABRA Story</u> : <i>Waterfall</i> The pupils must answer questions about events that took place in a story. Pupils must select the answer to six questions about the story. Because there are audio prompts to assist, this activity can be done by all pupils once they are familiar with the story.
Fluency <u>ABRA Story</u> : <i>Waterfall</i> This is a retelling of a Columbian legend. The people in this village were not happy and did not cooperate with one another. A wise old man teaches the people how to work and live in harmony. A mean man was upset with this change in the villagers' demeanor so he flooded the village. The wise man punishes him for his destructive behaviour and the villagers are allowed to live in peace again.	 Writing - Spelling Sentences The pupils will use keyboarding skills to spell words to make a sentence. This activity is directly related to the stories so have the pupils read a story then spell words related to that story. ⇒ Choose Level 1: 2-word sentences.
Teacher reviews the chosen story, then reads story to pupils. If time allows, teacher asks one pupil at a time to read a sentence in the story (choral reading).	
Week 14 **TUSOME OVERVIEW**



THEME: CLOTHES

Alphabetic Activities	Learner Story (Fluency, Comprehension)	Writing
 Letter/Sound Knowledges (sc, sk) Segmenting Vocabulary 	 Dressing a Goat Pupils read story and answer questions about story 	GrammarVocabulary

ABRA

Day 1-5	Extension Activities
 Alphabetics - Auditory Segmenting ABRA Story: Darryl! Don't Dawdle Given the pronunciation of a word, e.g. "cat", the pupil will identify the breakdown /c/ /a/ /t/ of the word. 	Comprehension - Comprehension Monitoring <u>ABRA Story</u> : Darryl! Don't Dawdle After reading a story, the pupil will identify words that do not make sense. (There is one incorrect word on each page).
 ⇒ Choose Level 2: 2-phoneme words with clusters, short, long, and r-controlled vowel sounds. Fluency <u>ABRA Story</u>: Darryl! Don't Dawdle Darryl is a boy who loves to take his time to do things. Throughout the story people constantly tell him, "Darryl! Don't dawdle". A funny ending occurs when Darryl is able to use these same words on someone who he thinks is dawdling. Tage these reviews the chasses store there eally	Writing Like in the activity above, pupils write sentences that don't make sense, for example: I put my skirt on my head. Another pupil reads the sentences and corrects it.
Teacher reviews the chosen story, then asks pupils to read story on their own.	



TUSOME OVERVIEW

THEME: THE FARM

Alphabetic Activities	Learner Story (Fluency, Comprehension)	Writing
Word Blending (-oo)Rhyming WordsVocabulary	 <i>The Farmer</i> Pupils read story and answer questions about story 	GrammarVocabulary

ABRA

Day 1-5	Extension Activities
 Alphabetics - Same Phoneme <u>No ABRA</u> related book for this activity The pupil will be required to distinguish between phonemes (letter sounds) that are the same or different. 	Comprehension - Summarizing <u>ABRA Story</u> : <i>The Little Red Hen</i> The pupil will answer story related questions to help him/her summarize the story at the end.
Fluency <u>ABRA Story</u> : <i>The Little Red Hen</i> An industrious hen solicits the help of a dog, cat, and pig to get the ingredients necessary to bake a loaf of bread. The animals are too lazy so they decline to help but eagerly agree to eat the bread once the work is done.	Writing Using the rhyming words from the story <i>The</i> <i>Farmer</i> (in READS), pupils write a new poem with at least 2 verses.
own.	



Teacher Module

The Teacher Module is designed to support teachers' use of ABRA. There are two components to this module: a Teacher Assessment feature, and a Teacher Resources site. Teachers can use the Assessment feature to follow pupils' progress in all of the activities. Teachers are encouraged to consult the resource site to learn more about the tool and to access classroom resources such as lesson plans. These teacher resources will be updated regularly.

Assessment

The Teacher Assessment feature provides teachers with a breakdown of which activities their pupils have accessed, how much time was spent in the activities, and what errors their pupils made. Guidance on the skills targeted in each of the activities is also provided.

To access this feature, click on the cog icon from the Lobby Page.

GENERATING A REPORT

The first step requires the teacher to choose which class they want to get data about. The teacher selects this class from the drop-down list.

By default the last 30 days are selected in the calendar. The teacher can choose an alternative date range. The report will only present data for the date range selected on this page.

Note: The LTK+ timestamps all pupils' activity using Coordinated Universal Time (UTC).

There are two report types: class portrait and student portrait.







Class Portrait

CATEGORY OVERVIEW

The activities are listed by their categories. Click on the tabs to select the category and see the activities of that category.

This page provides a quick indication of:

- Which activities pupils have attempted
- How much time they spent in each activity and in the category overall
- How many of the pupils have completed the activity at least once.

Click on an activity to see more details about the pupils' progress within that activity.

ACTIVITY DETAILS

The activity detail page provides a wealth of information on how the class has interacted with the tool. This can include:

- Summary
- Access Statistics
- Correct/Incorrect Statistics
- Error Report
- Stories Read
- Words Clicked On
- Activity Insights
- Activity Connections
- Drop-down Filter of Overall or Level Information
- Complete/Incomplete Pie Chart.



Information /	Class Portrait / Letter Sound Se	arch 🧍 🦓 Gara
LETTER SOUN	D SEARCH 🕶	
Time Spent: 18 minute Times Accessed: 6 time Average Time/Access: 3	s is 3 minutes	Choose the level(s): Level 1
Overall Statistics	Total	
Correct on first try	19	Complete. 1939/53
Correct on second attempt Help provided by the tool	1	
	0	incesta.
Ned Crowley (1 mistakes)	Go to profile	
Edmund Palka (3 mistakes)	Go to profile	Highdhath.com
Arusha Sunik (1 mistakes)	Go to profile	
Colette Tremblay (1 mistake	Go to profile	
Activity Insights •	•	
Activity Connecti	ons 🕶	

As each activity is different, the information on this page will change to align with what is relevant for the chosen activity.

By default, many of these sections are hidden when the teacher first accesses the activity details page. Click on the triangle buttons ▼ near the headings to show or hide content.

Summary: Clicking on the activity name will provide a description of the activity, focusing on its objective. If the activity has multiple levels, then a short description of each level is provided.

Access Statistics: The total number of times spent in the activity, number of times the activity was started, and the average time spent in that activity is listed.

Correct/Incorrect Statistics: List the total number of times that the pupils were able to answer correctly on the first attempt, on the second attempt after guidance was provided by ABRA, and incorrect answers. Not all of the activities provide a second attempt to answer the question, so occasionally this table will only list a correct or incorrect count.

Error Report: Provides details of the errors made by pupils. Each pupil that made an error will appear in this section. Click on a pupil's name to see details about the types of errors they made in the current activity. These errors are listed in chronological order. The error tables will look different in each activity as the type of errors varies from activity to activity.

Clicking on the *Go to Profile* button will navigate to that pupil's portrait - to the current activity's detail page. Only information relevant to that pupil will display rather than the whole class.

Overall Statistics	Total
Correct on first try	39
Correct on second attempt Help provided by the tool	10
Incorrect	1

Error Report -

Edmund Palka (3 mistakes) Go to profile						
John Smith	John Smith (5 mistakes) Go to profile					
Arusha Sun	Arusha Sunik (4 mistakes) Go to profile					
Story	Level	Date	Correct Answer	Student Answer		
Little Red Hen	2	Dec 12, 2018	they	thay		
Little Red Hen	2	Dec 12, 2018	cow	kow		
Little Red Hen	1	Dec 12, 2018	on	om		
Little Red Hen	1	Dec 12, 2018	by	dy		

RACADABRA TI

TEACHER MODULE

Stories Read: A list of stories chosen when pupils start the activity. This section will list the frequency and number of pupils that the stories listed.

Words Clicked On: A list of words in the stories that the pupils asked for help with pronunciation.

Activity Insights: Description of the skills targeted in an activity and suggestions for reinforcing those skills.

Stories Read				
Stories Read	# Times	# Students		
Henny Penny	4	2		
Little Red Hen	2	1		
l Can Move Like A	1	1		

Activity Connections: A list of other ABRA activities connected to the current one that build or extend the skills targeted in the current activity.

Drop-down Filter for Overall or Level Information: A drop-down menu allows for the data to be displayed for the activity overall, or to filter by a specific level.

Complete/Incomplete Pie Chart: A quick indication of how many pupils have complete the activity at least once. If viewing the data for all levels, 'complete' would mean they have gone through each level at least once.



Student Portrait

CATEGORY OVERVIEW

This page provides a quick indication of:

- Which activities this pupil has attempted
- Which levels the pupil has completed in the activity at least once
- How much time they spent in each activity and in the category overall.

Click on an activity to see more details about the pupil's progress within that activity.



ACTIVITY DETAILS

The activity detail pages contain a lot of the same type of information that is in the class portrait. However, the emphasis is different, so the information might be arranged differently. The report includes:

- Summary
- Access Statistics
- Correct/Incorrect Statistics
- Error Report
- Stories Read
- Words Clicked On
- Activity Insights
- Activity Connections
- Drop-down Filter of Overall or Level Information.

As each activity is different, the information on this page will change to align with what is relevant for the chosen activity.

Summary: Clicking on the activity name will provide a description of the activity, focusing on its objective. If the activity has multiple levels, then a short description of each level is provided.

Access Statistics: The total number of times spent in the activity, number of times the activity was started, and the average time spent in that activity is listed.

Correct/Incorrect Statistics: List the total number of times that the pupil was able to answer correctly on the first attempt, on the second attempt after guidance was provided by ABRA, and incorrect answers.

Not all of the activities provide a second attempt to answer the question, so occasionally this table will only list a correct or incorrect count.

Error Report: Provides details of the errors made by the pupil. These errors are listed in chronological order. The error tables will look different in each activity as the type of errors varies from activity to activity.

Stories Read: A list of stories chosen when the pupil started the activity. This section will also list the frequency that each story was chosen with the current activity.

Words Clicked On: A list of words in the stories that the pupil asked for help with pronunciation.

Activity Insights: Description of the skills targeted in an activity and suggestions for reinforcing those skills.

Activity Connections: A list of other ABRA activities connected to the current one that build or extend the skills targeted in the current activity.

Drop-down Filter for Overall or Level Information: A drop-down menu allows for the data to be displayed for the activity overall, or to filter by a specific level.

Teacher Resources

The ABRA Resource Page offers teachers a multitude of paper-based and multimedia resources intended to help teachers implement ABRA effectively in their classroom.

ACCESSING THE SITE

There are two ways to access the site:

1) From the LTK+ lobby page, click on R the apple icon

2) Go directly to the URL: https://grover.concordia.ca/resources/abra/teacher/en/

CONTENT ON THE SITE

The ABRA Teacher Resources website has the followings sections:

- Homepage
- Activities
- Stories
- Using ABRA
- Videos
- Resources



Homepage: Provides an overview of the tool, including a brief description, where it is being used, and the philosophy behind the design.

Activities: Literacy skills are divided into four sections: Sounds, Letters, and Words (Alphabetics), Understanding the Story (Comprehension), Reading (Fluency), and Writing (Typing).

In total there are 33 activities in ABRA. For each of the activities, a brief demo is available as well as a description of the activity's objective, group facilitation tips, and an explanation of the content and levels of each activity. Teachers can also choose to review the activity insights, what stories are linked to this activity, and any resources, such as lesson plans, that are connected to this activity.

Stories: There are two ways the stories are



organized: by category (genres) or by themes. The categories are: Folk and Fairy Tales, Poetry, Fiction, and Non-Fiction. The themes are: Adventure, Animals, Family & Friends, Feelings & Values, Food, Games & Sports, Imagination, Nature, Numbers, Other Themes, Places, and School.

Each of the stories is accessible in PDF format on the site. To help teachers assess the appropriateness of the story for their classroom, a summary and difficulty level is provided. If the story was connected to ABRA activities, that is also indicated on the website. Any resources linked to the story, such as lesson plans or worksheets, are also listed.

Using ABRA: This section provides guidance for teachers that want to jump right into using ABRA. It includes quick links to resources, such as this teacher guide, explanation of ABRA features, and how to use ABRA with other LTK+ tools.

Videos: This section provides quick access to video support. Videos are grouped into playlists centered on a theme.

Resources: This section provides resources to support teachers' use of ABRA in their classrooms. These resources include a large number of PDF documents. Some example resources include lesson plans, worksheets, guides, and teacher aids.

As ABRA is used worldwide, there is also region-specific content available in this section.

Teacher Aids

ABRACADABRA Basics

- Use your user ID and password to log in to the Learning Toolkit (LTK+). Note: ABRA is only accessible in level 1 and 2.
- Click on ABRACADABRA from the LTK+ *Lobby* page. This will bring users to the *Student Module Splash* page.



- 3. Click on the *Play!* button. This will bring users to the *Adventure Room* page. From here, users can choose activities, stories, or learn more about the characters.
- 4. Select an activity. First, select a main category.





Then, choose one of the activities. Use the red arrow to view more activities.



5. Select a book (if required). First, select a genre.





- 6. Click on the *Go* button. This will bring users to the activity or story page. A demo should load automatically.
- 7. Choose a level (if relevant).
- 8. Press the *Play* or *Read* button.

AT ANY TIME

Users can use the *Chooser* menu at the top of the screen to navigate to a different screen.



The Back button will bring users back to the previous screen.



The *Chooser* button will bring users to the Adventure Room page, where they select the activity and/or story they wish to engage with.



The *Home* button will bring users back to the splash page.

WITHIN AN ACTIVITY

The following buttons are the ones you'll see within an activity.



The *A*-*OK* button will check the answer.



The *Help Me* button will guide pupils to the answer.



The *Yes* button is to indicate agreement.



The *No* button is to indicate disagreement.



The *Repeat* button will replay the audio.

~

Jenn H.

ABRA

🕨 🕜 🕅 🙆 🤅

TEACHER MODULE

Getting Pupils Started Using ABRACADABRA

When using ABRACADABRA, it's important to set aside time for pupils to explore and learn about the software. Start by demonstrating the login process to pupils, reminding them that each pupil has a unique user ID and password. Consider using the Login Cards available on the Teacher Resource Page as a useful reminder tool. The login screen is shown on the right.

Once pupils are logged in, ask them to click on the ABRACADABRA logo.

THE WORLD OF ABRACADABRA

- Time: About an hour
- Materials: Whiteboard or projector/ screen
- Setting: Lab
- 1. Login and show pupils the *Adventure Room* screen.
- 2. Say: "This is the magical word of ABRACADABRA. Here we meet Julie and Leo, and they are going to take us on a wonderful journey where we can learn new sounds, words, and stories to help us learn how to read!"

Tip: Teachers can change the names to be more culturally significant.

- 3. Click on Characters.
- 4. Have pupils choose different characters.
- 5. Have the computer read aloud the character's biography, or if pupils want, they can try to read various portions of it.





- 6. Click on the Back button to return to the Adventure Room.
- 7. Now, click on Activities and Stories
- 8. Say: "This is the Adventure Room. From here, Julie and Leo can take us to different activities and stories where we will learn how to read and share what we have learned."
- 9. Allow for ample exploration time.

Tips for Teachers

- Make sure pupils are comfortable logging into ABRA on their own (initially with some support from the teacher or another pupil).
- Let pupils familiarize themselves with the icons and the navigation menu.
- Encourage pupils to watch the demos of the activities.

USE COLOUR TO EXPLORE ABRACADABRA

First Activity

Pupils look at the word ABRACADABRA and name all the colours in the title.

Second Activity

Go back to *Characters* or *Adventure Room*. Ask pupils to name various colours they see. Pupils make full sentences using the colours they have identified, for example: "Victor, the hairdresser is wearing a green shirt."

Third Activity

Pupils make up a new song, using ABRACADABRA characters and colours. Song should rhyme. All pupils can work together to create the song.

Tips for Teachers

- These activities can take place in groups.
- Give pupils clear instructions before they start.
- Make links to classroom, home and environment.



Tracking Student Activity with ABRACADABRA

This Teacher Aid will help make the most of ABRA's pupil tracking features starting with the log-in process, which is essential for correctly tracking pupil work.

HOW DOES THE ABRACADABRA LOG-IN PROCESS WORK?

At the beginning of the school term, class names, teacher names, and pupil names (connected to a class) must be entered into the software. The School Administrator usually does this.

- A User ID and password is created for each teacher.
- A User ID and password is created for each pupil.
- A User ID and password must be used when logging into the software.

Tip: make sure each pupil signs in to their own account to ensure their time in ABRA is correctly tracked.



CHANGING PASSWORDS IN TEACHER ACCOUNTS

A teacher can change his/her own password at any time. To do this, access the software using your login credentials.

- 1. Click on the *Manage* button.
- 2. Click on the *My Account* button.
- 3. Enter your old password.
- 4. Enter a new password. It will have to be entered twice.

Teacher accounts also have the capability of changing pupil passwords.

- 1. Click on the *Manage* button.
- 2. Click on the *My Students* button.
- 3. Click on the *Pencil* icon next to the pupil's name.
- 4. Change the password in the Password textbox.
- 5. Click on the *Save & Close* button.

WHAT PUPIL DATA IS TRACKED?

ABRA tracks the following data on pupil use:

- The amount of time the pupil has used ABRA within a session.
- The activities that were consulted (and the number of times they were consulted).
- When the pupil went for support (i.e. clicking on a word in the Tracking activity).
- When the pupil made an error (i.e. incorrectly spelling a word in the Spelling activity).

WHAT ASSESSMENT REPORTS ARE AVAILABLE?

Teachers are able to access a report of ABRA activity by:

- Whole class
- Individual

To access these reports, click on the cog icon from the Lobby Page.

Here is an example of a whole class report, focusing on the *Letter Sound Search* Activity.

This information helps teachers understand the type of errors their pupils are so they can determine ways to help them.

Information / (Class Portrait / Letter Sound S	earch	M Out :
LETTER SOUNI	SEARCH -		
Time Spent: 18 minutes Times Accessed: 6 times Average Time/Access: 3	minutes	Choose the level(s): Level 1 •	
Overall Statistics	Total		
Correct on first try	19	Complete.	
Correct on second attempt Help provided by the tool	1		
Incorrect	0	faccomplexes	
rror Report 🔺		Coarts	
Ned Crowley (1 mistakes)	Go to profile		
Edmund Palka (3 mistakes)	Go to profile	Highdans.com	
Anucha Sunik (1 mietakae)	Go to profile		
Proste Sunk (1 materies)		-	

HOW DO TEACHERS USE THE INFORMATION PROVIDED IN AN ASSESSMENT REPORT?

Teachers can:

- Use the time spent information to decide whether pupils are going through a story or activity too quickly.
- Look at the list of words clicked on to see what type of word families pupils or the class is struggling with and spend more time with struggling pupils.
- Encourage pupils to return to a story and/or activity that was completed too quickly or needs to be practiced again.
- Encourage pupils to click on words they don't understand and use the help provided.
- Design whole class writing activities using words the class is struggling with (word families)
- Ensure pupils have completed the assigned activities.

Managing Classes and Pupils in ABRACADABRA

When using ABRA it is important to understand how to manage your class(es) and pupils.

Remember:

- A User ID and password is created for each teacher.
- A User ID and password is created for each pupil.
- A User ID and password must be used when logging into the software.

To manage pupil log-in information, such as passwords, the teacher must use their own user ID and password to log in and then access *LTK Manage* feature.

The teacher can look at her classes by clicking on the *My Classes* button.

The teacher can view pupils' information by clicking on the *My Students* button.

- Pupils are shown for all of the teacher's classes (if she/he has more than one).
- A drop-down menu allows the teacher to select a class, and view pupils in a specific class.
- The teacher can change a pupil's password at any time. To do this, click on the pencil icon a next to a pupil's name. A window opens with the pupil's information. All of this information can be edited, including the password.
 Tip: If a pupil has trouble logging in, check their password first.
 Tip: Pupils can also use a Nickname instead of their user ID to log in.

🔰 Learnin	ng T op l K	it		ENIFR
APAR CARAERA	ELCO	EPEARL	15 15-21	READS
•	Userna	me		
•	Passwo	ord		
		Sign in		



ain Meni List of	u My Account	My Classes	My Students	ELM Settings			
List of							
List of							
	Students	Link / Unlink	New Work				
To edit	a student, click the	pencil icon next to	the student's name.				
To limit	the view, select a c	ass.					
To link a	a student to a class	s, click the "Link / l	Jnlink" tab.				
D All N	/ly Classes	× 🔶				ļ	
		۹					
Fi	Mu Classes						
All r	viy Classes				search		
Cla	ssroom AA		Nickname	lisername	Password	ePFARI	
Clas	ssroom BB			img1	123	Level 1	
2.52	Attar, Mohammed			img24	123	Level 1	C
100	Coulson, Hugo			img19	2608	Level 1	
2 12	Dent, Barry			img3	123	Level 1	
200	Farelli, Chloe			img4	123	Level 1	C
1	Garcia, Antonio			img18	123	Level 1	C
1	Gomez, Pedro			img5	123	Level 1	C
	Horton, Charlotte			img2	123	Level 1	C
1	Jacobs, Benjamin			img6	123	Level 1	C
1	Kahn, Max			img7	123	Level 1	
1	Lapointe, Felix			img21	123	Level 1	
2	Lindberg, Edvin			img20	123	Level 1	
2	Osborne, Daniel			img8	123	Level 1	
2	Popov, Alexei			img9	123	Level 1	
2	Roy, Florence			img22	123	Level 1	
2	Saluja, Priya			img16	123	Level 1	
	Sunik, Arusha			img10	123	Level 1	
					Concession (Concession)		
	Swan, Bo			img13	123	Level 1	

Using Stations/Centres in the Classroom

TEACHER PREPARATION

- 1. Choose an ABRA or READS story.
- 2. Set up 4-5 stations in the classroom with varied activities (7-8 pupils/ station).
- 3. Prepare each station (paper, printables, crayons, other materials needed, etc.).
- 4. Write out a specific set of instructions for each station see below for help.



