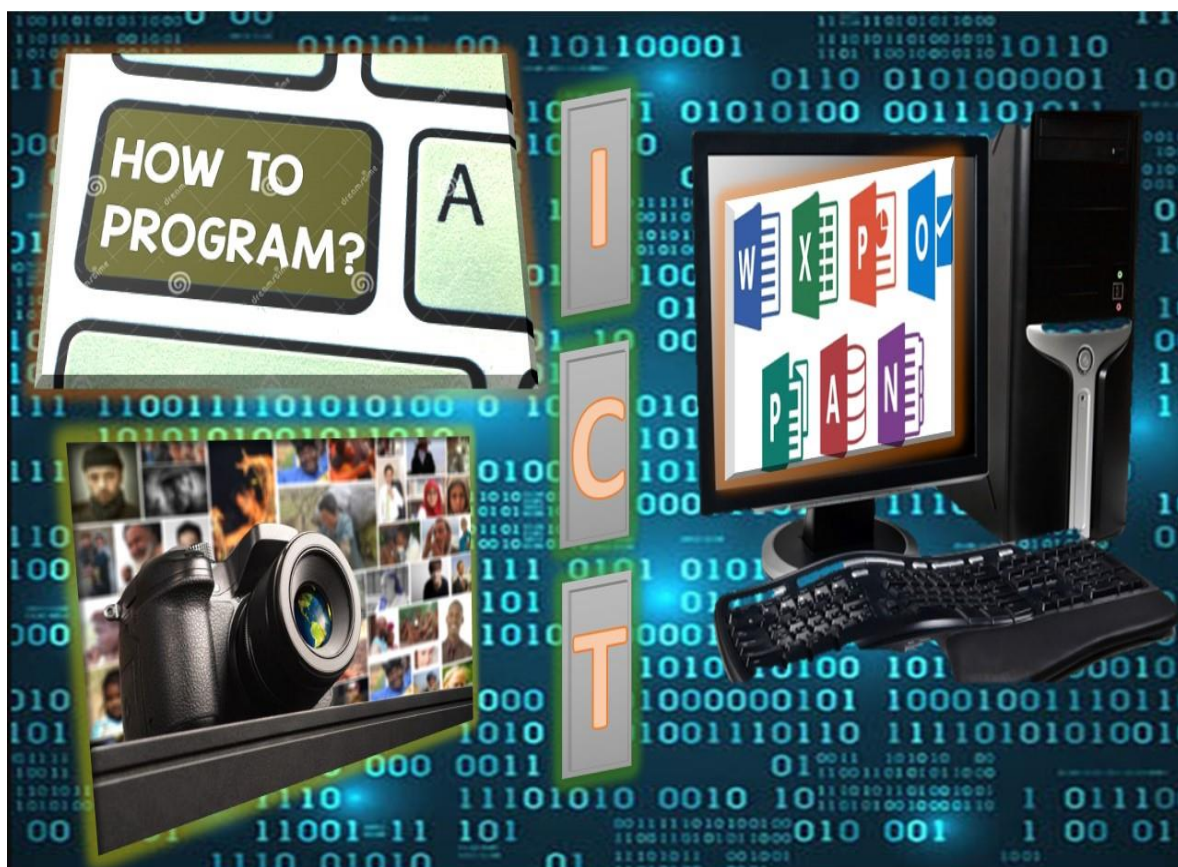**7**

ICT 7 Activity Sheet Quarter 4 |Week 3

Relative and Absolute References

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Introductory Message

Welcome to ICT 7!

The **Learning Activity Sheet** is self-directed instructional materials aimed to guide the learners in accomplishing activities at their own pace and time using the contextualized resources in the community. This will also assist the learners in acquiring the lifelong learning skills, knowledge and attitudes for productivity and employment.

For learning facilitator:

The **ICT 7 Activity Sheet** will help you facilitate the leaching-learning activities specified in each Most Essential Learning Competency (MELC) with minimal or no face-to-face encounter between you and learner. This will be made available to the learners with the references/links to ease the independent learning.

For the learner:

The **ICT 7 Activity Sheet** is developed to help you continue learning even if you are not in school. This learning material provides you with meaningful and engaging activities for independent learning. Being an active learner, carefully read and understand the instructions then perform the activities and answer the assessments. This will be returned to your facilitator on the agreed schedule.

ICT 7 ACTIVITY SHEET
Relative and Absolute References

Learning Competency:

Differentiate the use of relative reference from asolute cell reference.

Support competencies:
- Apply relative and absolute references in writing a formula.

Background Information for Learners

There are two types of cell references: relative and absolute. Relative and absolute references behave differently when copied and filled to other cells. Relative references change when a formula is copied to another cell. Absolute references, on the other hand, remain constant no matter where they are copied.

In this lesson, you will learn how to use a relative and absolute reference in writing a formula.

Activity Proper.
Activity 1.

Relative references

By default, all cell references are relative references. When copied across multiple cells, they change based on the relative position of rows and columns. For example, if you copy the formula =A1+B1 from row 1 to row 2, the formula will become =A2+B2. Relative references are especially convenient whenever you need to repeat the same calculation across multiple rows or columns.

To create and copy a formula using relative references:

In the following example, we want to create a formula that will multiply each unit cost by the quantity. Instead of creating a new formula for each row, we can create a single formula in cell D4 and then copy it to the other rows. We'll use relative references so the formula calculates the total for each item correctly.

