

MATHS



Lessons 28–29

Prep

Topic: Location and transformation

Describing movement

Lesson concepts

-  Location and direction — Positional language (describing)
-  Location and direction — Language of direction (describing)

Today students will:

- describe movement.

Resources

Digital

Drawing software (optional)
Digital camera (optional)

Find and prepare

Materials suitable for making puppets (for example: gloves, socks, paper bags, wooden spoons)
Simple props such as blocks, sticks, balls
Place markers (for example: empty plastic bottles or containers)
Blocks, figurines etc. and boxes to create mini worlds
Pictures or images that can be glued to make a board game or racing track
Cardboard
Animal prints or dots on cards

Key terms

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

Note

This is a double lesson. It may be administered on one day if time permits, or alternatively, it can be split and continued the following day. Some activities are suitable for repeating across both days.

Lesson

Note

It is important to highlight and develop the following vocabulary throughout this lesson: left, movement, path, forwards, backwards, under, over, around, beside, over, along, left, right, outside, inside.

Introduce the lesson: Recall movement sequences

- Provide students with socks, gloves or brown paper bags that could be used as puppets.
- Ask them to:
 - experiment with the movements that their puppet could do
 - select words to describe the movements (jump, twist, wriggle)
 - create a sequence of at least three movements for the puppet
 - demonstrate these to another person
 - copy the other person's puppet movements.

Focus questions

Q: How did your puppet move?

Q: What special words did you use to describe how they moved?

Q: In what order did they do the movements?

Q: How could you change the order?

Q: What movements were hard? Why?

Describe movement paths

- Share a copying game such as the songs 'Everybody do this' or 'Punchinello'.
- Have students repeat the copying game then:
 - discuss how you can change your location while you are moving
 - practise changing locations with the puppets in relation to your body (for example: on your head, behind your back, under your chin)
 - list words that describe movements (for example: forwards, backwards, around, under, beside, over, along, left, right)
 - relate these words to real-life situations.

Note

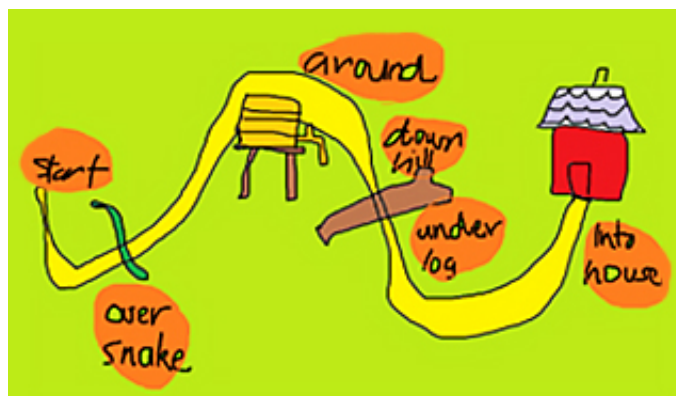
These can be used as prompts for descriptions or as writing models for students to copy when recording movement.

Focus questions

- Q: Why might you walk backwards/forwards?
- Q: What things do cars go under/over? Why?
- Q: Why might you go inside when you are playing outside?

Represent movement paths

- Explain to students that they will:
 - make up an adventure for their puppets (for example: when the friendly puppets went on a sailing trip/car journey/camping trip)
 - record the sequence of the adventures using simple images and/or words (referring to the list of movement words)
 - retell the adventure using mathematical language
 - plan where they could enact or demonstrate their adventure.



Focus questions

- Q: Where might your puppet go on an adventure?
- Q: Where might your puppet rest when it gets there?
- Q: In what order could it visit these locations? Why did you choose that order?
- Q: Are all the locations inside or outside? Why?

- Allow students to collect simple props and instruct them to:
 - represent the adventure inside and outside (for example: lounge room and outdoor area)
 - record the adventure using photographs/videos/drawings.
- Share the adventures and have students retell the movement sequence using their recordings as prompts.

Focus questions

- Q: *Where did your puppet travel? How did it move?*
- Q: *Where else could your puppet have gone? How could your puppet have moved differently?*
- Q: *What problems did you have describing and remembering the adventure?*
- Q: *What position and direction words did you use?*

- Ask students to:
 - scatter/place road markers (objects) within a set area
 - describe where they are placed (for example: under the seat, behind the table)
 - visit each location once only in a different order by using different paths.

Focus questions

- Q: *Where did you go first, second?*
- Q: *Why did you go in that order?*
- Q: *Are there other ways that you could have gone? What are they?*

- Explain how paths are made.

