



Lesson Plan

Oyster Express

Created: 04/2015 by the National FFA Organization

STUDENT LEARNING OBJECTIVES

After completing these activities students will...

1. Understand how a single species can impact an entire ecosystem.
2. Explain the life cycle of an oyster.
3. Describe natural resource restoration projects occurring locally or regionally.

TIME REQUIRED: 60 minutes-3 activities, 20 minutes each

RESOURCES: FFA.org

EQUIPMENT AND SUPPLIES NEEDED:

1. One copy of "The Life and Times of an Oyster" for each student.
2. One copy of "So What About Oysters?" for each student.
3. One copy of "Bringin' It Back" for each student.

THESE ACTIVITIES ARE ALIGNED TO THE FOLLOWING STANDARDS:

AFNR Performance Element

- NRS.01. Explain interrelationships between natural resources and humans necessary to conduct management activities in natural environments.

Common Career Technical Core

- AG-NR2 Analyze the interrelationships between natural resources and humans.

NASDCTEc

- AGPE01.01 Conduct system management activities in natural habitats to demonstrate recognition of the important relationships between natural resource preservation and human intervention.

Common Core- Speaking and Listening

- CCSS.ELA-Literacy.SL.9-10.1 Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9-10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

Common Core- Science & Technical Subjects

- RST.9.10.1 Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.
- RST.9.10.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.
- RST.9.10.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9-10 texts and topics.
- RST.9.10.5 Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).
- RST.9.10.6 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, defining the question the author seeks to address.
- RST.9.10.8 Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.
- RST.9.10.9 Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.

Common Core- Literacy in Science & Technical Subjects: Writing

- WHST.9.10.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

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- WHST.9.10.9 Draw evidence from informational texts to support analysis, reflection, and research.

Common Core- Math Practices

- CCSS.MP3: Construct viable arguments and critique the reasoning of others.
- CCSS.MP6: Attend to precision.

Next Generation Science

- HS-LS2-6 Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.
- HS-LS2-7 Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.

Partnership for 21st Century Skills

- Communication
- Critical Thinking and Problem Solving
- Environmental Literacy
- Information Literacy
- Initiative and Self-direction
- Productivity and Accountability

LESSON PLAN:

1. *Introduction:* Discuss endangered and extinct species of animals and plants and have students share those species they think might be nearing extinction. Discuss how the threat of losing these species could impact the ecosystem. Show the video *Oyster Express*. The direct url is: <https://www.youtube.com/watch?v=LomHIu8vaGI>.
2. *Activities:* Choose one or all of the following activities to complete after watching the video.
 - a. **"The Life and Times of an Oyster"** – Students will research the life cycle of an oyster and use the worksheet to draw, label and describe the eight steps in the process.
 - b. **"So What About Oysters?"** – Students will use the video and additional research to determine the cause of the decline in the oyster population and to explain the importance of oysters to the ecosystem and the economy.
 - c. **"Bringin' It Back"** – Students will research restoration projects occurring in their home state.
3. *Follow-up:* Have students share what they learned about restoration projects occurring near them. Discuss ways they can perhaps get involved in similar efforts.

