

# Gale Lesson Plan

## Science In Context: Life Cycles

**GRADE LEVEL:** 9-12

**SUBJECT/CONTENT:** Science/Biology

**SUMMARY OF LESSON:** Students will construct, compare, and explain the life cycles of several different organisms. Students will create a Powerpoint to share their research results with the class.

**FOCUS QUESTION:** What changes do different organisms undergo during their life cycles, and what process causes those changes to occur?

**RESOURCE:** *Science In Context*

**LEARNING EXPECTATION:** As a result of activities, students will understand how organisms develop and be able to explain the changes an organism undergoes as it matures.

**TIME FRAME:** 2-3 class periods

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### PROCEDURES:

#### Steps/Activities by the Teacher:

- In a class discussion, explain that most organisms undergo a series of changes from the time of conception to maturity, the stage when they can produce offspring of their own.
- Explain that different species develop in different ways. Some organisms—such as mammals, fish, and birds—have relatively simple life cycles. They are born and they develop into adults. Other organisms—amphibians and insects—undergo more dramatic changes as they develop. This is sometimes called metamorphosis. The process of metamorphosis may involve the organism living in a completely different environment during various developmental stages.
- Divide students into groups of four.
- Assign each group an organism to research. For example, one group might research the life cycle of a frog while another might examine the life cycle of a parasite. Be sure to include a variety of organisms for the students to research.
- Assist students in accessing *Science In Context*. Students should search for information about their specific organism and use the Life Cycles topic page.
- Have students locate the following information as they research the life cycle of their organism:
  - How does the organism reproduce? Sexually or asexually? Does the organism lay eggs, produce live young, or reproduce in another manner?
  - How long is the organism's gestation period?
  - Does the organism have a simple or complex life cycle?
  - How long is the organism's reproductive stage? Can the organism reproduce multiple times?
  - What are the different stages the organism undergoes as it develops?
  - Does the organism undergo metamorphosis?
  - How long does it take for the organism to develop into a mature adult?

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- Have students find pictures of the organism at each developmental stage and use articles or documents to support their findings. Students should explore all of the content types during their research.
- Encourage students to use the tools *Science In Context*. They can use the **Highlights and Notes** tool to spotlight, take notes, and annotate information they find in their research. To save their search results, they can **Send to Google Drive, Send to OneDrive, Print, Email, or Download**. Remind students they will be required to hand-in a bibliography with their Powerpoint, and show them how to use the **Citations Tools** on each document in *Science In Context*.
- Once the students have completed their research, allow each group time to use the computers to create a PowerPoint presentation on the life cycle of their organism. Tell students to include the pictures they have found in their presentations. Have each group write a brief explanation of the life cycle of their organism to go along with their PowerPoint presentation
- Have each group share their PowerPoint presentation with the rest of the class.
- Once all of the presentations are over, lead students in a class discussion comparing the life cycles of the different organisms.
- Each group will hand-in their PowerPoint presentation, brief explanation, and Works Cited or Bibliography.

### Steps/Activities by Student(s):

- In your group, use *Science In Context* to research your assigned organism. Use the Life Cycles topic page to find information about your specific organism.
- As you complete your research, be sure to collect the following information about the life cycle of your organism:
  - How does the organism reproduce? Sexually or asexually? Does the organism lay eggs, produce live young, or reproduce in another manner?
  - How long is the organism's gestation period?
  - Does the organism have a simple or complex life cycle?
  - How long is the organism's reproductive stage? Can the organism reproduce multiple times?
  - What are the different stages the organism undergoes as it develops?
  - Does the organism undergo metamorphosis?
  - How long does it take the organism to develop into a mature adult?
- Locate pictures of the organism at each developmental stage and use articles or documents to support your findings. Explore all of the content types during your research, including Featured Content, Reference, Video and Images.
- When you find articles and documents to support your findings, use the **Highlights and Notes** tool in *Science In Context* to annotate, take notes, and spotlight key points. Use the **Citation Tools** on each article or document in *Science In Context* to cite your sources and create a bibliography or Works Cited. Save your research with workflow tools like **Send to Google Drive, Send to OneDrive, Email, Print, and Download**.
- Once your research is complete, use the computers to create a PowerPoint presentation on the life cycle of your organism. Include the pictures you have found in your presentation.
- Write a brief explanation of the life cycle of your organism to go along with your PowerPoint presentation. Include your Works Cited.
- Choose one group member to read the explanation during your presentation.
- Once all of the presentations are over, you will participate in a class discussion about the different ways that organisms develop.
- Hand-in your group Powerpoint presentation, brief explanation, and Works Cited or Bibliography.

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**OUTCOME:** Students will be able to explain to others how and why organisms undergo changes during their life cycles.

### RELATED ACTIVITIES:

#### Math

Students can calculate the average length of time it takes the organisms discussed in class to develop into mature adults.

#### English

Show students the book *The Very Hungry Caterpillar*. Using this book as an example, encourage the students to create a children's book for the organism they have researched, explaining each developmental stage in creative ways.

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