

Material Preparation

MATERIALS

- CD player
- ECHOS CD
- large pitcher
- scissors
- hinged cockle shell (🐚) or other bivalve
- large conch shell (🐚)
- newspaper
- water
- permanent marker
- masking tape
- bag of small assorted seashells
- bag of small rocks

For each child:

- 4-oz. plastic funnel
- plastic spoon
- small bowl
- ½-liter (16.9 oz.) clear plastic bottle, empty with cap
- ¼ cup of sand
- small tray
- ten small seashells
- ten small rocks
- Ask Me About Shells sticker

PHOTOGRAPHS

Beach photograph

PREPARE IN ADVANCE

- For each child, place ten small seashells and ten small rocks on the small trays.

NOTE: You may need to crush some of the shells to make sure they fit through the neck of the bottle.

- Fill each small bowl with ¼ cup of sand.
- Fill a large pitcher with water.
- Set up the CD player and test *Track #2* on ECHOS CD.



SET UP THE LESSON AREA

- Place the CD player, large conch shell, the hinged cockle shell or other bivalve and pitcher with water in the ECHOS lesson area.
- Place the following materials for each child in the ECHOS lesson area: water bottles labeled with each child's name, funnels, spoons, bowls of sand and trays with small seashells and rocks.



For each child

OBJECTIVE

Children will create a beach model with water, sand, tiny rocks and seashells.

EXCITE

1. Gather the children and play Track #2, *Ocean Sounds*. **Close your eyes and listen very closely.** After a few minutes, turn the sounds off and ask the children to open their eyes. **What kind of sounds did you hear?** Responses may include: waves, water, birds, or other things that can be found at the beach. **Have you ever heard the sound of *waves* on a *beach*?** Let's listen to those sounds again.
2. Play Track #2, *Ocean Sounds* again for a few minutes. **Do you hear the sound of the waves?** Turn off the CD player.



INTRODUCE

1. **Have you ever seen the *ocean*?** Show children the *Beach* photograph. Point to the ocean in the photograph. **This is the ocean.** Point to the waves in the photograph. **These are the waves that make the sound we just heard. Tell me what else you see in this photograph.** Listen to the children's responses. Prompt until sand or shells are mentioned.
2. **Ocean waves can carry *seashells* to the shore of a beach. Have you ever found a seashell at the beach?** Listen to the children's responses. **The crashing and grinding action of waves can cause rocks and seashells to break into small pieces. Maybe you even found a small piece of a shell at a beach.**
3. **I brought a very special shell with me today.** Hold up a large conch shell (🐚). **Many animals that have shells to protect their bodies can be found in the ocean. This shell is empty now, but it used to protect an animal. The animal that lived here is long gone.**



4. **This is called a *conch shell*. Can you say conch shell?** May be pronounced [konch] or [kongk]. **This shell is very hard. It's so hard you can't squeeze it.** Overdramatize by trying to squeeze the shell. **Look at the shell. What colors do you see on the inside and the outside of the shell?** Listen to the children's responses.
5. **I'm going to give everyone a turn to hold the conch shell. When it's your turn, hold it gently to your ear like this.** Demonstrate.
6. Hand the conch shell to each child one at a time. Give the first child a turn. Ask: **Do you hear anything? Some people think it sounds like the ocean sounds we just heard. Is there an ocean in there? No, of course not!** Continue until each child has had a turn.
7. Hold up a complete, unbroken cockle shell (or any bivalve shell). **This is a different kind of shell. It's called a *cockle shell*. Can you say cockle?** Open the shell, holding the hinged sides together. **When this shell was in the ocean, these two halves fit together.**

NOTE: If you do not have a hinged cockle shell, hold up two halves of a complete cockle shell.
8. **Can you open and close your hands to make them look like this kind of shell?** Model for the children.
9. Take a half shell and some broken shells from the tray. **The waves in the ocean often break shells. When we find them at the beach they often look like this.** Hold up half of a shell or pass around small pieces of broken shells.



EXPLORE

1. **Now we are going to make a small model of a beach. Tell me again what you might find at a beach.** Listen to the children's responses. **Great! Let's begin by putting some sand in our bottles.**
2. Seat the children at a table. Give each child a plastic bottle and cap, spoon and small bowl of sand. Have the children use funnels and spoons to fill the bottles about a third full with sand. Assist as needed in placing the funnel into the bottle opening.
3. **Shells and rocks can be found in the ocean and along a beach, so we need to add some shells and rocks to our bottle, too.** Give each child six small shells and six small rocks. Have the children drop the small shells and rocks into their bottles. Assist as needed.
4. After each child has added sand, shells and rocks to their bottle, fill each bottle about half way with water. Assist the children with replacing the bottle cap, then use masking tape to seal each bottle.
5. Remove all materials from the table. **Now, let's turn on the *Ocean Sounds* again. While you listen to the ocean sounds, gently tip your bottle back and forth to make pretend waves.** Play Track #2, *Ocean Sounds* track for a few minutes. Have the children gently tip their bottles back and forth so the sand and water mix. Stop the CD player. **You did a great job making a model of a beach today!**




INTERACT

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

- Build geographical background knowledge about beaches and oceans for children who have never been to a beach. Use books, photos or general discussion as needed.
- Some children may need assistance using a spoon to add sand to the bottle. If a spoon is difficult for some children to use, then give them a small cup to scoop the sand and pour it through the funnel.
- Children can take their beach in a bottle home or leave it in the science area to explore.

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 you find at a beach?**
 - **What shells did we learn about today?**
 - **What do waves do?**
 - **What did you observe when you made pretend waves?**
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 #1: Waves in a Bottle* with all children in your classroom, add the ECHOS materials suggested below to your science area to encourage exploration.

VOCABULARY

- beach
- cockle shell
- conch shell
- ocean
- seashell(s)
- waves



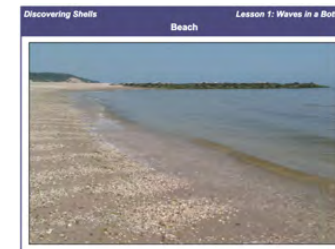
plastic funnel



beach models



large conch shell



Beach photograph

Beach

