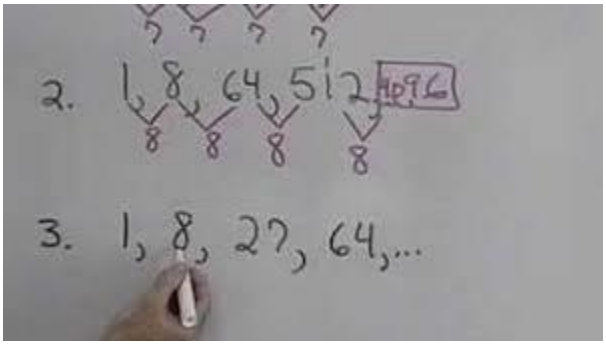
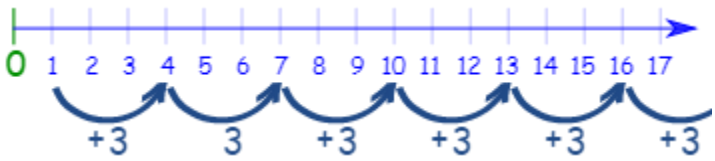
# BASIC 7

# WEEKLY LESSON PLAN – WEEK 2

| | | | | | |
|---|---|---|---|---|---|
| **Strand:** | Algebra | **Sub-Strand:** | Patterns and Relations | | |
| **Content Standard:** | B7.2.1.1 Derive the rule for a set of points of a relation, draw a table of values to graph the relation in a number plane and make predictions about subsequent elements of the relation. | | | | |
| **Indicator (s)** | B7.2.1.1.1 Extend a given relation presented with and without symbolic materials and explain how each element differs from the preceding one.<br>B7.2.1.1.2 Describe the rule for a given relation using mathematical language such as one more, one less, one more than twice, etc | | | **Performance Indicator:** Learners can identify the rule of a given relation. | |
| **Week Ending** | 19-01-2024 | | | | |
| **Class** | B.S.7 | **Class Size:** | | **Duration:** | |
| **Subject** | Mathematics | | | | |
| **Reference** | Mathematics Curriculum, Teachers Resource Pack, Learners Resource Pack, Textbook. | | | | |
| **Teaching / Learning Resources** | Charts, Pictures, Posters | **Core Competencies:** | | | |

| **DAY/DATE** | **PHASE 1 : STARTER** | **PHASE 2: MAIN** | **PHASE 3: REFLECTION** |
|---|---|---|---|
| **MONDAY** | Explain the concept of relation in Mathematics. | 1. Discuss with learners on how to compare patterns in a relation.<br>2. Assist Learners to compete tables of involving patterns of numbers.<br>3. Learners brainstorm to explain domains and co-domains.<br>4. Learners in small groups practice extending numbers of given relations.<br>  <br><br>Example:<br>1, 4, 7, 10, 13, 16, 19, 22, 25, ...<br>This sequence has a difference of 3 between each number. | Individual Learners practice completing tables involving patterns of numbers.<br>**Exercise;**<br>1. Find the following number in the number patterns 7, 14, 21, 28, 35….<br>2. Write the first five multiples of 4 by counting numbers in a pattern of 4. |

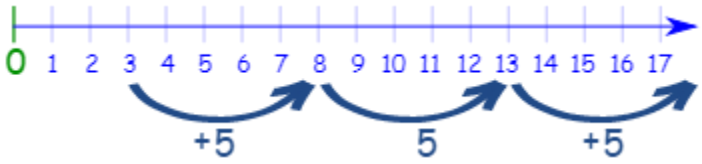
The pattern is continued by **adding 3** to the last number each time, like this:




Example:

3, 8, 13, 18, 23, 28, 33, 38, ...

This sequence has a difference of 5 between each number.
The pattern is continued by **adding 5** to the last number each time, like this:




The value added each time is called the **"common difference"**

What is the common difference in this example?

19, 27, 35, 43, ...

