

LESSON 7

Grid Masters: Exploring the 5x5 Adventure

30 minutes

Solving Problems

WHAT THIS LESSON DOES

In this interactive lesson, you'll navigate a character on a 5x5 grid, enhancing your problem-solving skills and spatial awareness. You'll play a fun 'Robot Statues' game, review the 4x4 grid, and then move onto the 5x5 grid. You'll explore different themes like letters, animals, and sports, learning at your own pace.

WHAT STUDENTS SHOULD BE ABLE TO DO

- Develop critical thinking and problem-solving skills through navigating a character on a 5x5 grid.
- Enhance understanding of directions and spatial awareness through interactive games and activities.
- Improve command recognition and response through participation in the 'Robot Statues' game.
- Reinforce knowledge of 4x4 grid navigation as a foundation for understanding 5x5 grids.
- Apply learned skills to navigate different themed 5x5 grids, including letters, animals, and sports.

BEFORE THE LESSON

- Open and test the 5x5 grid interactive on the whiteboard, and have devices ready for pupils to input commands themselves after the class demonstration.
- Print one 5x5 frog-and-fruit worksheet per pupil (attached to the final step).
- For Robot Statues, clear a little floor space and decide in advance the 2 or 3 signals you will allow, so the game does not stall while pupils negotiate rules.

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HOW THE LESSON RUNS

Introduction

Robot Statues

4X4 Grid Review

Introducing 5X5 Grids

5x5 Letter Grid

5x5 Animals Grid

5x5 Sports Grid

5x5 Grid Worksheet

TEACHING MOVES

- 2. Robot Statues. Agree just two or three signals with the class first and demonstrate one yourself. Keep the programmer facing away so pupils respond to the signal, not to being watched. This primes the idea of exact commands.
- 3. 4X4 Grid Review. Recap the four arrows by moving the character one square at a time on the old grid. Ask a pupil to predict where a given arrow lands before you press it.
- 4. Introducing 5X5 Grids. Count the squares aloud together, five across and five down, so pupils feel the grid got bigger. Work several moves as a whole class before handing over to individuals.
- 5. 5x5 Letter Grid. Name a target letter and ask the class to say the sequence aloud before anyone inputs it. Confirm the start square each time.
- 6. 5x5 Animals Grid. Now let individual pupils drive. Pick a target animal, let one pupil enter the commands, and have the class check each step against the character's position.
- 7. 5x5 Sports Grid. Raise the challenge: ask for the shortest route to the target, not just any route. Compare two pupils' sequences that both work.
- 8. 5x5 Grid Worksheet. Model the worked example on the board first, writing 'right, right, down' as you trace it. Stress that the frog starts in the centre every time, so each new fruit is a fresh count.

WHAT TO WATCH FOR

- Pupils confuse the character's left and right with their own, especially when giving up/down and left/right commands from their seat. Anchor directions to the grid, not the pupil. Point at the screen edges and say 'this way is right' each time until the habit forms.
- On the worksheet, pupils forget the frog returns to the centre for each new fruit and instead carry on from where the last route ended. Draw the frog back in the middle on the board before each example and say 'start again from here' so the reset is explicit.
- Pupils count squares by the lines rather than the steps, so a two-square move gets written as three arrows. Have them touch and count the moves aloud, one arrow per jump between squares, before writing anything down.

DIFFERENTIATION

- Emerging: Keep them on the letter grid a little longer with you, doing one move at a time and saying the direction before each press. On the worksheet, let them physically move a counter along the printed grid before writing the arrows.
- Developing: Pair them so one names the target and the other enters the commands, then swap, checking each other's routes. Ask them to say their full sequence back to you before they input it, catching errors before they happen.