

Learner Full Name: _____
 School: _____ Class: _____
 Workstation Device: _____ Station #: _____

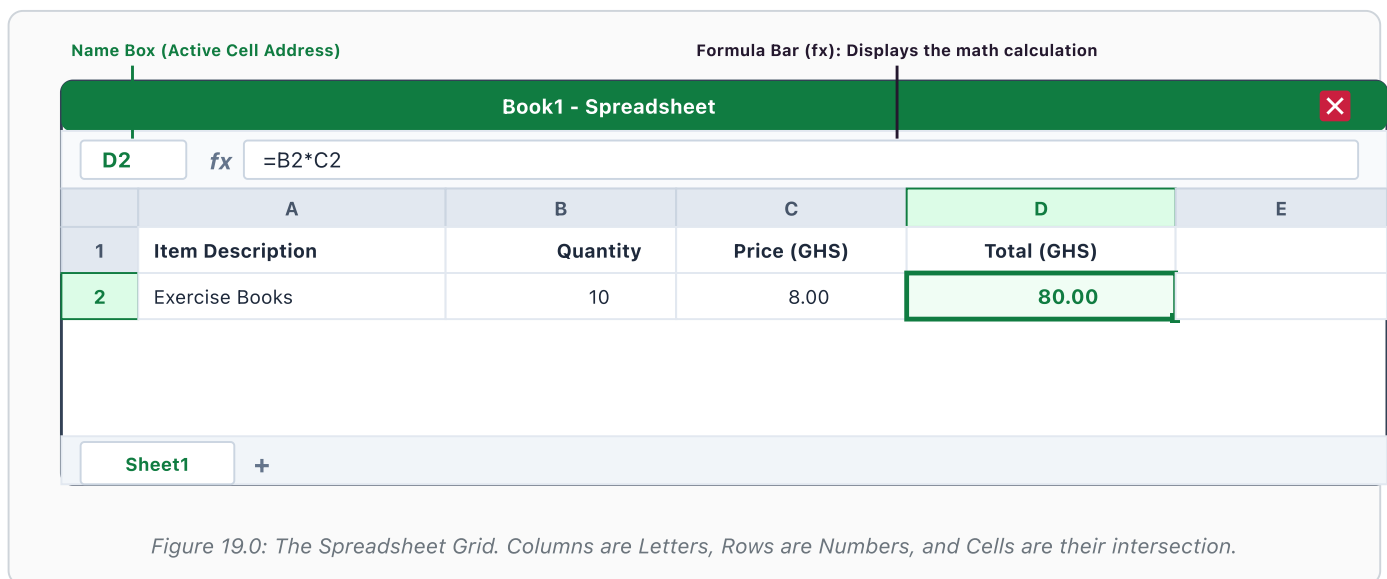
Session 19: Spreadsheets, Tables & Basic Formulas

In Sessions 16 and 17, you learned how to use a word processor to write essays and notices. Today, we unlock a completely different digital tool designed to handle **numbers, lists, money, and calculations**: the **Spreadsheet**!

1. Plain Talk: The Market Trader's Ledger Book

If you visit a busy shop or stall at Makola Market or Kejetia Market, the shopkeeper keeps a thick paper **ledger book** ruled into rows and columns. They write down items sold, quantities, and prices. At the end of the day, they use a pen or calculator to add up the cash totals line by line.

An electronic **Spreadsheet** (like Microsoft Excel, Google Sheets, or LibreOffice Calc) is an intelligent digital ledger. When you change a single price or quantity, **the spreadsheet recalculates all totals automatically in less than a millisecond!**



2. Essential Spreadsheet Vocabulary

- **Column:** A vertical strip of boxes identified by a **Letter** (A, B, C...).
- **Row:** A horizontal line of boxes identified by a **Number** (1, 2, 3...).
- **Cell:** A single box in the grid formed where a Column meets a Row (e.g., Cell B2).
- **Active Cell:** The box currently selected with a dark green border around it.
- **Formula Bar (fx):** The long white box at the top where formulas and raw data are displayed.

