

THIRD AND FOURTH - SOUND

Teacher Guidelines:

- Pp. 92-95

Linkage:

- Living Things - Plants and animals, Myself
- Environmental awareness and care
- Materials - Properties and characteristics of materials

Integration:

- Music
- Oral Language Development – English and Gaeilge
- SPHE
- Visual Arts

Content Objective:

LEARN THAT SOUND IS A FORM OF ENERGY.

Some suggested activities:

- Place some rice on the skin of a toy drum/bodhran/ bowl with plastic pulled tightly over. Bring a saucepan close to the drum and bang loudly with a wooden spoon. What happens to the rice? Why do you think this is so?
- Strike a tuning fork and place it in water. What happens to the water? (It splashes.) Ask a child to place their hands close to /on the speakers of a radio/CD player and to describe what they feel. Place a balloon in front of the speakers and increase the volume; what happens?

Some suggested investigations:

- Does the volume of the sound affect the rice dancing?

Content Objective:

RECOGNISE AND IDENTIFY A VARIETY OF SOUNDS IN THE ENVIRONMENT

Some suggested activities:

- Identify the sources of sounds and distinguish between natural and manmade sounds.
- Go on a sound walk in the school grounds or locality (Exemplar 11, Teacher Guidelines, p. 62). Discuss the range of sounds that were heard at the various

stops; how were they the same/different? Were they produced naturally or artificially

- Identify quiet and noisy areas of school.
- Ask the children to compile a tape of sounds they have recorded (perhaps at home) and ask the rest of the class to listen and try to identify the source of the sound.

Some suggested investigations:

- Where is the noisiest place in the school/school grounds
- If you carried out a sound survey at different times would your findings be the same?

Content Objective:

UNDERSTAND AND EXPLORE HOW DIFFERENT SOUNDS MAY BE MADE BY MAKING A VARIETY OF MATERIALS VIBRATE

Skin of drum, plastic ruler on table, string of an instrument, 'seed' in referee's whistle.

Some suggested activities:

- Gather a collection of musical instruments. Ask the children to play them and record how they are played (e.g. blow, pluck, struck, shake etc).
- Discuss and suggest what is vibrating each time (e.g. instrument, piece of the instrument or perhaps the air).
- Hold a ruler on the end of the table – twang it – it vibrates and produces sound. How can you change the rate of vibration? Alter the length of ruler that is free to vibrate. Place piece of Blu-tac on end of ruler. Twang it again. What happens when you stop the ruler vibrating?
- Pluck violin/guitar strings/elastic bands.
- Blow whistle. (with and without the seed inside).
- Blow up a balloon, stretch the neck of it and slowly let the air escape. What happens? Why?
- Strike a triangle.
- Shake a shaker.
- Ask the children to place their fingers gently over their voice box (i.e. larynx at the base of the neck) to feel the vocal vibrations when they speak. Is it any different if they whisper/shout/sing etc.
- Place hands on radio while it is playing.

Some suggested investigations:

- Making a rubber band banjo/guitar – butter box, ruler as bridge and various rubber bands. Can I make the same note/sound with different types of rubber bands? Does the

thickness or the tension of the rubber band affect the sound? What other materials can I use to make a guitar/banjo?

Some suggested designing and making:

- Banjo/guitar.

Content Objective:

DESIGN AND MAKE A RANGE OF SIMPLE STRING INSTRUMENTS USING AN INCREASING VARIETY OF TOOLS AND MATERIALS

Investigate how changes in length, tension, thickness and types of materials affect the sound produced.

Some suggested activities:

- Exemplar 23, Teacher Guidelines p. 94, Can you make a banjo from rubber bands?

Some suggested investigations:

- Does the length of the rubber band affect the sound produced?
- Does the thickness or the tension of the rubber band affect the sound produced?
- What other materials can I use? Wool, thread, string, cord etc
- Does the size of the box make a difference? Butter box, biscuit tin, tissue box etc.
- Can I make the same note/sound with different types of rubber bands?

Some suggested design and make:

- A rubber band banjo/guitar (Use cardboard, plastic, metal containers and various rubber bands.)

Content Objective:

EXPLORE THE FACT THAT SOUND TRAVELS THROUGH MATERIALS

Air, water, wood, metal.

Some suggested activities:

AIR

- Repeat the dancing rice activity outlined above. Ask the children to explain why they think the rice is moving (sound vibrations travelling through the air).
- Place funnels at each end of long hosepipe. One child talks into one funnel and another child listens with other funnel.

WOOD

- Gently scratch one end of table. Children place their ear flat on the opposite end of the table and listen to the sound. What do they notice? Tap one end of table while children listen to sound through material. Place several layers of books or scarves between children's ear and table. The sound is now difficult to

hear because soft materials absorb sound energy.

- Get the child to listen to a ticking watch from a 1m distance. It is very difficult to hear. Place the watch on a metre stick and ask child gently place the metre stick against the ear. The watch is audible.
- Tie spoon in centre of 50cm string. Allow the spoon to gently strike against table while holding the ends of string to your ears.

WATER

- Discuss with the children how well they hear when their ears are under water e.g. In the swimming pool or in the bath.
- Tap two spoons together underwater in a tank half full of water. Ask a child to put their ear to the outside of the tank (below the water level) and describe what they hear. Repeat, but with the spoons above the water level and with the child's ear above the water level on the outside of the tank? Is there any difference? Why?
- Set an alarm clock/alarm on a watch to ring, place in a watertight bag/container and immerse in a tank/basin of water. Is the ringing sound different than when out of the water?

Some suggested investigations:

- String telephone: Does the length of string make a difference?
- Does the type of string make a difference?
- Does the type of cup make a difference?
- Can you make a four way telephone?
- Are there any ways you can stop the sound from travelling?

Some suggested design and make:

- Make stethoscope (using a funnel and plastic tubing)
- Make string telephone