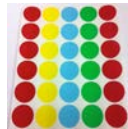


Material Preparation

MATERIALS

- scissors
- 12 pennies
- water basin or long water table
- toy sailboat (if available)
- ping-pong ball
- toy pinwheel
- water
- three sheets of white or colored card stock paper
- ¾" round color coding label stickers in four different colors (must include blue and red colors)

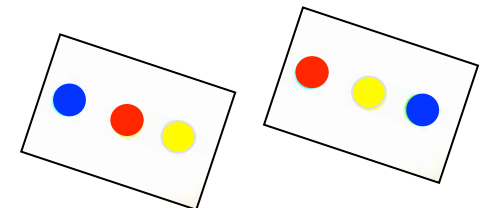


For each child:

- toy pinwheel
- 9-oz Styrofoam™ cup
- *Sail Cutout*
- drinking straw
- 3" x 5" index card
- three ¾" round color-coding label stickers in three different colors
- *Ask Me About Air* sticker

PREPARE IN ADVANCE

- Create model sailboats, one for each child:
 - Cut ⅔ off the top of each foam cup. Cut a small slit on opposite sides to insert sail.
 - Copy the *Sail Cutout* onto cardstock.
 - Cut out the sails; insert into the slits of each cup.
 - Place two pennies in each cup, this will help the cup boat balance.
- Create *Direction Cards*, one for each child:
 - Place three color-coding label stickers in three different colors on each index card, one for each child. Use different color patterns.
- Set up the water basin:
 - Fill half full with water.
 - Place a round red sticker on one side of the basin and a round blue sticker on the opposite side. Place a green and yellow sticker on the other two sides.



SET UP THE LESSON AREA

- Place one red sticker on the end of a table surface; place a blue round sticker about three feet away from the red sticker.
- Gather the straws, ping-pong ball, toy pinwheels, model sailboats and water basin.



For each child

TEMPLATES AND PHOTOGRAPHS

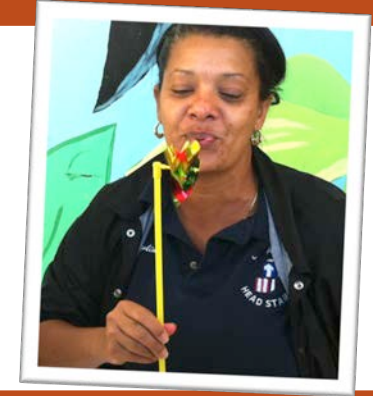
- *Sailboat* photograph
- *Sail Cutout*

OBJECTIVE

Children will understand that wind can move objects in different directions.

EXCITE

1. Gather the children at a table. Reveal the pinwheel. **This is a *pinwheel*. I can make it move like this.** Hold the pinwheel in front of your face and blow straight at it.
2. **I can also make it move like this.** Turn the pinwheel and blow at it from the side. **The air I blew is like wind, and it made the pinwheel spin. Remember, when air moves, we call it wind.**



INTRODUCE

1. Hand each child a pinwheel. **Let's all pretend to be the wind. Just take a deep breath and blow.** Let the children practice being the wind with their pinwheels.
2. **What happened to the pinwheel?** Listen to the children's responses. Ask children to put their pinwheel under their seat.
3. Place the ping-pong ball on the table. **I'm going to pretend to be the wind and move this ball in one *direction*, from the blue dot to the red dot. Ready, set, go!** Blow the ball toward the red tape. **I moved it!**
4. **Now, help me try to move the ping-pong ball back in the other direction, from the red dot to the blue dot.** Ask children to stand close to the red end of the table. **Let's all pretend to be the wind. When I count to three we'll all blow like the wind to move the ball back to the blue dot. Ready, set, go!**



EXPLORE

1. Place the basin on the table. Place the ping-pong ball in the water basin, near the blue dot. **I wonder if we can make the ping-pong ball move through the water?** Select two children to try it. Give each child a straw. **Blow through your straw to move the ping-pong ball in the water basin from the side with the blue dot to the other side with the red dot.**
2. **Now, let's try to move it back from the red dot to the blue dot.** Ask the same two children to move to the other side of the table. **Blow through your straw. Very good! We used wind to move the ball.** Remove the ping-pong ball. Collect and discard all used straws.
3. Hold up the *Sailboat* photograph or a toy sailboat. **This is a special kind of boat. It's called a *sailboat*. A sailboat uses the wind to move across the water in the direction it needs to go.**
4. Hold up one Styrofoam™ cup with a paper sail. **This is a model sailboat. The cup is the boat and the paper is the *sail*.** You're each going to have a turn to sail a model sailboat just like this one.
5. **We're going to do an investigation with these model sailboats. When it's your turn, you will move your boat in different directions. How will you get your boat to move? Listen to the children's responses. That's right! You will need to make wind!**
6. Choose one *Direction Card* and hold it up to show the children. **This is a *Direction Card*. How many dots do you see? Listen to the children's responses. The dots tell you where to move your boat.**



7. Model for the children how to blow through the straw, moving and directing the sailboat model from dot to dot following the sequence of dots on the *Direction Card*, from left to right.
8. Choose one child to go first. Give the child a *Direction Card*, a straw and a sailboat model. **Look closely at your *Direction Card*. You will start at the first color dot on the card.** Point to the first dot along with the child. **Where will you start?** Say the color with the child. **Place your sailboat at the start.**
9. **Your job is to move your boat to the next two color dots. On the count of three, use your straw to pretend to be the wind and blow against the sail. One, two, three! Watch closely everyone!**
10. Guide the child as needed to complete the directions on the card. **Great job following the directions!**
11. **Let's try this again.** Continue until each child has had a turn. **You were all great wind makers!**




