

Cell References: Relative, Absolute, Mixed

60 minutes

ICT Specialism 3: Spreadsheets

Outcome M3.U3.3

WHAT THIS LESSON DOES

Discover how cell references behave when formulas are copied in spreadsheets. Learn to use the dollar sign to lock values like rates so your work stays accurate. Practise fixing broken formulas and update your own project spreadsheet.

CURRICULUM OUTCOMES

Outcome	What the specification asks for
M3.U3.3	Create formulas using cell references and arithmetic operators (addition, subtraction, multiplication, division).

WHAT STUDENTS SHOULD BE ABLE TO DO

- Use relative and absolute references correctly when formulas are filled
- Fix fill-handle formula breakage with \$ locks
- Recognise mixed references and try a simple mixed fill as extension
- Refactor at least one portfolio formula so it copies correctly

BEFORE THE BELL

- Prepare a broken fill-handle example on the board: after =B4*B1 fills down, C5 → 0 and C6 → #VALUE!.
- Optional: pre-build a starter sheet with VAT rate and item table filled so support students join at the broken formula.
- Review the short key-concepts strip; keep mixed for the optional stretch.
- Have one broken fill-handle example ready on the projector (9.2, 0, #VALUE!)
- Print optional matching sheets if using the pair check; keep answers off the board
- Open a blank spreadsheet (or a pre-filled VAT + items starter) on the classroom screen for the live demo
- Be ready to help students locate a formula worth refactoring, or add a Plan B rate cell; protect 15+ minutes for this block

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HOW THE LESSON RUNS

5 min	introduction	Introduction
6 min	content	Key concepts
15 min	activity	Step-by-step task
4 min	content	Common issues
20 min	activity	Independent practice
5 min	content	Reflection
5 min	summary	Lesson summary

TEACHING MOVES

- Oral quick match only (relative vs absolute); answers stay in your notes.
- Model the live demo of the VAT formula breaking (0 and #VALUE!) before locking with \$B\$1 typed by hand.
- Mark mixed tier strip as stretch; do not stall the whole class on it.
- Circulate during independent practice to check reference choices and the on-sheet note of the changed cell.

WHAT TO WATCH FOR

- Pressing F4 on a Chromebook or without the cursor on a reference: lead with typing \$.
- Locking both row and column when only one is needed on a tier table.
- Expecting a wrong number like 600 on the broken fill, the real broken results are 0 and #VALUE!.

DIFFERENTIATION

- Support: starter price sheet with VAT and items pre-filled; pair work on Plan B rate cell.
- Core success: one correct absolute or relative refactor with a visible note.
- Extension: mixed strip in step 3 and the two-way mini table in the summary challenge.