

LESSON 4

Grid Games: Mapping the 3x3

30 minutes

The World of Logic

WHAT THIS LESSON DOES

Embark on a fun-filled journey of learning through games. Start with Simon Says to practice following instructions, then navigate characters on a grid in the Grid Game. Finally, apply your skills to guide a bird to its fruit on a worksheet. Ready for an adventure in learning?

WHAT STUDENTS SHOULD BE ABLE TO DO

- Develop ability to follow and give precise instructions.
- Understand the concept of grid mapping and its application.
- Enhance logical thinking and problem-solving skills through interactive games.
- Apply learned skills in a practical context through a worksheet activity.
- Recognise the importance of precise instructions in the digital world and its relevance to programming.

BEFORE THE LESSON

- This is an unplugged lesson: no pupil devices are needed. You only need the interactive whiteboard to display the grid.
- Open and test the Grid Game interactive on the whiteboard before the bell so the grid and the character are ready to move.
- Print and cut nothing yourself, but have the 'Giving Directions' worksheet downloaded and copied, one per pupil, plus scissors and glue for those doing the cut and stick option.
- Clear a little floor or standing space if you plan to play Simon Says as a knockout game.

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HOW THE LESSON RUNS

Introduction

Simon Says

Grid Game (Beginner)

Grid Game (Advanced)

Giving Directions Worksheet

Wrapping Up

TEACHING MOVES

- 1. Introduction. Hammer one idea: a computer does exactly what you say, not what you meant. Mix up the steps or leave one out and it fails. That is why precise instructions matter.
- 2. Simon Says. Name the rule out loud first: only obey a command that starts with 'Simon says'. Slip in a bare command early to catch listeners, then link the trigger phrase to a condition that must be met.
- 3. Grid Game (Beginner). Pick a start square and a target, then take turns calling single moves. Do exactly what each pupil says, even a wrong move, so they see the effect of an imprecise instruction and correct it.
- 4. Grid Game (Advanced). Set a longer route or add an obstacle to steer around, and ask pupils to plan the full sequence before the character moves rather than one step at a time.
- 5. Giving Directions Worksheet. Set the task as writing a perfect sequence to guide the bird to the fruit. Offer cut and stick arrows for those who want to build the sequence by hand.
- 6. Wrapping Up. Recap the thread: Simon Says, the grid, the worksheet all needed exact instructions. Ask one pupil to say what happens to a program if a single step is out of order.

WHAT TO WATCH FOR

- Pupils think 'turn left' turns the whole grid or turns from their own viewpoint rather than the character's facing direction. Pause and ask which way the character is facing before every turn. Have a pupil stand and physically face the grid direction to feel the difference.
- Pupils give the destination ('go to the red square') instead of individual steps, assuming the character will find its own way. Refuse the shortcut kindly: the character only understands one move at a time. Ask them to break it into single forward, left and right commands.
- Pupils count the starting square as the first move, so every instruction is off by one. Agree together that a move only counts when the character actually shifts to a new square. Count moves aloud as the character lands on each square.

DIFFERENTIATION

- Emerging: Pair the pupil with a partner and let them give just one move while the partner gives the next, sharing the sequence. Start them on a target one or two squares away in a straight line, with no turns.
- Developing: Ask them to say their whole route aloud before the character moves, then check it against what actually happens. Have them spot and fix a deliberately wrong instruction you give at the board.
- Proficient: Give the advanced grid route with an obstacle, or ask them to find the shortest sequence to the target. Ask them to write a route for a classmate to follow, then check whether it lands the bird correctly.