Subject Areas: Science

Grade Level: 6 – 12 (ages 11-18)

Time: At least two 45-minute class periods; time outside of class as necessary

Lesson Objective:
Students will better understand and construct a visual model of a natural cycle.

Common Core State Standards¹:
College and Career Readiness Anchor Standards for Reading:
Standard 7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
College and Career Readiness Anchor Standards for Writing:
Standard 7. Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

Overview:
Visual communication is often the best way to understand and communicate the complex cycles and interactions that take place in the natural world. For example, one diagram of the carbon cycle can do more to help students comprehend the movement of carbon through living and nonliving things than many pages of written text or hours of lectures. In this lesson, students use the Cycles in Nature template to construct a visual model of a natural cycle: Webspiration Classroom™ Starter>Starter Docs>Science>Cycles in Nature. Four ideas of cycles in nature are provided; students may choose one or an entirely different cycle to diagram.
Preparation:

• This lesson requires Internet access and the Webspiration Classroom software application published by Inspiration® Software, Inc. It can be accessed by visiting <http://www.webspirationclassroom.com>.

• Access to library resources would also be helpful for student research.

Lesson:

1. Demonstrate for students how to open the *Cycles in Nature* template using a data projector, if available. Explain to students that there are many natural cycles and systems, including the four types shown on the diagram.

2. Model for students how they can create a visual representation of one of the cycles or an entirely different one. Select one of the cycles, such as the Nitrogen Cycle, and drag its Symbol into the center of the diagram. Then delete the other symbols. Explain that students will conduct research on their chosen cycle and add the details into Symbols and link text, creating more Symbols and modifying the diagram as necessary. Notes can be used to record additional details.

3. Optional: Show students the example file ([Webspiration Classroom Starter>Examples> Science>Cycles in Nature Example]) so they have a better understanding of a completed cycle diagram.

4. Have students choose a partner who is interested in researching the same cycle and have them open the *Cycles in Nature* template. Teams can use library resources and/or the Internet in the research process. Encourage students to use Symbols from the Symbol palette and/or their own images from outside sources to add visual meaning to the diagram.
5. Students can collaborate on their diagrams and obtain feedback from the teacher and their peers using the collaboration tools. Documents can be shared with others using the **Collaborate Tab**. The **Comment Tab** can be used to comment on the document, or the **Chat Tab** can be used, if it is turned on at your school, to discuss ideas in real time.

6. Have teams make presentations to the class about their natural cycle, using their diagrams as a visual aid. Encourage students to ask clarifying questions and offer suggestions for improvement.

**Adaptations / Extensions:**

- Allow time for teams to revise their concept maps based on feedback given when they present to the class.

- Each student could write a paper which explains their natural cycle. They can download their projects to Inspiration® or a word processor, or transfer it to a Google Doc, to complete the writing process.

- Diagramming the life cycle of an organism is a simpler choice than the others ideally suited for younger students or those with special needs.

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