Explain to students

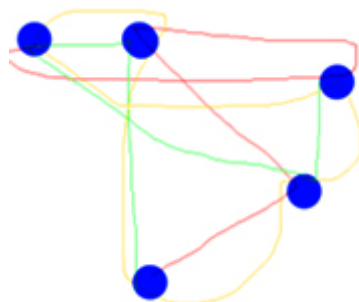
“ There are many ways to connect locations and when you connect them, different paths can be created. ”

- Negotiate opportunities for students to represent and describe different pathways between objects.

Activities may include:

1. Join the dots

- Explain to students how to place five or more dots randomly on paper or in sand and use different colours/tools to draw different paths.



Focus questions

- Q: *What sorts of lines did you create?*
- Q: *How could you draw a path that zigzagged or curved?*

2. Mini worlds

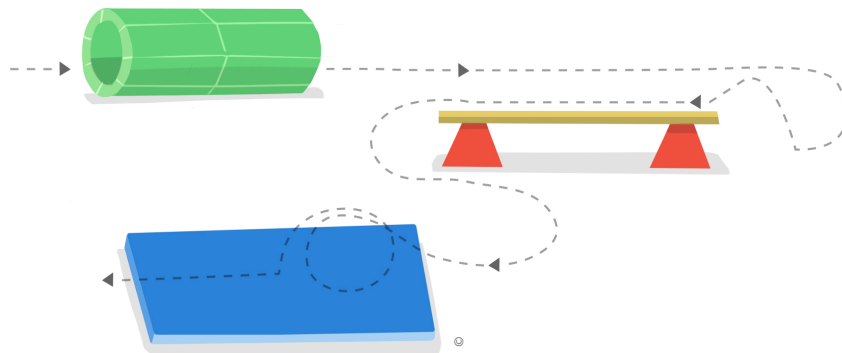
- Have students create a mini world (for example: city/garden) and represent different paths throughout the mini world for a toy or character. (Students could model this with playdough, blocks or environmental materials.)

Focus questions

- Q: *Where did you go next?*
- Q: *How did the character get to the next place?*
- Q: *Which way did it turn here?*
- Q: *How else could it have got there?*

3. Virtual obstacle courses (optional)

- Using drawing software, demonstrate to students how to use virtual three-dimensional shapes and lines to show alternative paths around an obstacle course.



- Support students to use virtual three-dimensional shapes and lines to create their own obstacle course and show alternative pathways around them.

Focus question

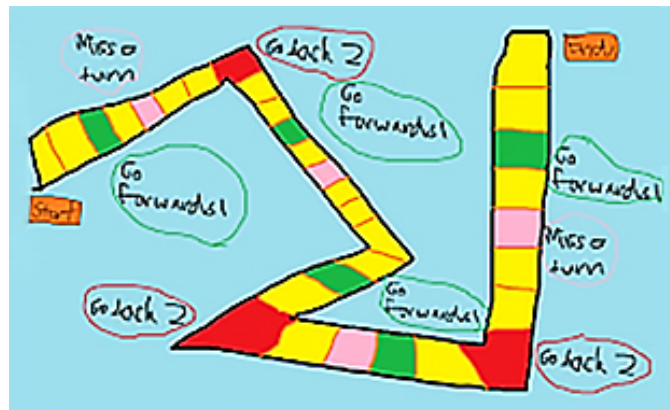
- Q: *What shapes did you use to make the obstacle course?*

4. Board game/racing track

- Explain to students how to paste pictures on cardboard to make a board game or racing track.
- Have students experiment with sequences pictures in order, before gluing the images to the cardboard.

Focus questions

- Q: Where do you want the game to start? Where else could you start?
- Q: What order do the players have to go to?
- Q: How would you describe the track?



5. Animal tracks

- Print or trace animal footprints on sheets of paper.
- Have students lay out animal footprints to create different paths through a room or outdoor area.

Say to students

- “ Where did the bear come from?
Where did he go next? ”

Identify and justify the ‘best’ path

- Discuss the different pathways to different items or locations. Ask students to consider the best pathway.

Say to students

- “ Which would be the best path to the mail box (or another suitable location) if you wanted the:
- quickest
 - most interesting
 - safest
 - most challenging
 - most scenic
 - one with left turns all the way
 - shadiest path?
- ”

- Discuss how paths may be different for different contexts, for example, if you were:
 - on a bike race track
 - walking along the edge of the beach
 - following an animal
 - in a plane
 - a butterfly.