

Introducing the Science of Sound to Preschoolers

Young children are natural scientists. They are curious and are always trying to figure out how the world around them works. Whether they are filling and dumping containers in a sandbox, building towers with blocks, or observing which objects float or sink in the bathtub, children are engaging in scientific discovery. Exploring scientific concepts with young children can be as natural and easy as asking questions, making predictions, and trying to figure out the answers together. Teachers do not need to have the answers to the questions that children might ask, but should be science explorers themselves and be willing to seek out answers with their students.

The following pages contain ideas for hands-on activities, experiments, games and songs for exploring the science of sound. With the introduction of any new subject, it is helpful to find out what children already know, or believe to be true, before deciding how to approach a topic. Below is a simple activity that can serve as an introduction and jumping-off point for talking about sound.

Go behind a desk or tall bookcase so the students **cannot see** what you are doing. Ring a bell and asks the students to guess what you did. Repeat making sounds with various objects that students cannot identify. Write a note on a piece of paper, and again, ask the children what you did. The students say they don't know because they can't see or hear you doing anything. Ask students, "What sense were you using before that helped you to know what I was doing behind the desk?" Hearing. Hearing sounds is one way to learn about the world. (You may want to adapt this activity if you have children with hearing impairments in your classroom. Many sounds can be "felt" using children's sense of touch and the sound vibrations in the air. If you provide students with an inflated balloon to hold, they can feel the sound waves as they strike the balloon. Test sound-making objects before using them with balloons to make sure the sounds cause the balloon to vibrate.)

Questions to ask children:

What causes sound? You have to hit something to make a sound? Is that the only way? What else? Can you name any quiet sounds? What about loud sounds? What are your favorite sounds? What kinds of sounds can you hear in our classroom?

Songs About Sound

Sound Song

(to the tune of "Did You Ever See A Lassie?")

Did you ever hear a bell ring,
A bell ring, a bell ring?
Did you ever hear a bell ring?
Ding, dong, ding, dong, ding.

Did you ever hear the wind blow,
The wind blow, the wind blow?
Did you ever hear the wind blow?
Swish, swish, swish, swish, swish.

The Shaker Song

To be used with the Sound Shakers children
make in the Activity section

(to the tune of "Frere Jacques")

Shake your shakers,
Shake your shakers,
Shake them left and right,
Shake them left and right,
Shake them loudly,
Shake them quietly.
Shh, shh, shh,
Shh, shh, shh.

Shake your shakers,
Shake your shakers,
Shake them up and down,
Shake them all around,
Shake them loudly,
Shake them quietly,
Shake them day and night,
Shake them day and night.

My Five Senses

(to the tune: The Farmer in the Dell)

I use my eyes to see, I use my eyes to see,
and when I want to see a star, I use my eyes to see.

I use my nose to smell, I use my nose to smell,
And when I want to smell a flower, I use my nose to smell.

I use my tongue to taste, I use my tongue to taste,
And when I want to taste a peach, I use my tongue to taste.

I use my ears to hear, I use my ears to hear,
And when I want to hear a bird, I use my ears to hear.

I use my hands to touch, I use my hands to touch,
And when I want to touch a cat, I use my hands to touch.

Sound Activities

Construct A Sound Shaker

1. Each child will need two paper plates (those without a wax coating are best).
2. Decorate the bottoms of plates. One or both sides can be decorated.
3. Children add rice, pasta, small bells or other items that would make a noise when sandwiched between the two plates.
4. Glue the two paper plates together around the edge, or staple the edge all around both plates. (If using glue, the glue must be completely dry before using the shaker .)

Go On A Sound Walk

Take a walk with the children around the school, outside, or anywhere with a variety of sounds. Bring either a tape recorder or a notepad and record the sounds that you hear. If the weather is mild, take a walk outdoors. If not, stroll around indoors. To help focus children's attention on sounds before your walk, ask a few open-ended questions such as, "What kinds of sounds do you think we will hear on our walk?" "How can we make sure we hear on our walk?" "How can we make sure we hear everything?" "Where should we go to hear lots of sounds?" As you walk, encourage children to tell you about the sounds they hear. Help them use descriptive words such as loud, soft, banging, roaring, ringing, etc.

After the walk, sit together and talk about the sounds you heard. Invite children to try to re-create the sounds using only their voices. Provide helpful clues such as, "Yes, (child's name), that sounds like the bird we heard but I think the bird made a softer sound." Or, "(child's name), that does sound like water running in the sink." Continue to re-create sounds. You might want to record them on a tape recorder to play back and try to identify at another time.

Remember that listening to, hearing, and re-creating sounds are separate skills. Children need lots of practice listening and tuning in to sounds before they try to re-create them.

Sound Experiments

- Experiment with sound traveling through the air by talking through used paper towels rolls.
- Let children sit with their heads resting on a table and one ear pressed down against the table top. Go around the room and “knock” on the table tops. Have children describe what they hear. Does the knocking sound the same when they lift their heads off the table tops? Is it more loud or more soft? Is the sound low or high? Let them discover that sounds travel through solid objects, like the table.
- Create a ‘telephone’ using two paper cups linked with a long string through the center of the base of each cup. Pull the string tight and talk through telephone. Ask children how they think the telephone works. How is the sound traveling from cup to cup? How can we find out?
- Experiment with the treble and bass settings on your stereo sound system and listen to the different effects. Let them feel the vibrations of sound on the speaker covers.
- If you play a musical instrument, let the children explore how the sound is generated as you play the instrument.
- Prepare several sealed containers holding one object or a combination of several different objects. Students shake the containers and describe the sounds they hear. They predict what’s inside. They record their predictions and then open the containers and compare predictions with actual results. To make this a matching game, prepare twelve containers, placing the same object in pairs of two containers, so you have six matching pairs of sounds. Students shake the sealed containers and predict what’s inside. They then try to find and match one container with another that has the same objects inside.
- Students take turns wearing blindfolds and listening to a partner drop beans on the table. One player drops one then two beans in succession, for example: drop ... drop, drop. The blindfolded student says three - why? One plus two or one plus one plus one. The students use different sound patterns through five.

Sound Games

Whistle Game

During circle time, give one child a whistle and have them go and hide. When the child is hidden, instruct the child to start blowing the whistle. The other children are then to follow the sound of the whistle to find the child. The child who finds the hidden child is next to get to hide.

Listening Game

Choose one child to be the listener. The child should be seated on the floor or on a chair in front of the group with face turned away from the group. Point to another child in the group who will become the mystery voice. She or he can say “Hi,” or any other greeting. Let the first child guess who the mystery voice is. If the child cannot guess correctly, let the speaker say something else. The child who is the listener gets 3 chances to guess who is the mystery voice.

Mystery Sound

Have the children close their eyes. Make a sound such as ringing a bell, jingling keys, clicking a pen open and shut, tapping a full water glass, etc. Let the children identify the object of the sound.

Look and Listen

Have students listen to a prepared tape of various sounds and then guess what objects made the sounds, by matching sounds to picture cards. Then they sort the picture cards of sounds by soft and loud. Students listen to the sounds and arrange the pictures in the order in which they heard them.

Sound Patterns Circle Game

A child creates a pattern with different sounds (clapping, snapping his/her fingers, dramatic sound effects, high or low voices, loud or soft voices, musical instruments, stamping feet, etc.). Students repeat the patterns and create their own.

Count the Sounds

The teacher claps her hands, taps her foot, rings a bell, etc., a certain number of times. The students count and tell how many times they heard a sound.