



### The National Orthodox School/ Shmaisani

Subject: Science/ Physics

Name: .....

Worksheet 1: Sound

Unit 3: Sound

Date: .....

Grade 6 all sections (CS)

#### Objectives:

- To use a variety of objects to make sounds.
- Describe how sound waves are produced and how they travel.

#### Activity 1:

**Materials Required:** You will need **tuning forks** of different sizes, a beaker of water.

#### Procedure:

1. Hold a tuning fork by its stem and hit the edge of a surface firmly. What is happening to the tuning fork?

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2. Fill a beaker with water. Hit the tuning fork with the edge of the table, and put it in the beaker. What happens?

.....



**Activity 2:**

**Materials Required:**

- A loudspeaker, with the cone exposed and facing upwards, connected to signal generator.
- Very light polystyrene balls.

**Procedure:**

1. Switch on the signal generator. Watch the loudspeaker carefully. What do you notice?

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2. Change the loudness control on the signal generator so that the sound is louder. What do you notice?

.....



**Activity 3:**

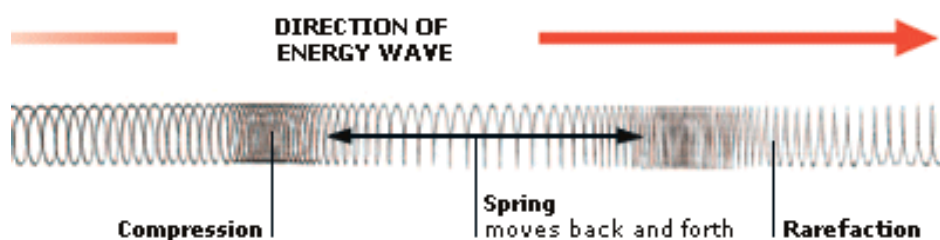
- **Materials Required:** A Slinky spring.

**Procedure:**

Hold the **slinky spring** from both ends and move your hands forwards and backwards. What do you observe?

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.....



**Questions:**

Question 1:

You cannot see a sound wave moving through the air but you can model it with a slinky spring.

- a. Draw a diagram of a wave on a slinky.

- b. There are places where the coils are close together.

What is that called in a sound wave? .....

- c. There are places where the coils are far apart.

What is that called in a sound wave? .....

Question 2:

- a. How can we measure the loudness of sound?

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- b. What is the unit of the loudness of sound?

.....

- c. Sound has a different speed in different materials.

- 1. Draw diagrams of the particle arrangements in a solid, liquid, and gas.

- 2. Use the diagrams to explain the different speeds in different materials.

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### Investigating the loudness of sound:

Hashem used a sound level meter to measure the volume of different sounds.

He held the sound level meter exactly the same distance away from each source of sound.

The table shows his measurements of the volume of each sound:

Source of sound	Sound level (dB)	Distance from source (m)
Hitting a ruler on the desk	70	5
Blowing a whistle	85	5
Shutting the door	90	5
A noisy street	100	5
Friends talking to each other	60	5

1. Identify the control, the independent and the dependent variables in this investigation.

Control: \_\_\_\_\_

Independent Variable: \_\_\_\_\_

\_\_\_\_\_

Dependent Variable: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. Describe two ways in which Hashem could make the test fair.

\_\_\_\_\_

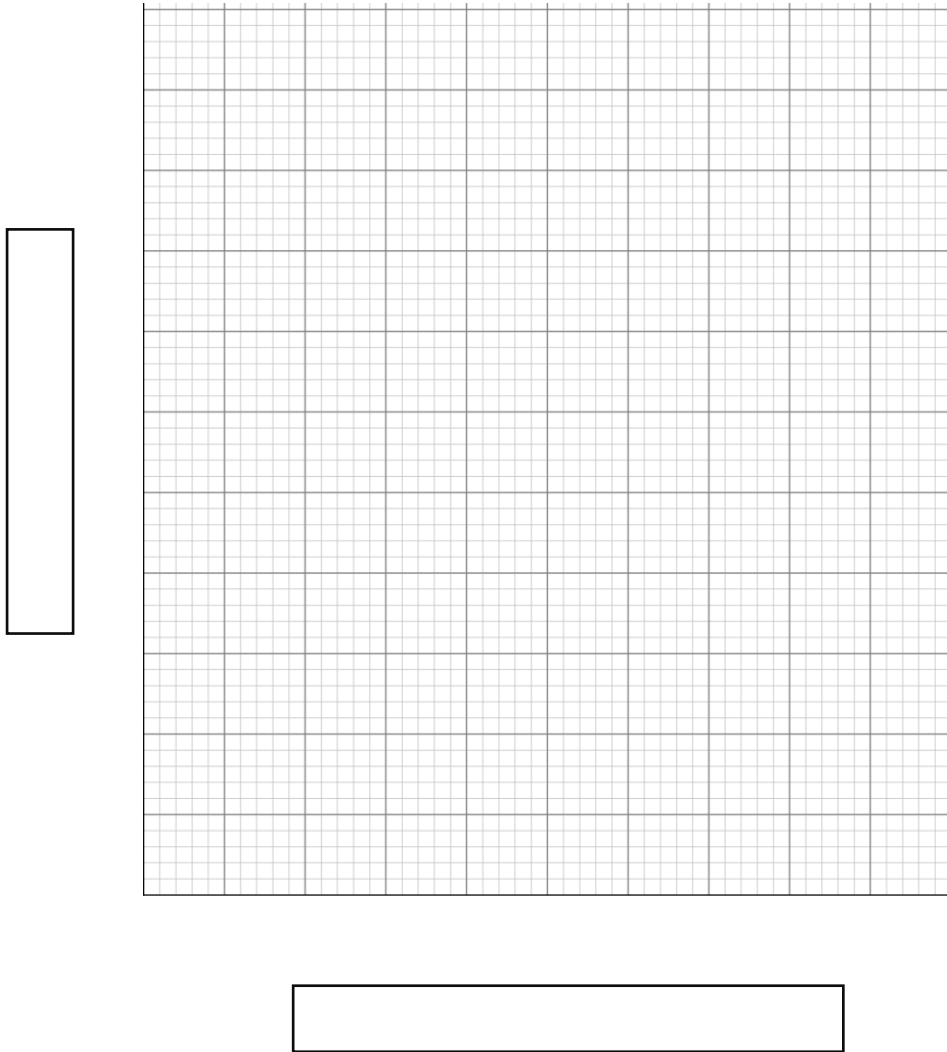
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3. How could Hashem get more accurate results?

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4. Draw the results in a bar chart.

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5. Which sound was loudest? .....

6. Which sound was quietest? .....