1. Cell Coordinate Addresses (Column Letter + Row Number)

Every single box in a spreadsheet has its own unique home address. You find the address by reading the **Column Letter first**, then the **Row Number second**:

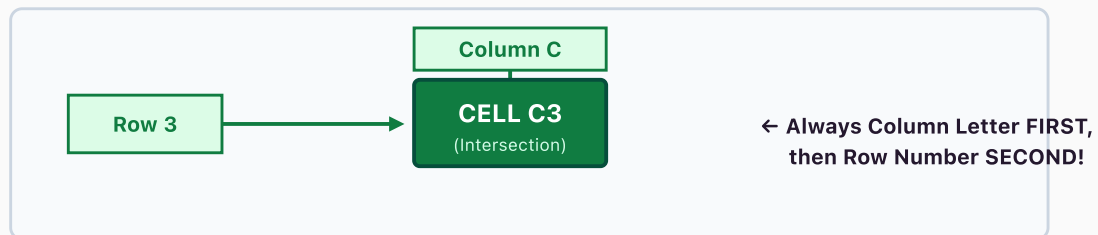


Figure 19.1: Reading cell coordinates. Column C meets Row 3 at Cell C3.

2. The Two Basic Types of Data

TEXT (Labels)

Words, names, descriptions, or titles. Text helps people understand what the numbers mean.

Examples: Tomatoes, Ama Mensah, Exercise Books

Alignment: The computer automatically hugs text to the **LEFT** side of the cell, so it reads naturally, like a book.

NUMBERS (Values)

Raw digits, quantities, prices, percentages, and measurements that can be mathematically calculated.

Examples: 10, 25.50, 100

Alignment: The computer automatically pushes numbers to the **RIGHT** side of the cell, so units, tens and hundreds sit under each other for easy adding.

3. Check Your Thinking

Look at the coordinate grid below. Write the cell address for each item:

	A	B	C
1	Rice	Gari	Beans
2	Yam	Plantain	Cassava

A. In which cell is **Gari** located?

B. In which cell is **Cassava** located?

1. What is a Formula?

A **Formula** is an electronic mathematical instruction you give to a cell. Instead of doing the math in your head and typing the answer, you write a formula that commands the computer to calculate it for you!

THE GOLDEN LAW OF SPREADSHEETS:

EVERY FORMULA MUST START WITH AN EQUALS SIGN: =

If you forget to type the = sign first, the computer thinks you are just typing plain words and will **NOT** calculate anything!

2. The Four Computer Math Operators

Computers do not use the math symbols from your primary school exercise notebook. Study these keyboard operators:

Math Operation	Old Paper Symbol	Computer Keyboard Key	How to Write It in a Cell
Addition	+	 (Shift + =)	=B2 + C2
Subtraction	−	 (Minus key)	=B2 - C2
Multiplication	×	 (Asterisk: Shift + 8)	=B2 * C2 <i>(Never type the letter 'x'!)</i>
Division	÷	 (Forward slash)	=B2 / C2

3. Why We Use Cell Addresses (Not Fixed Numbers!)

BAD FORMULA: =10 * 8

If you type =10 * 8, the cell shows 80. But if the store manager changes the price to 9 Cedis tomorrow, your total stays stuck at 80! It is dead math.

SMART FORMULA: =B2 * C2

You tell the cell: "Multiply whatever number is in B2 by whatever is in C2!" If prices change next week, the total updates automatically! This is called **Dynamic Calculation**.



1. What is the AutoFill Handle?

Imagine having a sales list of 200 items in a school store. You do **not** have to type $=B3*C3$, $=B4*C4$, $=B5*C5$ two hundred times!

When you select a cell, look at its bottom-right corner. There is a tiny dark green square called the **AutoFill Handle**. When you drag it down, the computer copies the math formula and updates the row numbers automatically!



Figure 19.2: The AutoFill Handle. When the cursor turns into a thin black cross (+), drag down to copy formulas.

