

## Integrating Multiple Sources

As an educator, you may wish to collect particular materials for all students to analyze rather than ask students to collect materials across a range of topics. In these instances you can use *Science Reference Center* to collect, organize, and share materials with your class.

If you are assessing a student's ability to summarize multiple articles, pull the central ideas from a scientific text and combine these to form a cohesive argument or product, you may prefer all students to use the same content. The following is an example of how the educator can pull together materials for a lesson and how students will interact with these materials to complete an assignment. Teachers can modify this lesson to match any grade level.

### Objectives

Students will be able to:

- Identify central ideas and key details from multiple sources
- Summarize findings and draw a specific conclusion
- Integrate technical information from text with a visual form (infographic)
- Model the flow of energy among living and nonliving parts of an ecosystem\*\*

### Standards

CCSS.ELA-Literacy.RST.6-8.2, CCSS.ELA-Literacy.RST.6-8.9, CCSS.ELA-Literacy.RST.6-8.7, NGSS MS-LS2-1\*\*, NGSS MS-LS2-3\*\*

\*\* *This objective and associated standards can be interchanged with any desired topic and associated Science Standard (i.e. another NGSS DCI or specific state standard).*

### Materials

1. Computer/laptop/tablet
2. Access to *Science Reference Center*

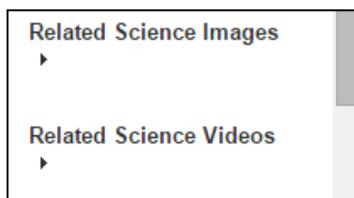
### Procedures

#### Educator:

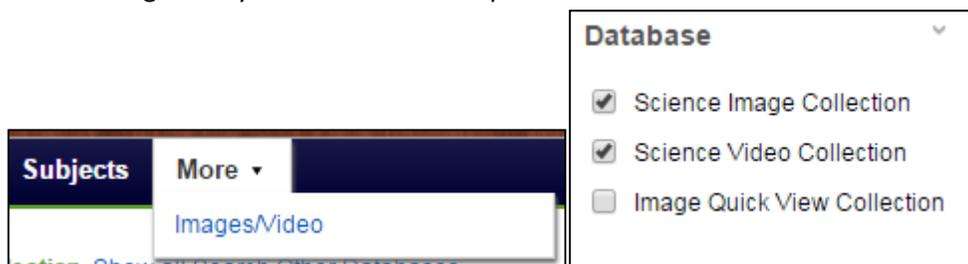
1. Sign in to *Science Reference Center* to ensure you can access and save to your folder.
2. Collect multiple resources on the designated topic to provide to students.
  - a. Identify one or more resources appropriate for the topic and students' abilities.
    - i. Click through the Browse by Category: **Life Science > Ecology & Ecosystems** and choose an ecosystem that aligns with your curriculum.
      1. Click on advanced search to see more limiter options (e.g. **Lexile Range, Document Type**, etc.)
      2. Searches can be refined by adding the word "AND" along with another keyword to the search string (e.g. **AND energy**)
    - ii. Run a Basic Search using two or more keywords (e.g. **ecology AND web**)

iii. Find Video and Image content

1. Click on Related Science Videos and Related Science Images, if available



2. Search for images and video specifically by scrolling over **More ▼** on the toolbar using 1-2 keywords and Limit to specific databases.



- b. Add desired resources to the folder.

- i. Click  Add to folder for each desired resource.

- c. Collect resources from the folder to share with class

- i. Click on the folder icon  Folder on the top toolbar to access your folder.
- ii. Select all content you wish to share with the class.
- iii. Print/Email/Save content based on how you will share with the class. (e.g. if sharing digitally, documents may be emailed or saved to the computer)

3. Provide students with materials via school technology (Moodle, Blackboard, Desire2Learn, etc.)
4. Provide assignment instruction to students.
5. Extend by sharing suggestions for independent study and further research using the database.

### Student:

1. Access resources - Students will access all resources provided by the educator via school technology.
2. Read and assimilate content to identify common themes, concepts, arguments - Students will draw on study skills and tools to organize ideas across resources.
3. Summarize major points and analyze multiple sources to integrate into a single argument or statement – Students may use notebooks or school technology to create a draft of their summary and analysis.
4. Design a model to visually explain the argument/statement – Students may collaborate in groups or work independently at the educator’s discretion to translate their summary/analysis from text into a visualization of the concept.
5. Using available technology (iPad apps, computers, etc.) or craft/engineering supplies, publish an infographic which describes your argument/statement using text and graphics. This is a great opportunity to use AppSmashing skills! (To learn more about AppSmashing, [watch this video.](#))

### Assessment

**Formative Assessment:** Review students’ design model, either evaluate rough drafts of their visualization or evaluate individuals taking part in group discussion of their design.

**Summative Assessment:** Review final Infographic and/or student presentation of the infographic.