# HORIZONTAL LINES, VERTICAL LINES AND CARDINAL POINTS

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## Subject

Mathematics

## Prepared By

[Instructor Name]

## Grade Level

3

## Overview

This lesson plan covers teaching content for;

1. Understanding Plane shapes
2. Identifying vertical and Horizontal lines
3. Working with intersection of lines and shapes
4. Understanding the four cardinal points

## Objectives

Students should be able to;

1. Review the properties of plane shapes
2. Identify the horizontal and vertical lines
3. Mention five objects or materials that have horizontal and vertical lines in their environment
4. Identify the primary and secondary cardinal points.

## Guided Practice

**Day 2/ Lesson 2: 15 Mins**

1. Explain that there is a word that describes all the lines

## Activity Starter/Instruction

1. Pupils may be confused about the definition of vertical being straight up on the board and straight up on the page (even though the page itself is horizontal.)
2. Make sure you refer to shapes drawn both on a vertical board and on a flat sheet of paper.
3. Explain that it is easiest to think of vertical as straight up, whether this is in the air or on the table
4. Pupils may confuse the relative positions of East and West.
5. Use some form of memory exercise such as the body shapes or a mnemonic such as that given in the lesson focus, to help them to remember

## Guided Practice

**Day 3/ Lesson 3: 15 Mins**

1. Groups the learners into four groups – A, B, C, and D.

## Teacher Guide

**Day 1/ Lesson 1: 15 Mins**

1. Ask pupils to each draw a rough sketch of a landscape (two minutes maximum time).
2. Choose a few that show the horizon. Discuss the term 'horizon' with the class.
3. Ask pupils to point to vertical lines in the classroom for example, edges of doors and windows and the chalk board; corners where walls join; chair and table legs.
4. Next, ask them to point to horizontal lines for example, table and desk tops, tops of doors and windows and so on.

## Guided Practice

**Day 4/ Lesson 4: 15 Mins**

1. Give students a blank piece of paper and ask them to draw a circle in the center of the paper.
2. Instruct students to draw a horizontal and vertical line through the circle to create a compass rose.

## Materials Required

- Blank Papers
- Pencils
- Compass
- Shapes (e.g. cubes, desk, cuboid)
- Whiteboard and marker

## Additional Resources

- https://clicksamplenote.com.ng/2019/06/08/smase-asei-pdsi-method-on-plane-shapes/horizontal-and-vertical-lines/
- https://www.brighthubeducation.com/lesson-plans-grades-3-5/105975-cardinal-points-mapping-and-reading-a-compass-lesson-plan/
- https://za.pearson.com/content/dam/region-growth/south-africa/pearson-south-
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## Additional Notes

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| that go across from left to right – it is horizontal.<br>2. Ask pupils to show you all the horizontal lines in the shape you have drawn.<br>3. Then repeat to define vertical. Ask them to draw a rectangle on a piece of paper, and compare it to the one on the board.<br>4. Explain that we still define the upright sides of the rectangle as being vertical, even though they are flat on the desk.<br>5. Ask pupils to identify two horizontal and two vertical lines in the classroom.<br>6. The lines can be part of the room or objects in the room | 2. Guide the learners to choose a leader and secretary for your group.<br>3. Gives each group learning materials – cube or cuboid cartoon.<br>4. Let pupils identify the lines by names – horizontal and vertical lines.<br>5. Guides them to differentiate between horizontal and vertical lines with practical illustrations – vertical (standing) and horizontal (lying down)<br>6. When 3 or more lines joined together, they formed a shape.<br>7. How many line formed this shape?<br>8. How many of these lines are vertical and horizontal lines.<br>9. The face of this shape looks like square or rectangular face?<br>10. Name five (5) shapes that the represent – for example, Maggi cube. | 3. Have students fill in the cardinal directions on the compass rose. Have students stand up while they are holding the compass rose.<br>4. Ask the students to turn so the north on the compass rose actually points north.<br>5. Discuss with the students why they were not able to correctly turn towards north.<br>6. If some students are facing the correct direction, ask them why they are facing that direction as some people have a natural sense of direction.<br>7. Give students a compass and a map with the cardinal points already labeled. Have students stand holding the compass in one hand and face North.<br>8. Have students turn slowly in a circle and observe what happens with the compass needle.<br>9. Repeat the process while holding a map.<br>10. Discuss the concept that no matter which way you are actually facing, up is always north on a map.<br>11. Discuss how this concept may cause problems when trying to navigate using a map in an unfamiliar place. |
| Assessment Activity | Assessment Activity<br>1. Evaluation of this unit gauges the extent to<br>2. which individual pupils have achieved the<br>3. objectives stated at the beginning of this unit.<br>4. You should give pupils a set time in which to complete the assessment.<br>5. Pupils should work through the questions individually. | Assessment Activity<br>1. Make a compass. You will need a pin or needle, a magnet, a piece of cork and a glass of water.<br>2. Hold the pin or needle in one hand and run the magnet along it, always in the same direction, 80-100 times.<br>3. Stick the pin or needle through the piece of cork so that it is balanced. |

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| | 6. Encourage them not to spend too much time on any one question if they are stuck.<br>7. Instead, they should go on to the next question, and come back to the question they were struggling with if they have time at the end of the assessment. | 4. Float the cork in the glass of water and allow it to settle.<br>5. Test the compass by moving the cork – observe how it returns to the original position |
| Summary | Review and Closing<br>1. Once students are comfortable with using north, south, east and west when giving directions, they are ready to create a treasure map<br>2. Students can work independently or in pairs to write directions.<br>3. Distribute compasses to each student or group of students.<br>4. Place students on each side of the open area so that they are attempting this activity from different starting points.<br>5. Let the students move around the open space and get the directions of different points in the open area. | |