

INQUIRY PROCESS: EXPLORE

Lesson Plan

Purpose: Once students have decided which appropriate resource(s) they need, they will begin to explore the retrieval tools that are available for each resource. This particular lesson will focus on helping students explore the types of search tools available for searching websites (i.e.: search engines and directories) and evaluating the search results retrieved in such tools.

OUTCOMES

LESSON GOALS	QEP COMPETENCIES
<p>Students will be able to...</p> <ul style="list-style-type: none"> Explore a variety of appropriate search tools (based on the type of information they are looking for) for each Little Question using effective search strategies. 	<p><i>Languages: English Language Arts</i></p> <ul style="list-style-type: none"> 1 – To read and listen to literary, popular and information-based texts 3 – To represent her/his literacy in different media 4 – To use language to communicate and learn <p><i>Cross Curricular</i></p> <ul style="list-style-type: none"> 1 – To use information 3 – To exercise critical judgment 5 – To adopt effective work methods 6 – To use information and communication technologies 8 – To cooperate with others 9 – To communicate appropriately

Materials:

- “Unknown” object.
- Computers with Internet access.
- Whiteboard and markers.
- Interactive whiteboard (connected to the Internet).
- *Optional: Worksheets of the Explore exercise (see the teacher resources page for the worksheet).*
- *Optional: Take your students to the school library and use the resources available to you there (including the OPAC).*

UNKNOWN OBJECT

- 1) *Provide* students with an image of an object that they would be unfamiliar with. Alternatively, you can bring in a physical object.
- 2) *Ask* students if they know what it is, or how it is used, and when it was invented. If you have selected an object that the class is unfamiliar with, they will quickly realize that they cannot answer these questions yet.
- 3) *Have* them brainstorm ideas on how they will find out more about the object.

Teacher Tip

If you are having difficulty thinking of an object that students would be unfamiliar with then you can select a historical event or a pop culture icon from before their time.

- 4) *Form* student groups to use the Internet to see if they can identify the object. Students should attempt to find out the name of the object, or its purpose, or its uses. Take note of what search terms they are using, but do not provide any clues at this stage.

Teacher Tip

If they are having trouble locating information on the Internet, review some of their initial brainstorm ideas on how they can find out information about the object. Are there any offline resources they can use? Get students to think about the people, places and tools they have at their disposal to find this information.

You can repeat this activity with a few objects so that students can see that different resources might be useful for different needs.

WEB SEARCH TOOLS

- 1) *Draw* two columns on the whiteboard.
The headings should be “Search Engines” and “Directories”.
Optional: *you can also add “Metasearch Engines” if you would like to introduce your students to them as well.*
- 2) *Ask* which search tools students used to search the web.
- 3) *Write* the names of the tools students list in the appropriate column on the board.
- 4) *Ask* students if they were satisfied with the results.
How many hits did they receive? Were the sources useful?
- 5) *Provide* students with a definition for each of the tools.
Search Engine: An Internet software program that creates huge databases of words from web documents. Search engines send out “spiders” or “robots” to crawl through web files and index them. Examples: Google and DuckDuckGo.
No search engine indexes the entire web.

Directory: A special kind of file used to organize websites into a hierarchical structure. Internet directories begin with broad categories and become more specific as one browses the hierarchical list. Examples: Yahoooligans, Fact Monster, and KidsClick.



Optional: Metasearch Engine: A search engine that searches multiple search engines simultaneously. Examples: Yippy and Metacrawler.