Suggested station activities:

Using printables, including worksheets, sequencing cards, etc. (from ABRA Teacher Zone or other prepared materials)

- On a table have various printed materials that pupils can choose from.
- Ask pupils to choose one and complete.

Colouring pictures and images

- On a table have various colouring pages that pupils can choose from.
- Ask pupils to choose one and complete.

Listening station

- Set up a chosen ABRA story that pupils can listen to.
- Use laptops and headphones (if available in the classroom; if not can be done in the lab) taking turns.
- Pupils listen to the chosen story.

Echo reading (See Echo Reading: Tips for Success Teacher Aid)

- Use the printed PDF of the story.
- Sit at a table or on the floor with pupils (preferably facing one another in a circle).
- If the teacher is not available to conduct the activity, ask a facilitator to begin reading the story.
- Pupils read the story taking turns (i.e. continuing where the last person left off).

Painting/Drawing

- Facilitator sets up a station with paints/markers/crayons and paper.
- Pupils can paint or draw their favourite part of the story.

Writing

- Facilitator sets up a station with lined paper and pencils.
- Pupils write a new story ending.
- Pupils use vocabulary from the story and write 2-3 complete sentences.

Filling in the blank spaces

- Create 3-4 sentences using the story content with blank spaces.
- Make sufficient copies of sentences.
- Set up a station with copies of fill-in-the-blanks sentences.
- Pupils take one sheet each and complete.

Rewriting story in own words

- Facilitator sets up a station with paper and pencils.
- Ask pupils to write a summary of the story.
- Remind them to consider: characters, main events, conclusion.

Paper Puppet Making

- Facilitator sets up a station with craft, colouring and other relevant materials available.
- Ask pupils to create a small paper puppet.
- Remind them to consider: characters, main events, conclusion.

Dramatizing (role play)

- Facilitator sets up a station with props or puppets if available.
- Pupils discuss and choose a favourite scene/part from the story.
- Pupils choose a character from the story that they will play.
- Pupils act out one scene/part form the story they agree on.

Retelling the story in own words (See CL Lesson Plan: Literary Circles)

- Pupils at this station sit together in a circle with a discussion leader.
- Pupils take turns retelling various parts of the story.
- Discussion leader can decide if this should be done as a sequencing or summarizing activity.

Question and Answer

- Create 4-5 short questions about the story.
- Make sufficient copies of questions.
- Set up a station with your questions sheet and pencils.
- Pupils take one sheet and complete the questions.

PUPIL PREPARATION

- 1. Have pupils come to the mat.
- 2. Read the ABRA story (use projector and iBook or a PDF copy of the story if available or simply summarize it).
- 3. Provide an overview of the activities available at the different stations.



USING THE STATIONS

- 1. Put pupils into groups of 6-8 and assign them to an initial station.
- 2. Use visual cues to help pupils identify stations easily. (See following pages for visual cue cards.)
- 3. Make sure to indicate the time needed for each station's activity. (Suggest 10-25 mins. for a total class time of 90 mins.)
- 4. Pupils should rotate through the stations--set one way of rotating, i.e. clockwise or anti-clockwise.
- 5. If time does not allow for completion of activity (i.e., role-play, literary circle, echo reading), pupils can start at that station upon the next rotation
- 6. Supervise pupils as they rotate through stations and do the activities.
- 7. Rotation can be done by alerting pupils using:
 - Bell.
 - Clapping of hands.
 - Using gestures.
 - Word of mouth.





Using ABRACADABRA in Large (Split) Classes

TEACHER PREPARATION

- 1. Plan what ABRA activity/story will be assigned in the computer lab.
- 2. Make sure all of the computers and headphones are functioning in the lab.
- 3. Plan the activities for 3 or more stations in the classroom (see suggestions at end).
- 4. Prepare each of the classroom stations using available materials such as:



- Flash cards (both with letters and words).
- Sequencing cards.
- Drawing material (paper and colouring pencils).
- ABRA worksheets (printables from the ABRA *Teacher Resources* site).
- 5. Prepare a run-through of each station before starting. (As a reminder for yourself, write out a specific set of instructions for each station see below for help).
- 6. Share the lesson objectives with the pupils in the classroom before going to the computer lab. This helps in managing time when in the lab.

PUPIL PREPARATION

- 1. Have pupils come to the mat.
- 2. Group the pupils into two groups.
- 3. Provide an overview of the objectives of the lesson.
- 4. Describe the activities available at each of the different stations and the ABRA activity they will be using in the lab.
- 5. Assign one group of pupils to the computer lab and ask them to move to the lab and to open up the activity and required book.
- 6. Divide the second group into mini-groups, and assign each mini-group to a station. Ask them to move to the stations and begin the station activity.
- 7. Set a time limit for work in each station, then rotate pupils through the stations.
- 8. When half the lesson time is up, ask all pupils to return to the mat.
- 9. Divide the lab group into mini-groups and assign them to stations. Ask pupils to move to the stations and begin work.
- 10. Ask the second group to proceed to the lab and to open up the activity and required book



- 1. If time allows, pupils should rotate between the stations (set one way of rotating, i.e. clockwise or anti-clockwise).
- 2. Assign a station to each group and supervise as they do the activities.
- Use visual cues for pupils to identify stations easily. See visual cues cards in the Teacher Aid Using Stations/Centres in the Classroom.
- 4. The time at each station should be indicated. Suggested 10-15 mins. for a total of 30 mins. and 30 min in the lab.
- 5. If time does not allow for completion of an activity, pupils can start at that station in the next English lesson.
- 6. Rotation can be done by alerting pupils using:
 - Bell
 - Clapping of hands
 - Using gestures
 - Word of mouth

SUGGESTED CLASSROOM ACTIVITIES

- Using printables, including worksheets, sequencing cards (for available stories), etc. from the ABRA Teacher Zone or other prepared materials.
 - On a table have various printed materials that pupils can choose from: arranging cards to form a word, arranging cards to form a sentence, worksheets.
 - Ask pupils to choose one and complete it.
- Colouring pictures and images
 - On a table have various colouring pages that pupils can choose from.
 - Ask pupils to choose one and complete it.
- Question and Answer
 - Create 4-5 short questions about the story.
 - Make sufficient copies of questions.
 - Set up a station with your questions sheet and pencils.
 - Pupils take one sheet and complete the questions

Different Pupils/Different Needs: Using ABRACADABRA in a Mixed-Ability Classroom

Children vary in their ability to do certain kinds of schoolwork. Some need more assistance, attention, and time from the teacher. To use ABRA successfully in your class, here are some ideas for working with mixed-ability groups:

- Depending on the lesson objectives, teachers might want to group pupils according to abilities.
- Pupils who need more time and attention (we call them "children with special needs") benefit from having 1 computer or 1 book each.
- Let the special needs pupils read simple stories or try simple activities (e.g.: alphabetics) from Level 1 in ABRA.
- Ask other pupils to work on their own while the teacher assist the special needs pupils.
- During free time (break/lunch), use the laptop to help the special needs pupils and give the rest of the class other activities such as drawing and colouring, worksheets, writing simple sentences, or making/forming words using letters.
- Give pupils with stronger computer skills or a better understanding of ABRA a chance to assist pupils who need more help. This fosters self-esteem and confidence, as well as a sense of cooperation and collaboration.
- Create experts in your classroom. Identify pupils who have an excellent understanding of how computers/tools/software function. Make these pupils the "helpers" for the class. Make a sign in the lab that is visible to all pupils, so when someone struggles, they can go to:



• Try having peers teach each other by pairing stronger and weaker pupils to work on an assignment.

Echo Reading: Tips for Success

WHAT IS ECHO READING?

Echo reading is an easy-to-use reading strategy for helping readers learn about **fluency**, **expression**, and **reading at an appropriate rate**.

Fluency and **pace** affect **comprehension**. If pupils read too slowly or too fast, they will most likely have trouble comprehending what they are reading. Echo reading helps struggling readers improve their comprehension skills.



This strategy can also help them learn about paying attention to **punctuation marks** while reading.

During echo reading activities, the teacher models important skills such as:

- Correct intonation (tone of voice).
- When and where in the text to read slowly or faster.
- Using the appropriate expression for the context of the story.
- Showing different emotions through one's voice.

These are important skills not only for becoming a successful reader, but also for helping to understand the story.

TIPS FOR TEACHERS

- 1. The ages and ability levels of your pupils will determine how much text to read at one time.
- 2. When participating in echo reading, it is important that pupils can follow along in a text. They should not just be repeating words back to the teacher.
- 3. Remember that many struggling readers have poor self-esteem. Finding ways to help these children improve in these personal areas is as important as helping them read well.



Level & Other Information	Easy	Average	Advanced
READS Stories from Kenya	I Enjoy Ninafurahia	A Camel, and Ox and a Sheep	Hyena and Raven
······································	Barua kwa mama/ Letter to mum	Juma and Kamau	Akatope
	Zawadi and the Ogre	Kamali's Selfishness	Zawadi and the Ogre
		Lion and Hare	
ABRACADABRA Stories	Counting to Ten	Animal Antics	The Frogs and the Well
	The Fruit Family	Counting Cuddly Koalas	Waterfall
Poetry	Where am I?	Rhyme Time	Feelings
	Gecko on the wall	Lea's Birthday Party	
	Open up your eyes	When I Open my Eyes	

Texts recommended for each reading: Poetry, big books, simple picture books.



Troubleshooting on a Lab Desktop (PC)

When using ABRA, teacher and pupils should be able to switch on the PC, login and out of the Learning Toolkit, and carry out the learning activities without help from a technician. Sometimes, problems occur, so teachers will find instructions below about how to handle some common issues.

- 1. Ask technician to ensure that the server is on.
- 2. If the laptop will not turn on at all, check the power cord to confirm that it is plugged securely into the computer and power outlet. Also, check that the power outlet is working by plugging in something else to check.
- 3. If PC desktop (laptop) is not on, turn it on.
- 4. If an application is frozen and users are unable to close the window, press and hold the *control* + alt + *delete* buttons. Then select start *Task Manager.* Choose the unresponsive application, then end task and force quit.



- 5. If the screen is blank:
 - It means the computer is in sleep mode. Click the mouse or press any key to wake it up. If it does not wake up, press the power button.
 - Ensure the computer and monitor are plugged in and turned on.
- 6. If the PC desktop (laptop) is running slowly:
 - Close and reopen the program or application.
 - Turn computer off and reboot.
 - Have a Technician run the virus scanner.
 - Delete unwanted programs.
- 7. If the sound is not working:
 - Check the volume level click the audio button in the top right hand corner of the screen to ensure sound is turned on and the volume is up.
 - Check cables make sure external speakers are plugged in, turned on and connected to the correct audio port or USB port.
 - Try connecting headphones to the computer to see if sounds can be heard from the headphones.



8. Sometimes, when users click on a PDF file or a link, it may open in a new window.

Your pupils may need to learn how to manage multiple windows. To close the window, click on the red x button in the upper left hand corner.



9. Learn to minimize and maximize.

Minimize using the underline button. Maximize using the rectangle button.

Find minimized materials in the dock at the bottom on your screen on a PC. Click on the software's button.

10. If pupils have a problem logging into the LTK, check the user name and password. These must be correctly entered with no spaces. Remember that to log out, pupils must click the logout button at the bottom of the screen.



11. Create experts in your classroom. Pupils that have a god understanding of how computers/tools/software and applications function can be assigned to a special task to help the teacher, class and other pupils.

Make a sign in the lab that is visible to all pupils, when someone struggles, they can go to:





Troubleshooting on a MAC Laptop

When using ABRA, teacher and pupils should be able to switch on the Mac laptop, login and out of the Learning Toolkit, and carry the learning activities without help from a technician. Sometimes, problems occur, so teachers will find instructions below about how to handle some common issues.

- 1. Ask technician to ensure that the server is on.
- 2. If the Mac will not turn on at all, check the power cord to confirm that it is plugged securely into the computer and power outlet. Also, check that the power outlet is working by plugging in something else to check.
- 3. If Mac laptop is not on, turn it on.
- 4. If an application is frozen and users are unable to close the window, press and hold the *command* + *option* + *esc* keys to open the task manager. Select the program that is not responding and click *Force Quit*.



- 5. If the screen is blank:
 - It means the computer is in sleep mode. Click the mouse or press any key to wake it up. If it does not wake up, press the power button.
 - Ensure the computer and monitor are plugged in and turned on.
- 6. If the Mac laptop is running slowly:
 - Close and reopen the program or application.
 - Turn computer off and reboot.
 - Have a Technician run the virus scanner.
 - Delete unwanted programs.

- 7. If the sound is not working:
 - Check the volume level click the audio button in the top right hand corner of the screen to ensure sound is turned on and the volume is up .
 - Check cables make sure external speakers are plugged in, turned on and connected to the correct audio port or USB port.
 - Try connecting headphones to the computer to see if sounds can be heard from the headphones.
- 8. Sometimes, when users click on a PDF file or a link, it may open in a new window.
- Your pupils may need to learn how to manage multiple windows. To close the window, click on the red x button in the upper left hand corner.
- 9. Learn to minimize and maximize. Minimize using the yellow button. Maximize using the green button. *Find minimized materials in the dock at the bottom on your screen on a Mac.*





10. If pupils have a problem logging into the LTK, check the user name and password.



These must be correctly entered with no spaces. Remember that to log out, pupils must click the logout button at the bottom of the screen.

11. Create experts in your classroom. Pupils that have a god understanding of how computers/ tools/software and applications function can be assigned to a special task to help the teacher, class and other pupils. Make a sign in the lab that is visible to all pupils, when someone struggles, they can go to:







Parent Module

Parent Resources

This module provides similar resources as the *Teacher Resources*, but it is targeted towards parents and guardians. Parents should be encouraged to access this resource to learn more about the importance of literacy and how to support use of ABRA at home.

Parent can access this resources by going directly to the URL: https://grover.concordia.ca/resources/abra/parent/en/



A collection of resources to support your children's early literacy skills and use of ABRACADABRA.

ABRACADABRA, A Balanced Reading Approach for Children Always Designed to Achieve Best Results for All, is a highly interactive, early literacy web-based tool that supports beginning readers through 33 engaging activities linked to 20 stories of different kinds.

In this Parent Module, you will find information about ABRACADABRA (ABRA) and how it supports early literacy skills. You will discover practical and fun tips for helping your child develop those skills and avoid anxiety.



Stories

Tips

Videos

Resources

Activities

Note: The Parent Resources web pages are currently being revised.



READS

Introduction to READS

What Is READS?

READS stands for **R**epository of Ebooks **A**nd **D**igital **S**tories. A repository or database is an organized collection of material that may be searched. Thus, READS is a bilingual catalogue of digital books and it is accessible through the LTK+ Lobby Page. The books in READS may be used to complement the fluency and comprehension activities in ABRA by providing access to additional stories. The latest version of READS includes over 700 online books in a multitude of languages and genres. Since teachers are always searching for new and diverse reading materials, READS provides easy access to a variety of books online. Furthermore,

pupils are taken on an exploration of various cultures, countries, and interesting customs, as we have books published from all over the world!

To access READS simply click on the READS logo from the LTK+ lobby page.

To help teachers, parents and pupils access books related to their needs and interests, READS has categorized book by themes, language, country of origin, reading level difficulty, type, and format available.



THEMES

READS has identified 15 common themes between all of the books within the repository. This can be a useful search strategy if teachers are building a unit on a particular theme, or if the child has shown interest in a particular subject.



Adventure: These stories have a particularly exciting plot where the main characters explore unknown lands or try new things.

Animals: Animals are commonly found in stories for young children. Often these animals act in human-like ways and have a moral to teach us.



Body: These types of books can help pupils learn about human and animal bodies. This can help promote health and care for others.

Colours: These stories can help children build their colour identification skills.

INTRODUCTION TO READS READS



Family and Friends: The people that matter the most to us are our families and friends. They are especially important to young children. These stories will help children see that while everyone has a family, everyone's family looks different.



Feelings and Values: These stories encourage pupils to recognize their own feelings and to think about others.



Food: These stories allow pupils the opportunity to become familiar with food groups (ex: fruits), explore different tastes (sweet vs, salty), learn about where their food comes from, and how much work goes into making meals.



Games and Sports: Children love to play, so stories that include games and sport are very appealing to them and may lead to discussions around teamwork, and fair play.



Imagination: Imagination is an important skill for children to develop, as it will inspire new ideas and creativity. These stories depict characters using their imagination and resourcefulness.



Nature: Nature is an important theme as it teaches children about our planet. This includes learning about plants, rocks, rivers, and even weather.





Other Themes: This is a miscellaneous category.



Outer Space: These stories can teach children about our solar system. They can also inspire children's imagination about what or who else might be out there.



Places: These stories offer a window into different parts of the world and cultural backgrounds. These stories can be used to encourage children to learn about their place in their own community.



School: These stories can help children understand the various routines that are part of their school environment.

READS INTRODUCTION TO READS

LANGUAGES

READS includes stories written in a variety of languages. The majority are in English, but READS contains stories in 31 other languages as well. Some of the books have been translated into multiple languages. Others are only available in one language.

COUNTRIES

In addition to offering stories in multiple languages, READS has compiled stories from various countries across the world. This allows children to find and read stories relevant to their own culture, and/or explore and learn about new cultures and places.

DIFFICULTY LEVELS

In order to help teachers, children, and parents select books, READS uses a 5-scale system. Each book is tagged as either: beginner, easy, average, advanced, or expert. This helps ensure that children select books at an appropriate level. If selecting a more advanced book, they will require assistance.

DOOOBeginner: First words, simple themes, large font, and lots of images.

Easy: Short sentences, simple themes, introductory vocabulary, and lots of images.

Average: Mix of simple and complex sentences, variety of themes, basic vocabulary, and less reliance on images for comprehension.

Advanced: More complex sentences, may include more mature themes, some challenging vocabulary, and may or may not include images.

Expert: Many complex and compound sentences, more mature themes, challenging vocabulary, and few images.

ТҮРЕ

READS has categorized the books within it into three groups: fiction, non-fiction, and poetry.

Fiction: Made up or "not true" stories created by an author.

Non-fiction: True stories about real people, places, events.

Poetry: Writing that uses verse and rhymes to awaken the imagination and emotion as the reader interacts with the text

FORMAT

The stories in READS are available in at least one of the following formats: PDF, audio, or HTML. The majority of the stories are available as a PDF. Some of the stories are not hosted on READS. Rather, there will be a link to a HTML version on the publisher's website.
INTRODUCTION TO READS READS

There are two methods of searching for books in READS: through the use of filters or by keywords.

Filters

Clicking on the *Filter* button (top-right of the screen) will launch the filter feature. Teachers, pupils, and parents can browse the categories that interest them the most.

At least one tag must be selected, but multiple tags can be selected in different categories.

• Selecting multiple tags <u>within</u> a category broadens the results. For example, choosing stories with the theme Adventure OR Nature.



• Selecting multiple tags <u>between</u> categories narrows the results. For example, choosing stories about Adventure AND are from Kenya.

Keyword Search

Q Clicking on the *Search* button (top-right of the screen) will launch the search bar.

Users can enter one or multiple keywords. These keywords should be short but specific. READS will look for instances where those characters appear together. For example, if someone searches for 'cat', they will find books about the animal, but READS will also display words with 'cat' in them (ex: vacation or Cathy).

READS provides additional filtering options to help users narrow down their search results.



READS INTRODUCTION TO READS

Accessing Stories

Within READS, stories can be accessed directly or more information about the book can be requested.

The *Read* button allows teachers, children, and parents to jump right into the book. As many of the stories in READS are offered in different formats and languages, READS will prompt users to select the desired version.

Not all stories are available in all three formats (PDF, audio, and HTML).

Similarly, not all stories are available in multiple languages.

1 The *Information* button provides the publishing information for the book. It contains information about the author, publisher, illustrator, country of origin, etc. It also displays the difficulty level and which themes are in the story.

Clicking on the *Read* button on this screen will launch the same window that can be accessed from the results page.



Books	R		T Q ENIFF
low a Bear prouts	How a Bean S By CSLP Read	prouts ©O	0000
This story tells of the stages of a bea integrated in other areas of learning.	n from a seed to a young plant. The illus Nerrator	cations show the changes in the seed Author(s) CSLP	that is often hidden from eyesight. This text can be Country Canada
Year	Reading Level	Number of pages	Theme(s)
2011	Beginner	N/A	Food Nature
Publisher	Copyright	Citation	
Centre for the Study of Learning & Performance	CSLP. DOE - Concordia. 2014	, CSLP. How a Bean Sprouts. 2011	Centre for the Study of Learning & Performance.
Books you might like			
h 1		Ca.	: 1 3/4



Teacher Aids

Using READS to Support Comprehension and Vocabulary Skills

TEACHER PREPARATION

- 1. Select an appropriate READS story, using the filter function to look by genre, themes, language, or reading level.
- 2. Review the story, selecting 5-6 words pupils may struggle to understand.
- 3. Make a note of these words.
- 4. Print out a copy of the READS story or display it on a screen.

WHOLE CLASS ACTIVITY

- 1. Show pupils the book and explain that the class is going to read it aloud. Tell them that they will be exploring certain words in the story.
- 2. Start reading story.
- 3. When the class reads the first word selected, stop and write it on the blackboard.
- 4. Ask pupils if they can define the word.
- 5. If a pupil can define the word, ask how she or he learned about the word.
- 6. Ask pupils how they might figure out the meaning of the word without looking in a dictionary.
- 7. Encourage pupils to come up with strategies for guessing (or inferring) a word's meaning. For example, pupils can look at the illustrations for clues, or try to decide based on the story context.
- 8. Continue with the story, stopping at each of the preselected words and repeating the questioning process.



