LESSON 6

Grid Explorer: Navigating the 3x3

30 minutes | Exploring Patterns

WHAT THIS LESSON DOES

In this lesson, you'll guide your students through a series of activities designed to enhance their understanding of grid navigation. Starting with a game of 'Simon Says', you'll then introduce a 3x3 grid game, followed by interactive grid games themed around numbers, fruits, and colours. The students will then complete a worksheet activity, and finally, check their answers using an interactive grid.

WHAT STUDENTS SHOULD BE ABLE TO DO

- Students will understand the concept of a 3x3 grid and how to navigate it using up, down, left, and right directions.
- Students will develop the ability to follow a sequence of commands to move a character on a grid.
- Students will apply their understanding of grid navigation to complete a worksheet activity, predicting the end location of a character based on a sequence of commands.
- Students will enhance their problem-solving skills by determining the correct sequence of commands to reach a specific location on the grid.
- Students will demonstrate their understanding of grid navigation by participating in interactive grid games.
- Students will develop a positive attitude towards learning through engaging and interactive activities.

BEFORE THE LESSON

- Open and test the 3x3 grid interactive on the whiteboard before the bell, and check the three versions load: numbers, fruit and colours.
- Print one Gridwork worksheet per pupil.
- Have a short list of Simon Says commands to hand for the warm-up so the game keeps moving.

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HOW THE LESSON RUNS

- Simon Says
- Introducing 3 X 3 Grids
- 3x3 Grid Numbers
- 3x3 Grid Fruit
- 3x3 Grid Colours
- 3x3 Grid Worksheet Activity

TEACHING MOVES

- 1. Simon Says. Start easy, then speed up and add commands without 'Simon says' to catch pupils out. The point is following a precise instruction only when the cue is right, which mirrors following exact grid commands.
- 2. Introducing 3 X 3 Grids. Say the grid is 3 across and 3 down. Model one arrow press so pupils see one press equals one square, then let individuals take turns driving the character to named items.
- 3. 3x3 Grid Numbers. Use the numbers version to give a target square by number. Have pupils say the moves aloud before pressing so the sequence is planned, not guessed.
- 4. 3x3 Grid Fruit. Ask pupils to navigate to a named fruit. Have the class agree the sequence before anyone touches the board.
- 5. 3x3 Grid Colours. Ask a pupil to reach a colour, then ask a second pupil if there is a shorter route. Two correct paths can exist.
- 6. 3x3 Grid Worksheet Activity. Work the 'right, right' example on the board first, starting the frog in the top-left corner and counting each move onto a square. Then let pupils complete their own sheets.

WHAT TO WATCH FOR

- Pupils think one arrow press moves the character more than one square, or count the starting square as the first move. On the board, point to the start square, press once and land on the next square. Count aloud: 'start here, one move, now here.'.
- Pupils confuse the character's left and right with their own, especially when the character faces them. Fix left and right to the grid itself, not the character. Point to the left edge and right edge of the board and say the direction always means that side of the grid.

DIFFERENTIATION

- Emerging: Let them drive the whiteboard grid with you calling one move at a time before they try a full sequence. On the worksheet, have them place a counter on the frog and physically slide it one square per command.
- Developing: Ask them to say each move aloud before pressing, so they plan the sequence rather than react.
- Proficient: Ask them to find a second, different route to the same square, or to write the shortest sequence. Have them set a target for a partner and check the partner's moves.