

Material Preparation

MATERIALS

- helmet
- large conch shell (🐚)
- two small containers of Silly Putty®
- two small trays for cockle shells and play dough

Optional for teacher use:

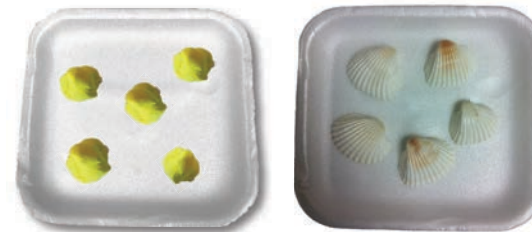
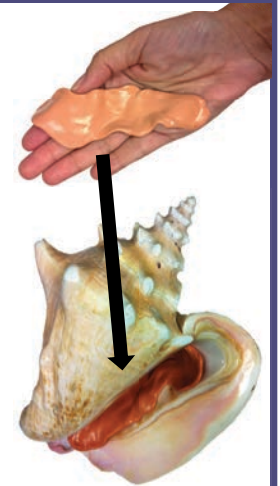
- real mollusk, such as a clam or mussel
- dull knife for the teacher to open mollusk shell

For each child:

- cockle shell (🐚), large enough to cover a teaspoon of play dough
- ½ teaspoon of play dough
- Ask Me About Shells sticker

PREPARE IN ADVANCE

- If possible, obtain a real mollusk, such as a clam or a mussel, from a grocery store to demonstrate how the hard shell protects the soft organism inside.
- Make a mollusk model:
 - Remove the Silly Putty® from the two small containers. Roll both pieces into one large handful and flatten.
 - Test to make sure the shape will fit into the conch shell; remove from shell for lesson.
- Place up ½ teaspoon of play dough per child on a small tray. Each amount of play dough should fit under a cockle shell without being flattened.
- Place one cockle shell (🐚) per child on the other small tray.



SET UP THE LESSON AREA

- Place the helmet, conch shell and Silly Putty® in the ECHOS lesson area.
- Set aside the trays with cockle shells and play dough.



PHOTOGRAPHS

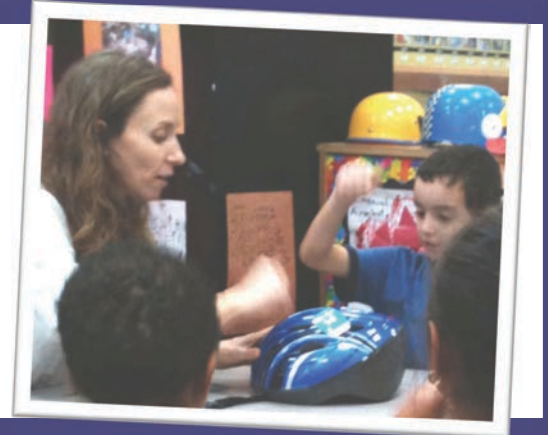
Mussel photograph

OBJECTIVE

Children will understand that shells provide protection for mollusks.

EXCITE

1. Gather children in the ECHOS lesson area. Put on the helmet to generate curiosity. **Why do people wear helmets like this one?** Accept responses. **Helmets protect our heads. They keep us from getting hurt. Helmets can protect us because they are very hard.**
2. Knock on the helmet with your knuckles to demonstrate how hard it is. **Can you think of something else that helps protect us?** Encourage children to talk about other things we use for protection, such as clothes, raincoats, shoes, hats, umbrellas etc.



INTRODUCE

1. Hold up the empty large conch shell. **Do you remember what kind of shell this is? That's right, it's a conch shell. Do you think this conch is hard or soft?** Listen to the children's responses. **It's hard, just like the helmet.**
2. **All shells are made by an animal. These animals are called mollusks. Can you say mollusk? [mol-uhsk] I am going to show you a picture of a mussel. A mussel is a type of mollusk.** Show children the *Mussel* photograph. Point out the hard shell and the soft body.



NOTE: If you have a real mollusk (clam or mussel) in its shell, use a dull knife to gently pry open the shell; pass around for the children to examine. Point out the hard shell and the soft body. Have the children wash their hands after handling the real mollusk.

3. Insert the Silly Putty® into the large conch shell. **This is a *model* of a mollusk. A model is not the real thing. It gives us an idea of what the real thing is like. Let's take a good look at it. Do you see how the mollusk's soft body fits into its hard shell?**

4. **This mollusk model can hide *inside* its shell or peek *outside* its shell. With a real mollusk, the soft part cannot come out all the way. The mollusk's soft body is attached to its hard shell.** Prompt children to notice the soft and hard parts of the mollusk model.



EXPLORE

1. **We're going to explore how shells protect mollusks.** Take out a piece of play dough and roll it into a small ball, then hold it in the palm of your hand to show the children. **This very, very small ball is soft like a mollusk's body. Do you think a shell can protect it?** Listen to the children's responses. Ask them to explain their predictions. **How do you think we can find out?**

2. Gather the two small trays. Give each child a ½ teaspoon or very small amount of play dough. **Roll your play dough into a little ball just like I did.** Assist as needed. Hand each child a cockle shell. **Remember, your ball of play dough represents a mollusk's body. Put your ball under the shell. Model how to insert the play dough ball under the shell. OK, everyone, press down GENTLY on your shell.**

3. **Now, look under your shell. What happened? Is your play dough ball still there?** Allow time and prompt if needed to elicit that the shells protected the ball of play dough.



4. **Place your shell to the side. OK, everyone, use your hand to press down GENTLY on your play dough without a shell. What happened? Yes, you made the soft ball flat because it did not have a shell to protect it.**

5. **Do you think shells protect mollusks in the same way that your shell protected the play dough ball?** Encourage the children to discuss that the hard shell protected the mollusk's soft body.

6. Allow the children to further explore the materials on their own to see how a shell can protect the soft play dough ball.




INTERACT

Interact to accommodate children's individual needs and strengths. Use these suggested strategies as needed:

- Some children may need assistance when molding the play dough into a ball. Children can use a flat surface to roll the play dough into a ball if it is easier than using their own hands.
- If the ball is too big, the shell will flatten it rather than protect it. If children have difficulty making a small ball, provide a larger shell.

OUTCOMES

1. Regroup the children in the ECHOS lesson area. **What did we learn about today?** Listen to the children's responses. If needed, use suggested prompts to elicit key concepts and vocabulary. Encourage responses from everyone.
 - **What can we wear to protect us?**
 - **How are helmets and shells alike?**
 - **Where do mollusks live?** Prompt until water and shells are elicited.
2. Give each child an *Ask Me About Shells* sticker. 

Remind the children to tell their family something they have learned about shells.
3. After you have completed *Lesson #2: Shells Protect* with all children in your classroom, add the ECHOS materials suggested below to your science area to encourage exploration.

VOCABULARY

- hard/soft
- inside/outside
- model
- mollusk
- protect



cockle shells



mollusk model on conch shell



helmet



Mussel photograph

Mussel



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