READS TEACHER AIDS

9. At the end, review the different vocabulary strategies pupils have discovered.

FOLLOW UP ACTIVITY

Small Group

- 1. Once the class has read the story and discussed the vocabulary words, divide the class into groups of 4-6 pupils.
- 2. Assign each group three or four vocabulary words from the discussed list. Groups will receive many of the same words.
- 3. Ask pupils to create sentence with their assigned vocabulary words.
- 4. Ask pupils to write down their sentences.
- 5. When pupils have completed the task, ask each group to share one or two sentences.
- 6. Compare the different uses of the vocabulary words.
- 7. If possible, ask pupils to put their sentence papers on a board. Continue to review the words and sentences during the week.

Using READS to Support Writing Skills

TEACHER PREPARATION

- 1. Select an appropriate READS story, using the filter function to look by genre, themes, language, or reading level.
- 2. Review the story.
- 3. Review the Reading Response Prompts on the next page.
- 4. Select one or more of the prompts for pupils to answer or create new prompts.



5. Print out a copy of the READS story or display it on a screen



WRITING ACTIVITY

Small Group & Individual

- 1. Tell pupils "I will read you a story".
- 2. Explain that at the end of the story, they will be asked to write about their responses (feelings, thoughts) to the story.
- 3. Read the story aloud to the whole class.
- 4. Then, divide the class into groups of 4-6 pupils.
- 5. Assign each group a prompt.
- 6. Ask pupils to discuss their prompts and share their answers for about 10 minutes.
- 7. Then ask pupils to write individually a short text (4-5 sentences) responding to the prompt.
- 8. If there is time, ask pupils to share their texts with the whole class.

READER RESPONSE PROMPTS

These questions, or any similar prompts, help pupils think about, discuss, and then write a short text on a READS book. *Note that ePEARL contains reading prompts and can be used for response writing exercises.*

Feel free to add questions to this document.

- 1. This story tells about . . .
- 2. This story made me feel (happy, sad, angry, disappointed, etc.) because...
- 3. My favourite part of this book was ______ because...
- 4. My least favourite part of the book was ______ because...
- 5. My favourite character was _____ because...
- 6. My least favourite character was _____ because...
- 7. If I could ask a character three questions, those would be...
- 8. This story made me remember another story called ______ because...
- 9. If I could meet the author, I would ask...

READS TEACHER AIDS

- 10. If I were the author, I would change...
- 11. I like the way the author wrote about...
- 12. From this story, I learned...
- 13. When I looked at the pictures in this story, I felt _____ because...
- 14. I would recommend this book to a friend or sibling because...

ELM



INTRODUCTION TO ELM

Introduction to ELM

What Is ELM?

Emerging Literacy in Mathematics (ELM) is an online bilingual tool created to help early elementary pupils develop their number sense. Pupils develop these skills when they are encouraged to select and use appropriate mathematical techniques to solve problems. ELM aims to reduce math anxiety by increasing children's confidence in their mathematical abilities. This encourages more children consider careers in math, science, and engineering. ELM concentrates on five themes: Number Concept, Geometry, Patterns, Data, and Number Line. These themes cover core mathematical ideas: count, compare, add, subtract, decompose, place value, identify shapes, translate patterns, bar graphs/tables, and number as displacement.

ELM steps build slowly and carefully; pupils start with steps that use concrete physical actions and progress towards steps that employ symbolic representations. Each step provides sufficient repetitions for children to achieve both fluency and understanding. In addition, pupils are able to work at their own pace without penalties. The steps provide instant access to situational audio help and visual feedback is provided to confirm success or assists in understanding error(s).

Teachers can access a number of lesson plans that support the use of ELM in the classroom. As well, a number of offline lessons were also developed to deepen understanding of core ideas and introduce an additional theme.

INTRODUCTION TO ELM



A Framework for Success





INTRODUCTION TO ELM

Evidence-Based Practice

As ELM was being developed, it was field-tested in a number of Quebec schools within the English Montreal School Board (EMSB), Commission scolaire de la Pointe-de-l'Île (CSPI), Commission scolaire de la Beauce-Etchemin (CSBE) and Eastern Shores School Board (ESSB). ELM is also widely used across Canada and in Kenya. With every iteration of the tool we sought confirmation that the activities met their intended objectives, supported pupil mathematic achievement, and explored pupils' motivation towards learning mathematics. The results obtained in these first rounds of pilot testing were promising. When comparing standardized test scores, ELM pupils were consistently higher than those of their peers in the control group. Likewise, ELM pupils' mathematical emotions scores reported significantly lower anxiety towards learning mathematics than the control pupils.

The 2016-2017 study was designed as a two group, pre-post test, with 26 classes from the above-mentioned school boards participating (14 experimental and 12 control) with a total of 338 grade 1 pupils. In addition, 12 teachers from British Columbia have been using ELM to teach mathematics to their grade 1 classes. We are currently processing the pre-test data collected in the fall of 2016 and are looking forward to analyzing the results once the post-testing is completed in May 2017.

In addition to the above, we have begun piloting ELM internationally to confirm the global relevance of the software. We have been working with teachers in various primary schools in Mombasa, Kenya. The preliminary data collected from 162, K-1 pupils suggest significant improvements in mathematic skills measured on the standardized test (GMADE, Group Mathematics Assessment and Diagnostic Evaluation). In particular, the gains are important in the Concepts and Communication subtest that address the language, vocabulary and representations of mathematics and the Process and Applications subtest measuring the pupils' ability to take the language and the concepts of mathematics and apply the appropriate operations and computation to solve a word problem. In order to succeed on this subtest, the pupils need to apply appropriate strategies when solving the problems and to reason and estimate an answer that makes sense. It is important to note that pupils in K (N=73) and grade-one (N=89) classes improved their mathematic skills equally well.



Pupil Module

Accessing ELM

LTK+ LOBBY PAGE

The lobby page will display certain tools depending on the level set by the LTK+ administrator. Early Years teachers should have access to Level 1. These teacher will have access to:

- ABRACADABRA
- ELM
- ePEARL
- READS

Click on the icon to access the tool. In this case, click on ELM.

Tip: If ELM is not viewed on the LTK lobby, the account might not be set to level 1 or 2. To change level: Manage \rightarrow My Account \rightarrow My ePEARL Account. If ELM is still not being viewed, please contact the system administrator as ELM may be turned off at the administrator level.

LOCATION

ELM will prompt users to select their location. If they are using ELM at school, they should press *Yes*.

PUPIL MODULE: HOMEPAGE

Once pupils click on *Yes* or *No*, they are brought to the ELM's homepage. Here they can meeting the hosts, access activities, and see which animal friends they have.









PUPIL MODULE

Themes, Ideas, and Steps

ELM is organized in terms of *Themes* (overarching branch of mathematics), which are further divided into different *Ideas* (mathematical concepts). Each Idea has a certain number of *Steps* to slowly build a pupil's understanding of the concept and guide pupils in gaining proficiency. Any of the Ideas are accessible at any time, but the pupil needs to progress through the steps sequentially the first time they access the Idea. Once they complete all steps within an idea, they can access any step for further practice.

Tip: *The pupil does not need to complete an Idea before starting another one. For example, after a pupil* has worked through the initial three steps in Count, the pupil could be asked to do the first step in Compare, Add and/or Subtract.



IT BREARL





Meet the Hosts

Each mathematical Theme covered in ELM is associated with an animal host. Some themes cover multiple mathematical Ideas.

Host		Theme	Ideas
	Chuck	Number Concept	 Count Compare Add Subtract Decompose Place Value
	Tia	Geometry	• Identify Shapes
	Ivan	Patterns	• Translate Patterns
	Kiros	Data	• Bar Graphs and Tables
CC	Matilda	Number Line	 Number of Steps (Offline) Comparison of Position (Offline) Number as Displacement
	Расо	Mathematical Language	• Introduction to the Bus (Offline)
	Ruby	Extra	



PUPIL MODULE

The pupils can learn more about the hosts by visiting the Meet the Hosts page.

Meet the Hosts

Each host will introduce themselves as well as state what skills the pupils will learn and practice through the Ideas presented within their specific theme.

Accessing Ideas

The wheel on the homepage allows pupils to cycle through all of the Ideas in ELM. Alternatively, they can use the See All button:



Progress

()

Pupils may select any Idea from the homepage. However, the steps within an Idea must be completed sequentially. Therefore, pupil accounts will restrict access to steps until the prior step has been successfully completed.

The homepage provides a quick summary of a pupil's progress. The steps within an Idea are represented by a button. There are four types of buttons.



- (1)

🔰 📴 lcon Meaning \bigcirc White circle Can access the step Grey circle Cannot yet access the step Red circle Requires help with the step Gold star Completed the step



Soft-Lock

The soft-lock feature is intended to identify and aid the pupils that struggle with the activities.

If pupils make three consecutive errors in one set (represented by one puzzle piece), the activity will be reset. The host will pop up to let them know what happened. They can attempt to complete the activity with a new situation but at the same level they had been before they were reset. The teacher is not yet notified of the pupil's difficulty with the activity.

If the pupil makes another three consecutive errors, the soft-lock will trigger. This means that the activity will be reset again but this time the teacher will be notified in a number of ways. For starters, as the teacher circulates in the classroom, he/she can look for this icon ⁽²⁾, which appears on the bottom-left corner of the screen. Even though a soft-lock has been triggered, the pupil is not prevented from continuing the activity on his or her own. This ensures that the pupil is not hindered if the teacher is unable to address all concerns as they happen. However, it is important



for teachers to know where pupils experienced difficulty. Whenever a soft-lock is triggered, the teacher receives a notification in their account's *Teacher Manage* section.

Validation

ELM was designed to go beyond a simple confirmation of whether the pupil's answer is correct or incorrect. Whenever the pupil submits an incorrect answer, the software will compare their answer to what's on screen and/or indicate how the pupil might correct the error. This is presented in a visual manner. For complex situations, there is additional audio to guide the pupil in understanding the error. The intention to is promote self-correction.



PUPIL MODULE

Differentiation

In each classroom, the teacher faces pupils with a range of background knowledge, abilities and learning styles. In an effort to provide an environment that perpetuates positive attitudes to mathematics and also accommodates this diversity within a classroom, ELM includes several features:

- In every step, the Gallows a pupil who is unsure about how to proceed to seek context sensitive help, which may be delivered visually, aurally or in both manners;
- Whenever a pupil clicks on ^{Soff} to indicate that they have completed a task, if the pupil has made an error, then the software suggests the nature of the error visually and/or aurally;
- If a pupil repeatedly has difficulty completing a task in the software, the software will send an alert to the teacher, and also display a small icon on the pupil's screen, (2), so that if the teacher is moving about amongst the pupils, the teacher can spot that a pupil has been having difficulty and intervene;
- In the *Teacher Manage* section, the teacher can adjust the number of repetitions that each pupil or group of pupils must perform so as to complete a step. See under Teacher Module for more information on *Teacher Manage*.

Other Navigation Options

At any time within a step, the top navigation menu can be used:



Go back to the puzzle page.

Go back to the Idea page.

Go to the home page.

There are also navigation icons on the bottom-right corner of the screen:



Go to LTK+ Lobby Page.

Navigates to the ePEARL tool.

Signs the user out of their LTK account.



My Animal Friends

Each of ELM's steps is associated with an animal friend. When the pupil starts the step, they are presented with an incomplete puzzle of an animal. The missing puzzle piece represents how many times they must successfully complete a set in the step. The teacher is able to adjust the assigned repetitions. The pupil gains the friend by completing the puzzle.

Animal friends can be accessed by going to the *My Friends* page.





Only the animal friends that have been gained will be visible on this page. If pupils gained the friend, they will have a badge of the animal and they will be able to access the associated trading card(s). These cards contain the animal's name, some information about the animal, and the puzzle pictures the pupil completed. Pupils may click on the speaker to have this information read aloud.

There are two trading cards per animal friend. If the pupil repeats the step (either because it has been assigned in their plan or because they went back to practice on their own), they will have a second trading card for that animal friend.

Teacher accounts will have all badges/ trading cards visible even if the steps have not been completed.

Each Idea is associated with a particular animal family. For example, all of the animal friends gained in the Count steps are birds.



PUPIL MODULE







PUPIL MODULE

Tip: *The trading cards contain a short blurb about the animal. These can be used as an introduction to animal science or a way to practice reading skills and comprehension. Each card has an audio button that reads out the text. The pupil can read with the software or compare their attempt to the audio.*

My Profile

Clicking on the *My Profile* button can change the icon associated with the account.

 	N
-	

My Profile

To change the icon, click on an alternative image and then select the accept button.



Online Themes

ELM's steps teach basic mathematical concepts for grade 1 as covered in the standards for grade 1 set out by the *National Council of Teachers of Mathematics* (NCTM) in the United States and Canada.

ELM features a unique account and profile for pupils. Each pupil is tracked as she/he progresses through the steps, to help a teacher understand what concepts their pupil has mastered and which, if any, she/he has difficulty with and needs assistance to learn.

NUMBER CONCEPT

- Count: 5 steps
- Compare: 4 steps
- Add: 4 steps
- Subtract: 5 steps
- Decompose: 4 steps
- Place Value: 9 steps

GEOMETRY

• Identify Shapes: 3 steps

PATTERNS

• Translate Patterns: 1 step

DATA

• Bar Graphs/Tables: 2 steps

NUMBER LINE

• Number as Displacement: 1 step



Number Concept

In this theme, pupils are encouraged to see 'number' as a set or a collection of objects. ELM's activities are intended to develop pupils' fluency in recognizing numbers, comparing numbers, adding and subtracting numbers, decomposing numbers into either a sum or difference of two numbers, and understanding the place value of numbers. Pupils also familiarize themselves with mathematical symbols and vocabulary.

Tip: Most of the steps in this theme focus on the numbers 1-9. This allows pupils the opportunity to learn the concept in a way where they can verify the answer for themselves by using their fingers.

Count

The Count Idea helps pupils become familiar with the basic numerals (1 through 9) and the quantity each represents. The idea's steps are structured to move from concrete to abstract by means of counting a set of objects. By completing the steps, pupils also practice 'subitizing', the ability to instantly recognise the number of objects in a set of objects presented without any conscious counting.

Tip: It's a good idea to start ELM with the Count steps. Many of the other ELM ideas call on pupils' counting strategies.

Step 1

This step focuses on the importance of counting each object in a set just once. Pupils are asked to click on each bird to count it. This introduction is meant to mimic how pupils likely count tangible objects. As they click on each bird, the counter on the right automatically fills up. Even though pupils are not yet asked to interact with the counter, this should reinforce the counting. This models the strategy of using markers to record the count of objects.





INCORRECT FEEDBACK

The pupil may make an error by not clicking on all of the birds. In this case, the software will highlight the overlooked birds.



Step 2

This step moves to a slightly more abstract version of counting where pupils are asked record the count directly in a counter. This strategy encourages pupils to count without physically manipulating the objects in a set. Given the small numbers of objects presented, this step also provides practice for subitizing.



INCORRECT FEEDBACK

There are two ways the pupil may make an error: counting too few or counting too many. If the pupil gave an answer that less than the number of birds on screen, then birds equal to the amount that the pupil enter are highlighted in purple while the rest turn red. If they provided an answer that is more than the number of birds, then the feedback will display additional "ghost" birds on screen.



This step builds on the previous one. Pupils first continue building associations between a mental image of a set of objects and a record on the counter. After successfully doing so, they are asked to select the correct numeral to represent the total count of birds.



INCORRECT FEEDBACK

In the first phase, there are two ways the pupil may make an error: counting too few or counting too many. If the pupil gave an answer that is less than the number of birds on screen, then birds equal to the amount that the pupil enter are highlighted in purple while the rest turn red. If they provided an answer that is more than the number of birds, then the feedback will display additional "ghost" birds on screen.



In the second phase, the feedback is the same regardless of whether the pupil answered more or less than the total number of birds. A bracket appears next to the counter to encompass the pupil's answer. They can then compare their answer to the number of coloured cells in the counter.



Step 4

This step reverses the process by giving pupils a numeral and having them generate a set of objects to match. The counter automatically adjusts as they add or remove birds to the field.



INCORRECT FEEDBACK

The correct numeral will be presented next to the counter to contrast with the pupil's answer. If the pupil didn't add enough birds, they will see some cells are still white and thus more birds need to be added. If the pupil added too many birds, they will see that cells outside of the bracket are filled in.



In this step pupils are asked to move directly from a given set of objects to the numeral representing that number of objects. This is the most abstract counting activity that calls upon pupils' subitizing skills.



INCORRECT FEEDBACK

When the pupil enters a number less than the correct answer, owls equal to pupil's answer are highlighted. When the pupil enters a number greater than the correct answer, additional "ghost" birds will appear on screen to visually display what their answer looks like.





Compare

Pupils will be asked to count two sets of objects: bears and hockey sticks. They are asked to compare these two sets of objects and determine if they are equal or whether one integer is larger or smaller than the other. These activities expose pupils to both natural language and mathematical symbols that express and compare the cardinality of two sets.

Step 1

There are a number of bears on screen and pupils are asked to give each one a hockey stick. Once they add the required number of hockey sticks, pupils are asked to enter how many there are in each set. Once they correctly state the amount of bears and sticks there are, ELM provides three ways of verbally expressing equality: "is the same as", "is as many as", and "is equal to".

INCORRECT FEEDBACK

During the first phase, whatever bears and sticks can be matched are moved to the center of the screen. If there are any remaining bears without a stick, they are highlighted in red. If there are additional hockey sticks, they are highlighted in red.

In the second phase, the feedback is displayed sequentially (first on the set of bears, then the set of sticks) so that pupils can focus their attention on one set of objects at a time. If they enter a number less than the amount of bears and sticks, ELM will highlight the objects not counted in each set. If they enter a number larger than the amount of bears and sticks, additional "ghost" bears and sticks will be displayed.





Building on the previous activity, pupils are asked to compare the number of bears to the set of sticks, though both sets may no longer be equal. Pupils are asked to count the number of bears and the number of sticks. Then they match the bears to sticks until all have been matched or the objects in one set have been exhausted. In the final phase, the pupil must determine which operator fits the situation: = is equal to; > is bigger than, < is smaller than.



INCORRECT FEEDBACK

During the first phase, if the pupil entered a number smaller than the correct answer, the number of bears or sticks equal to the answer provided will be highlighted. If the pupil entered a number higher than the correct answer, additional "ghost" bears or sticks will appear. If the pupil made an error counting the objects in both sets, the feedback will be provided sequentially.



Match bears to sticks by clicking on the bears.

न्दे 🥩 🖏

In the second phase, if pupils have not

matched as many bears to sticks as possible then the remaining bears will be highlighted followed by the remaining sticks. It is important to note that if pupils attempt to send a bear to the center of the rink when there are no sticks remaining, the bear will be sent back to the left side. This prevents the possibility of having an unmatched bear in the center.

If they make one error in the third phase, it will automatically trigger the reset/soft-lock feature.



Step 3

Much like the previous step, the pupil must first enter the number of bears and sticks there are in each set. They are once again asked to match the bears to the sticks until all have been matched or the objects in one set have been exhausted. The final phase asks them to select the operator that fits the situation but using on the symbols ($\langle = \rangle$). There is no text next to the symbols to reinforce the meaning of the operators, but ELM will automatically read the mathematical statement chosen in order to support pupil understanding of operators.



INCORRECT FEEDBACK

The feedback is the same as the previous step; if the pupil entered a number smaller than the correct answer, the number of bears or sticks equal to the answer provided will be highlighted. If the pupil entered a number higher than the correct answer, additional "ghost" bears or sticks will appear. If the pupil made an error counting the objects in both sets, the feedback will be provided sequentially.

In the second phase, if pupils have not



If they make one error in the third phase, it will automatically trigger the reset/soft-lock feature.



In this step, the pupil is presented with the equation or inequality and he/she has to create two sets to match it. The first asks the pupil to create the set of bears and the second phase has them creating the set of sticks. The third phase does not require pupils to manipulate elements on the screen but will match the bears to the sticks to reinforce the validity of the equation or inequality.

NUMBER CONCEPT

INCORRECT FEEDBACK

In both the first two phases, if the pupil added too few bears or sticks, ELM will display additional "ghost" bears and sticks to demonstrate what a correct answer ought to look like. If the pupil entered too many bears or sticks, ELM will highlight the additional bears and sticks.





This Idea asks the pupil to add the cardinality of two sets of animals. They see that the resulting number is the "sum" or "total" and that can be represented by an equation. In the earlier steps, pupils learn to read the equation. Later, they learn to write these equations by placing the numbers and symbols in the appropriate order.

The steps in Add reuse the counting strategies learned in the Count steps. This includes clicking on objects to count them and the use of counters to represent cardinality. Each set has its own counter; however, this strategy is extended to use an additional counter to represent the total of both sets. Pupils are expected to draw their own conclusion as to what each counter is counting and to figure out the logic that ties a counter to a border. This strategy is intended to help pupils become capable and confident in their understanding in mathematics.

Step 1

The pupil is introduced to the idea of addition by combining two separate sets into one set. They start by clicking on each animal in the sets. As they do, the animal is counted in the associated counters: one for each set and one for the total. Once all of the animals have been counted, the pupil is expected to choose the appropriate number symbol to represent the total number of animals in the two sets.

INCORRECT FEEDBACK

In the first phase, if the pupil made an error by not counting all of the animals, ELM will highlight the animals not clicked on. If errors were made in both sets, the incorrect feedback will show in each set consecutively.

In the second phase, if the pupil selects an incorrect number symbol for the total, the tool will encircle the counter to match the pupil's answer. They can then compare

Count how many animals there are in each box.

-di 🍣 🍣



their answer to what was counted in the counter in the previous phase.

This step reinforces the concept of addition as putting two sets of objects together. Pupils are asked to count the animals in each set by directly entering a numeral in the associated box. If the pupil's answers are correct, then the rightmost counter's cells fill to match the sum. The pupil must then select the number symbol that represents the total. If they enter the correct number, ELM will create an equation describing the sum of the animals in the two sets.



