

Lesson Plan: Cowrie Shells

Summary:

In this lesson, students learn about cowrie shells, a type of sea snail known for their glossy appearance and long history of use in human culture. The transcript discussion highlights their biology, including how the mantle keeps the shell polished, their predators, and their nocturnal habits. The lesson also explores the role of cowries as currency in Africa and Asia, their continued use in fortune telling, and their vulnerability to environmental change.

<https://www.youtube.com/live/roPMuxuwzy0?si=UXYqa3TM2qx7WG3R>

Objective

Students will understand the biological features, ecological role, and cultural significance of cowrie shells, as well as the environmental threats that impact them today.

Materials

- 9 Fun Facts about Cowrie Shells (provided)
- Worksheet (provided)
- Optional: Images of cowrie shells and live cowries with mantle extended

Introduction

Begin by asking students if they have ever seen a shiny shell used in jewelry or decoration. Explain that cowries are sea snails that polish their own shells and have been used as money and fortune-telling tools for thousands of years.

Activity

1. Present the 9 Fun Facts to the class.
2. Discuss how the mantle both polishes and camouflages the shell.
3. Compare cowrie shells to other mollusks, pointing out the hidden spiral structure.
4. Explore how cowries were used as currency and why they became more valuable farther inland.
5. Conclude with a discussion of their endangered status and sensitivity to pollution.

Assessment

Students will complete the worksheet, answering questions on cowrie biology, history, and conservation. Participation in discussion will also be used to measure understanding.

Rubric

Criteria	4 - Excellent	3 - Good	2 - Fair	1 - Poor
Understanding Content	Demonstrates full understanding of cowrie biology, history, and threats	Shows good understanding with minor gaps	Shows partial understanding	Shows minimal understanding
Participation	Actively contributes thoughtful answers	Participates with some prompting	Limited participation	No participation
Worksheet Accuracy	All answers complete and correct	Most answers correct	Some answers correct	Few or no answers correct
Reflection	Insightful and personal	Adequate reflection	Minimal reflection	No reflection

9 Fun Facts About Cowries

1. Smooth, Glossy Shells Cowries are instantly recognizable by their shiny, polished shells. Unlike most mollusks that are smoothed by waves, cowries actively polish theirs by extending their mantle over the shell, keeping it glossy for life.

<https://www.colorado.edu/cumuseum/2021/06/23/tiger-cowrie>

2. Ancient Lineage, Modern Forms Cowries belong to a family of marine snails that have existed for millions of years, but the modern species we recognize today evolved more recently. Their durability and adaptability helped them persist while other lineages faded away.

<https://people.eecs.berkeley.edu/~lewis/cowries.html>

3. Built-in Shell Buffer The mantle secretes calcium carbonate to repair scratches and add new layers, keeping the shell smooth. This natural polishing process makes cowries look like they have been through a rock tumbler right out of the ocean.

<https://www.colorado.edu/cumuseum/2021/06/23/tiger-cowrie>

4. Unique Shell Patterns Each cowrie species has its own distinctive markings, such as spots, stripes, or swirls. These natural designs provide camouflage against coral, sand, or rock and make each cowrie identifiable.

<https://ioa.factsanddetails.com/article/entry-282.html>

5. Trapdoor Defense When threatened, cowries pull inside their shells and shut themselves in with an operculum, a tough keratinous trapdoor. Combined with the thick shell, this makes them a difficult target for most predators, leaving mainly octopuses and specialized crabs able to eat them.

<https://www.aquariumdomain.com/SpeciesProfiles/MarineInverts/TigerCowrySnail.shtml>

6. Shells as Currency For centuries, cowrie shells were used as money in Africa and Asia. They were valued for being durable, portable, and easily recognizable, often becoming more valuable the farther inland they traveled.

<https://nmaahc.si.edu/cowrie-shells-and-trade-power>

7. Tropical and Nocturnal There are over 250 species of cowries found worldwide in warm tropical waters. They spend the day hiding in crevices or under rocks and emerge at night to feed on algae, sponges, or detritus.

<https://www.wildsingapore.com/wildfacts/mollusca/gastropoda/cypraeidae/cypraeidae.htm>

8. Still Collected Today Cowrie shells are still gathered and sold as souvenirs, but ethical collecting emphasizes leaving living animals alone and only picking up empty shells. This helps protect fragile marine ecosystems while still allowing people to enjoy their beauty.

<https://www.travel4wildlife.com/ethical-shell-collecting-guide/>

9. Cultural Significance via Fortune Telling Beyond money, cowries have been used in jewelry, art, and spiritual practices across the world. In parts of Africa, they are still used in fortune telling, where shells are cast and their positions interpreted to answer questions or give guidance. In other cultures, they symbolize fertility, wealth, or protection.

<https://www.paulskiart.com/blogs/journal/cowrie-shells-a-window-into-the-soul-of-african-arts>

Worksheet: Cowrie Shells

Name: _____ Date: _____

Review

1. What makes cowrie shells shiny?
2. How do cowries protect themselves from predators?
3. What role did cowries play in human history?

Discussion

4. Why might cowries have been worth more farther inland than near the coast?
5. How does the mantle help cowries survive?

Data Analysis

6. If a cowrie grows to 4 inches in length and its mantle adds 0.01 inches of shell thickness each year, how thick would the shell be after 20 years of growth? Show your math.

Reflection

7. Cowrie shells are beautiful but vulnerable to pollution and habitat destruction. What can people do to help protect them?