

## Exploring Pearls

### Elementary: Ages 11-14

**Rationale:** Students will explore pearls, including, what a mollusk is and how pearls are formed, the different types of pearls and the difference between natural and cultured pearls and how to conserve the habitat of mollusks

### Learning Outcome/Goal:

- The students will identify characteristics of mollusks
- The students will develop an understanding of how pearls are formed
- The students will develop an understanding of and be able to identify the different characteristics of pearls as well as the difference between natural and cultured pearls
- The students will develop an understanding of how to conserve the habitat of mollusks

### Key Stage 3:

#### *Relationships in an ecosystem*

- how organisms affect, and are affected by, their environment, including the accumulation of toxic materials

#### *Experimental skills and investigations*

- make predictions using scientific knowledge and understanding
- make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements

#### *Analysis and evaluation*

- present observations and data using appropriate methods, including tables and graphs

### Materials/Resources:

- Mollusk information:
  - <http://www.biokids.umich.edu/critters/Mollusca/>
- How a pearl is formed video (<https://www.youtube.com/watch?v=T18E58vOTus>)
- Picture of a pearl farm (see attached)
- Pearl Characteristic Chart (see attached)
- Classroom set of pearls
- Several books about oysters and pearls, such as, Pearls: Natural, Cultured and Imitation by Alexander Farn, Pearls by Fred Ward and Pearls and Pearl Oysters of the World by Shohei Shirai
- Informational articles about oysters:
  - <http://animals.nationalgeographic.com/animals/invertebrates/oyster/>
  - <http://a-z-animals.com/animals/oyster/>
  - <http://www.encyclopedia.com/topic/oyster.aspx>
- Mollusk Research Note Form (see attached)
- Poster board or large white paper, markers

**NOTE: This lesson can be completed as a whole lesson, or can be broken up and completed over the course of several days**

**Procedure:**

**Introduction**

1. Write the following on chart paper or on a white/black board in list format: clam, octopus, snail, mussel, oyster and squid. Ask the students what they have in common. Students may or may not be able to identify these animals as mollusks. Explain to the students that these animals are mollusks and tell them that mollusks are invertebrates that have soft bodies covered with a hard shell.

**Development**

2. Ask the students if they know which mollusk can make something special. If the students do not know, tell them that oysters make pearls. Show the students the video about how pearls are formed.
3. Discuss with the students what was presented in the video. Reinforce the concept that pearls are made naturally when an “intruder” enters the oyster’s shell. The “intruder” is then covered with layer after layer of nacre. Explain that while pearls cannot be replicated artificially, people have found a way to create pearls outside of the natural environment. Those pearls are called cultured or farmed pearls.
4. Oysters make cultured pearls, just like they make natural pearls, but those oysters are at pearl farms (show picture of pearl farm). There, a human places an “intruder” inside of the oyster to start the process. Naturally formed pearls are very rare.
5. Ask the students if they think it is possible to tell the difference between a natural and a cultured pearl based on what they have learned. Discuss with the students that an oyster depositing nacre around the “intruder” creates both natural and cultured pearls. Therefore, it is very difficult to tell if a pearl has occurred naturally or was cultured without taking an X-ray to see what is in the middle of the pearl. Tell the students that they are going to get a chance to look at and explore some pearls.
6. Split the students into groups of 2-3 so that each group has a sample bag (there are 10 bags per classroom set). The students should explore the pearl samples, looking closely at the difference characteristics (texture, size, color, etc.) of the pearl and for what they think the “intruder” was based on the size and shape of the pearl.
7. Students should be given ample time to examine each pearl in their sample set. Students should then fill in their Pearl Characteristic Chart. After the students have completed their chart, bring the students back together as a group and discuss what they observed and hypothesized about their pearls.
8. Tell the students that they are going to be learning even more about oysters and pearls. The students should be given access to books about oysters and pearls, as well as, where possible, the internet to conduct some research. The student should be presented with the following questions:
  - Where do mollusks (oysters) live?
  - Why are mollusks important?
  - How can mollusks’ habitat be conserved?

9. The students can conduct this research alone or with a partner. The students should seek out answers to the questions that were posed. Students should take notes on the Mollusk Questions sheet and then use the information that they learned to create a poster highlighting that information.

**Wrap-Up**

10. Students will share their posters with the rest of the class. The posters should then be displayed around the classroom along with the pearl samples.

## Pearl Farm Picture



Rows of oysters



Oysters hanging in the water, growing pearls

### Pearl Characteristic Chart

Fill in the chart using your observations of the pearls.

	Size	Shape	Texture	Color	What could the “intruder” have been?
Pearl 1					
Pearl 2					

Pearl 3					
Pearl 4					
Pearl 5					

### Mollusk Research Notes Form

Use this to help you take notes and keep track of information!

Where do mollusks (oysters) live? \_\_\_\_\_

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Why are mollusks important? \_\_\_\_\_

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How can mollusks' habitat be conserved? \_\_\_\_\_

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