INCORRECT FEEDBACK

If the pupil makes an error in the first phase, the software will show them what their answer looks like. If they entered a number lower than the animals in the set, then ELM will highlight deer equal to the number entered so that the pupil can compare this to the total animals in the set. If the entered a number higher than what's in the set, the software will add additional "ghost" deer to show what their answer looks like. If the pupil makes an error in both sets, the software will show the feedback sequentially.

		Count ho	w many ani	mals there are	in each box.		£\$
		Â Â	7	*		1	
Jane D.	12	34	56	789	** ?) 🗖	Logout

In the second phase, if the pupil selects an incorrect number symbol for the total, the tool will encircle the counter to match the pupil's answer. They can then compare their answer to what was counted in the counter in the previous phase.



Step 3

This step builds on the previous one. The first two phases follow the same structure: pupils are asked to count the animals in each set by directly entering a numeral in the associated box. If the pupil's answers are correct, then the rightmost counter's cells fill to match the sum. The pupil then selects the number symbol that represents the total. However, instead of the software providing the equation, the pupil is asked to create it by himself or herself.

INCORRECT FEEDBACK

The Incorrect Feedback for the first two phases is the same as it was in the previous step. In the first phase, if the pupil entered a number lower than the animals in the set, then ELM will highlight deer equal to the number entered so that the pupil can compare this to the total animals in the set. If the entered a number higher than what's in the set, the software will add additional "ghost" deer to show what their answer looks like. If the pupil makes an error in both sets, the software will show the feedback sequentially.

In the second phase, if the pupil selects an incorrect number symbol for the total, the tool will encircle the counter to match the pupil's answer. They can then compare their answer to what was counted in the counter in the previous phase.

In the final phase, if the pupil did not enter the same numbers in the equation as appears in the boxes above, the first, third and fifth placeholders in the equation will







be highlighted. If the pupil did not use one + and one = sign in their equation, the second and fourth placeholders in the equation will be highlighted. If the largest number in the equation is not in the first or fifth placeholder and adjacent to the equal sign, then the whole equation will be highlighted. In all of these situations, there is additional situational audio to help pinpoint how the pupil can correct their error.

In this step, pupils are provided an equation and are asked to create sets of animals to match it. The pupil must select a box before they can add deer to that set. The tool will not allow them to add more than nine in total. ELM will accept answers that are flipped from the provided arrangement, such as when the software provided the equation of 1+2=3 and the pupil create sets of 2+1=3.

	NUMBER C	ONCEPT		
	Click on the deer buttons to that match this equa	make boxes tion.	£ \$	
	2 + 4 =	6		
R		8		
Jane D.			i GRARL Logout	

INCORRECT FEEDBACK

If the pupil added fewer than asked for, the software will add "ghost" deer to the set. If the pupil added too many deer, the software will highlight the deer that should have been added to show there are too many in the set. If the pupil makes an error in both sets, the software will show the feedback sequentially. Following these visuals, the sum will be highlighted in the total counter. In all of these situations, there is additional situational audio to help pinpoint how the pupil can correct their error.





Subtraction is introduced as the process of taking away. In all five of the Subtraction steps, the pupil will initially see all animals in one set. They have to count how many are in the set and note the empty second set. This way, the pupil learns to associate 0 as the count of the empty set. In the later steps, this process will be associated with an equation. This equation is a symbolic representation of the state of the sets, and the 'take away' process that occurred.

Step 1

The pupil is introduced to the concept of subtraction (take away) by being asked to move objects from one pile to another. Zero (0) is introduced as the count for an empty set.



INCORRECT FEEDBACK

In the first phase, if the pupil makes an error by not correctly counting the animals, the barn's counter will highlight cells to match the pupil's incorrect answer. The pupil can then compare their answer to the coloured cells in the counter.

If the pupil makes an error in the second phase, then the number in Chuck's speech bubble gets lager and the number associated with the pasture is red. If the pupil sends fewer goats to the pasture



than asked for then Chuck tells them they need to send more. If the pupil sends more than asked for then Chuck informs them that they sent too many over.

This step builds on the previous one. The pupil is expected to count the number of animals in the barn, as well as the empty pasture by recording the count as 0. Then the pupil once again "takes away" by moving animals from one set to another. The software introduces symbolic representation for the process, in the form of an equation that is automatically updated as the pupil moves animals.

		Click on the buffaloes to send them to the pasture.		
) C	Send Jato the pasture. 5		0 5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	

Tip: As pupils begin to learn about mathematics, they are more likely to see equations expressed a - b = c but ELM's Subtraction steps expresses the equation as c = a - b. This is due to the visual nature of the activities. The left-side barn is associated with the "c" position while the right-side pasture is associated with the "b" position and the total of all animals is associated with the "a" position. The steps begin with all animals in the left-side barn and the equation appears before pupils begin to move the animals. As they move the instructed amount to the right-side pasture, they can observe the cells in the barn and pasture's counters adjust, while the total remains the same. Writing the equation as c = a - b helps pupils to see how changes they are making change the equation.

Pupils with learning difficulties may have trouble understanding that a - b = c is the same as c = a - b. Manipulatives with a blank equation can be used to help demonstrate that the equation would be the same. Simply, rotate the manipulative 180 degrees. Alternatively, a balanced scale can be used as a metaphor to demonstrate that it does not matter which side the components are on so long as the scale is balanced.

INCORRECT FEEDBACK

As with the previous activity, the feedback in phase 1 allows pupils to compare their answer with the number in the counter. The barn's counter and/or the pasture's counter will highlight cells to match their answer. The pupil can then compare their answer to the coloured cells in the counter. If there are errors in both areas, the feedback happens simultaneously.

If the pupil makes an error in the second phase, then the number in Chuck's speech



bubble gets larger and the number associated with the pasture is red. If the pupil sends fewer buffaloes to the pasture than asked for then Chuck tells them they need to send more. If the pupil sends more than asked for then Chuck informs them that they sent too many over.





As with the first two steps, the pupil must first indicate how many animals there are in the barn and in the pasture. They implement the 'take away' strategy by moving the requested amount of animals into the pasture. However, the software no longer automatically updates the equation based on the animals' movement. Instead, it is up to the pupil to correct the equation.



As with the previous activity, the feedback in phase 1 allows pupils to compare their answer with the number in the counter. The barn's counter and/ or the pasture's counter will highlight cells to match their answer. The pupil can then compare their answer to the coloured cells in the counter. If there are errors in both areas, the feedback happens simultaneously.

 Correct the equation.

 Image: Correct the equation.



If the pupil makes an error in the second

phase, then the number in Chuck's speech bubble gets larger and the number associated with the pasture is red. If the pupil sends fewer muskoxen to the pasture than asked for then Chuck tells them they need to send more. If the pupil sends more than asked for then Chuck informs them that they sent too many over.

In the third phase, if the pupil does not properly adjust the equation then the associated number boxes for the barn and pasture will be highlighted as errors in the equation.

This activity focuses on "counting up", which is a use of addition to perform subtraction. The previous three steps used the 'take away' strategy to move animals from one location to another, which kept the total unchanged. However, in this step, the pupil adds new animals to one location, to reach a requested total.

Note: Why isn't this activity part of the Add steps, given that the pupil adds animals to the

screen? There are various ways in which a pupil could understand the process of subtraction, and many pupils use "adding up" to do subtraction. This particular activity is designed to allow pupils to see that they can use adding up just like subtraction and get the same result.

INCORRECT FEEDBACK

As with the previous activity, the feedback in phase 1 allows pupils to compare their answer with the number in the counter. The barn's counter and/or the pasture's counter will highlight cells to match their answer. The pupil can then compare their answer to the coloured cells in the counter. If there are errors in both areas, the feedback happens simultaneously.

If the pupil makes an error in the second phase, then the number in Chuck's speech

bubble gets larger and the number in the total box is red. If the pupil sends fewer Dall sheep to the pasture than asked for then Chuck tells them they need to send more. If the pupil sends more than asked for then Chuck informs them that they sent too many over.

In the third phase, if pupils do not properly adjust the equation then the barn and pasture's number boxes will be highlighted as the errors in the equation.







Step 5

The pupil is introduced to the concept of subtraction (take away) by being asked to move objects from one pile to another. Zero (0) is introduced as the count for an empty set.



Click on a sheep to send it to the pasture. ck 🛸 🐯

INCORRECT FEEDBACK

As with the previous activity, the feedback in phase 1 allows pupils to compare their answer with the number in the counter. The barn's counter and/or the pasture's counter will highlight cells to match their answer. The pupil can then compare their answer to the coloured cells in the counter. If there are errors in both areas, the feedback happens simultaneously.

If the pupil makes an error in the second phase, then the number in Chuck's speech



bubble gets larger and the number associated with the pasture is red. If the pupil sends fewer sheep to the pasture than asked for then Chuck tells them they need to send more. If the pupil sends more than asked for then Chuck informs them that they sent too many over.

In the third phase, if pupils do not properly adjust the equation then the barn and pasture's number boxes will be highlighted as the errors in the equation.
Decompose

The main concept of this Idea is integer decomposition or partition. These steps allow pupils to practice counting strategies, as well as the operations of addition and subtraction. Pupils are presented with a set of beavers. They must partition this total by separating the beavers into two different sets by deciding which beavers are in the grass or water region. The later steps include a table where pupils are tasked with completing the missing line. This demonstrates their understanding of the patterns in the table by selecting a missing value.

Tip: The notion of having the beavers in the dam or water is expressed by whether they are seen standing on grass or surrounded by water. They do not move to the dam or water boxes. The reason for this is because keeping them in one line maintains the notion that they are one unit/group. So even though they are being partitioned into subgroups, remaining in a line at the bottom of the screen reinforces the idea that they are one group.

Step 1

The pupil is presented with a set of beavers and asked to partition them into two subsets based on the numbers they are shown. They click on as many beavers as indicated that ought to go swimming (i.e. partition them). This will provide grounding for subsequent pupil understanding of the task of decomposing a positive integer into a sum of two integers.

INCORRECT FEEDBACK

If they made an error by not selecting enough beavers then all of the beavers already selected plus additional beavers still in the dam that would make up the difference turn red. If they made an error by selecting too many beavers then the number of selected beavers equal to what should be in the water turn red. The user can then compare this to the additional beavers they chose to send swimming.









Step 2

This step introduces a decomposition table. The pupil is again presented with a set of beavers, but is now asked to partition them into two subsets based on the highlighted line in the table. The number of beavers in the dam is given but the number of beavers swimming is missing from the table. They first click on as many beavers as indicated that ought to go swimming (i.e. partition them). Once they do this correctly, they enter the



numerical value to complete the table. They are expected to do this twice in order to complete the set.

Tip: The pupil is provided with two opportunities to decompose a given number because it provides more practice with that particular number, increasing the chance that the pupils will notice the pattern in that decomposition, as well as gain fluency in decomposing that number.

INCORRECT FEEDBACK

The first phase is the same as the previous activity. If they made an error by not selecting enough beavers then all of the beavers already selected plus additional beavers still in the dam that would make up the difference turn red. If they made an error by selecting too many beavers then the number of selected beavers equal to what should be in the water turn red. The user can then compare this to the additional beavers they chose to send swimming.



In the second phase if they enter a number that is less than the number of beavers that are swimming, then beavers equal to the number they entered are encircled in red. The pupil can see that some of the beavers swimming have not been counted. If the pupil entered a number larger than the beavers that are swimming, then all of the beavers in the water are encircled in red plus some of the beavers in the dam to that the total number of beavers highlighted equals the pupil's incorrect answer. If they enter a number larger than the total number of beavers then the number in the total box is highlighted, becomes larger and wiggles.

Step 3

This step builds on the previous one and the pupil is now asked to fill in both numbers in the missing row. They begin by indicating how many of the beavers ought to remain in the dam based on the missing row. As they select a number, the beavers below are automatically partitioned so long as they do not choose a number larger than the total beavers shown. The pupil can use this to evaluate their answer. If they answer this correctly,



the previous partition fades and they are then asked to indicate how many are swimming based on the missing cell. As they enter a number, the beavers are once again partitioned below as a visual aid.

INCORRECT FEEDBACK

In the first phase, if the pupil provided an incorrect number that appears elsewhere in the table, that row is highlighted. If the pupil provided an answer that is higher than the largest number in the table, additional ghost beavers will appear below to equal the total erroneous answer. The total number box will get bigger and wiggle. Pupils can compare their answer to the total number box.

In the second phase, if the user enters



an incorrect number, the total box is highlighted, becomes larger, and wiggles. The beavers will temporarily disappear and the total box will move to the right side of the screen. The numbers from the dam and water boxes float down to create the statement that the number in the dam plus the number the pupil entered does not equal the total.



Step 4

This step also asks pupils to fill in a missing row in the decomposition table but this time without the beavers present as scaffolding. They also fill in both cells at once.



INCORRECT FEEDBACK

If the pupil provided a partition of the total, but not the one asked for, the related line in the table will be highlighted and wiggle. If the pupil enters numbers that are not a partition of this number then the total box is highlighted, becomes larger, and wiggles. It will move to the right side of the screen. The numbers from the dam and water boxes float down to create the statement that the number in the dam, plus the number the pupil entered does not equal the total.



Place Value

The Place Value steps aim to help pupils realize that numbers beyond 9 but less than 100 have two 'parts': there is a number of '10s' combined with a number of '1s'. The goal is to have pupils understand that one 'ten' is equal to ten 'ones'. This combined number is read left (tens) to right (ones).

In order to facilitate pupils' grasping the notion of place value, ELM uses pinecones to represent units of one. When ten units are grouped, they become a tree representing ten.

Step 1

Building on the strategy of using counters to count, the Place Value steps extend this notion to represent two-digit numbers with counters. Pupils are shown between 1-29 pinecones in the field. If the number they are shown is above 10, then groups of ten will be compiled together in the shape of a tree. In this step, the tool provides enough counters to count all of the pinecones shown. When the pupil provides the correct answer, the pinecones fly to the counters. Any counters that have

10 pinecones transforms into a tree. If there are two they merge into one 'tree' counter, which introduces pupils to the idea of using a tens counter to count.

INCORRECT FEEDBACK

If the pupil makes an error, the tool will encircle the counter's cells up to the number of pinecones visible. The pupil can then compare their answer to what's shown.









Step 2

Building on the previous step, pupils are once again asked to count the number of pinecones there are but this time they are required to first determine how many counters they will need. Initially there are no trees shown even if there are ten or more pinecones. Instead, groups of 5 are clustered together to help pupils count. For the pupils that struggle with counting, the pinecones will merge into a tree after they make their first error.



INCORRECT FEEDBACK

During the first phase, the pinecones will attempt to fill the counters. If the pupil does not add enough counters to count all of the shown pinecones then some pinecones will remain in the field and turn red. If they added too many counters then they will see that there are some empty counters with nothing in them.

If the pupil makes an error in the second phase, the tool will encircle the counter's cells up to the number of pinecones visible. The pupil can then compare their answer to what's shown.



Step 3

This step connects the tree counter (tens) and a pinecone counter (ones) with the corresponding abstract symbolic representation. First, the pupil is asked how many 'trees' (tens) need to be added to the tree counter in order to count all of the pinecones shown. The goal is to have pupils recognize that two digit numbers are grouped in "tens" and this corresponds to the numeral in the "tens" place. Once they correctly indicate how



many trees should be added to the tens counter, they are asked to select the correct numeral to represent the total count of pinecones.

INCORRECT FEEDBACK

In phase 1, if the pupil does not add enough trees in the 'tree' counter, groups of ten will merge into a tree and become red. If they add too many trees, the counter's cells up to how many trees are visible are encircled. The pupil can compare their answer to what is highlighted. If they did not need to add trees but did so anyway, the tool will display faded red trees equal to the number they indicated.



In phase 2, the counters will surround the cells to indicate the incorrect number. The pupil can then compare their answer to where the trees and pinecones appear.



Step 4

This step asks pupils to write two-digit numbers by entering the numeral for the tens position and ones position separately. If there are no trees then the pupil ought to enter 0, but by the end of the step, the tool will also show them that a zero is the tens position does not need to remain – i.e. 0# is the same as saying just #.



If the pupil makes an error in the tens position by entering a number larger than the correct digit, then transparent red trees appear on screen to show what their incorrect number would look like. If the pupil entered a 1 in the tens position when the answer should be two, one of the trees is highlighted while the other is not. If the pupil made an error in the ones position by entering a number smaller than what is in the field, pinecones equal to pupil's answer are highlighted. The rest





remain untouched so that pupils can compare their answer. If the entered a number larger than what is in the field, then transparent red pinecones will appear to visually display what their answer looks like.

Step 5

This step is similar to the previous one, but the pupil is asked to enter the tens and ones position into one number box. The number will be between 1-99.



INCORRECT FEEDBACK

If the pupil makes an error by entering a number smaller than what is on the field, the trees or pinecones equal to the pupil's answer are highlighted. The rest remain untouched so that pupils can compare their answer. If the entered a number larger than what is in the field, then transparent red trees or pinecones will appear to visually display what their answer looks like.







This step reverses the process of the previous ones but providing the pupil with a number and asking them to place equivalent trees and pinecones in the field. In other words, they are asked to demonstrate their understanding of a two-digit numbers (an abstraction) by creating an image that expresses each digit (semi-abstract). They are asked to place the trees (tens) first. Once they answer this correctly, they are asked to add the pinecones (ones).



INCORRECT FEEDBACK

If the pupil makes an error, a tree and a pinecone number box appears on screen to indicate the number the pupil provided. The pupil can then compare their answer with what was asked for.



Step 7

This step aims to encourage pupils' fluency with performing addition and subtraction. The pupil practices decomposition within a memory card game structure.

Tip: We repeat decomposition at this point because it is one way pupils may perform rapid and accurate addition/subtraction of number with two or more digits. For example, when asked to compute 13 - 8 the pupil knows



that 8 cannot be subtracted from 3. Instead, the pupil decomposes the 10 into 8 and 2, and understands that after subtracting 8 what is left is 2 + 3 = 5.

INCORRECT FEEDBACK

If the pupil attempts to match two cards that are not a partition of the number asked for, then an equation appears at the bottom of the screen to add these two cards. The pupil can then compare the total of the two cards to the number that Chuck is asking for.





Step 8

This step has the pupil add a one-digit number to a two-digit number. The pupil does so by adding pinecones from one counter into a second group of counters. If their addition results in a counter with ten pinecones, they must convert that counter into a tree (i.e. add it to the tens place). Once they have correctly joined the both groups, they are asked to represent this process by writing the equation. Half the time, the pupil will be asked to write



the equation a + b = c and the other half of the time, it will be presented as c = a + b.

INCORRECT FEEDBACK

There are several different types of errors a pupil can make in the first phase. If the user did not move all of the pinecones in Chuck's counter, those pinecones will be highlighted. If there is no more room in the counters for them, meaning that the pupil has to add a counter, this button will also be highlighted in case the error is related to technical difficulties. If they unnecessarily added an extra counter, it will be highlighted and Chuck will prompt them to consider if it's needed. If



the pupil has a counter will 10 pinecones and they did not transform it into a tree, the tool will play a brief animation showing that process before it reverts back to the pupil's answer. If the pupil made multiple errors then the feedback for each type is shown sequentially.

If the pupil made an error during the second phase, ELM will use the counters to help pupils see the mistake. If the digit the pupil entered is less than the trees/pinecones in the counter, then the cells surrounding up to that number are highlighted. The pupil can then compare their answer to where the trees and pinecones appear. If the pupil entered a digit larger than the trees/pinecones in the counter, then additional transparent trees/pinecones appear in the counter to





indicate what the pupil's answer would look like. If the pupil mixed up the tens place and the ones place, a double-sided arrow will appear below the digits as well. If the pupil made multiple errors then the feedback is shown sequentially from left to right, focusing on one number at a time.

Step 9

This step has the pupil subtract a one-digit number from a two-digit number. The pupil does so by removing pinecones from the two-digit number's counter. If they do not see enough pinecones in the ones counter, then they will have to convert a tree into a pinecone counter (i.e. borrow). Once they have subtracted the number asked for, they are asked to represent this process by writing the equation. Half the time, the pupil will be asked to write the equation a - b = c and the other half of the time, it will be presented as c = a - b.



INCORRECT FEEDBACK

There are several different types of errors a pupil can make in the first phase. If the user did not move all of the pinecones in Chuck's counter, those pinecones will be highlighted. If there is no more room in the counters for them, meaning that the pupil has to add a counter, this button will also be highlighted in case the error is related to technical difficulties. If they unnecessarily added an extra counter, it will be highlighted and Chuck will prompt them to consider if it's needed. If the pupil



has a counter will 10 pinecones and they did not transform it into a tree, the tool will play a brief animation showing that process before it reverts back to the pupil's answer. If the pupil made multiple errors then the feedback for each type is shown sequentially.

If the pupil made an error during the second phase, ELM will use the counters to help pupils see the mistake. If the digit the pupil entered is less than the trees/pinecones in the counter, then the cells surrounding up to that number are highlighted. The pupil can then compare their answer to where the trees and pinecones appear. If the pupil entered a digit larger than the trees/pinecones in the counter, then additional transparent trees/pinecones appear in the counter to indicate what the pupil's answer would look like. If the pupil mixed up the



tens place and the ones place, a double-sided arrow will appear below the digits as well. If the pupil made multiple errors then the feedback is shown sequentially from left to right, focusing on one number at a time.

Geometry

This theme asks pupils to categorize and distinguish two-dimensional shapes. ELM's goal is to develop pupils' fluency in recognizing shapes and foster pupils' own criteria for correctly identifying shapes. To this end, ELM does not list a shape's attributes. Instead, the pupil is provided with varying prototypes and they must define their own criteria for what makes a shape a shape. Teachers can have pupils justify their definitions of shapes during consultations to ensure adequate and robust understanding has unfolded.

