

SCIENCE

Lessons 2-3

Prep

Topic: Reflecting on movement

Applying understandings of movement

Lesson concepts

- A** The way objects move depends on a variety of factors, including their size and shape
- A** Questions can obtain responses
- O** Observations can be made using the senses
- A** Observations can be discussed and ideas can be represented
- A** Observations and ideas can be shared

Today students will:

- ▶ construct an object with moving parts
- ▶ apply their understanding of properties influencing the movement of objects.

Resources

Digital

Slideshow — Objects that have multiple moving parts

Find and prepare

Sheet — My moving object

Sheet — How well does my object move?

Sheet — Activities for observing movement in other contexts

Playdough

Computer mouse (or other object with several moving parts)

Household objects with moving parts such as moving toys, can opener, door handles and catches, stapler, pliers

Materials for making a simple object with moving parts, for example: commercially-made construction sets, cardboard boxes, tape, split pins, plastic containers

Key terms

object, property, senses, vibration

For definitions and explanations of terms, please see the [Glossary](#).

Lesson

Note

Two lessons have been allocated to this topic. This is to allow students plenty of time to construct their object with multiple moving parts and to make comparisons of the movements of a number of objects.

Review shape and movement

Say to students

‘ We have been learning about the movements that objects can make and the properties affecting these movements. To begin this lesson, we are going to use some playdough to remember what we have learned about so far. ’

1. Display the playdough.



Focus questions

Q: *What are some of the properties of the playdough as it is like this?*

A: For example: pink, soft, flexible, stretchy, cold, has a smell

Q: *If we wanted to get the playdough to roll across the table what might we do to it?*

A: For example: We would roll it into a ball; roll it into a sausage shape.

Q: *Are there any new properties we can now describe?*

A: For example: round, long, thin, smooth

Q: *If we wanted to try and get the playdough to slide, what might we do to it?*

A: For example: We could flatten the sides and make it like a box.

Q: *Which property or properties affect how the playdough moves and which don't?*

A: For example: Its shape affects how it moves but being pink, soft, cold and smelly doesn't affect its movement.

- a. Provide a pencil.

Say to students

Now use this pencil and the dough to see if you can make a shape that can spin.

- b. Share observations as they mould and test their spinner.

Say to students

We know that how an object moves can depend on its properties, in particular its shape.

Consider real objects with multiple moving parts

Say to students

We have explored objects that move in particular ways, but many objects have different parts that each move in their own way. This computer mouse is a very good example.

2. Display the computer mouse.



Focus questions

Q: *What parts can you identify?*

A: For example: a cord, a wheel, a light underneath

Q: *What movements can we make with the mouse?*

A: For example: We can click the buttons on the top, roll the wheel, slide it across the mouse pad forwards backwards and sideways, and we can lift it to move it.

Focus questions

Q: *How do the properties of the parts allow for these movements?*

A: For example: The bottom is flat and smooth so it slides easily. The wheel is round so it can roll. The buttons can be pushed down and then they spring back.

Q: *Apart from seeing these movements and properties, can you make observations with any other senses?*

A: For example: Yes, I can hear the buttons clicking and the wheel turning; I can feel the wheel turn and feel how the bottom is smooth and the buttons go up and down.

Say to students

Remember, scientists make accurate and detailed observations using all the senses possible.

Focus question

Q: *Apart from seeing the movements and properties of the mouse, can you make observations with any other senses?*

A: For example: Yes, I can hear the buttons clicking and the wheel turning; I can feel the wheel turn and feel how the bottom is smooth and the buttons go up and down.

Say to students

This computer mouse is an object that can actually make three different types of movement to do the job it has been made for. Look around to see if you can identify any other objects that you use everyday that make more than one type of movement. Stand near an object that has two or more moving parts and observe:

- the shapes of the moving parts
- how useful the part is for the object and its job
- the types of movements each part makes.

3. Display and discuss the objects and their moving parts in **Slideshow — Objects that have multiple moving parts.**



Construct an object with more than one moving part

Say to students

‘ In the next part of this science lesson, you are going to make your own object with two or more moving parts. The parts can move in any way you wish. Let’s recall the different movement types you could choose. ’

4. View and read movement word cards (bend, roll, bounce, swing, slide, turn, spin, twist, rotate).

Say to students

‘ Now you can begin building your object. Make sure it has at least two moving parts and makes two different types of movement. For example a car with four rolling wheels is only one type of movement so you will need to add another type of moving part. These are the materials you can choose to use. ’

5. Present the materials and allow time for construction of an object with at least two different moving parts.

Analyse the ability of a created object to perform different movements



6. Locate **Sheet** — [My moving object](#).

Say to students

‘ We will take a photo of your object and insert the photo into the first box on the sheet. Then we will talk about your scientific thinking. ’

7. Use **Sheet — My moving object** to record student responses about:
 - a. the movements the object can make
 - b. the properties and parts of the object that enable it to make these movements.
8. Students may try some other activities with moving objects. See **Sheet — [Activities for observing movement in other contexts](#)** for more examples.

Note

The next activity uses a table to tally the different types of movement in a collection of everyday objects.

Say to students

‘ To finish this lesson, we are going to examine some objects and see which types of movements are most often made. ’



9. Display the **Sheet — [How well does my object move?](#)**

Say to students

‘ For each object, we will place a stamp/tick in the columns that match the movement it makes. ’

10. Enter movements for all objects.

Say to students

‘ This shows us which movements our objects mostly made. Perhaps some movements like vibrate and bounce need special parts that were hard to make, whereas rolling and swinging parts were easier to make with the materials we had. ’