1. Open a new workbook and encode the data below.

	A	B	C	D
1	INVENTORY REPORT			
2				
3	ITEM	QUANTITY	UNIT COST	AMOUNT
4	Bond paper	5	120	
5	Ballpen	50	8.50	
6	Pencil	100	6.50	
7	Colored Pen	23	15.65	
8	Manila Paper	25	12	
9	Colored Paper	40	55	
10	Sharpener	10	10	
11	Folder	30	6.50	
12	Envelope	45	22	

2. Select cell D4.
3. Type the formula, **= B4 *C4**.
4. Press Enter on your keyboard. The formula will be calculated, and the result will be displayed in the cell.
5. Locate the fill handle in the bottom-right corner of the desired cell. In our example, we'll locate the fill handle for cell D4.
6. Click and drag the **fill handle** over the cells you want to fill. In our example, we'll select cells **D5:D12** (this example of fill handle was illustrated in our Q4 W1 module)
7. Release the mouse. The formula will be **copied** to the selected cells with **relative references**, displaying the result in each cell.

Note: You can double-click the **filled cells** to check their formulas for accuracy. The relative cell references should be different for each cell, depending on their rows.

> **Save** the workbook with a new filemane **Q4_W3_***(where *** is your family name)

Activity 2.

Absolute references

There may be a time when you don't want a cell reference to change when copied to other cells. Unlike relative references, **absolute references** do not change when copied or filled. You can use an absolute reference to keep a row and/or column **constant**.

An absolute reference is designated in a formula by the addition of a **dollar sign ($)**. It can precede the column reference, the row reference, or both.

A2	The column and the row do not change when copied
A$2	The row does not change when copied
$A2	The column does not change when copied

You will generally use the **A2** format when creating formulas that contain absolute references. The other two formats are used much less frequently.

When writing a formula, you can press the **F4** key on your keyboard to switch between relative and absolute cell references. This is an easy way to quickly insert an absolute reference.

To create and copy a formula using absolute references:

In the example below, we'll use cell **E2** (which contains the tax rate of 7.5%) to calculate the sales tax for each item in **column D**.

To make sure the reference to the tax rate stays constant—even when the formula is copied and filled to other cells—we'll need to make cell **E2** an absolute reference.

In this activity, we will use the same workbook in Activity 1.

1. Select column D, and insert a new column. Name the column as **SALES TAX** .
2. Select cell D2, and type **Tax Rate:**
3. Select cell E2, and type **7.5%**

4. Select cell D4.
5. Enter the **formula** to calculate the desired value. In our example, we'll type **=(B4*C4)*E2**, making **E2** an absolute reference.

6. Press **Enter** on your keyboard. The formula will calculate, and the result will display in the cell.
7. Locate the **fill handle** in the bottom-right corner of the desired cell. In our example, we'll locate the fill handle for cell **D4**.
8. Click and drag the **fill handle** from cells **D5:D12.**
9. Release the mouse. The formula will be **copied** to the selected cells with an **absolute reference**, and the values will be calculated in each cell.

Note: You can double-click the **filled cells** to check their formulas for accuracy. The absolute reference should be the same for each cell, while the other references are relative to the cell's row.

Be sure to include the **dollar sign ($)** whenever you're making an absolute reference across multiple cells. The dollar signs were omitted in the example below. This caused Excel to interpret it as a **relative reference**, producing an incorrect result when copied to other cells.

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	A	B	C	D	E
1	INVENTORY REPORT				
2				Tax Rate	7.5%
3	ITEM	QUANTITY	UNIT COST	SALES TAX	AMOUNT
4	Bond paper	5	120	45	600
5	Ballpen	50	8.50	31.875	425
6	Pencil	100	6.50	48.75	650
7	Colored Pen	23	15.65	26.99625	359.95
8	Manila Paper	25	12	22.5	300
9	Colored Paper	40	55	165	2200
10	Sharpener	10	10	7.5	100
11	Folder	30	6.50	14.625	195
12	Envelope	45	22	74.25	990

Save the workbook with a new filemane **Q4_W3_PT3***(where *** is your family name)

Acitivty 3.

Multiple Choice. Select the letter of the correct answer.

1. There are two types of cell reference, absolute and relative. Select the relative cell reference.
   - a. D9
   - c. D9
   - b. 9
   - d. D

2. Which of the following is an absolute cell reference?
   - a. C2
   - c. C2
   - b. $C2$
   - d. C2

3. Suppose you want to copy a formula while keeping one of the cell references locked on the same cell. Which of the following would you use?
   - a. Relative reference
   - b. Autofill
   - b. Absolute reference
   - c. Function

4. The cell range that starts in cell A1 and goes over to J15 is written as _____ in a formula.
   - a. (A1-J15)
   - c. (A1:J15)
   - b. (A1;J15)
   - d. (A1toJ15)

5. What is the symbol used in a formula to make a cell reference absolute?
   - a. #
   - c. !
   - b. &
   - d. $

6. What key on your keyboard would you use to switch between relative and absolute cell references?
   - a. F3
   - c. F10
   - b. F4
   - d. F2

7. Which cell reference will not change if copied or moved?
   - a. B@2
   - c. B2
   - b. !B2
   - d. B2

8. By default, all cells are Relative Cell References within a formula and will update when copied or use of Autofill.
   - a. True
   - b. False

9. In the formula below, which references will update when copied? =A1+$B4
   - a. Column A
   - c. Row 1
   - b. Column B
   - d. Row 4

10. Absolute Cell Reference means the cell is locked and will not update when copied or use of Autofill.
    - a. True
    - b. False

Complete the sentence below:

I understand_____

I don't understand _____

I need more information about _____

 Links and/or Other References

https://edu.gcfglobal.org/en/excel/getting-started-with-excel/1/
https://www.deskbright.com/excel/workbook-and-worksheet-basics/
https://quizizz.com/admin/quiz/58ef78d6161180b96835dc7c/excel-cell-reference-quiz-2018