Identify Shapes

This Idea aims to lead pupils to realize that there is a set of properties or characteristics that determine if something is a member of a class of shapes. While ELM does not state any explicit guidelines, pupils are guided into developing their own understanding that all shapes are closed figures. Furthermore, the boundaries of all shapes considered are composed solely of straight lines, other than for a circle, where the boundary is a curved line. Varied prototypes may help pupils note that the number of vertices is a characteristic used in defining classes of shapes. As the steps increase in complexity, pupils will also note that size is not a property that determines the class of a shape.

Step 1

ELM presents the pupil with an array of two-dimensional shapes and open figures. The host, Tia, asks pupils to sort the objects into one of two boxes. Tia will ask for a certain shape in the box closest to her, and all other objects ought to be sorted into the other box. By having pupils sort all of the objects, they make a conscious decision about which of these objects qualify as the requested shape.



ELM asks pupils to identify circles, squares, rhombi, rectangles, and triangles – in that order the first time they encounter the steps. This order follows the level of difficulty pupils typically have with identifying shapes. The objects that are not the requested shape consists of incomplete figures, over-extended figures, and shapes of other classes that are similar to the requested shape. In this step, all objects are roughly the same size.

INCORRECT FEEDBACK

There are a number of ways the pupil can incorrectly sort the objects. In all cases, the prototypes in Tia's box get filled in to make them stand out more. If they place an over extended figure in Tia's box, the overextended portions become highlighted. If they place an incomplete figure in Tia's box then that figure is highlighted so pupils may more easily compare it to the prototypes. If the pupil placed a different shape than the one asked for in Tia's box then that shape



is highlighted and Tia prompts the pupil to consider how this shape is different from the prototypes. If the pupil placed the asked for shape in the wrong box then that shape is highlighted so pupils may more easily compare it to the prototypes. If the pupil made multiple types of errors then the feedback is shown sequentially.



GEOMETRY

Step 2

Building on the previous step, the pupil is once again asked to sort objects, with Tia asking for a particular shape. Tia will once again ask for either circles, squares, rhombi, rectangles, or triangles. The objects that are not the requested shape consists of incomplete figures, overextended figures, shapes with a curved side, and shapes of other classes that are similar to the requested shape. This step has more alternative shapes than the



previous step. In addition, all objects are varying sizes.

INCORRECT FEEDBACK

There are a number of ways the pupil can incorrectly sort the objects. In all cases, the prototypes in Tia's box get filled in to make them stand out more. If they place an over extended figure in Tia's box, the overextended portions become highlighted. If they place an incomplete figure in Tia's box then that figure is highlighted so pupils may more easily compare it to the prototypes. If they place a shape with one or more curved sides, any curved side becomes a dotted



line. If the pupil placed a different shape than the one asked for in Tia's box then that shape is highlighted and Tia prompts the pupil to consider how this shape is different from the prototypes. If the pupil placed the asked for shape in the wrong box then that shape is highlighted so pupils may more easily compare it to the prototypes. If the pupil made multiple types of errors then the feedback is shown sequentially.

Step 3

Further building on the previous two steps, the pupil is once again asked to sort objects, with Tia asking for a particular shape. However, some of the objects will be rotated, increasing the difficulty. Because the focus is on rotation, Tia will no longer ask them to sort circles. The not-asked-for shapes will consist of other two-dimensional shapes that look similar to the requested shape.



INCORRECT FEEDBACK

The pupil can make two kinds of error: they gave Tia a two-dimensional shape she did not ask for or they sorted the asked for shape into the truck. If the pupil placed a different shape than the one asked for in Tia's box then that shape is highlighted and Tia prompts the pupil to consider how this shape is different from the prototypes. If the pupil placed the asked for shape in the wrong box then that shape is highlighted so pupils may more easily compare it to the prototypes.



If the shape has a non-standard orientation, then there will be a short animation where that shape is rotated until its orientation is more familiar to what the pupil is used to seeing. It will revert back to its original rotation when pupils attempt to correct their errors. If the pupil made multiple types of errors then the feedback is shown sequentially.



In early primary grades, pupils are expected to develop their skills in recognizing the changing attributes in patterns, especially determining the rule for a repeating pattern. Pupils typically express their understanding by recognizing, continuing, completing and creating patterns. ELM aids the development of their skills in identifying regularity and building sequences.

Translate Patterns

This idea is recommended as a continuation following the development of basic pattern copying, completion and continuation skills.

There are two main objectives for this Idea. The first is developing pupils' ability to identify the repeating portion – the core, or unit of repeat. The pupil is asked to extend this understanding of the core structure in the second objective, which is abstracting the pattern. Pupils demonstrate this by recreating the pattern using a new set of objects. The objects in the initial pattern, as well as the ones provided to the pupil to create a new sequence, will vary for each repetition of the step.

Step 1

The pupil is presented with objects arranged in a pattern. There is a minimum of 4 objects (2 objects x 2 units of repeat) and a maximum of 12 objects (4 objects x 3 units of repeat). The pupil's first task is to identify the pattern core. If they are able to correctly identify it, they are then asked to recreate that core using different objects. Once the pupil has correctly imitated the pattern core, they are asked to repeat it to match the initial pattern presented.



INCORRECT FEEDBACK

During the first phase, the first time the pupil makes an error there will be some audio feedback that guides pupils to select the images that make up one group. There is a brief animation that separates the pattern core before they revert back to an evenly distributed line of objects. If the pupil makes another error, ELM will provide letter symbols (ABCD) to express the pattern. There is audio guidance to suggest that the pupil start with the first object that is repeated. If the pupil makes a third error, ELM will show them the pattern core before resetting the activity so that they can try with a new set of objects.

When the pupil is asked to recreate the pattern core in the second phase, if the pupil makes an error, ELM will provide letter symbols (ABCD) for both patterns. The pupil can then compare their answer to the pattern above.

Errors with imitating the pattern core in the final phase will take the original core pattern the pupil created and move it above each of the erroneous cores. The pupil can then compare their pattern to the original pattern core they created.





In grade 1, pupils are expected to pose or respond to questions, organize data, and interpret data using graphs and tables, with their teacher's guidance. To support pupils' development of these skills, this theme presents situations where the answer is not instantly obvious. In order to make sense of the situation, the pupil is required to organize data according to common attributes and represent a tally using graphs and tables. This task connects the situation to the graphic displays.

Bar Graphs & Tables

The purpose of this Idea is to support pupils' ability to interpret and display data using bar graphs and tables. The pupil is provided with a context and they are expected to count and represent that tally using pictures, counters and numerals. The situation that the data is provided in offers a context for the bar graph and table to be meaningful. The pupil discovers that a bar graph is useful for organizing data into categories to determine the relative sizes at a glance. A table can be useful to quickly count the total.

Tip: Encourage pupils to go beyond just reading the data. Ask them to use the tables in ELM to compare quantities (most, least).

Step 1

The pupil is given a random situation between being shown the hosts' collection of X, their friends' favorite Y, or Z type of objects the host noticed that day. Along with this situation, the pupil is presented with a pile of objects. This pile consists of 2-4 categories and a total of 10-15 objects. The pupil's first task is to identify the categories in the pile of objects. Then they are expected to label a bar graph so that each category is represented. The pupil is then prompted to complete the bar graph in relation to the given pile of objects.



INCORRECT FEEDBACK

If the pupil makes an error in the first phase, by selecting multiple objects in the same category, then the tool will highlight one of the objects in cyan and all of the extra objects in red and state that only one of each kind is needed. If the pupil did not select one of the categories then all objects in that category are highlighted in red and Kiros will let them know that they overlooked one or multiple categories. If the pupil made multiple types

of errors then the feedback is shown sequentially.

It is not possible for the pupil to make an error labeling the graph in the second phase, as the OK button is not active until all labels have been created.

In the third phase, the pupil is asked to fill in the counters in the bar graph. They can make an error by not correctly counting the objects in a category. In this case, the objects on the left will be highlighted in red as well as the counter. The pupil is expected to compare the objects and the counter's cells. If the pupil made multiple errors in different categories, the feedback is shown sequentially.

If the pupil enters an incorrect numeral in the table during the fourth phase, the counter in the bar graph as well as the incorrect number in the table are highlighted in red. If the pupil made multiple errors in different categories, the feedback is shown sequentially.





DATA

Step 2

This step is the same as the previous one but also asks pupils to complete the table at the end. The pupil is randomly given one the situations seen in the previous step. They must identify the categories, label a bar graph, and then fill in the bar graph. Once they have successfully completed the bar graph, the pupil is asked to fill in a table using the information in their bar graph. This demonstrates that both the bar graph and table can be used to represent their data.



INCORRECT FEEDBACK

The initial phases have the same feedback as Step 1. If the pupil makes an error in the first phase, by selecting multiple objects in the same category, then the tool will highlight one of the objects in cyan and all of the extra objects in red and state that only one of each kind is needed. If the pupil did not select one of the categories then all objects in that category are highlighted in red and Kiros will let them know that they overlooked one or multiple categories. If the pupil made



multiple types of errors then the feedback is shown sequentially. It is not possible for the pupil to make an error labeling the graph in the second phase, as the OK button is not active until all labels have been created.

In the third phase, the pupil is asked to fill in the counters in the bar graph. They can make an error by not correctly counting the objects in a category. In this case, the objects on the left will be highlighted in red as well as the counter. The pupil is expected to compare the objects and the counter's cells. If the pupil made multiple errors in different categories, the feedback is shown sequentially.

If the pupil enters an incorrect numeral in the table during the fourth phase, the counter in the bar graph as well as the incorrect number in the table are highlighted in red. If the pupil made multiple errors in different categories, the feedback is shown sequentially. If the pupil provides an incorrect total in the fifth phase, the number in each row temporarily gets bigger and a plus sign appears in the last row. In addition, a smaller pile of the objects appears to the right of the table to help pupil visualize what each number looks like.





Number Line

Number lines provide a second understanding of the concept of numbers explored earlier in the Number Concept theme. Focusing on the position on a line offers another concrete method for pupils to count, compare, and order numbers. The number line helps pupils to see that counting numbers are ordered, with counting up related to increases in quantity and counting down related to decreases in quantity. Positive and negative displacements indicate movement in opposite directions along a number line, allowing pupils a new interpretation of addition and subtraction. The use of a standard size of units (step length) also encourages pupils to discuss the use of different systems of "units," e.g. mm, cm, m, inch, foot, yard, which lead to different correct numerical answers.

Number as Displacement

This Idea provides pupils with a situational problem where three numbers are related. The starting point (a), the displacement (b), and the ending point (c) are presented by the equation "a + b = c" or "a - b = c". Two out of these three are provided. The pupil's first task is to determine what each given number corresponds to physically on the number line. The pupil can use the physical interpretation to aid in determining the missing third value. In the process of using the number line, pupils may count/add by 1s, 5s, and 10s and proficiency in composing/decomposing numbers while gaining fluency in addition/subtraction with numbers up to 100.

Note: This Idea should not be the first instance that pupils are introduced to a number line. Rather, ELM suggests a kinaesthetic approach to start. See the Teacher Resources page for suggested offline lessons before directing pupils to the online idea.

Step 1

The pupil is shown a number line from 0-100. The host, Matilda, will provide a situational word problem that describes the starting point (a), the displacement (b), and the ending point (c). One of the values will be missing so the pupil will be provided with either the start position and displacement, the end position and displacement or the start and end positions. They are tasked with determining the missing value. The pupil starts by placing the starting or the ending



position on the number line. They do so by dragging the number from the word problem or equation. If they get this correct, they are then tasked with creating the displacement by



NUMBER LINE

adding 1, 5 or 10 unit blocks. These represent the steps Matilda has taken along the number line. Once the pupil has correctly built the displacement (length and direction), the missing value is provided.

INCORRECT FEEDBACK

In the first phase, if pupils place the starting or ending point on the incorrect notch, the marker will turn red and the value will be displayed in a red font. The starting or ending value in the word problem and equation will also turn red. This will allow the pupil to compare their answer on the number line to the value in the word problem/equation. For situations where the pupil was provided with the starting and ending point and they put the starting marker on the ending value



in the number line or vice versa, the shape of the markers will also be emphasized.

There are two kinds of errors the pupil can make when creating the displacement in the second phase: direction and/or length. When the pupil is provided the displacement and either the start or end position and they create the displacement in the opposite direction then one of the blocks will gain an arrowhead pointed towards the ending position. The word forward/backward in the word problem is highlighted as well as the outline for the displacement arrow.

The pupil can compare the two. If the pupil makes an error in the length of the displacement then the blocks will combine and the total value will be displayed. The displacement value in the word problem and equation turn red so the pupil can compare the two values. If the

pupil makes an error in both direction and length, the feedback will be shown sequentially. For situations where the pupil is given the start and end positions the incorrect feedback will be the same no matter if the error is one of direction, length or both. Rather, the dotted line touching the edge of the displacement is emphasized and the number appears above the number line. The not-placed start or end position in the word problem/ equation becomes red so the pupil can compare the two values.





ELM & PRIEDE

Alignment of ELM with PRIEDE

In the table below, there are suggestions for using ELM activities to support the concepts addressed in PRIEDE.

WK 1-4	Geometry		Number Co	ncept	Number Co	ncept
	PRIEDE	ELM	PRIEDE	ELM	PRIEDE	ELM
Week 1	Identify Shapes: Draw lines through the shapes that looks like this].	<i>Identify</i> <i>Shapes</i> : Steps 1-3	Count: Circle Groups of 2.	<i>Count</i> : Steps 1-5	Compare: Pair and match equal groups.	Compare: Step 1
Week 2	Identify Shapes: Draw lines through the circles.	<i>Identify</i> <i>Shapes</i> : Steps 1-3	Count: Count and write the number of objects.	<i>Count</i> : Steps 3-5	Add: Read the number. What is 1 more?	<i>Add</i> : Steps 1-4
Week 3	Identify Shapes: Draw lines through the circles.	<i>Identify</i> <i>Shapes</i> : Steps 1-3	Subtraction: Count. Take away 1, Write the number that is left.	<i>Subtract</i> : Steps 1-5	Compare: Circle the group with more shapes.	<i>Compare</i> : Steps 2-4
Week 4	Identify Shapes: Draw lines through the rectangles.	<i>Identify</i> <i>Shapes</i> : Steps 1-3	Count: Read the number. Draw the correct number of circles.	<i>Count</i> : Step 4 <i>Compare</i> : Step 4 <i>Add</i> : Step 4 <i>Subtract</i> : Step 4 <i>Decompose</i> : Step 1	Write how many more fingers you need to make 5.	<i>Add</i> : Steps 1-4 <i>Subtract</i> : Steps 1-5 <i>Decompose</i> : Steps 1-4



WK 5-8			Number	Concept		
	PRIEDE	ELM	PRIEDE	ELM	PRIEDE	ELM
Week 5	Count: Count and write the number of shapes.	Count: Steps 3-5	Subtract: Write the numbers that come next.	Subtract: Steps 1-5	Compare: Write equal signs between groups with the same number of objects.	<i>Compare</i> : Step 1
Week 6	Decompose: Match the numbers in the family of 9.	<i>Decompose</i> : Steps 1-4	Place Value: Match the groups to the numbers.	<i>Place Value</i> : Steps 1-6	Subtract: Write the number that is left.	<i>Subtract</i> : Steps 1-5
Week 7	Count: write the number of objects.	<i>Count</i> : Steps 1-5	Compare: Draw lines under the groups with more.	<i>Compare</i> : Steps 1-4	Subtract: Count the shapes. What is 1 less?	<i>Subtract</i> : Steps 1-5
Week 8	Add: Write 1 more that the number shown.	<i>Add</i> : Steps 1-4	Decompose: Write numbers to complete the number sentences.	<i>Add</i> : Steps 1-4 <i>Subtract</i> : Steps 1-5 <i>Decompose</i> : Steps 1-5 <i>Place Value</i> : Step 7	Decompose: Write + or = signs.	<i>Add</i> : Steps 1-4 <i>Subtract</i> : Steps 1-5 <i>Decompose</i> : Steps 1-4 <i>Place Value</i> : Steps 8-9





WK 9-12			Number Cor	ncept & Data	l	
	PRIEDE	ELM	PRIEDE	ELM	PRIEDE	ELM
Week 9	Subtract: Write the next number.	Subtract: Steps 1-5 Place Value: Step 3	Add: Write the missing number.	<i>Add</i> : Steps 1-4 <i>Place Value</i> : Step 3	Decompose: Write the number you need to make number families of 10.	<i>Decompose</i> : Steps 1-4 <i>Place Value</i> : Step 7
Week 10	Place Value: Fill in the charts.	<i>Place Value</i> : Steps 1-6	Compare: Number the lines 1, 2, 3, 4 from the longest to the shortest.	<i>Compare</i> : Steps 1-4	Add: Count and put together.	<i>Add</i> : Steps 1-4
Week 11	Subtract: Subtract by crossing out.	Subtract: Steps 1-5	Place Value: Write the missing number.	<i>Place Value</i> : Step 3	Subtract: Subtract.	<i>Subtract</i> : Steps 1-5
Week 12	Compare: Draw an equal number of shapes.	<i>Compare</i> : Step 1	Order from the lowest to the highest.	Place Value: Step 3 *Data: Steps 1-2	Subtract: subtract by crossing out.	<i>Subtract</i> : Steps 1-5



₩К	Number Co	ncept	Number Lin	e	Data	
13-16	PRIEDE	ELM	PRIEDE	ELM	PRIEDE	ELM
Week 13	Add.	Add: Steps 1-4	Decompose: Write the Missing number.	Decompose: Steps 2-4	Write the numbers from the least to the greatest.	<i>Compare</i> : Steps 1-4 * <i>Data</i> : Steps 1-2
Week 14	Compare: Circle the objects that are heavier that the book.	Compare: Steps 1-4	Place Value: Write the missing number.	<i>Place Value</i> : Step 3	Count: Write the numbers.	<i>Count</i> : Steps 1-5
Week 15	Decompose: Write how many dots are needed to make 10.	<i>Place Value</i> : Steps 4-7	Count: Draw tally marks needed to make 10.	<i>Place Value</i> : Steps 1-4 <i>Number as</i> <i>Displacement</i> : Step 1	Add: Write the missing numbers.	<i>Add</i> : Steps 1-4
Week 16	Place Value: Fill in the place value charts.	<i>Place Value</i> : Steps 1-6	Count: Draw the tallies needed to make 10.	<i>Place Value</i> : Steps 1-4 <i>Number as</i> <i>Displacement</i> : Step 1	Compare: Order from the longest to the shortest.	Compare: Steps 1-4

ELM & PRIEDE



₩К	Number Co	ncept	Number Co	ncept	Number Lir	ne & Data
17-20	PRIEDE	ELM	PRIEDE	ELM	PRIEDE	ELM
Week 17	Decompose: Write the number needed to make 10.	<i>Decompose</i> : Steps 1-4 <i>Place Value</i> : Step 7	Count: Count and write the number of parts in each rectangle.	<i>Count</i> : Steps 1-5	Number Line: Write the numbers from 20 to 30.	<i>Place Value</i> : Steps 1-4 <i>Number as</i> <i>Displacement</i> : Step 1
Week 18	Add & Subtract: Add or subtract. Then match the number families.	<i>Add</i> : Steps 1-4 <i>Subtract</i> : Steps 1-5	Count: Count and write the number of dots.	<i>Count</i> : Steps 3-5	Compare and Order from the least to the greatest.	<i>Compare</i> : Steps 1-4 <i>*Data</i> : Steps 1-2
Week 19	Add & Subtract: Add or subtract. Then match the number families.	<i>Add</i> : Steps 1-4 <i>Subtract</i> : Steps 1-5	Decompose: Write the number needed to make 10.	<i>Decompose</i> : Steps 1-4 <i>Place Value</i> : Step 7	Number Line: Write the numbers from 10 to 30.	<i>Place Value</i> : Steps 1-4 <i>Number as</i> <i>Displacement</i> : Step 1
Week 20	Add.	<i>Add</i> : Steps 1-4	Place Value: Write the next numbers.	<i>Place Value</i> : Step 3	Write the numbers from 31-50.	<i>Place Value</i> : Step 3 <i>Number as</i> <i>Displacement</i> : Step 1



₩К	Number Co	ncept	Data & Nun	nber Line	Number Co	ncept
21-24	PRIEDE	ELM	PRIEDE	ELM	PRIEDE	ELM
Week 21	Add.	Add: Steps 1-4	Compare: Circle the groups with more.	<i>Compare</i> : Steps 1-4	Subtract.	<i>Subtract</i> : Steps 1-5
Week 22	Add: Write the missing number.	<i>Add</i> : Steps 1-4	Write the missing number.	<i>Number as Displacement</i> : Step 1	Add: Complete the number sentence to make it equal.	<i>Add</i> : Steps 1-4
Week 23	Place Value: Write the next number.	<i>Place Value</i> : Step 3	Number Line and Place Value: Count by tens. Write the next numbers.	<i>Place Value</i> : Steps 1-4 <i>Number as</i> <i>Displacement</i> : Step 1	Add.	<i>Add</i> : Steps 1-4
Week 24	Subtract.	Subtract: Steps 1-5 Place Value: Step 9	Compare: Order from the least to the greatest.	Compare: Steps 1-4 Place Value: Step 3 *Data: Steps 1-2	Place Value: Fill in the place value charts.	<i>Place Value</i> : Steps 1-6



WK 25-27	Number Lir Number Co	ne & ncept	Number Co	ncept	Number Co	ncept
	PRIEDE	ELM	PRIEDE	ELM	PRIEDE	ELM
Week 25	Use the number line to circle the greater number.	<i>Number as</i> <i>Displacement</i> : Step 1	Count: Count and write the number of dots.	Count: Steps 3-5	Compare: Circle the lesser number.	<i>Compare</i> : Steps 1-4
Week 26	Place Value: Write the numbers from 71-80.	<i>Place Value</i> : Steps 4-5	Subtraction: Complete to make equal.	<i>Subtract</i> : Steps 1-5	Sequence of numbers: Count by fives. Write the missing numbers.	<i>Place Value</i> : Steps 2-3 <i>Number as Displacement</i> : Step 1 (in blocks of 5)
Week 27	Identify Shapes: Circle the curved lines.	<i>Identify</i> <i>Shapes</i> : Steps 1-3	Compare: Draw sticks.	Compare: Step 4	Subtract.	<i>Subtract</i> : Steps 1-5



ELM & PRIEDE

Here are the weeks in the PRIEDE program that pertain solely to Geometry.