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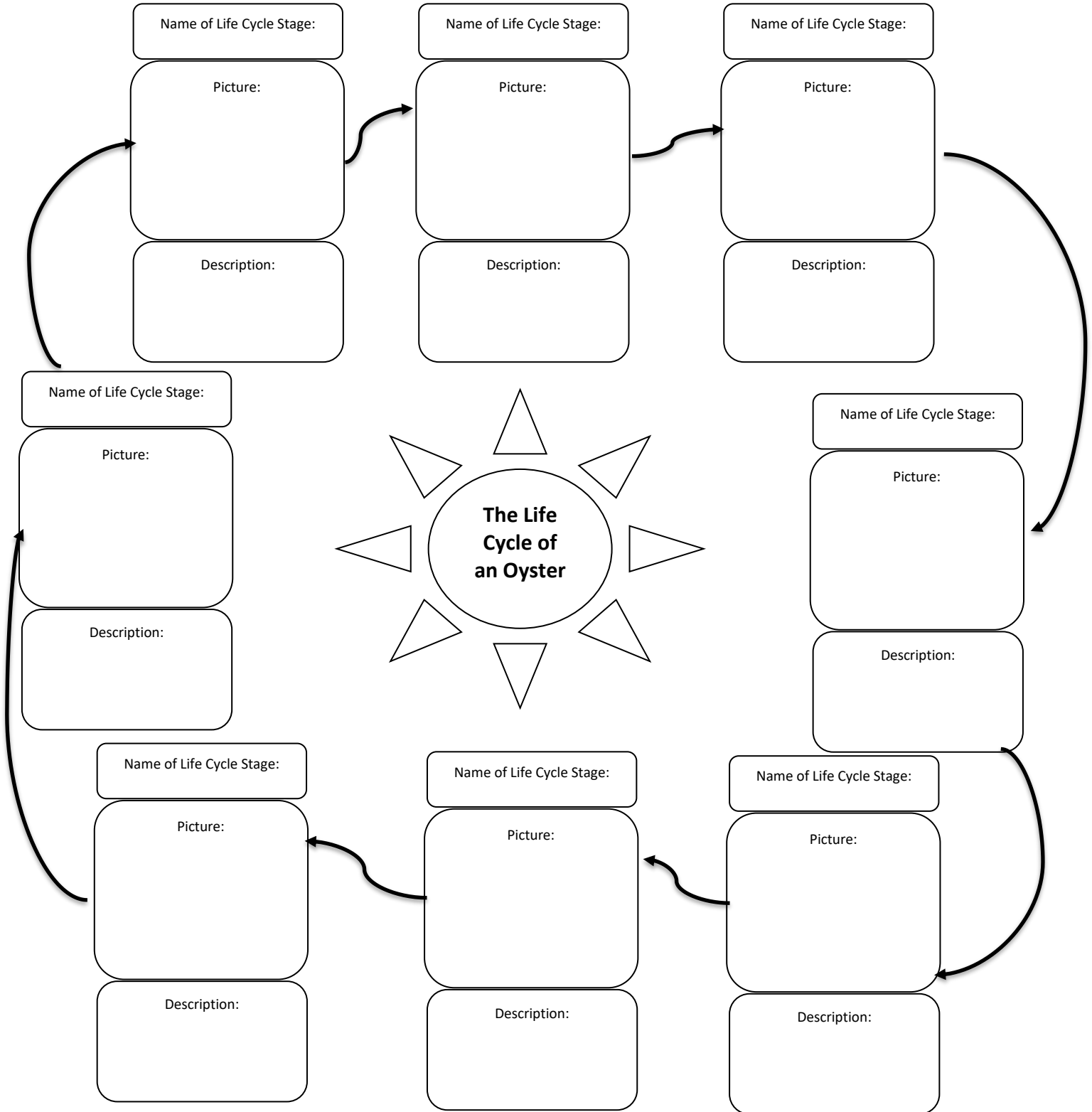
The Life and Times of an Oyster

DIRECTIONS:

Draw, label and explain the life cycle of an oyster.

Suggested Resources:

- <https://hatchery.hpl.umces.edu/oyster-life-cycle/>
- http://barnegatshellfish.org/oyster_lifecycle_02.htm



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So What About Oysters?

DIRECTIONS:

Using the video, *Oyster Express*, and other resources, answer the following questions.

Suggested Resources:

- <http://hatchery.hpl.umces.edu/oysters/>
- <http://shorebread.com/2012/08/06/the-importance-of-oysters-on-the-eastern-shore/>
- <http://www.chesapeakebay.net/issues/issue/oysters#inline>

- 1. Why is the oyster population decreasing?**
- 2. What is being done in Chesapeake Bay to restore the oyster habitat?**
- 3. Why are oysters important to the economy?**
- 4. How are oysters important to the ecosystem?**
- 5. Does the problem with the oyster population affect your life in any way? Why or why not?**

Aligned to the following standards:

NRS.01; AGPE01.01; CCSS.ELA-Literacy.RI.9-10.3; CCSS.ELA-Literacy.SL.9-10.1;
RST.9.10.1; RST.9.10.2; RST.9.10.4; RST.9.10.5; RST.9.10.6; RST.9.10.8; RST.9.10.9;
WHST.9.10.7; WHST.9.10.9; MP3; MP6; AG-NR2; HS-LS2-6; HS-LS2-7

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Bringin' It Back

DIRECTIONS:

Research natural resource restoration projects in your state and answer the questions below.

Suggested Internet Searches:

- river (or lake, stream, bay, etc) restoration project in *insert state name*
- wildlife restoration project in *insert state name*
- wetland restoration project in *insert state name*

1. What restoration projects are currently happening, or about to start, in your state?
2. Are restoration projects necessary? Why or why not?
3. Describe the progress of a restoration project in your state that you find most interesting? If none in your state interest you, research one currently occurring somewhere in the country.
4. Why did you find this project interesting?
5. How can you contribute, assist or promote this restoration project?

Aligned to the following standards:
NRS.01; AGPE01.01; CCSS.ELA-Literacy.RI.9-10.3; CCSS.ELA-Literacy.SL.9-10.1;
RST.9.10.1; RST.9.10.2; RST.9.10.4; RST.9.10.5; RST.9.10.6; RST.9.10.8; RST.9.10.9;
WHST.9.10.7; WHST.9.10.9; MP3; MP6; AG-NR2; HS-LS2-6; HS-LS2-7