

Unit 2: Managing Data – Spreadsheets

Topic: 2.1 Conditional Formatting | Audience: Grade 7 Learners | Pedagogy: 11-Stage Expanded Taxonomy

1. Previous Learning: What Do You Already Know?

Before diving into conditional formatting, let's review the fundamental spreadsheet concepts and everyday symbols you already understand from previous learning:

- **What is a Spreadsheet:** Spreadsheet is a digital document with a lot of cells which are arranged in rows and columns.
- **What Spreadsheets Do:** Spreadsheets help us for performing mathematical calculations, creating simple databases, and modelling solutions to real-world problems by using data.
- **Spreadsheet Layout:** A spreadsheet grid is constructed from horizontal rows (numbered 1, 2, 3...) and vertical columns (lettered A, B, C...). Data is typed into individual rectangular boxes called cells.
- **Cell Definition:** A cell is the unique individual box created where a column and a row meet (for example, column D and row 4 intersect at cell D4).
- **Visual Formatting:** Formatting changes how text and cells look (such as bold, underline, font color, or cell fill). Colours help us instantly spot the most important data.
- **Everyday Meaning of Colours:** We already associate colours with real-life cues: a red traffic light means 'stop' or 'warning', while green means 'go' or 'positive'. On a spreadsheet, positive numbers we are happy with can be green, while negative values we are unhappy with (like -3) can be shown in red.
- **Comparison Operators:** Mathematical comparison symbols test relationships between values. The symbol '>' means 'greater than' and '<' means 'less than'.

2. Learning Objectives & Key Terminology

By the end of this lesson, learners will achieve the following mastery objectives:

- **Objective 1:** Use conditional formatting to format an individual cell or range of cells.
- **Objective 2:** Learn how to apply different visual styles of conditional formatting to a cell depending on the data inside it.
- **Objective 3:** Understand precisely what a condition is and how a rule is structured.
- **Objective 4:** Learn how to write different types of rules, including formatting based on fixed values and formatting based on another cell.

Key Words Glossary

Key Term	Textbook Definition & Classroom Meaning
Analyse	To examine data carefully to work out what the data means, identify trends, and draw conclusions.
Cell	An individual box where a column and a row meet in a spreadsheet, into which data is typed.
Condition	A logical test performed on data that gives either a true or a false result (e.g., 'Is the value > 10?').
Formatting	The visual style applied to aspects of a document or cell, including font family, size, text colour, and background fill colour.
Conditional Formatting	A style that is automatically applied to cells containing data that meets certain specified conditions.
Rule	A sentence (statement) that includes a condition and the specific formatting applied based on the outcome of that condition.
Spreadsheet	Spreadsheet is a digital document with a lot of cells which are arranged in rows and columns.
Statement	The written sentence that expresses a complete rule (e.g., 'If the value in the cell = 0, format background colour as orange').

3. Core Concepts & Classroom Discussion

Why Do We Need Conditional Formatting? (Contextualizing Scenario)

Imagine an ice cream van business or a school drama society recording hundreds of transactions across several months. Some spreadsheets have thousands of cells filled with data. Finding critical numbers quickly like whether the business made a profit or fell into loss by reading through every cell is slow and error-prone. Conditional formatting solves this problem by making the most important data look visibly different from surrounding data. It allows users to see patterns instantly, evaluate financial health, and analyse information efficiently.

 **Translating Checkpoint (In My Own Words)**

Conditional formatting is an automated visual alarm or highlighter for spreadsheet cells. Instead of me manually coloring cells, the computer checks a test (condition). If the condition is TRUE, it applies my chosen style instantly.

How a Rule Works: Conditions & Statements

Conditional formatting is always applied by writing a rule. Every rule is a statement composed of two distinct parts:

- **Part 1: The Condition** The mathematical or logical test (e.g., 'Is the value in the cell ≤ 10 ?'). This always evaluates to TRUE or FALSE.
- **Part 2: The Formatting Action** The visual change applied if the condition evaluates to true (e.g., 'Format text colour as green'). If false, the formatting is not applied.

Rule Breakdown Example

Statement: 'If the value in the cell = 0, format the background colour as orange.'

- Condition: Value in cell = 0
- Formatting Applied: Light orange background fill with dark orange font.

4. Short Answer Questions with Answers

Q1: What is a spreadsheet?

Answer: Spreadsheet is a digital document with a lot of cells which are arranged in rows and columns, used to capture data, make calculations, analyse build and model solutions to problems or answer a question.

Q2: What is the definition of a cell in spreadsheet software?

Answer: A cell is an individual rectangular box formed where a vertical column and a horizontal row meet. Data, such as text, currency, or numerical values, is typed directly into cells for storage and computation.

Q3: What does the term 'condition' mean in computer science?

Answer: A condition is a logical test performed on data that always produces either a true or a false result. For example, testing 'Is the value in cell C16 greater than 0?' is a condition.

Q4: What is conditional formatting?

Answer: Conditional formatting is a spreadsheet feature that automatically applies a visual style (such as font colour, cell fill, or text styling) to cells containing data that meets certain specified conditions. It helps important data stand out clearly.

Q5: What two key components must every conditional formatting rule contain?

Answer: Every conditional formatting rule must include a condition (the logical test) and the specific formatting style applied to the cell based on the outcome of that condition. Together, they form a statement.

Q6: Why is conditional formatting especially valuable when working with large spreadsheets?

Answer: When spreadsheets contain thousands of cells, manually reading through every number to find critical information is very difficult. Conditional formatting makes vital data stand out immediately, allowing users to spot patterns and trends without searching.