₩К	Geometry	
	PRIEDE	ELM
Week 1	Identify Shapes: Draw lines through the shapes that looks like this 🗌 .	<i>Identify Shapes</i> : Steps 1-3
Week 2	Identify Shapes: Draw lines through the circles.	<i>Identify Shapes</i> : Steps 1-3
Week 3	Identify Shapes: Draw lines through the circles.	<i>Identify Shapes</i> : Steps 1-3
Week 4	Identify Shapes: Draw lines through the rectangles.	<i>Identify Shapes</i> : Steps 1-3
Week 6	Identify Shapes: Draw lines under the triangles.	<i>Identify Shapes</i> : Steps 1-3
Week 9	Identify Shapes: Draw 3 triangles.	<i>Identify Shapes</i> : Steps 1-3
Week 14	Identify Shapes: Draw lines under the rectangles.	<i>Identify Shapes</i> : Steps 1-3
Week 17	Identify Shapes: Circle the straight lines.	<i>Identify Shapes</i> : Steps 1-3
Week 24	Identify Shapes: Draw lines through the rectangles. Identify Shapes: Steps 1-3.	<i>Add</i> : Steps 1-4 <i>Subtract</i> : Steps 1-5 <i>Decompose</i> : Steps 1-4 <i>Identify Shapes</i> : Steps 1-3
Week 27	Circle the curved lines. Circle the straight lines.	<i>Identify Shapes</i> : Steps 1-3



Teacher Module

The Teacher Module is designed to support teachers' use of ELM. There are two components to this module: a Teacher Manage feature and a Teacher Resource page. The Manage feature allows teachers to follow and modify pupils' progress. Teachers can utilize the resource page to learn more about the tool and access classroom resources such as lesson plans.

Manage Feature

The *Teacher Manage* feature enables teachers to get notifications about which pupils are struggling with the steps, see how their pupils are progressing through the tool, create custom plans, and assign extra animal friends.

To access this feature, click on the cog icon from the Lobby Page.



NOTIFICATIONS

The first feature that is seen when accessing the ELM Settings are the notifications.

Recall how the soft-lock feature functions: if the pupil makes three errors in a row, they will be given a new problem to solve. If they continue to make three more errors in a row, they are

advised to seek help from their teacher. ELM will notify the teacher so they are aware of any challenges pupils encounter. Although this icon 2 appears on the pupil's screen to indicate they need help, a teacher may not be able to address all errors and difficulties in the classroom. The Notifications tab keeps a running tally of pupils consistently struggling with a particular step.

Each notification consists of the pupil's name, the Theme, Idea and Step, and on what date. A teacher can sort this list by pupil name or by date. To remove the notification, check the box and click "Remove". This will only remove the

Main Menu	My Account	My Classes	My Students	ELM Settings		
				· ·		
Notificat	tions	Reports	Plans	Extra Friends		1.1
- The following	ng student(s) mad	le several errors i	n a row, in the followi	ng activities, and need you	r help:	
				· · · · · · · · · · · · · · · · · · ·		
Student	Frrors					
otadont						
All My Class	ses	•				
						Remove
	Name: First La	ist	Theme	Idea - Step	Date 🛛	⊻
Takeuchi, Y	uko		Number Concep	t Count - 5	2017-10-06	
Horton, Cha	arlotte		Number Concep	t Count - 5	2017-10-06	
Farelli, Chlo	e		Number Concep	t Count - 5	2017-10-06	
Jacobs, Ber	njamin		Number Concep	t Count - 4	2017-10-05	
Farelli, Chlo	e		Number Concep	t Count - 4	2017-10-05	
Takeuchi, Y	uko		Number Concep	t Count - 3	2017-10-03	
Jacobs, Ber	njamin		Number Concep	t Count - 3	2017-10-03	
Jacobs, Ber	njamin		Number Concep	t Count - 2	2017-10-03	
Gomez, Peo	dro		Number Concep	t Count - 2	2017-10-03	
Jacobs, Ber	njamin		Number Concep	t Count - 1	2017-09-29	
Horton, Cha	arlotte		Number Concep	t Count - 1	2017-09-29	
Gomez, Peo	dro		Number Concep	t Count - 1	2017-09-29	
			Number Concer	t Count - 1	2017-00-20	



TEACHER MODULE

notification from this list, not the record of the mistake. So, if they are still stuck that will be reflected in the report as well as in their account.

REPORTS

The *Report* tab shows pupils' progress through ELM activities and any difficulties they are experiencing.

A teacher will be asked to select a class before s/he can see the reports.

Jane's Man	age Section		4) F r	rançais LTK+	ePEARL	ELM	ABRA	Logout 🕏
lain Menu	My Account	My Classes	My Students	ELM Settings				
Notificati	ons	Reports	Plans	Extra	Friends			
Select a class	s to see an overv	iow of student p	ograes Lies the ch	acklist balow to say	more / les		-	
scicol a ciab	o to bee an overv	iew of student p	ogress. Ose the ch	eckilar below to see		s intonn	ation.	
		lew of student p	ogress. Ose the ch	BORIIST DEIOW TO SER	s more / lea	55 INIONI	auon.	
Select a C	Class		ogress. Ose the ch		inore / les	s mom	auon.	
Select a C	Class					55 1110111	auon.	
Select a C	Class		ogress. Ose the ch			55 1110111	auon.	
Select a C	Class Class		ogress. Ose the on			55 1110111	ation.	

A teacher can then determine which Theme and Idea s/he want information about:

By default, Number Concept and Count will be pre-selected. Use the dropdown menus to select other Themes and Ideas.

A checklist and report will load below. The checklist can be used to narrow or broaden how much information is shown in the report.

A grey cell indicates that the step has not been started yet. This is selected by default and cannot be unchecked.

A red cell shows that the pupil is currently experiencing difficulties with a particular step and is unable to continue. This information would have also been provided in the Notifications tab. It is selected by default but a teacher can uncheck this option.

The orange cells mean the pupil had been stuck on that step recently but has been able to make some progress. This marker will disappear once they have successfully completed three puzzle pieces in a row or finish the puzzle.

1		N Français	LTK+ ePE		
n Menu My Account	My Classes	My Students ELM	Settings		
Notifications	Reports	Plans	Extra Erlend	ts	
lect a class to see an overvi	iew of student pro	gress. Use the checklist t	below to see more	e / less informatior	n.
~		<u> </u>			
Classroom AA	* Numb	er Concept	Count	· ·	
Orange cell : Student too Orange cell : The activity ha Indicate how many tii Show current progress.* Bolded fractions: show	t stuck within the l as been completed mes they have con current repetitions	last 3 puzzle pieces but n d successfully. mpleted a puzzle.* s completed / assigned.	esumed progress		
On-bolded fractions: sho On-bolded f	ow any redos assig a previously mast selected at the sam	gned for this activity. ered activity. ne time.			
Off-bodded inactions, site Off-bodded inactions, site	ow any redos assig a previously mast selected at the sam	gned for this activity. ered activity. ne time. tep Step 1 2	Step 3	Step 4	Step 5
Off-bodded fractions: site O Student is practicing These two options cannot be Name: First Last ∞	w any redos assig a previously mast selected at the sam	gned for this activity. ered activity. he time. tep Step 1 2	Step 3	Step 4	Step 5
Off-builded inscitutions, since Off-builded inscitutions,	w any redos assig a previously mast selected at the sam	gned for this activity. ered activity. he time. tep Step 1 2	Step 3	Step 4	Step 5
- On-builded Inscitutions, sind - ⊕ Student is practicing These two options cannot be Name: First Last ∞ Name: First Last ∞ Arnaud, Jean-Claude Jent, Barry Farelli, Chloe	a previously mastr selected at the sam	gned for this activity. ered activity. te time. tep Step 1 2	Step 3	Step 4	Step 5 0/15
Of-bodded Haddon's site · © Student is practicing These two options cannot be Name: First Last Arnaud, Jean-Claude Jent, Barry Farelli, Chloe Somez, Pedro	w any redos assignations as a previously mastrix selected at the same se	gned for this activity. ered activity. te time. tep Step 1 2	Step 3	Step 4 3/10 0/10	Step 5 0/15
Of-bodded inductions: since Of Student is practicing These two options cannot be Name: First Last Arnaud, Jean-Claude Dent, Barry arelli, Chloe Gomez, Pedro Horton, Charlotte	w any redos assignations assigned to the same selected at the same selec	ned for this activity. ered activity. te time. tep Step 1 2	Step 3	Step 4 3/10 0/10	Step 5 0/15 3/15
On-builded Inductions: Since O Student is practicing These two options cannot be Name: First Last Amaud, Jean-Claude Jean, Barry Farelli, Chloe Somez, Pedro Horton, Charlotte lacobs, Benjamin	w any redos assi a previously mast selected at the sam	gned for this activity. ered activity. tep Step 1 2	Step 3	Step 4 3/10 0/10 5/10 0/10	Step 5 0/15 3/15
On-bodded traduotry, sind OB Student is practicing These two options cannot be Name: First Last @ Name: First Last @ Arnaud, Jean-Claude Jean, Barry Farelli, Chloe Somez, Pedro Horton, Charlotte lacobs, Benjamin Kahn, Max	w any redos assi a previously mast selected at the sam	ned for this activity. ered activity. tep Step 1 2 1 2	Step 3	Step 4 3/10 0/10 5/10 0/10 0/10 0 1/3	Step 5 0/15 3/15
On-builded Intactions: since Of Student is practicing These two options cannot be Name: First Last Name: First Last Armaud, Jean-Claude Dent, Barry arelli, Chloe Somez, Pedro Horton, Charlotte lacobs, Benjamin Kahn, Max Saborne, Daniel	w any redos assis a previously mast selected at the sam	ered activity. ered activity. tep Step 1 2 4/15	Step 3	Step 4 3/10 0/10 5/10 0/10 0/10 0/10	Step 5 0/15 3/15
Of-bolded Inductions: since Of Student is practicing These two options cannot be Name: First Last ∞ Name: First Last ∞ Arnaud, Jean-Claude Dent, Barry arelli, Chloe Somez, Pedro Horton, Charlotte lacobs, Benjamin Kahn, Max Soborre, Daniel Popov, Alexei	w any redos assis a previously mast selected at the sam	ered activity. ered activity. tep Step 1 2 2 4/15 1/10 0/10	Step 3	Step 4 3/10 0/10 5/10 0/10 0/10 0 1/3	Step 5 0/15 3/15
On-builded Inductions: since OB Student is practicing These two options cannot be Name: First Last Name: First Last Arnaud, Jean-Claude Dent, Barry arelli, Chloe Jonne, Pedro Jordon, Charlotte Jacobs, Benjamin Kahn, Max Daborne, Daniel ² opov, Alexei Jounik, Arusha	w any redos assis a previously mast selected at the sam	tep Step 1 2 4/15 4/15 1/10 0/10	Step 3	Step 4 3/10 0/10 5/10 0/10 0/10 0/10	Step 5 0/15 3/15
On-builded Hadulins: sind OB Student is practicing These two options cannot be Name: First Last Name: First Last Arnaud, Jean-Claude Jean, Barry Farelli, Chloe Somez, Pedro Horton, Charlotte lacobs, Benjamin Kahn, Max Jsborne, Daniel Popov, Alexei Sunik, Arusha Takeuchi, Yuko	w any redos assis a previously mast selected at the sam St St St St St St St St St St St St St	tep Step 1 2 4/15 4/15 1/10 0/10	Step 3	Step 4 3/10 0/10 5/10 0/10 ⊙ 1/3	Step 5 0/15 3/15 6/15

A blue cell indicates that the step has been completed. If a teacher has assigned a plan where the pupil has to complete the puzzle twice, then the cell will not turn blue until both puzzles have been completed.

TEACHER MODULE



Once a pupil has completed all of the steps in an Idea, they are able to go back to redo any step if they want additional practice. Select the sub-menu option to see how many times they've completed each step. This provides the number of puzzles completed. So, when there's an assigned a plan with a redo, the report will state that the pupil completed the puzzle twice.

Clicking the 'Show Current Progress' option will display how many puzzle pieces the pupil has completed vs. how many were assigned to them. If the pupil was given a plan with a redo, two fractions will appear on their report. The bold one indicates the current progress–if it's on the left then the pupil is on the first puzzle of the plan, if it's on the right then the pupil is working on the second puzzle assigned by the plan.

PLANS

A teacher may feel that the default plan is ill-suited to their stronger or weaker pupils. One can tailor the pupils' experience of ELM through the Plans feature. The *Plans* tab allows a teacher to control how their pupils will progress through ELM by modifying how many puzzles and/or puzzle pieces they should complete in order to successfully master each step.

The first step is to select a theme to create a new plan for. Use the dropdown menu at the top of the page. Then, click on the button Create a New Plan. Enter a name for the plan in the textbox that appears and click on 'save'.



The plan will load at the bottom of the page. The class dropdown list can be used to narrow down the list of pupils, but a plan can be applied across multiple classes.

Notifications		Reports	Plane	Extra Erlanda		
Noulications		Reports	Plans	Extra Prienos		
- Note: All students	must have a	a plan. Students are	automatically ass	igned to the default plan.	lon"	
- Removing a student	ent from a cu	istom plan will assig	es from the class n him / her back to	the default plan.	an .	
i toine nig a staat		otom plan nin acoigi		, the dolutin plant		
Number Concept						
					Create a New F	
					Create a New P	'la
Default Plan						
Warning: All chang	es are saved	automatically. Thes	se changes will aff	ect students the next time they log	y in.	
	Step	Puzzle Pieces	Redo	All My Classes		,
Count	1	15	0	Name: First Last P		
Compare	2	15	0	Name: First Last @		
Add	3	15	0	Attar, Mohammed		2
Subtract			0	Coulson, Hugo		1
December	4	15	0	Dent, Barry		1
Decompose	5	15	0	Farelli, Chloe		2
Place value				Gomez, Pedro		1
				Horton, Charlotte		V
				Jacobs, Benjamin		2
				Lapointe, Felix		V
				Lindberg, Edvin		V
				Osborne, Daniel		1
				Popov, Alexei Roy, Florence		V
				Saluja, Priya		V
				Sunik, Arusha		1
				Swan, Bo Takeuchi, Yuko		1
				Thorne, Emma		1
				Tremblay, Colette		1
				Wang, Wei		1
				Williams, Mary		1
				24 records		
					dd Student(e) te D	
				A	Ju Student(s) to P	"Iai
Advanced Student	ts					
					Delete	P
	Step	Puz 2	Redo	Classroom AA		,
Count		4	0 -	Name: First Last Ø		
Compare	2	5	0 -	Arnaud, Jean-Claude	Default	C
	3	6	0 -	Dent, Barry Farelli, Chloe	Default	N C
Add	4	8	0 -	Gomez, Pedro	Default	C
Add Subtract		9	0 -	Horton, Charlotte	Default	6
Add Subtract Decompose	5	10			Default	5
Add Subtract Decompose Place Value	5	10		Jacobs, Benjamin	Deraut	
Add Subtract Decompose Place Value	5	10 11 12		Jacobs, Benjamin Kahn, Max Osborne, Daniel	Default	J D D D D
Add Subtract Decompose Place Value	5	10 11 12 13 14		Jacobs, Benjamin Kahn, Max Osborne, Daniel Popov, Alexei	Default Default	
Add Subtract Decompose Place Value	5	10 11 12 13 14 15		Jacobs, Benjamin Kahn, Max Osborne, Daniel Popov, Alexei Sunik, Arusha	Default Default	



TEACHER MODULE

There are two methods that allow for additional practice of a particular concept: puzzle pieces and redos. For each step, a teacher can adjust the number of puzzle pieces (repetitions) to anywhere between 1-24. One can increase the number if it is desired that a pupil practice more, or decrease this number if a pupil should advance more quickly to the more challenging tasks. The pupil will only gain the new "animal friend" once they have completed all of the repetitions.

Tip: There is no option to skip a step even for the advanced pupils. Even if they are asked to complete only one puzzle piece, it will provide pupils to opportunity to become familiar with the tool.

The plan can assign a redo of the puzzle, with the same number of puzzle repetitions. This provides additional practice for to help pupil master skills and strategies.

Tip: One option of how to use the redo feature could be to provide encouragement to the pupils that are struggling. For example, if the default plan for the whole class is set to 15 repetitions, a teacher can create a plan that has a redo but only 10 missing puzzle pieces in each puzzle for the weaker pupils. This will require them to do more repetitions in order to move on to the next step, but they gain the friend mid-way through to provide encouragement sooner.

Each pupil can only be assigned to one plan per Idea. Pupils' current plans are listed next to their names. Pupils can be moved to another plan at any time. If the pupil is working in ELM when their assigned plan is changed, the plan will only take effect the next time they log in.

Once a plan has been created, it can be kept even if no pupils are assigned to it. Plans can be reused from year to year.

Classroom AA 🔹		
Name: First Last 🛛		
Arnaud, Jean-Claude	Default	
Dent, Barry	Advanced St	
Farelli, Chloe	Default	
Gomez, Pedro	More Practic	
Horton, Charlotte	Default	
Jacobs, Benjamin	More Practic	
Kahn, Max	Advanced St	
Osborne, Daniel	Default	
Popov, Alexei	More Practic	
Sunik, Arusha	Advanced St	
Takeuchi, Yuko	Default	
Tremblay, Colette	Advanced St	
12 records		
Add Student(s) to Plan		
TEACHER MODULE



EXTRA FRIENDS

The *Extra Friends* tab contains some additional animal friends that are not linked to specific online steps. A teacher can choose to assign these if ELM's offline lesson plans or ELM's suggested extension activities are used, or if any introduction activities were created for use within ELM.



Teacher Resources

The Teacher Resources web page provides a complete list of resources that have been prepared by the ELM team with input from teachers. To access the site, go directly to the URL:

https://grover.concordia.ca/resources/elm/teacher/en/.

Alternatively, from within the tool this page can be accessed on the Lobby Page by clicking on the apple (i) icon.

LESSON PLANS

ELM provides suggested lesson plans for our online activities as well as for additional themes not covered within the tool.

• Consolidation Questions: Each of the lesson plans found on the Teacher Resources page contains a section of consolidation questions. The questions are specific to the



step and are intended to guide classroom discussions. They serve as a suggested way to discuss the mathematical concepts and ensure pupils reflect and synthesize their understanding.

• Offline Lessons: In addition to the online activities, ELM has four offline lesson plans. Two of these support learning related to Number Line, while the other two introduce the idea of Mathematical Language.



PARENT MODULE

Parent Module

Parent Resources

This module provides a similar resource as the *Teacher Resources*, but it is targeted towards parents and guardians. Parents should be encouraged to access this resource to learn more about the importance of literacy and how to support use of ABRA at home.

Parent can access this resources by going directly to the URL: https://grover.concordia.ca/resources/elm/ parent/en/

8

Overview Tips Videos Resources

ELM Parent Module

on of resources to support your children's numeracy skills and use of ELM.



Transcript

How Can Parents Help?

Parents have a key role to play in helping their children develop numeracy. You don't need to be an expert—or even to love mathematics—to rouks a difference volu just need a willingness to talk about and incorporate activities focusing on numbers, counting geometry etc. If you suffer from math analysit, don't worry. You will learn how to help your child without feeling stressed.

Click here for more information



In this Parent Module, you will find information about ELM and how it supports numeracy skills. You will discover practical and fun tips for helping your child develop those skills and avoid math anxiety.

Before you get started, check out the short introductory video for an overview of ELM.



ePEARL



Introduction to ePEARL

What is ePEARL?

ePEARL is a web-based electronic portfolio software that has been designed to encourage self-regulated learning by supporting pupils as they set goals, develop and monitor strategies to accomplish tasks, and reflect on their learning.

ePEARL is best suited for educators who wish to use electronic portfolios in a pupil-centered way, but who also wish to experiment with multimedia content and a collaborative approach. ePEARL's features encourage planning, reflection, sharing and peer feedback, in addition to the creation and revision of work.

What is Self-Regulated Learning?

There are three main processes that will help pupils build self-regulatory skills: Forethought (Planning), Performance (Doing), and Self-Reflection (Reflecting). This is a cyclical process where pupils move back and forth between the steps. Developing these self-directed, lifelong learning skills will help pupils succeed in a classroom environment, as well as throughout their lives in a variety of contexts and tasks.

Learners with high levels of self-regulation:

- Have good control over the attainment of their goals
- Can focus on the process of how to acquire these skills
- Are better prepared for the 'real world'
- Feel more ownership over their learning
- Become lifelong learners

Teachers who have used ePEARL report improvements in pupils' use of SRL processes including:

- Setting process goals
- Articulating task demands
- Listing strategies
- Providing constructive feedback to peers
- Using teacher & peer comments to improve work
- Evaluating their own work





ePEARL Structure

LEVELS AND USERS

The software has three levels that fosters self-regulated learning (SRL) throughout a pupil's academic career:

- Level 1: Grades 1-2
- Level 2: Grades 3-6
- Level 3: Grades 7-12

Each level builds on the features from the previous level.

Level 1 is designed for beginning readers and writers. The interface design and the type of interaction are simplified to suit young learners. Users are introduced to basic SRL processes such as setting a goal.

Level 2 supports older pupils in the portfolio process and promotes emergent self-regulation skills. Pupils can be guided through the learning process as they set general goals for the term, specific goals for each entry, and determine strategies for achieving their goals. They are encouraged to reflect on their own work, provide meaningful feedback on their peers' work and select important artifacts for presentation at the end of a cycle (or grade).

