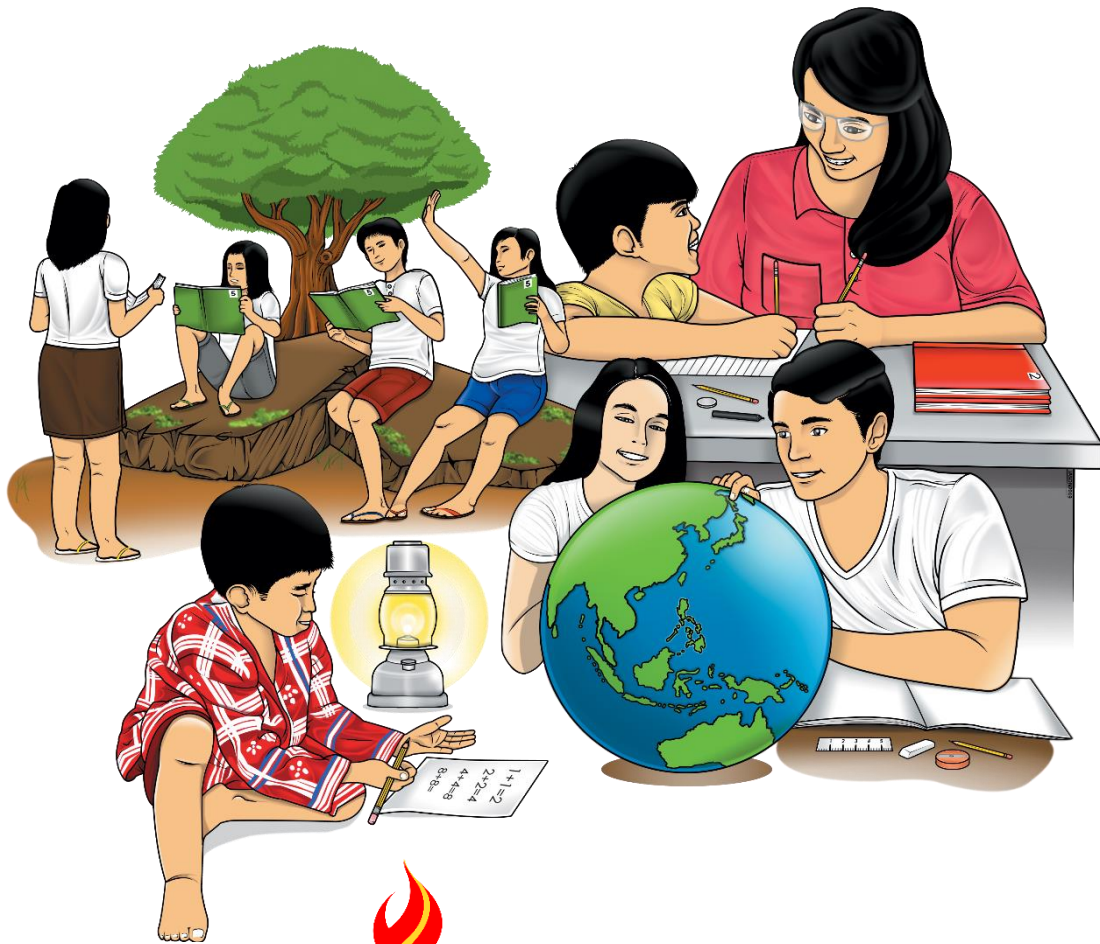


# Mathematics

## Quarter 3 – Module 1: Kinds of Lines



**Mathematics – Grade 4**  
**Alternative Delivery Mode**  
**Quarter 3 – Module 1: Kinds of Lines**  
**First Edition, 2020**

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**4**

# **Mathematics**

**Quarter 3 – Module 1:  
Kinds of Lines**

## **Introductory Message**

This Self-Learning Module (SLM) is prepared so that you, our dear learners, can continue your studies and learn while at home. Activities, questions, directions, exercises, and discussions are carefully stated for you to understand each lesson.

Each SLM is composed of different parts. Each part shall guide you step-by-step as you discover and understand the lesson prepared for you.