2. Panic Button: Spreadsheet Error Messages Decoded

Error on Screen	What Actually Happened	How to Fix It in 2 Seconds
##### (Train Tracks)	The number is too wide to fit inside the cell column width!	Move your pointer to the line between column letters (e.g. between D and E) and double-click to widen it!
#NAME?	You misspelt a function or name (e.g. $=SUMM(B2:B5)$).	Click the cell and fix the spelling in the Formula Bar. (Forgot the $=$? Then the formula just shows as plain text.)
#VALUE!	You tried to do math with words (e.g. multiplying "Books" * 10).	Check your formula: make sure it points only to cells with numbers inside.



1. Lab Mission: Build a 4-Item Inventory Table

Follow these 5 steps to build your first spreadsheet:

1

Launch Spreadsheet Software:

Click Start → type excel (or open **LibreOffice Calc** or **Google Sheets**) → Open a blank workbook.
Using Google Sheets or LibreOffice Calc? The buttons look a little different but do the same job.

2

Type Column Headers in Row 1:

- In Cell **A1**, type: Item Description → tap Tab
- In Cell **B1**, type: Quantity → tap Tab
- In Cell **C1**, type: Unit Price (GHS) → tap Tab
- In Cell **D1**, type: Line Total (GHS) → tap Enter

3

Enter the Stationery Items (Rows 2 to 5):

- Row 2: Exercise Books | 10 | 8
- Row 3: Ballpoint Pens | 20 | 2
- Row 4: Wooden Rulers | 5 | 4
- Row 5: Pencil Erasers | 15 | 1.5

4

Write the Multiplication Formula:

Click inside Cell **D2**. Type: $=B2*C2$ and press **Enter**.
Observation: Cell D2 instantly calculates 80!

5

AutoFill Down & Save:

Click Cell **D2** again. Hover over the bottom-right green dot until the cursor turns into a thin black cross (+).
Click and drag down to **D5**. *All totals appear!*

Save: **File** → **Save As** → Documents > BIH_Practice → Name: Stationery_Store_AmaMensah.xlsx.

Using Google Sheets? It saves online. Use File → Download → Microsoft Excel (.xlsx), then move the file from Downloads into BIH_Practice.

2. Visual Target (What Your Finished Sheet Must Look Like)

	A	B	C	D
1	Item Description	Quantity	Unit Price (GHS)	Line Total (GHS)
2	Exercise Books	10	8.00	80.00
3	Ballpoint Pens	20	2.00	40.00
4	Wooden Rulers	5	4.00	20.00
5	Pencil Erasers	15	1.50	22.50

1. Formula Writing Practice (On Paper)

Write the correct spreadsheet formula you would type into the destination cell:

Math Problem to Solve	Your Formula (Remember the Golden Law!)
Multiply Cell B3 by Cell C3 :	-----
Add Cell A1 and Cell A2 together:	-----
Divide Cell D10 by Cell E10 :	-----
Subtract Cell C5 from Cell B5 :	-----

2. Written Review Questions

Question 1: Why does a spreadsheet automatically push numbers to the right side of a cell, but words to the left side?

Question 2: A student types B2*C2 into a cell and presses Enter. The cell just displays the text "B2*C2" instead of calculating a number. What critical mistake did they make?

Question 3: You see ##### filling an entire cell. What does this mean, and how do you fix it?

3. Self-Assessment & Mentor Sign-Off

Tick the column that reflects your confidence at the end of Session 19:

Spreadsheet Competency	With Help	Almost Alone	All By Myself!
1. I can locate any cell using Column Letters and Row Numbers (e.g. B2).	☐	☐	☐
2. I remember to start every single math formula with an equals sign (=).	☐	☐	☐
3. I can write multiplication formulas using the asterisk key (*).	☐	☐	☐
4. I can use the AutoFill handle (+) to copy formulas down a column.	☐	☐	☐

Mentor Signature: _____

Date Completed: _____