INTERACT

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

- Children may have a difficult time blowing air onto the sail. Have children practice blowing the sailboat first before their turn.
- Children may need guidance following the *Direction Cards*. Say the colors on the card in sequence. For example, say: **Start at blue, then go to yellow, then end at red.**

OUTCOMES

1. Regroup the children in the ECHOS lesson area. **What did we discover today?**
Listen to the children's responses. If needed, use suggested prompts to elicit key concepts and vocabulary. Encourage responses from everyone.
 - **In the beginning of the lesson, what did the wind move?**
 - **How did you make wind?**
 - **How did you know what direction to move your sailboat?**
2. Recap and review the unit key concepts by asking and prompting children to recall something they learned from any of the prior *Astonishing Air* lessons.
3. Give each child an *Ask Me About Air* sticker. 

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

VOCABULARY

- direction
- pinwheel
- sail
- sailboat



pinwheels



sailboat model

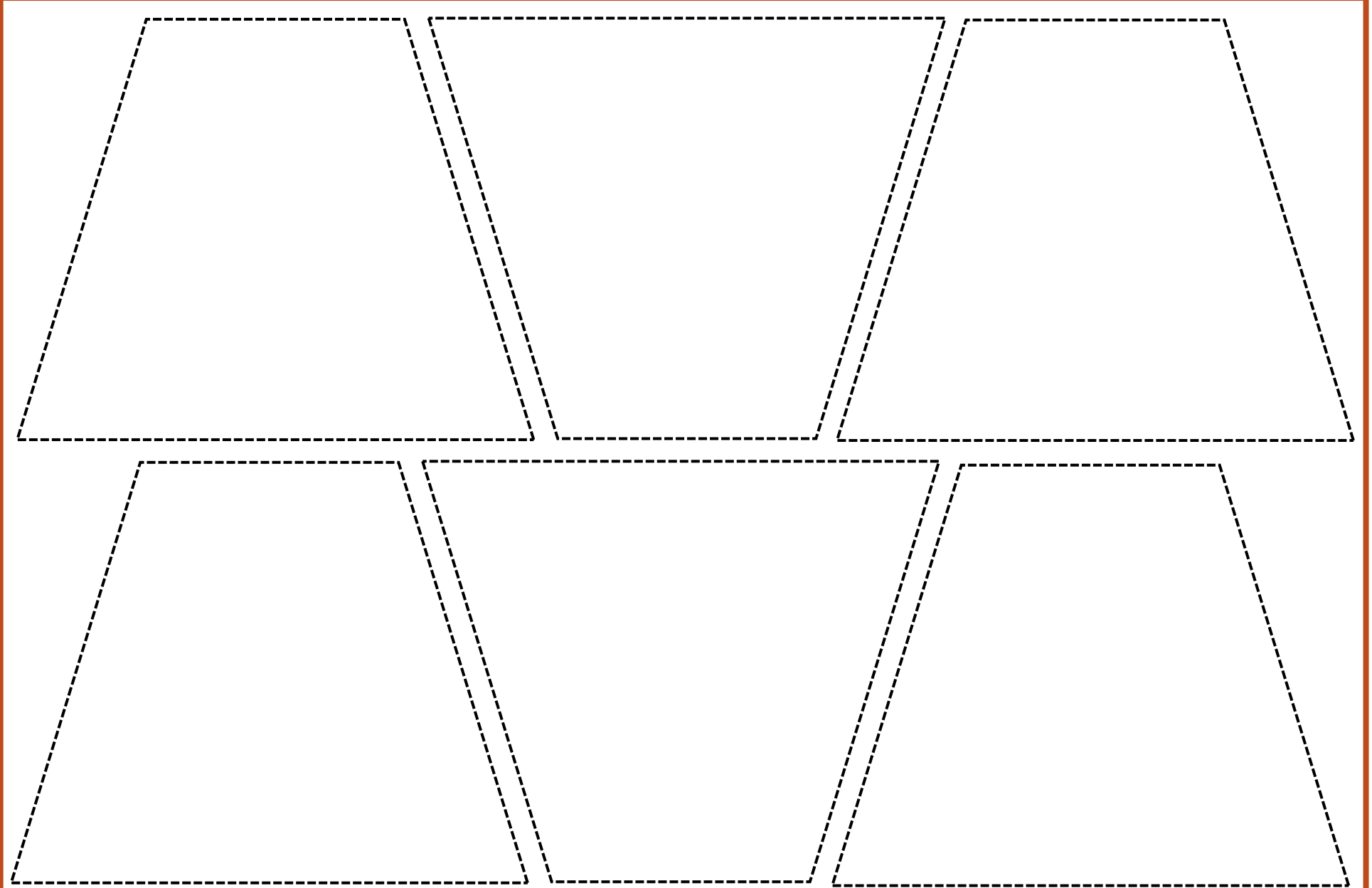


water basin



Sailboat photograph

Sail Cutout



Sailboat



Photo Credit: User Andrzej Mlynarz, Wikimedia Commons