Pre-tests are provided to measure your prior knowledge on lessons in each SLM. This will tell you if you need to proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for better understanding of the lesson. At the end of each module, you need to answer the post-test to self-check your learning. Answer keys are provided for each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text, Notes to the Teacher are also provided to our facilitators and parents for strategies and reminders on how they can best help you on your home-based learning.

Please use this module with care. Do not put unnecessary marks on any part of this SLM. Use a separate sheet of paper in answering the exercises and tests. And read the instructions carefully before performing each task.

If you have any questions in using this SLM or any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator.

Thank you.



## ***What I Need to Know***

This module was designed in order to help you learn the different kinds of lines. Lines can be seen in most objects.

In this lesson, you will learn about the three different kinds of lines. The learning activities will allow you to explore, discover and appreciate the different kinds of lines which can be seen in objects around us. You will also learn how to describe and illustrate the different kinds of lines.

After going through this module, you are expected to be able to:

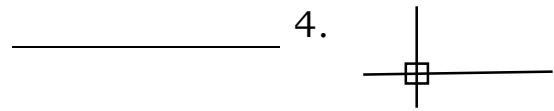
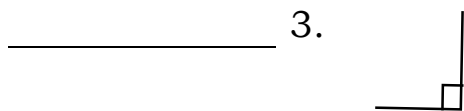
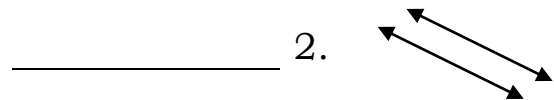
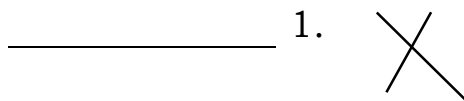
1. Describe and draw parallel, intersecting and perpendicular lines using a ruler and set square set.
2. Identify the different kinds of lines.



## What I Know

We need a sheet of paper for our next activities.

A. Identify the kind of lines shown in the figure. Fill in the blanks by writing parallel, intersecting, or perpendicular.



B. Draw objects that show parallel, intersecting or perpendicular lines. (one object for each kind of lines)

C. Describe the following kinds of lines.

- parallel lines
- intersecting lines
- perpendicular lines

Look at the last page to check your answers.



**CONGRATULATIONS!** If you got a score of 9 or 10, you should not have any difficulty studying the lesson in this module.

If you got a score of 8 or below, you may need to study the lesson more carefully and do all the given activities.

## Lesson

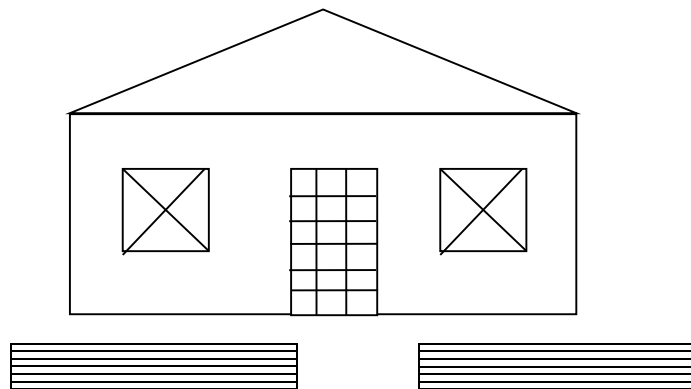
# 1

## Kinds of Lines



### *What's In*

Each of the pupils of Grade 4 Resourceful was asked to draw a house. Neil presented his drawing to the class. Take a look at it.



Do you see lines in Neil's drawing? In what parts of the house do you see lines? Do you think we can draw houses without lines? Are lines important? Why?

We see lines in most of the things around us. We see different kinds of lines in almost everything. Today, we will talk about the three kinds of lines.



## What's New

### Parallel Lines

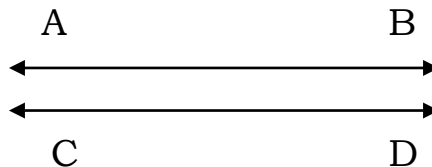
Let us look at Neil's drawing of the fence.



Neil drew the fence using horizontal and vertical lines. The horizontal lines do not intersect even if we extend them. Likewise, the vertical lines do not intersect even if we extend them. These lines are said to be parallel lines.

**Parallel lines** are lines that do not intersect.

Lines AB and CD below are parallel lines. They will not intersect however long we extend them to the left or to the right.



