

**WEEK 1:**      Lesson Plans for the week beginning September 7, 2020 to September 11, 2020.

**Day One:**      Monday, September 7, 2020

**Duration:**      60 minutes

**Sub-title:**      Introduction to Sets

**Specific Objectives:** At the end of the lesson, the students should be able to:

- ✓ Define the concept of a set.
- ✓ Describe a set.
- ✓ Name and list members of any given set.

**Key Vocabulary:**      sets, elements, members

**Key Skills:**      identifying, sorting, reasoning, describing, listing, defining, naming

**Materials:**      Video - <https://youtu.be/l3-A0042Lyo>, pictures of different groups, stories, classroom and home environment

**Teaching/Learning Activity:**

**Engage and Explain:**

Students will watch video entitled, **‘What are sets? /Set Theory’** - <https://youtu.be/l3-A0042Lyo>.

Based on their understanding of information given in video, students will then examine the picture below very carefully. After which they will complete the guided exercise that follows.



**Instructional Guide:** Students will in their notebooks:

1. List some of the objects that they see, then write a caption for the above picture.
2. Place the objects they have listed in three or more groups.
3. They will then answer the following questions based on the above activity.
  - a. How many groups did you make?
  - b. Do you have any object(s) that belong to more than one group? Write them down.
  - c. In pairs, compare your list and group names. Explain to your partner how you decided on the different groups?

Teacher will then reinforce students understanding of the concept – sets, from the above activities, by encouraging students in their own words to give a brief description of a set.

Teacher will then give the definition below:

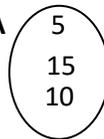
A set is a collection of items usually of the same kind. The items which belong to a set are called **members** or **elements** of the set. We use braces  $\{\}$  to show the members or elements of a set.

**Examples:**

- a. {cellular phone, tablet, laptop, computer} may be described as the **set of electronic devices**.
- b. {5, 10, 15} may be described as the **set of multiples of 5 that are less than 16**.

A set may be represented in three ways:

- a. By **listing the elements**, example **{5, 10, 15}**
- b. By **description**, example **the set of multiples of 5 less than 16**.
- c. By drawing a diagram, example **A**



We use curly brackets(braces),  $\{\}$ , to write about sets in mathematics.  $\{\}$  means “the set of”.

Therefore,  $A = \{5, 10, 15\}$  should be read as “A is the set of multiples of 5 that are less than 16.

**Note:** A set without members or elements is called an **empty** or **null** set. An empty or null set is represented by the symbol  $\{\}$  or  $\emptyset$ .

**Explore:**

Students will be presented with six pictures of different groups of things as shown below.

**Vegetables, transportation, furniture, fruits, musical instruments, and toys.**



A set of transportation



A set of musical instruments



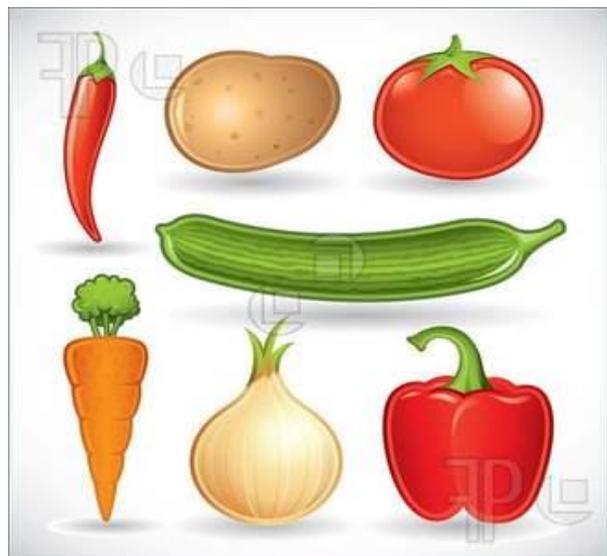
A set of fruits



A set of toys



A set of furniture



A set of vegetable

They will be asked/encouraged to examine each picture carefully then identify/name each group as a set. Teacher will engage students in a discussion about each picture with the following questions, as a guide to help students to correctly name each set.

- ✓ What are on each of the pictures you just looked at?
- ✓ What have you noticed about each picture?
- ✓ A group can also be called a \_\_\_\_\_.
- ✓ Can you say in your own words what is a set?
- ✓ Can you describe each group/set?
- ✓ Can you name things in the set in each picture?
- ✓ Do you know how many things are in each picture?
- ✓ What is one word that can be used to name each group/set?

Students will look around the classroom. In their notebook, list the objects that they see, then put the objects that have been listed in to three or more groups. They will then answer the following questions based on the activity above.

1. How many groups did you make?
2. Do you have any objects that belong to more than one group?

Write them down.

3. In pairs compare your list and group names. Explain to your partner how you decided on the different groups.

Based on the observation made in pairs, say what they would have done differently and why.

### Elaborate:

Students will discuss in groups the following questions. Write down and place each answer in a set suitable set, then share their answers with the class. Groups should be able to justify their answers.

1. I grow on various trees and you can eat me. I make you healthy. There are many like.
2. You use me when you are tired because I make you comfortable. I am found in bedrooms but sometimes in stores. My feet and yours add up to six.
3. Students wear me to school. Some people wear me to work. I am sometimes white, but I often appear in other colours such as brown, green, or with red stripe.
4. I am found in stores and libraries. I can be fat or thin, depending on what is within. I can be hard or soft on the outside, but I provide lots of information on the inside.
5. I come in many colours, shapes and sizes, and I am found in many places worldwide. People use me to transport items wherever they go. Schoolchildren like to wear me on their heads.



**Comments:**

**Areas of strengths:**

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**Areas of weaknesses:**

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**Actions to be taken:**

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