

# SCIENCE: Friday 29<sup>th</sup> January 2021: SOUND: Activities for the Day

Watch the Sound videos, then do the very short starter task, then choose...

## Either...

### Instruments

Musical instruments produce sounds and make those sounds loud enough to hear across a room. Examine instruments to explain how they do that.

#### You need:

- Either two different instruments or very, very clear pictures of instruments that you can look at closely. [Avoid using electronic instruments for this task.]
- Drawing equipment for producing high quality artwork – not rough drawings. Your finished work should have **display quality art** with Science notes added neatly next to it.
- A pen, and probably a ruler.

#### What to do:

You are going to produce two full A4-sized drawings that show very accurately the detail of two musical instruments.

You should plan how to draw these so that you leave just enough neat, empty space on each sheet of paper to fit in your explanation that answers these questions:

- a) What does a player do that makes parts of the instrument vibrate?
- b) How is the instrument designed so that the sound is then made bigger and louder (amplified) to be heard by other people?

**These explanations should be a clear, well-written paragraph, not just two short sentences. I am looking to see how well you can explain your thinking so short facts will not be enough.**

If you can also go on to explain how the instrument plays a range of different notes (if it is an instrument that does), that will be even better.

## Or...

### Insulators

Some materials block sound better than others.  
Test some materials.

#### You need:

- two similar cups - preferably plastic,
- two plastic bags,
- elastic bands
- a range of materials with which to fill the cups that you think might insulate against sound getting through.

You also need something that can make the same **quite loud sound** – a doorbell or alarm clock, for example - whenever you are testing a new set of ear-muffs.

#### What to do:

- Fill both your two cups snugly with one of the materials you are testing
- stretch plastic bags across the ends, probably held on with elastic bands
- hold the pair of ear-muffs you have made to cover your ears
- make the loud sound (bell/beeping/alarm/...)
- give the ear-muffs a score out of ten for how much sound they stopped. [0 is hearing all the original sound; 10 is hearing none of the original sound; 5 is hearing half of it; etc.]
- Test them again to be confident of the score you have given.
- **Repeat until you have tested at least three sets of differently-filled ear-muffs.**
- Write a report on what you did: **Title, Date, Diagram, Method, Results, Conclusion** – in that order.

Remember, the Conclusion is just to say which of the materials made the best ear-muffs and was best at insulating to stop sound getting through.

Remember to warn your family members when you are about to make the loud noises for testing!