

## Material Preparation

### MATERIALS

- container such as a shoebox or tissue box, for use as a *Discovery Box*
- *Color Cards*
- *Shell Cards*
- set of three shells: auger shell (🐚), moon snail (🐚) and cockle shell (🐚)
- cup of sand
- sheet of 16" x 24" poster board
- permanent marker
- roll of masking tape

For each child:  
Ask Me About Shells sticker

### PREPARE IN ADVANCE

- Create a *Shell Chart*:
  - Use masking tape to make an evenly spaced 4-column x 4-row grid on poster board, or draw grid lines with a permanent marker.
- Create a *Discovery Box*:
  - Place enough auger (🐚), moon snail (🐚) and cockle (🐚) shells so that each child can select one type of shell. For example: for a group of six children, use two auger, two moon snail and two cockle shells.
  - Pour the cup of sand over the shells.



Shell Chart



Discovery Box

### TEMPLATES

*Shell Cards* template (optional)

**NOTE:** In case you lose any of the *Shell Cards*, this template can help you create your own.

### SET UP THE LESSON AREA

- Place the *Shell Chart* in the middle of the table, or have children participate by sitting around it on the floor.
- Place the *Color Cards* in the first column of the *Shell Chart*.
- Place the *Shell Cards*, the teacher set of three shells, and the *Discovery Box* in the ECHOS lesson area.



## OBJECTIVE

Children will classify shells using multiple attributes at the same time.

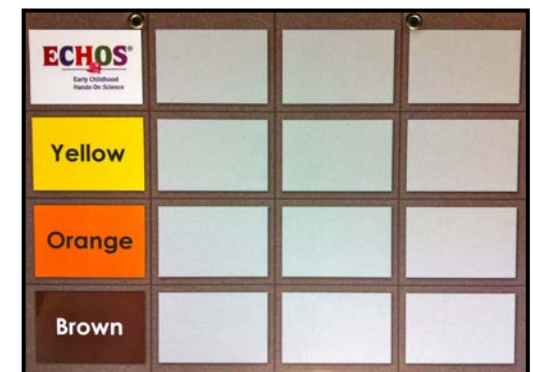
## EXCITE

1. Reveal the shoebox or container. **Today I brought a Discovery Box and each of you will have a turn to find one object hidden inside.** Choose one child to reach into the box. Hold the box so that the child cannot look into it, but can reach in to feel the sand. **Now, reach into the box.** When the child reveals a shell, say: **Tell me about your shell. How does it feel? What colors do you see? Does anyone remember what the name of this shell is?** Provide wait time.
2. Repeat this step with each child in the group. **Hold your shells, as we are going to use them in this lesson.**



## INTRODUCE

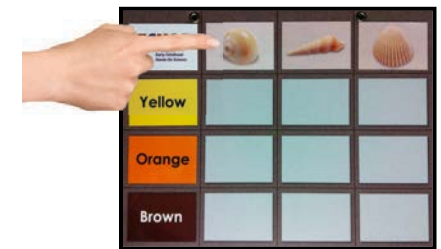
1. **Today we are going to look at shells. Scientists who collect and study shells are called *conchologists* [kong-kol-uh-jists]. That's a long word! Can you say conchologist? Good. Conchologists use clues to give them information about shells.**
2. Point to the chart. **Today, we are going to be scientists and use this *chart* to find missing shells.**



3. Gather the teacher set of three shells and the three white shell cards. Place the white moon snail shell card in front of you and point to it. **Do you remember the name of this shell?** Listen to the children's responses. **This is a moon snail shell. It's kind of round like the moon. Let's match our real shells to this picture.** Place your moon snail shell on the matching shell card. **If you chose a moon snail shell from the discovery box, place it on top of the card like I did.**



4. Repeat with the auger (pointy) and cockle (bumpy) shells. Remove the shells. Place the three white shell cards in the top row of the chart.



starting position

5. Review the colors in the left column: yellow, orange and brown. **Let's start here.** Point to the yellow card. **Can you tell me what color it is? Yes, yellow.** Repeat with the orange and brown color cards.



yellow color card

6. **Let's look at this row.** Point to the yellow row. I'm going to put all the yellow shells under the picture of each shell. Place the yellow shells in the yellow row. **What is the same** about these three shells? Accept all responses. Prompt children to notice that they are all the same color. **What is different** about these shells? Point out that they are all different kinds of shells.

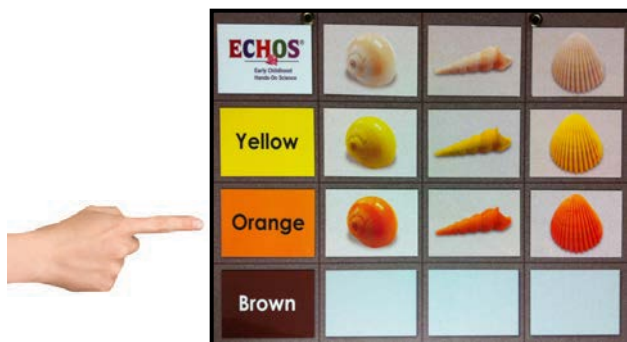


Point to the yellow row.