### Intersecting Lines

Let us now look at Neil's drawing of the window of the house.

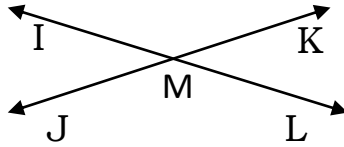


The diagonal lines cross or intersect each other. They are thus called **intersecting lines**.

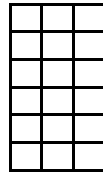
So, we say, "**Intersecting lines** are lines which intersect".



Line IL and line JK below are intersecting lines. They intersect at point M.



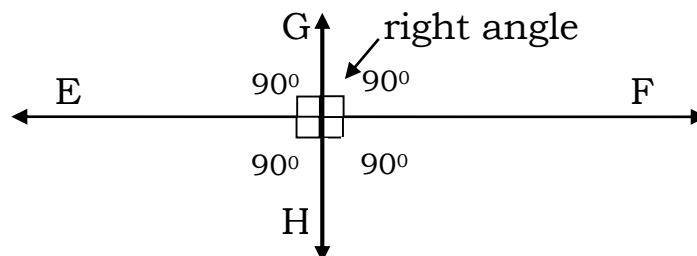
Let us now look at Neil’s drawing of the door of the house.



Neil used horizontal and vertical lines to draw his door. The horizontal lines intersect the vertical lines. What kind of angle is formed by one of the horizontal lines and one of the vertical lines. If you answered, “right angle”, you are correct. Each pair of intersecting horizontal and vertical lines in Neil’s door form a right angle. Each of these pairs are then described as perpendicular lines.

And so we say, “**Perpendicular lines** are lines that intersect and form a right angle”.

Lines EF and GH below intersect and form right angles. They are therefore perpendicular. The four small squares at the corners tell us that the angles formed are right angles or that the measures of the angles is  $90^\circ$ .



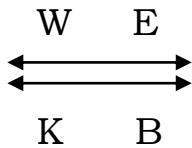


## What is It

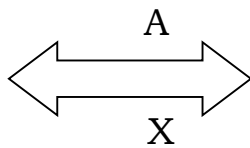


How do the kinds of lines differ from one another? Take a close look at the examples.

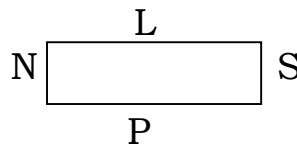
**Parallel lines** – lines that do not intersect. The figures below show parallel lines.



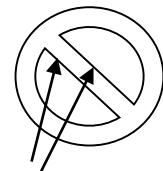
Lines WE and KB are parallel



Side A and side X are parallel

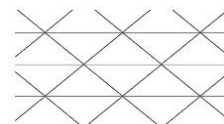
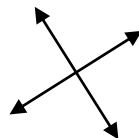
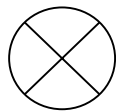


Sides L and P are parallel. Line N and line S are also parallel

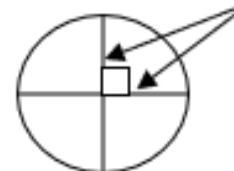
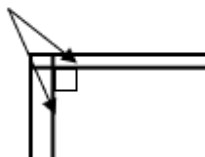
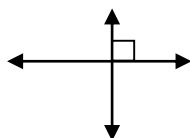


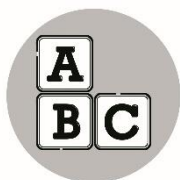
The lines to which the two arrows point are parallel

**Intersecting lines** – lines that meet or intersect at a point. The figures below show intersecting lines.



**Perpendicular lines** – lines that intersect and form right angles (angles measuring  $90^\circ$ ). The pictures below show perpendicular lines.