Level 3 is designed for young adults. The SRL components are more in-depth and provide the opportunity for pupils to engage in deeper self-regulation. The software contains a toolbox, calendar, and tagging features to provide a flexible environment. Pupils can drill-down on goal setting, motivation, and reflection questions. As well, the ability to set notifications, add posts, and reply to peers', teachers', and parents' comments, creates the feel of a social media wall. Finally, pupils can customize these notifications and their homepage, which ultimately provides ownership over their portfolio.



ePEARL Features

PUPILS

- Reflect on their learning meaningfully and comment constructively on the work of their peers.
- Track their reading and writing development, and/or their presentation skills by recording directly into the computer
- Learn basic word processing commands through the use of a text editor.
- Archive selective artifacts within a presentation portfolio over the course of their academic career.

TEACHERS

- Create their own portfolios.
- Provide feedback on pupils' goals, work and reflections.
- Track the development of their pupils' learning over a term, a year, or a cycle.
- Model effective practices related to goal setting, reflection, and conferencing.

PARENTS & GUARDIANS

- Track their child's learning.
- Become actively involved in their child's education through the provision of feedback on work once it is stored within their child's portfolio.

A Closer Look at Level 1

Designed for beginning learners in early elementary classes, Level 1 provides a friendly interface that offers two main features: Reading and Creating. These are presented within the

structure of a portfolio environment as pupils are introduced to basic portfolio processes such as goal setting and reflection.

GENERAL GOALS

Pupils should be encouraged to state one or two general (or long term) goals related to the development of their reading, writing, and other types of work. These goals may be changed, deleted or added to throughout the school year. The general goals icon is visible when working on a reading or creation so that pupils may refer back to their goals when they are reflecting on their work.





My Readings

In the *My Readings* section, the software encourages recognition of the different components of a book, as pupils are required to list the book's title and author. They may also enter the name of the book's illustrator and the classmate they are reading with. Each entry is automatically date stamped. Pupils are also encouraged to set small task goals for an individual reading.

RECORDING A READING

A recorder is provided for pupils to record a reading sample (maximum set by the software administrator), which allows pupils, teachers and parents to track reading development over time. Additionally, up to three files (e.g. a scanned picture of the book cover) may be uploaded to the My Reading page.

Note: When using the recorder for the first time, users will be prompted to download a Flash Player.

TIP: Pupils can record their reading into ePEARL with a classmate. One person may be designated as the operator of the computer while the other is the reader.

PEER FEEDBACK

Once the recording is completed, the reader's partner or other classmate may provide written or recorded feedback on the reader's performance.



		, 🕗 , 🧟
My Reading	Reading Response	Reflection
Mini Detective Author Ima Quack Illustrator Isa Trickster Who I am Reading With Barry Date 12/14/18	,	My Reading
What I Wanted To Do Text I will practice pronou	ncing hard words.	
Other Stuff Files Alex - mini det view download		
Feedback	Peer Feedback ? ? P Per: Updated 12/14/18 You said big words! I think you did good. Edit Feedback ? ? You said big words! I think you did good. Save	arent Feedback



In the *Response* tab, pupils may respond to prerecorded questions related to the literature, or add a question provided by either the pupil or the teacher. Pupils must click on the *Add* button once they have selected the desired question.

Pupils' responses may be given in multiple formats, such as typing directly into the text box, handwriting an answer and uploading the scanned file, scanning a picture they have drawn, or recording an answer directly into the portfolio.

REFLECTION

The *Reflection* tab is identical to the Reading Response, but here the focus is on the learning processes. Questions and guiding statements prompt pupils to think about the strategies they used while they were reading. For example:

- What did you do when you got stuck on a word?
- How was your reading this time different from the last time you read?

My Creations

In the *My Creations* section, pupils are encouraged to employ many different skills in their work, including numeracy, writing, and arts. Pupils are introduced to basic word processing commands through the use of a text editor.

When starting work on a new piece, pupils are required to give the piece a title. Each entry is automatically date stamped. Pupils are also encouraged to set a small task goal for their work, as this promotes self-regulated learning.





Pupils may also include samples of their handwritten work by scanning and uploading files. Another way of doing this is to take a picture of the work sample and then upload the file to the pupil's portfolio.

REFLECTION

In the *Reflection* tab, pupils may select a question designed to help them think about their work process and the skills that they have acquired or need to develop. As in the *My Readings* area, pupils may choose from preset questions or pupils and teachers may add their own questions. Multiple questions may be selected. Reflections may be typed, written, or drawn and scanned in.

My Presentations

At key points during the school year such as at the end of a term, pupils should be encouraged to select their most important pieces and send these to their *My Presentations* folder. This folder is a place where pupil work can accumulate over time, as items stored here carry forward to the next ePEARL level. Everything is copied over with the artifact, including goals, reflections and feedback, and items are organized in two separate sections: **Readings** and **Creations**. Because a copy

 Alexander's Portfolio
 I Français
 LTK+
 ABRA
 ELM
 My Account
 Logout*

 Wy Readings
 My Creations
 Wy Resentations
 Image: Creations
 Image: Creations
 Image: Creations

 Mini Detective
 12/14/18
 Image: Creations
 12/14/18
 Image: Creations
 12/14/18

is transferred over, pupils should be encouraged to clean up their main portfolio environment and delete their original work so that they can start the next school year with a clean portfolio.

INTRODUCTION TO EPEARL





Pupils can save a copy of their *My Presentation* folder. If they click on the *Export* button, they can save the artifacts in this folder on their desktop. Clicking on the disk icon sends the portfolio to the desktop as a zipped (compressed) HTML file, which can then be unzipped, and burned to a CD or saved to a USB drive. Then, pupils can take their portfolio home with them! This process is designed to allow pupils to keep their portfolio as long as they want, and it is saved in a standard HTML format for easy viewing with a browser at home. Exporting is easy to do as the software guides the user through this process.

Parent Mode



Parents may only provide feedback by clicking on *Parent Mode* on the ePEARL landing page. All of their child's work will be in view-only mode. However, the *Parent Feedback* boxes will be active. They must first click on a reading or creation. When viewing that work, the feedback boxes will appear at the bottom of the page.

TIP: Teachers should encourage parents to add comments throughout the year, and to date each individual comment separately. The software will assign a date for the most recent addition only.

Other Feedback

Teachers and peers can also leave feedback for the pupil. It is important to remind pupils to always leave positive and constructive feedback for their peers.

MY FEEDBACK

This section allows others to leave general feedback on the portfolio as whole.

FEEDBACK ON ARTIFACTS

Like with parents, both teachers and pupils can leave feedback on specific readings or creations. For teachers, they access the boxes through the Manage feature. For peers, they can fill in these boxes while their peer is signed in to their account.

Feedback		
Teacher Feedback 🚱	🕐 Peer Feedback 🥝	🙆 Parent Feedback 🥝
J. Doc: Updated 12/17/18 It sounds like your friend and the kittens are luck to have found each other. Good job.	Edit Feedback 🕗	Parent: Updated 12/17/18 There are some pretty big word in this story. I can't believe how well your spelling has improved I can see that you are getting into the habit of using a dictionary!



Embedded Support

Each feature has in-context help geared towards its intended audience (pupils, teachers, or parents). Clicking on the *Information* icon @opens the help window.

The help screens vary but can include several sections:

- Explanation.
- Examples.
- What do I do in ePEARL? (technical support).
- Teacher Tips (only seen in the teacher accounts).
- Support Video (only available for key SRL skills).

This is where	e you can add content to your	What do I do in ePEA	RL?
Reading.		You can add a text editor by	clicking o
EXAMPLES			
Write a new stor	y ending in the Text editor.		
Record your first Recorder.	impression of the story using the	You can record yourself by	licking on
Attach a picture	of the book cover you drew.		

VIDEO SUPPORT

In addition to the embedded textual support, ePEARL also contains short video clips to model and support pivotal self-regulation steps. These videos provide just-in-time modeling for pupils and teachers to help integrate self-regulation theory into daily classroom practice. These videos can easily be part of the teacher's introduction of tasks such as setting goals, meaningful reflection and providing peer feedback. Pupils may access them independently in class as refresher videos for concepts they have learned and practiced offline.

The videos were designed to be level-specific and support critical information with textual reinforcement.



Using ePEARL with Other Tools

There are other LTK+ tools that can support pupils' acquisition of self-regulation learning.

ABRA-ePEARL Link

Within ePEARL there is a built-in connection to ABRA, which allows pupils to record their readings and/or to create original content inspired by the ABRA stories.

My Readings

EPEARL

Twenty digital stories are available in both ABRA and ePEARL. Each book may be viewed and read from within either program. When reading in ePEARL, pupils can record themselves reading. The recording allows a pupil, teacher, or parent to monitor and track reading development. Listening to one's own reading is proven to be an extremely effective tool for self-monitoring and consequently learning.



To record an ABRA book, pupils should go the *My Readings* section in ePEARL. Then, they should click

on the *New ABRA Reading* button, and they will be asked to choose an ABRA story.

DIGITAL STORIES

Two of ABRA's main tracking features are accessible in ePEARL: the *Repeat* button that will read the page aloud to the pupil, and the ability to click on words in the story to get help pronouncing words. This scaffolding is important for the beginner reader. ABRA provides extra help so pupils can obtain the support they need to develop reading skills, when they work independently.

A recorder is provided for recording reading samples. This allows pupils, teachers and parents to track reading development over time.







My Creations

Pupils can also practice their creative writing skills in the *My Creations* area. For example, they may link their writing to an illustration from a selected ABRA book. Teachers can encourage their pupils to write a new ending to a story or to summarize the events depicted in an illustration. Pupils can also upload images and pictures of drawings.



Pupils should go the *My Creations* section in ePEARL. Then, they should click on the *New ABRA Creation* button. They will be asked to choose an ABRA story. Following this, illustrations from the story will be presented.

PUPIL ASSESSMENT

By implementing the ABRA-ePEARL link, teachers can track their pupils' literacy development. For example, teachers can use ePEARL for assessment purposes when doing the following ABRA activities:

- Accuracy.
- Comprehension Monitoring.
- Expression.
- Prediction.
- Sequencing.
- Speed.
- Spelling Sentences.
- Spelling Words.
- Vocabulary.

ELM-ePEARL Link

The link between the ELM and ePEARL tools supports the development of pupils' selfregulated learning skills. This is an ideal space to prompt pupils to reflect on the math skills they are building and to incorporate what they have learned into their daily practices.

My Creations



To access this connection between the tools, pupils should go the *My Creations* section in ePEARL. Then, they should click on the *New ELM Creation* button. They will be asked to choose an ELM Idea.

TIP: If pupils are struggling readers, quickly guide them to select an Idea by referring to the alphabetized list instead of the Idea name.



ELM-EPEARL LINK

As soon as one of the ELM Ideas is selected, a new artifact will be created with the Idea name as the title. Pupils can then work on the artifact as they would a general ePEARL creation, but each section would relate to the ELM Idea.

Pupils can use the *What I Want To Do* section to create goals related to the Idea. For example, a goal related to Identify Shapes could be "I want to learn 2 new shapes today". Or answer the following question: What do I have to do to complete this step?

The pupils should determine if/how the *My Creation* section is used. Pupils can:

- Indicate how they practice their math skills.
- Tie these skills with other subject areas:
 - Write a story that incorporates the math skill.
 - Draw a picture of how this skill is used in real-life settings.

The *My Reflection* section can be used to consider how the mathematical concepts relate to pupils' lives and/or track their learning. Pupils can use the toolbar to create general reflections. They can also use the drop-down menu to select specific ELM reflection questions. Alternative, teachers and parents can guide pupil to write their own questions by typing them in the text field then clicking on the *Add* button.



LTK+ Managing Classes and Pupils

Managing Classes and Pupils

Accessing the LTK+ as a teacher will open up the LTK+ Lobby Page. There are two main options on this page: LTK+ Management (for the management of classes and pupils) or accessing the tools offered within the LTK+. A shortcut to the Teacher Resources page for each tool has also been provided on this screen **(b)**.

LTK+ Management

This section allows teachers to easily manage their classes and pupils in one convenient location for all the LTK+ tools.

Here, teachers can:

- Edit teacher information such as password, colour tags, etc.
- Link themselves to multiple classes
- Link pupils to their homeroom class



My Account

In My Account, a teacher can change their nickname, password, ePEARL level and define their teacher colour codes in ePEARL (only for those teachers who have ePEARL activated in their account).

30111 3 144	nage Section		V Français Li	K+ ePEARL	ELM ABRA	1515-21	Logout
Main Menu	My Account	My Classes	My Students	ELM Settings			
My LTK+ Ac	count My eP	EARL Account					
Username	smith						
Nickname							
		N					
JS		snange Nickname	0				
Old Passv	vora:						
Entor a m	www.macoword.(turino).					
Enter a no	ew password (twice):					
			Change	Password (?)			

My Classes

A list of classes – the classes that a teacher is linked to – will be displayed. Teachers are automatically linked to their homeroom class.

The pencil icon allows changes to be made to the class name and nickname.

ohn's M	anage Section		I Français L	TK+ ePEARL	ELM AE	BRA ISIS-21 Logo	ut 🗢
Menu	My Account	My Classes	My Students	ELM Settings			
14.01		Link (Links)					
edit a view a	class, click the pe class list, click th	encil icon next to th ne "View Students	e class name. in This Class" icor	۱.	0	Link Myself To More Classe	es
edita viewa inkm inkm cords	class, click the pe class list, click th yself to another ore teachers to c	encil icon next to th ne "View Students class, click "Link N one of the classes	e class name. in This Class" icor lyself To More Cla below, click the "	n. sses". Link / Unlink" tab.	0	Link Myself To More Classe	es
o edit a o view a o link m o link m cords Cla	class, click the pe class list, click th yself to another of ore teachers to co uss Name II	encil icon next to th ne "View Students class, click "Link M ne of the classes	e class name. in This Class" icor lyself To More Cla • below, click the "	ı. sses". Link / Unlink" tab. Class Nic	⊙ ckname	Link Myself To More Classe	es
o edit a o view a o link m o link m cords Cla	class, click the pe class list, click th yself to another of ore teachers to c uss Name heroom 1A	encil icon next to th ne "View Students class, click "Link N ne of the classes	e class name. in This Class" icor lyself To More Cla below, click the "	1. sses". Link / Unlink" tab. Class Nit Daniel Nyor	ckname nga's Homeroon	Link Myself To More Classe	

The class list icon opens up the list of pupils who are in the class. See the My Pupils section of this guide for more information about what can be done using this list.

There may be instances in which a teacher wishes to link himself or herself to other classes, for example, if he or she teaches two homeroom classes or is a resource, music, or technology teacher who works with many classes. This function can also be accessed in LTK+ Management.

Click on the *Link Myself To More Classes* button to add or remove a class from the list.

The chain is connected and the background is yellow when a class is linked to the teacher. When unlinked, the chain is broken and the background is white. Once linked, a teacher will be able to see the class in the *My Classes* tab.

LINKING OTHER TEACHERS TO YOUR CLASS

From the *My Classes* tab, teachers may also link other teachers to their own class by clicking on the *Link/Unlink* tab.

If the teacher does not appear in the list, he or she must be added to the database by the LTK+ sub-administrator for the school.



40	in Monu	Mr. Account	Mar Cla		Mr. Chudonto	ELM Cott	000		
viai	in Menu	My Account	My Cia	sses	My Students	ELM Sett	ngs		
	My Class	50S	Link / Unlin	k)					
То	link a tea	cher to a class	:						
1.3	Select a cl	ass.							
2	Click the c	nain icon next t	o the teache	r's nam	_				
2.	Olick the G	an ion next o		a o nami					
0	Homero	om 1A	*						
	Tiomore								
	Homere								
+ F	Filters								
+ F	Filters								
+ F	Filters							search	
+ F 10	Filters records nlink Teac	her From This	Class			N	ickname	search Username	ePEARI
+ F 10	Filters records nlink Teac Meyer, Liz	her From This	Class			N	ickname	search Username Lizteach	ePEARI level3
+ F	Filters records nlink Teac Meyer, Liz Robinson, Pi	her From This	Class			N P	ickname at	search Username Lizteach Pat	ePEARI level3 level2
+ F 10 0	Filters records nlink Teac Meyer, Liz Robinson, Pi Smith, John	her From This	Class		_	P	ickname at	search Username Liztesch Pat smith	ePEARI level3 level2 level2
+ F 10 U	Filters records nlink Teac Meyer, Liz Robinson, Pi Smith, John Teacher, Tei	her From This	Class		_	P P	ickname at	search Username Lizteach Pat smith teacher5	ePEARI level3 level2 level2 level2
+ F 10 0 20 20 20 20 20 20 20 20 20 20 20 20	Filters records nlink Teac Meyer, Liz Robinson, Pi Smith, John Teacher, Tei Teacher, tea	her From This at acher5 cher6	Class		_	N P	ickname at	search Username Liztesch Pat smith teacher5 teacher6	ePEARI level3 level2 level2 level2 level2 level2
+ F 10 U 80 80 80 80 80	Filters records nlink Teac Meyer, Liz Robinson, Pu Smith, John Teacher, Tea Teacher, tea Teacher, tea	her From This at scher5 cher6 cher6 cher8	Class			N k	ickname at	search Username Liztesch Pat smith tescher5 tescher6 tescher6	ePEARI level3 level2 level2 level2 level2 level2 level2
+ F 10 U 80 80 80 80 80 80 80 80 80 80 80 80 80	Filters records nlink Teac Meyer, Liz Robinson, Pu Smith, John Teacher, Tea Teacher, tea Teacher, tea	her From This at scher5 cher6 cher8 cher9	Class		_	P k	ickname at	search Username Lizteach Pat smith teacher5 teacher6 teacher9	ePEARI level3 level2 level2 level2 level2 level1 level2
+ F 10 U 20 20 20 20 20 20 20 20 20 20 20 20 20	Filters records nlink Teac Meyer, Liz Robinson, Pu Smith, John Teacher, Tea Teacher, tea Teacher, tea Teacher, tea	her From This at acher5 cher6 cher9 cher10	Class		_	N P k	ickname at	search Username Littesch Pat smith tescher5 tescher6 tescher6 tescher10	ePEARI level3 level2 level2 level2 level1 level2 level3
+ F 10 U 20 20 20 20 20 20 20 20 20 20 20 20 20	Filters records nlink Teac Meyer, Liz Robinson, Pl Smith, John Teacher, tea Teacher, tea Teacher, tea Teacher, tea	her From This tt tcher5 cher5 cher6 cher9 cher10 w	Class			N k	ickname et im	Search Username Liztesch Pat smith tescher5 tescher5 tescher6 tescher9 tescher9 tescher10 New	ePEARI level3 level2 level2 level2 level2 level1 level1 level3

LTKO MANAGE My Students

Teachers may view and edit pupil information within a specific class by clicking on the pencil icon 🥜 beside the name of a specific pupil.

Note: A teacher must be linked to the class the pupil is in to view the details.

If there are pupils who are not linked to a class but should be, a teacher may link them by clicking on the *Link/Unlink* tab to display a list of pupils who attend the school. Please see the sub-administrator at the school if the pupil does not appear on that list, as he or she must be added to the database.

From here, the pupil password can be changed for individual pupils, as well as the ePEARL level for those pupils who are using that tool. Note that user names may not be changed as these are set by the software when the pupil list is entered into the LTK+ database. Nicknames are defined by the pupil.

From the main pupil list, teachers can also access any tool that an individual pupil is using.

ain Menu List of Stud To edit a st To limit the	My Account My Cla	sses My Students				
List of Stu To edit a st To limit the	idents Link / Unlin		ELM Settings			
List of Stur To edit a st To limit the To link a st	idents Link / Unlin					
To edit a st To limit the		k New Work				
To limit the	tudent click the pencil icon	next to the student's name				
To link a et	view, select a class.	next to the student's name.				
10 1111 4 30	tudent to a class, click the	"Link / Unlink" tab.				
all My C	Classes v	•			6	
		<u></u>				
Filters						
3 records				search	•	l
Na	ame: First Last 🛛	Nickname	Username	Password	ePEARL	~
Bo	olduc, Joseph		arjan	1906	Level 1	
P 😡 Bo	outin, Sébastien		coco	123	Level 2	
Cr Cr	rowley, Ned		Ned	123	Level 1	
P 🔂 😥 De	emo, Student2		helen2	123	Level 2	
De De	oe, Jane		Jane	123	Level 1	
/ 🕞 📦 🛛 Gi	iglio, Lauren	LIIG	Lauren	123	Level 2	
P 🙀 Ha	ails, Sam	Sam	Sam	123	Level 1	
Ma Ma	larkle, Athena		Athena	123	Level 1	
2 🕞 😥 Me	leyer, Emily		Emily	123	Level 2	
P 🙀 Ma	iontoya, Mia		Mia	123	Level 1	
Pa Pa	alka, Edmund		Eddy	123	Level 1	
Ra Ra	aab, Kiran		raabk	123	Level 1	
Sr Sr	mith, Sally		Sally	123	Level 3	
			- ePEARL ELI			
John's Mar	nage Section	N Français LIK+		M ABRA ISIS	5-21 Logo	ut 🗘
John's Mar ain Menu	nage Section My Account My Cla	sses My Students	ELM Settings	M ABRA ISIS	5-21 Logo	out 🗘
John's Mar ain Menu	nage Section My Account My Cia	Sses My Students	ELM Settings	M ABRA ISIS	5-21 Logo	out 🗘
John's Mar ain Menu List of Stu	nage Section My Account My Cla Idents Link / Unlin	My Students	ELM Settings	4 ABRA ISIS	5-21 Logo	out 🗘
John's Mar ain Menu List of Stur Edit	nage Section My Account My Cla Indents Link / Unlin	K New Work	ELM Settings	M ABRA ISIS	5-21 Logo	out 🗢
John's Mar ain Menu List of Stur Edit First Nam	nage Section My Account My Cla Idents Link / Unlin Edmund	A Prançais LTK+ ssee My Students New Work	ELM Settings	M ABRA ISIS	5-21 Logo	out 🗢
John's Mar ain Menu List of Stur Edit First Name Family Na	nage Section My Account My Cla Idents Link / Unlin Ie Edmund ame Palka		ELM Settings	M ABRA ISIS	5-21 Logo	out⊂
John's Mar ain Menu List of Stur Edit First Name Family Na Nickname	nage Section My Account My Cla Idents Link / Unlin Ie Edmund ame Palka	A Prançais Litet sees My Students K New Work Please let students ch	ELM Settings	4 ABRA ISIS	S-21 Logo	out <
John's Mar ain Menu List of Stur Edit First Name Family Na Nickname Username	aage Section My Account My Cla Idents Link / Unlin Be Edmund Ame Palka 9 Eddy	V Français Litet sees My Students K New Work Please let students ch Let LTK+ choose t	ELM Settings	4 ABRA ISIS	<u>}-21 Logo</u>	ut¢
John's Mar ain Menu List of Stur Edit First Name Family Na Nickname Username Password	Anage Section My Account My Cla donts Link / Unlin E Edmund E Palka E Eddy E Eddy 123	K Prançais Litet sees My Students k New Work Please let students ch Let LTK+ choose t	ELM Settings	4 ABRA ISIS	5-21 Logo	out≎
John's Mar ain Menu List of Stud Edit First Nam Family Na Nickname Username Password ePEARL	Anage Section My Account My Cla donts Link / Unlin Edmund Anne Palka Eddy Li23 Level 1	K Prançais LTA+ sses My Students K New Work Please let students ch Let LTK+ choose t	ELM Settings	4 ABRA ISIS	21 Logo	out o

Figure 1 If the pupil is using ePEARL, the teacher can access it by clicking on the Portfolio icon.