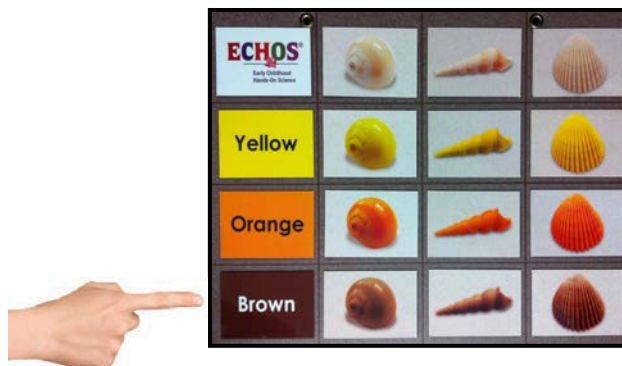


Place the yellow shell cards.

7. Repeat with orange row. **Now I'm going to place the orange shells in the next row.** Repeat the questions "What's the same? What's different?"
8. Repeat with brown row. **Now I'm going to place the brown shells in the next row.** Repeat the questions "What's the same? What's different?"



Point to the orange row.



Point to the brown row.

9. Remove all the colored shells from the last two columns. **Let's look carefully at the shells at the top. Let's start with this one.** Point to the moon snail at the top of the chart and place all the moon snail cards down on that column. **What is the same about the shells in this *column*?** Accept all responses. Prompt children to recognize that they are all moon snail shells. **What is different? Yes, they are different colors.** Repeat for auger and cockle shells columns.



Moon Snails



Augers



Cockles

## EXPLORE

1. **Now let's see what a good conchologist I can be. I'll go first. When I close my eyes, one of you will remove just one shell card. I will have to FIGURE OUT which shell it is.** Choose a child. Close your eyes and prompt the child to remove a shell card and place it behind his/her back.
2. Open your eyes and model how to look for clues. For example, you can say: **Hmm... What color could it be? Remember, we're conchologists, so we need to look for clues to get information.** Point to the row color. **This is the orange row, so I know it's orange.** Point to the cockle column. **What kind of shell it is? These are all cockles, so it's a cockle. That means it must be an orange cockle. Am I right?** Ask the child to show you the shell card to check your answer.



Hidden Card: Orange Cockle

3. **Now it's your turn to be a conchologist. Close your eyes and I'll hide a shell.** Remove a shell card and place it behind your back. Then, ask the children to open their eyes. **Let's see if you can FIGURE OUT which shell is hidden. First, tell me what color it is.** Cue if needed by pointing to the color card in the first column. **What type of shell is it?** Cue if needed by pointing to the shell type in the top row. Reveal the shell card.
4. Repeat by removing two shells cards at a time, then asking one child to name one missing shell card and the other child to name the other missing shell card. Be sure that each child has a turn. Conclude by saying: **What great conchologists you are!**




## INTERACT

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

- If children are unable to identify the colors, review with other objects that are yellow, orange and brown.
- If children have difficulty identifying hidden shells by attribute, cue them to location by pointing to appropriate row (shell color) and column (shell type) where the shell is missing.
- To simplify the activity, you can make two sets of shell cards and play a card matching game.
- To increase difficulty of activity, you can also rearrange the color column or shell row.

## 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 did the shells look like?** Prompt for color and shape.
  - **Did all the shells feel the same?** Prompt for smooth, bumpy, pointy.
  - **What are the names of the shells we used today?** Prompt for moon snail, auger and cockle.
  - **What does a conchologist do?** Responses may include: looks at shells, collects and studies shells.
2. Recap and review the unit key concepts by asking and prompting children to recall something they learned from any of the prior *Discovering Shells* lessons.
3. Give each child an *Ask Me About Shells* sticker. 

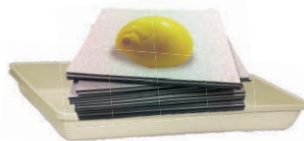
Remind the children to tell their family something they have learned about shells.
4. After you have completed *Lesson #4: Shells Mystery* with all children in your classroom, add the ECHOS materials suggested below to your science area to encourage exploration.

## VOCABULARY

- chart
- column
- conchologist
- row
- same/different



discovery box with shells



Shell and Color Cards



Shell Chart

## Shell Cards Template

Instructions:

1. Make four photocopies of this page on white card stock paper.
2. Cut along the dotted lines to make 12 shell cards.
3. Color shell pictures with crayons to make:
  - 3 moon snails (1 yellow, 1 orange, 1 brown)
  - 3 augers (1 yellow, 1 orange, 1 brown)
  - 3 cockles (1 yellow, 1 orange, 1 brown)
4. Leave the remaining set of shell cards black and white; do not color.