## What's More

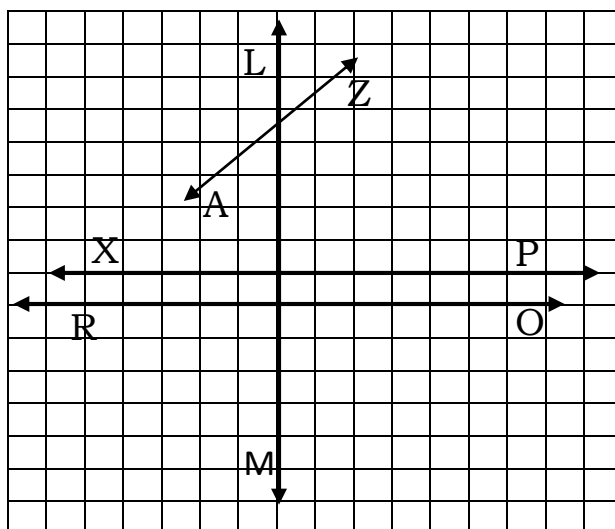
### Activity 1 - "Name Us"

Name the pair of lines being described by each statement.

1. We are lines that intersect each other.
2. We are lines that intersect and form a right angle.
3. We are lines which do not meet or intersect even when extended.

### Activity 2 - "Explore the Space"

Look at the grid below and give at least 1 pair of parallel lines, 1 pair of intersecting lines, and 1 pair of perpendicular lines.



### Activity 3 - "Draw Me"

1. Draw 2 parts of your house which show parallel lines.
2. Draw 2 objects in your bag which show perpendicular lines.
3. Draw 2 objects in the garden which show intersecting lines.



## ***What I Have Learned***

Let us remember:

- **Parallel lines** are lines that do not intersect even when extended in either direction.
- **Intersecting lines** are lines that intersect.
- **Perpendicular lines** are lines that intersect and form a right angle.



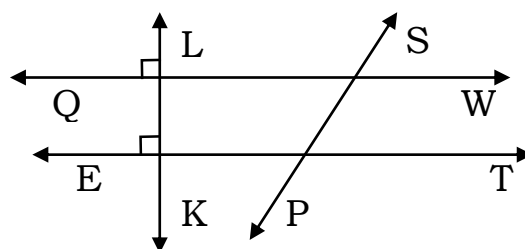
## ***What I Can Do***

Using the different kinds of lines, design a vegetable garden that you can put up in your yard.



## ***Assessment***

- A. From the figure below, name 2 pairs of intersecting lines, 1 pair of parallel lines, and 2 pairs of perpendicular lines.



B. Fill in the blanks with the kind of lines being described.

1. \_\_\_\_\_ are lines that intersect at a point.
2. \_\_\_\_\_ are lines that do not intersect even if they are extended in either direction.
3. \_\_\_\_\_ are lines that intersect and form right angles.

C. Draw an example of each kind of lines.

1. Intersecting lines
2. Perpendicular lines
3. Parallel lines



### ***Additional Activities***

Using the different kinds of lines, make a design of a house that cannot be easily destroyed by a typhoon.



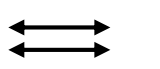
# Answer Key


**What I Know**


A. 1. Intersecting lines  
 2. Parallel lines  
 3. Perpendicular lines  
 4. Perpendicular lines  
 B. (drawings may vary)  
 C. a. Parallel lines are lines which will not intersect even when extended in either direction.  
 b. Intersecting lines are lines which intersect at a point.  
 c. Perpendicular lines are lines which form right angles.

**What's More**

Activity 3

1. parts of the house with these lines  


2. objects with these lines  


3. objects with these lines  


**What's More**

Activity 2

1. Parallel lines  
 - lines XP and RO  
 2. Perpendicular lines  
 - lines LM and XP  
 - lines LM and RO  
 3. Intersecting lines  
 - lines LM and ZA

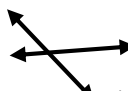

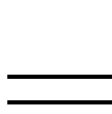
**What's More**

Activity 1

1. Parallel lines  
 2. Perpendicular lines  
 3. Intersecting lines

**Assessment**

C.

1.   
 2.   
 3. 

**Assessment**

B.

1. Intersecting lines  
 2. Parallel lines  
 3. Perpendicular lines

**Assessment**

A.

1. Intersecting lines  
 - lines QW and SP  
 2. Parallel lines  
 - lines QW and ET  
 3. Perpendicular lines  
 - lines LK and QW  
 - lines ET and LK

## ***References***

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<https://www.cuemath.com/learn/types-of-lines/>

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<https://www.deped.gov.ph/2020/06/19/june-19-2020-do-012-2020-adoption-of-the-basic-education-learning-continuity-plan-for-school-year-2020-2021-in-the-light-of-the-covid-19-public-health-emergency/>

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