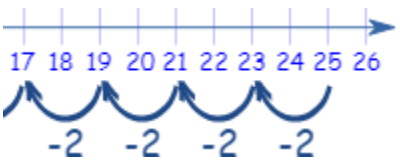
Answer: The common difference is **8**

The common difference could also be negative:

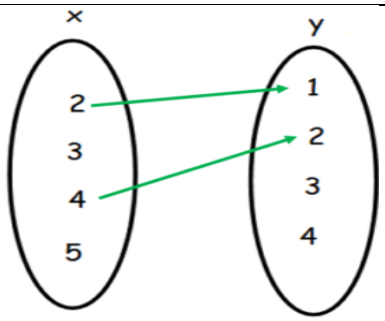
Example:

25, 23, 21, 19, 17, 15, ...

This common difference is **−2**
The pattern is continued by **subtracting 2** each time, like this:



| | | | |
|---|---|---|---|
| | | | |
| **TUESDAY** | Review Learners knowledge on the previous lesson. | 1. Assist Learners to describe rules of given relations using mathematical language such as one more, one less, one more than twice.<br>2. Learners brainstorm to find "square of numbers" and "double of numbers" in given relations.<br>3. Learners in small groups to discuss and answer questions on a table of patterns.<br><br>**Double means that a number is multiplied by 2**.<br>Squared means that a number is multiplied by itself.<br><br>A double is a number or an amount that is twice as large as the given number or amount. So, if we multiply a number by 2 or if we add a number to itself, we say that the number is doubled.<br><br>Squared =5^2 ==5 x 5 ==25 [multiply the number by itself]<br><br>Doubled =2 x 5 ==10 [multiply the number by 2<br>The following Arrow Diagram shows a Relation from Set A to Set B. Find the Domain and Range?<br><br>**Solution:**<br><br>The domain is the first component of the ordered pairs in the Relation R whereas Range is the second component of the ordered pairs. Repetition is not allowed.<br><br>Domain = { -2, 2, 4, 5, 6}<br><br>Range = { 4, 16, 25, 36}<br><br>The below figure shows a relation between Set x and Set y. Write the same in Roster Form, Set Builder Form, and find the domain and Range? | Through questions and answers, complete the lesson.<br><br>**Exercise**<br><br>1.<br><br>| | | | | |<br>|---|---|---|---|---|<br>| ***x*** | 3 | 5 | 7 | 9 |<br>| ***y*** | 9 | 15 | 21 | 27 |<br><br>Write the equation that represent the relationship of values in the table. |




**Solution:**

In the Set Builder Form R = {(x, y): x is the square of y, x ∈ X, y ∈ Y}

In Roster Form R = {(2, 1)(4, 2)}

Domain = {2, 4}

Range = {1, 2}

9. What can you say about the ordered pairs (x, y) and (y, x)?

**Solution:**

Ordered Pairs (x, y) ≠ (y, x).

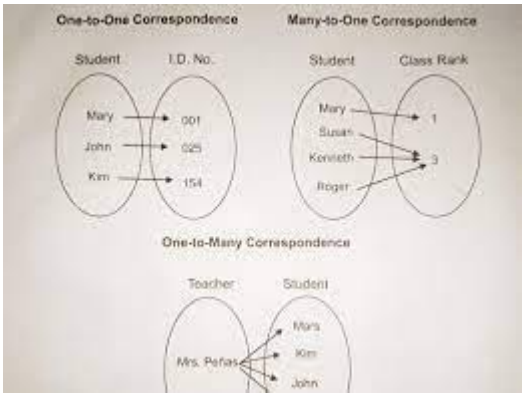
In case of Ordered Pairs Order Matters.

10. If A × B = {(a, 2); (a, 6); (a, 3); (b, 3); (b, 6); (b, 2)}, find B × A.

**Solution:**

Given AxB = {(a, 2); (a, 6); (a, 3); (b, 3); (b, 6); (b, 2)}

BxA = {(2, a); (6, a); (3, a); (3, b); (6, b); (2, b)}

| | | | |
|---|---|---|---|
| **THURSDAY** | Solve examples of writing relations in words for Learners to observe. | 1. Discuss with Learners on how to state the rules in words to represent a given relation.<br>2. Assist individual Learners to write rules of given relations in words.<br><br>A pattern rule is **a mathematical relationship used to find the value of each term in a sequence**. To describe certain sequences, a pattern rule can be established. This is an algebraic equation that enables you to quickly find the value of a term in a sequence using its rank.<br><br>  <br> | **REMARKS** |

**Name of Teacher:** **School:** **District:**