- 6) *Project* the results from a search engine page.
Go to Google and type in a search that one of the teams had previously used. Take note of the number of results that were retrieved and read the first three results as a class.
Remind students that search engines do not search the entire web. You can compare the results of 2 different search engines to illustrate that different search engines would return different results.
- 7) *Project* the results from a directory.
Go to Yahoo and do a similar search. Read the first three results as a class.
- 8) *Demonstrate* how a directory works.
Point out that you had previously used the search toolbar, but you can also use the broad categories and narrow those down into more specific categories. Go through some examples with them.
- 9) *Ask* students to compare the results from the 2 types of tools.
Inform students that directories can be useful when you have a broad topic and need to focus it but are not sure of the different ways to get more specific.
- 10) **Optional:** *Review* with students when they should use a metasearch engine.
 - As no search engine searches all websites, using a metasearch engine would cast a wider net by retrieving more information.
 - You want to see if websites or web documents are available for a certain topic.
 - A metasearch engine will help you see the best search engine to conduct your search.

EXPLORING RESOURCES FOR THEIR TASK


- 1) *Have* students log into IS-21.
Students should navigate to the IS-21 task that they created. They should be on the **EXPLORE** step.
- 2) *Tell* students to select the Internet button in the **EXPLORE** step.
This class will focus on exploring potential sources for the Little Questions they think they need the Internet for.

Teacher Tip

The focus is on Internet resources, but you could also visit your school's library. Print out and use the 'School Library' worksheet.

Request that parents and guardian take students to community resources that would help with locating information for their task.



- 3) *Have* students select the Search Engine tab.
- 4) *Direct* students to select one of their Little Questions.
In the previous step they connected Little Questions they felt needed an Internet resource to answer their information need.
- 5) *Select* a search engine.
You can suggest a search engine for students to try or direct them to IS-21's list of recommended search engines. Have students click on the Web icon  to get to our list of recommended search engines and directories.
- 6) *Entering* the search string, students should examine the search results.
Students should enter their full search string into the search engine's search box. Ask students to take note of how many results were found. Have them read the first page of results carefully.

Teacher Tip

Have students either open multiple tabs or print their results so that they can easily compare two search results. With their partners they should determine which one is better for their needs and verbalize why they feel that way.

This can also be done with the results of 2 different search engines. This will let them see that even using the same search string can result in different sources being available from different search engines.

- 7) *Revise* the search strings as needed.
- 8) *Direct* students to mark down their process in the **EXPLORE** step.
Students should use IS-21 to record the tool they were using, a URL of the results, and determine if this method is successful for future searches.
- 9) Repeat the process with a directory.
You can suggest a directory for students to try or direct them to IS-21's list of recommended directories.

Teacher Tip

If students are using a search engine that has a "related searches" features, suggest that they take a few moments to look it over. This will show how other people have searched for their topic. It might give them ideas for alternative keywords or appropriate synonyms for the field.

- 10) *Explore* each Little Question in either a search engine or directory.
Students should do this preliminary search for all of the Little Questions that they indicated needed an Internet resource. You can assign this for homework if there is not enough class time.



11) Use the **Report** feature of IS-21 to review the students' work.

ePEARL Users

Remember the Report may also be viewed in a student artifact. Think about viewing it there and providing feedback through the Teacher Feedback feature.

Optional Modifications to the Lesson

If you plan to bring students to the school library to explore that resource, then you might want to do a preliminary search before to ensure that your library contains resources on your topic. You could also have them explore the OPAC beforehand. If your students have no experience with the library's OPAC then invite the school librarian to give them a short tutorial.

If IS-21 does not have a direct link to your school board's OPAC, contact your IT department.

Use the worksheet entitled School Library if you take students to the library.

REFLECTION

For students that have completed the step quickly, suggest they use the extra class time to begin reflecting. Direct them to the reflections window in IS-21 and suggest they use the prompts as needed. There are additional prompts listed on the teacher resource page if you would like to have them broken down by each step.

This is an individual task. Students should not be completing this portion with their group member(s). Even if reflection is not a big part of your classroom, we recommend that you have students reflect at least once.

ePEARL Users

There are two locations that students can reflect- either within their IS-21 task or within the ePEARL artifact that is automatically created whenever a new IS-21 task is started. The reflection ends up in the same place though!

This lesson is an adaptation of a lesson from AT&T/UCLA's *Initiative for the 21st Century Literacies*' teacher resources. It was modified with permission.

