



# MATH&MOVE

## LESSON

### USING MOVEMENT TO

learn geometric lines



The lesson focuses on learning lines used for geometry concepts. Pupils must find the right type of line by taking into account the characteristics of each according to geometric principles. Pupils will follow the teacher's instructions and will walk over specific lines.

### At the end of this lesson, pupils should be able to:



- Recognise types of lines that can be used in the production of geometric shapes.
- Have improved the speed of their thinking (quick recognition of geometric shapes, develop their collaborative thinking as well as observation skills)
- Realise that lines exist everywhere since simple, everyday objects are made up of the different types of lines.

**TOPIC:** Geometry (recognition of line types)

**DURATION:** 20 - 30 mins

**LEVEL:** Ages 6-7

**PARTICIPANTS:** 1 class divided into pairs or groups of 4

## LESSON PREPARATION

### Required skills

For this lesson, pupils should already know:

- To use a ruler
- That objects around us consist of different types of lines

### Required materials and set up

- 1** An indoor or open space, quiet enough for children to be heard and move around comfortably
- 2** 4 balloons or balls of different colors (1 for units, 1 for tens, 1 for hundreds and 1 for thousands).
  - Possible items could be: a house, a block of flats, a ladder, a wheel, a lake etc. or classroom items like a globe, a map, a board, a computer screen, a pencil case etc. to present the lines, so the teacher could use:
    - real photos taken and printed by him/her
    - online images in a PowerPoint presentation
    - flashcards or
    - real items (like the classroom items previously mentioned)



- 3** Pieces of chalk or rolls of paper tape, used for the construction of lines.  
You can make 9 lines on the floor, 3 for each kind.
- Chalk and paper tape of different colour would help and make the activity more pleasant. Ensure that the lines are visible and wide enough for pupils to easily step on them.
- 4** 4 groups of pupils or pairs
- 5** 20 sheets of white paper (A4), set of markers and sets square (one per pair/group).
- Hand them out when it's time for pupils to draw.

## LESSON INSTRUCTIONS

Show images/items to the pupils to present the different types of lines. Talk about similarities and differences and name lines. Get pupils draw them on sheets of paper. Divide pupils in pairs/groups and describe the activity:

- In this collaborative game each pair/group has to cross the right line on the ground by walking along it (each member) and, in the end, work together to form the respective line using your bodies.
- There are 3 types of lines in front of you. Your teacher will call out a kind of line, i.e.: straight. You should all head to the right choice and use small steps to walk completely over it without stepping out of the line.
- Once the pairs/groups have completed your “route”, you have to use your body to make the type of line you walked over.

Once the 4 groups are formed, pupils take their place and await the teacher's instructions.



## 2

The game begins:

- A type of line is announced loudly by the teacher, i.e.: straight.
- The players, first think, exchange views, and orient themselves in the space.
- All groups must then run towards the right line, with each pair/group member running behind one another in unison.
- They must cross the line in small steps one behind the other.



## 3

- When reaching the end of the line, pupils must form the line just crossed using their bodies.
- The game continues with the other types of lines being spoken out by the teacher until all pairs/groups have a go.



## CONCLUSION



When all pupils have had a turn ask them which line(s) was the easiest to walk over and which one was the hardest. Which pair/group cooperated better?

## TO GO FURTHER



To make it more challenging, add open-closed lines (i.e. a line with one endpoint free, not meeting the other or a line forming a shape with both endpoints meeting).

This adds variety and makes the game more interesting for pupils.

This activity can also be implemented at home (i.e. by locating types of lines on furniture). Children can observe objects inside or outside the house like paintings, windows, doors or vases and afterwards they can draw the lines on sheets of paper. With their parents, siblings and/or friends they can sketch lines on the floor, yard or pavement to walk over.



# RECOMMENDATIONS FOR INCLUSION

## How to adapt this lesson to older pupils

For older pupils we could play the game by drawing complex geometry shapes such as rhombuses, hexagons, or 3-D shapes such as sphere or pyramid and mixed lines such as zig zag and curved, straight and zigzag and get them move towards them.

## Accommodations for pupils with specific learning disorders

- Because this lesson involves the use of coordination, balance and gross motor skills (ie. running), adaptations may be needed to ensure that all children can actively participate. This is especially true if some of your pupils may appear to be clumsier or have more difficulty navigating through spaces.
- The first accommodation you can make is to minimise the occurrence of environmental disturbances, such as loud noises and visual distractions.
- Then demonstrate the activity to children first, showing them the type of steps needed from them, before the lesson officially begins.
- Finally, always have the child 'leading' the group in a straight line towards the right line be one that is more gifted with coordination and can, therefore, serve as an example to follow during the activity.

## BIBLIOGRAPHY

Missiuna, Cheryl, and Lisa Rivard. "Children with Coordination Difficulties: A Flyer for Physical Educators." CanChild, n.d. <https://canchild.ca/en/resources/126-children-with-coordination-difficulties-a-flyer-for-physical-educators>.