If the pupil is using IS-21, clicking on the IS-21 icon will allow teachers to see the pupil's main projects in IS-21.

Cooperative Learning



Introduction to Cooperative Learning

What Is Cooperative Learning?

Cooperative Learning (CL) is a teaching strategy that helps pupils work together to achieve a common goal. Research demonstrates that CL improves pupils' achievement as well as their engagement with life-long learning.

In many classrooms, pupils work together in pairs or groups, but that doesn't mean they are benefiting from CL. During traditional group work, some pupils may contribute more than others because they are more enthusiastic, capable, or interested. Shyer or less energetic pupils may not contribute much at all. When using CL strategies, the work is structured so that every pupil, regardless of temperament or ability, must participate and reap the benefits. Therefore, for CL to succeed, several factors must be present:

- Pupils share **positive interdependence**, meaning they depend on one another for the overall success of their work. They share a goal that can only be achieved if everyone participates. In other words, each pupil's success is dependent on the other pupil's success too. It's "united we stand, divided we fall".
- Everyone must contribute equally, meaning there is **individual responsibility**.
- At the end of the work, groups reflect on what went well and what could improve in terms of listening to others, sharing ideas, and working well together.

Researchers have been interested in the effects of CL for over 50 years. They have found that CL helps pupils perform better, although how much better is still being debated. Some researchers have found very large improvements and some more modest improvements. But overall, pupils who participate in CL activities demonstrate higher levels of achievement. (For more information, see Abrami, P.C. (1995). Classroom connections: Understanding and using cooperative learning. Harcourt College Pub.)

However, CL also has an effect on other kinds of skills. When working in CL groups, pupils:

- Like the subject matter.
- Get along better with classmates and teachers.
- Feel they have support from classmates and teachers.
- Feel good about themselves as learners.

In short, CL strategies have a positive impact on the development of social skills and working cooperatively in a team, as well as the enjoyment of learning.

CL strategies can help teachers meet the objectives of the Kenya Primary Education plan, especially by helping structure group work to ensure the contributions of all pupils, while

also developing communication skills such as listening and verbally conveying ideas and information. CL also fosters critical thinking skills and contributes to a life-long love of learning.

CL doesn't have to be time-consuming or difficult. Teachers can try out very simple techniques like "pair and share," in which pupils think about an issue or a question, then turn to a partner to share their reflections. Using CL in literacy activities can be achieved by having one pupil read a sentence aloud, then the other group members "echo back" by saying the same sentence until everyone can read and say the sentence correctly. As teachers gain more confidence with CL, they can use techniques such as Sukumawiki, a reading tournament that helps teams improve their understanding of a text.

We encourage teachers to start small and persevere because the results are worth it. CL has many benefits to offer, helping pupils develop both academic and social skills.

LTK INTRODUCTION TO COOPERATIVE LEARNING **5 Steps to Cooperative Learning**

Cooperative Learning (CL) is a teaching strategy that uses positive interdependence (everyone is "in it together") and individual accountability (each person must contribute) to ensure academic success and the development of social skills. CL can be used with pupils of all ages and abilities. As well, CL can be incorporate in small but effective ways into any classroom without requiring extensive teacher preparation.

To get started with CL, teachers must focus on five key steps:

- 1. **Foster positive interdependence**: Group activities must be structured so that all teams members "sink or swim" together. In other words, the success of one increases the success of the entire team. There are many ways to do this including providing common goals, asking pupils to share resources, assigning roles, or giving team rewards.
- 2. **Structure individual accountability**: There are two parts to this accountability:
 - Each person is responsible for his or her own learning.
 - Each person is responsible for helping team members learn.

Teachers can encourage individual accountability by having team members sign their work indicating everyone has participated, by randomly selecting a team member to report on the group's work, or by assigning and monitoring group roles.

- 3. **Group pupils carefully**: When using CL, teachers may assign pupils to different sizedgroups (pairs, triads, groups of 4-6). They may assign them randomly or use some criteria (such as ability) to group them. Ideally groups should be gender balanced. Depending on the project, pupils may stay in groups for a few minutes or over several work periods.
- 4. **Support the use of good social skills**: Using CL both encourages the development of social skills and requires the use of them. Some pupils may need direct instruction and modelling on using the appropriate social skills in a group setting. Classes may benefit from some simple "cooperative learning" rules such as every person gets equal time to be heard, each person must participate and help the team, and each group member must take on a specific role to help the team succeed.
- 5. **Reflect on the group experience**: After a CL activity, pupils take time to think or reflect on how the group worked together, what went well (stars) and what could be improved (wishes). There are many ways to encourage reflection: by asking pupils to rate their team's work, having them answer reflective questions, etc.

Teacher Aids

Quick Guide: Cooperative Learning Strategies

There are many ways a teacher can incorporate cooperative learning into their teaching, ranging from simpler activities (Beginning Strategies) to complex approaches (Advanced Strategies) that require more time, planning, and resources.

BEGINNING STRATEGIES

Think-Pair-Share

- Teacher asks pupils a question (for example: what things to you do in the morning to get ready for school?).
- Pupils have a few minutes to think about their answers.
- Teacher then pairs up pupils.
- Each pair shares and compares their answers.
- Teacher may then ask one pupil from each group to share what they learned.

Variation: Think-Pair-Share-Square

- Once the pairs have finished comparing answers, put two sets of pairs together (the "square").
- Pupils share their responses.

Rally Robin/Round Robin

- In pairs (Rally Robin) or in a larger circle (Round Robin), pupils respond one by one to the teacher's question, such as "how many things in this room begin with the letter A?"
- Each pupil must contribute.
- Group members must listen respectfully and quietly.

Brainstorming

- In a pairs or larger groups, pupils think up as many ideas as possible on the topic (for example, how many different ways can we think of to travel from home to school?).
- It can be helpful to assign roles as well (see below).

Echo Reading

- In pairs or groups, one pupil reads part of a text.
- Then the other pupil(s) read back, or echo, what was just read.



Role Assignment

- Each person in a pair or a team (best to limit teams to 4 people) is given a particular role. Popular roles include:
 - Recorder: writes down the group's ideas and decisions.
 - Time Manager: makes sure the group finishes on.
 - Reader: reads aloud any materials and checks that everyone understands.
 - Facilitator: invites everyone to participate and to work well together.
 - Encourager: praises people and encourages them to keep working hard.
 - Observer: watches how the group is working together and notes any problems to be discussed during the group reflection phase.
- In the ABRA materials, we suggest the following roles:
 - Speed Captain: puts on the time pressure to ensure the tasks get done.
 - Super Supporter: encourages all ideas without passing judgments.
 - Synergy Guru: encourages teammates to build on each others' ideas.

Interviewing

- In pairs, pupils take turns asking each other questions, such as "It is the day of Lea's birthday party. What should you what would you buy at the grocery store for the party?"
- The pairs then share what they've learned with the larger group.

ADVANCED STRATEGIES

Jigsaw

- Best for material that does not have to be mastered equally by all pupils.
- Divide material into sections.
- Assign sections to different members of the team.
- Team members work with pupils from other groups who have the same material (section of the jigsaw) to master the material.
- Pupils return to their home group and teach the others the material.

Student Teams-Achievement Divisions (STAD)

- Assign pupils to ability-balanced teams.
- Provide instruction to the whole class.
- Have teams study material together.
- Give pupils quizzes individually.
- Average team members' individual scores and offer extra points for pupils whose scores improve after each quiz.
- Share the results at the school and with parents.

Teams-Games-Tournaments (TGT)

- Assign pupils to ability-balanced teams.
- Provide instruction to the whole class.
- Have teams study material together.
- Organize tournament tables where pupils compete in games to earn points.
- Distribute points: the points earned by pupils are assigned to a team score.
- Share the results at the school and with parents.

Sukumawiki

- This is variation of TGT, but adapted for reading practice.
- Select stories that are challenging to the majority of the class.
- Assign pupils to teams, with two or more teams reading the same story
- Have team members study the story, either individually or in pairs/triads.
- Create team tables, with a piece of paper at the centre as the sukumawiki.
- Assign team members to tables with others who have read the same story.
- Select one pupil to be the reader. S/he will start reading the story, soon leaving out a word and substituting in the word "sukumawiki."
- The other pupils at the table compete to touch the paper first. The person who does so gets to say the correct word that was left out.
- Give one point for each correct word.
- Rotate the roles of reader and participants, so each person has a chance to read.
- Add up the points and assign them back to the team.

LTK INTRODUCTION TO COOPERATIVE LEARNING Fostering Social Skills & Managing Classroom Conflict

SOCIAL SKILLS IN THE CLASSROOM

Cooperative learning activities require pupils to develop and practice many social skills such as:

- Using people's names
- Smiling and making eye contact
- Praising
- Taking turns
- Helping
- Sharing
- Disagreeing politely
- Listening actively
- Encouraging
- Negotiating



Note: See Chapter 8, p. 90 of Classroom Connections for a comprehensive list of interpersonal skills important in cooperative learning.

Every class and even every group will have differing abilities to use appropriate social skills when working cooperatively. In other words, a teacher will have both stars and wishes for their pupils. That teacher must decide which skills most need development and practice. Then they can help their pupils with this process.

USING A T-CHART FOR SKILL DEVELOPMENT

To help a class develop a specific skill, consider using a T-Chart, like the one below:

Name of Skill to be Taught	(Active Listening, for example)
Looks Like	Sounds Like
Look at the speaker Smile Lean toward speaker Nod your head	"I like your idea" "That sounds like a great plan" "Tell me more"

To use the T-Chart, ask pupils, "If I were observing your group, but couldn't hear what you said, what would you be doing that shows you are using this skill?" Then write down the non-verbal examples on the left under "Looks Like."

Then, ask pupils, "What phrases or words would you say to each other when using this skill?" Then write down the verbal examples on the right under "Sounds Like."

When pupils are working in groups, given them a copy of the T-Chart or display it in the classroom.

Monitor the groups, praising pupils when they use the skill and helping them to practice the skill while in the group.

Ask pupils to reflect on how well they integrated the skill, making reference to items on the T-Chart if appropriate, after their cooperative learning work.

MANAGING CONFLICT RESOLUTION

Conflicts are a normal part of classroom life—and of cooperative learning. However, pupils may find it difficult to resolve their differences in constructive ways.

Professors David W. Johnson and Roger T. Johnson, both leaders in cooperative learning, have also developed a set of steps to help pupils solve conflicts (Johnson and Johnson, 2002). When faced with disagreements, pupils:

- 1. Describe what they want: for example, "I want to use the blue pencil."
- 2. Describe how they feel: "I'm feeling frustrated because I can't use it."
- 3. Describe why they want and feel these things: "I am working on a picture for my project and need the blue pencil. You have been using it for more than 20 minutes. The class is ending soon and I am frustrated that I may not finish my project."
- 4. Take the other person's perspective by describing what the other person's wants and feelings are: "I know you also have a project to finish too and you are excited about drawing well."
- 5. Develop three different plans to resolve the conflict: The plans A, B, and C should be fair to both sides.
- 6. Agree on one of the plans and implement it together.

Teaching pupils to resolve their conflicts effectively takes time and practice. However, it is a valuable skill that pupils will use over and over, in the classroom and in life.

Jigsaw

As the name suggests, Jigsaw activities use a divide-and-conquer approach. The subject material is divided into sections and assigned to different pupils to master. Then, pupils come together with their team and share their knowledge.

To create a Jigsaw project:

- Divide, or "jigsaw," the subject material into 4-6 sections.
- Create teams with 4-6 pupils.
- Assign a different section of the material to each pupil in the team. Make sure all the sections, or jigsaw pieces, are represented on the team.
- Team members may work individually to master the material or they may form study groups with pupils from other teams who have the same material.
- Once the material is learned, pupils return to their teams.
- Pupils teach or share what they have learned with the team.
- Then the team demonstrates to the entire class how they have created a complete project (jigsaw puzzle) out of the different pieces.

Jigsaw takes more time to organize and carry out because the teacher must find appropriate work to divide into sections. As well, the material should not have to be mastered equally by all pupils.

This technique is effective because it builds in **individual accountability** (each team member has a part of the jigsaw puzzle) and **positive interdependence** (the work—puzzle—cannot be finished without the contributions of all members).



Student Teams-Achievement Divisions (STAD)

This cooperative learning strategy uses team competition to motivate pupils and ensure they all have opportunities to succeed.

Student Teams-Achievement Divisions (STAD) is based on pupils working together in teams, then taking quizzes or tests individually but earning points for their team. STAD uses whole class instruction, team study, and frequent evaluation. STAD is appropriate for a lesson that extends over several teaching



periods and uses regular quizzes or tests to evaluate pupils. *Please refer to the Cooperative Learning Pt 2 slides and Classroom Connections, Chapter 11 for detailed STAD information.*

There are six steps involved in STAD:

1. Assign pupils to balanced teams.

- Create teams with four or five pupils of mixed ability and gender.
- Teams should have a similar average ability (i.e. higher-achieving and lowerachieving pupils should balance out the overall team achievement).
- 2. Instruct the whole class.
 - Provide instruction to the entire class on the topic being covered.
- 3. Have pupils study in teams.
 - Ask pupils to study together in their teams instead of doing individual or pair work (for example, worksheets).
 - Remind pupils that each team member must master the material.
- 4. Give individual quizzes/tests.
 - On a regular basis, usually once a week, give pupils quizzes or tests individually.
 - Score each team by adding up and then averaging the team's score.

5. Assign improvement scores.

- Give individual pupils additional points for their team based on how much they, individually, improve each week.
- Remember that improvement points ensure team members contribute equally to the team's success regardless of ability.

6. Share the results.

- As soon as possible after the quizzes, recognize and congratulate teams.
- Use posters at school or notes home to parents to share the results.

Notes

- STAD does not have any built-in opportunities for reflection, both in teams and individually. Teachers may want to incorporate reflection time into their lesson plans.
- STAD also assumes pupils will develop or already have the necessary social skills to study effectively in a team. Teachers may need to provide support and encouragement for certain social skills in order for teams to function well.

Teams-Games-Tournaments (TGT)

Teams-Games-Tournaments (TGT) uses competition between teams to motivate pupils and ensure they all have opportunities to succeed. It is very similar to Student Teams-Achievement Divisions (STAD), except that pupils compete in evaluation tournaments instead of completing quizzes individually.

Like STAD, this method uses whole class instruction, team study, and frequent evaluation. TGT is appropriate for a lesson that extends over several teaching periods



and uses regular quizzes or tests to evaluate pupils. *Please refer to the Cooperative Learning Pt 2 slides and Classroom Connections, Chapter 11 for detailed TGT information.*

There are six steps involved in TGT:

1. Assign pupils to balanced teams (same as STAD).

- Create teams with four or five pupils of mixed ability and gender.
- Teams should have a similar average ability (i.e. higher-achieving and lowerachieving pupils should balance out the overall team achievement).
- 2. Instruct the whole class (same as STAD).
 - Provide instruction to the entire class on the topic being covered.

3. Have pupils study in teams (same as STAD).

- Ask pupils to study together in their teams instead of doing individual or pair work (for example, worksheets).
- Remind pupils that each team member must master the material.

4. Participate in tournaments.

- Regularly organize tournaments, in which pupils from different teams are assigned to ability-homogenous tables.
- At the tables, pupils compete to answer questions correctly, thus earning points for their team.
- After completing one "game" or set of questions, pupils may be rotated to new tables based on their performance.

5. Calculate points.

- Calculate each pupil's points based on his or her performance in the tournament (top scorers earn, for example 6 points, middle scorers earn 4, and low scorers earn 2). Each member contributes to these points to his or her team.
- Determine the total points for each team to have the team score.

6. Share the results.

- As soon as possible after the tournaments, the team scores should be shared with the class, the school, and parents.
- Use posters at school or notes home to parents to share the news.
- Highlight teams meeting certain criteria, such as a team average of 4.0 giving "good" status, 4.5 "great" status, and 5.5 "super" status.

Notes

- TGT does not have any built-in opportunities for reflection, both in teams and individually. Teachers may want to incorporate reflection time into their lesson plans.
- TGT also assumes pupils will develop or already have the necessary social skills to study effectively in a team. Teachers may need to provide support and encouragement for certain social skills in order for teams to function well.

Sukumawiki

Sukumawiki is a variation on Team-Games-Tournaments (TGT) cooperative learning but adapted for reading practice.

Getting Started

- Create mixed ability teams of 4 to 6 readers.
- Select stories that are challenging for the majority of pupils.
- Assign stories to teams, ensuring at least two teams are reading the same story.



- Ask teams to read and study their story thoroughly.
- Remind them they will have to read the story aloud.
- Pupils may work in pairs, triads, or individually, using any technique they like such as echo reading.

Tournament Tables

- Tables should seat four to six pupils.
- At the centre of each table, place a small piece of paper, which represents the sukumawiki.
- Assign pupils who have read the same story to the same tournament table. Ideally, no pupil from the same team is at the same table. This may not be possible.

Tournament Rules

- One pupil at each table is named the first reader.
- The reader begins reading the story, but soon leaves out a word in the text, saying "sukumawiki" instead.
- When hearing "sukumawiki," the remaining pupils at the table touch the sukumawiki (piece of paper).
- Whoever touches the paper first gets to speak.
- This pupil then says what should be the correct word.
- The pupil earns a point for being right.
- The reader continues for several tries (up to five), then the role of reader rotates to another pupil.

Tips for Success

- Ensure that everyone has both a chance to read and to provide the correct word
- Remind pupils to substitute "sukumawiki" for an important word in the sentence not for "the" or "and."



- The teacher may need to assist some readers, perhaps by quietly pointing to a word, in making their selection of words to leave out.
- Add up pupil points at the end and assign them to the team.



References

Bailey, B., Arciuli, J., & Stancliffe, R. J. (2016). Effects of ABRACADABRA literacy instruction on children with Autism Spectrum Disorder. Journal of Educational Psychology. Advance online publication. [http://dx.doi.org/10.1037/edu0000138]

Bailey, B., Arciuli, J., & Stancliffe, R. J. (2017). Effects of ABRACADABRA instruction on spelling in children with Autism Spectrum Disorder. Scientific Studies of Reading. 21(2), 146-164. [https://doi.org/10.1080/10888438.2016.1276183]

McCarthy, T. (1996). Teaching Genre: exploring 9 types of literature to develop lifelong readers and writers. Missouri: Scholastic Professional Books.

McNally, S., Ruiz-Valenzuela, J., & Rolfe, H. (2016). ABRA: Online Reading Support. Evaluation Report and Executive Summary. Retrieved from Education Endowment Foundation website: https://educationendowmentfoundation.org.uk/public/files/Projects/ Evaluation_Reports/EEF_Project_Report_ABRA.pdf

Wood, E., Grant, A.K., Gottardo, A., Savage, R. & Evans, M.A. (2016) Software to promote young children's growth in literacy: A comparison of online and offline formats. Early Childhood Education Research Journal. http://dx.doi.org/10.1007/s10643-016-0779-9



Literacy and numeracy are the foundations of a child's education. To help young people develop these important skills, the Centre for the Study of Learning and Performance (CSLP) has created a suite of educational software tools called the Learning Toolkit+ (LTK+) which encourage children to acquire, practice and use literacy, math, and self-regulated learning skills.

This guide focuses on the use of the LTK+ tools **ABRACADABRA** (A Balanced Reading Approach for Children Always Designed to Achieve Best Results for All), **READS** (Repository of EBooks And Digital Stories), and ELM (Emerging Literacy in Mathematics), along with links to the electronic portfolio **ePEARL** (Electronic Portfolio Encouraging Active Reflective Learning). Also included is material to assist teachers in incorporating cooperative learning techniques into their classrooms.

The material has been developed in close partnership with teachers in Kenya to support and reflect their specific teaching context. The guide provides teachers with:

- Clear and detailed information on using ABRACADABRA, READS, ELM, and ePEARL in the classroom.
- Lesson plans for incorporating the tools into the classroom.
- Teacher aids for quick reference and support.
 - Information and tools for using cooperative learning techniques.



