

Drawing Robot

40 minutes

Unplugged Coding - Art

WHAT THIS LESSON DOES

In this lesson, you'll become a robot artist, following step-by-step arrow instructions to create pictures on a dot grid. Learn sequencing by drawing lines in a specific order, understanding how each step builds the final image.

WHAT STUDENTS SHOULD BE ABLE TO DO

- Understand the importance of sequencing in creating predictable outcomes through ordered steps.
- Develop skills in following clear, step-by-step instructions to achieve a specific result.
- Recognise the role of precision and order in completing tasks accurately.
- Apply problem-solving strategies to identify and correct errors in a sequence.
- Engage in creative expression by translating coded instructions into visual art.

BEFORE THE LESSON

- Print the dot grid worksheet and the larger Car worksheet, one of each per pupil.
- Give each pupil crayons or markers in three different colours.
- Open and test the Pencil Coding Challenge and the Ladybird Dot Trail interactives on the board, and check sound and fullscreen work.
- If pupils will try the interactives themselves, have devices ready per pupil or per pair.

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HOW THE LESSON RUNS

IntroductionHeader 3

Join the Dots Discussion and Code Link

One Action, One Step

Pencil Coding Challenge

Ladybird Dot Trail

Run A Debugging

The Final Creation (The Car)

TEACHING MOVES

- 2. Join the Dots Discussion and Code Link. Ask what happens if you skip or swap a number, and let pupils tell you the picture comes out wrong. Land the point: numbered dots are code, and order matters.
- 3. One Action, One Step. Cast pupils as Robot Artists following arrows exactly. Stress one arrow means one short line, drawn in the order given, or the picture will not appear correctly.
- 4. Pencil Coding Challenge. Run two or three rounds together on the board, thinking aloud as you choose each step, before pupils attempt puzzles themselves.
- 5. Ladybird Dot Trail. Build one sequence together on the dot grid, press GO, and watch the trail. If it misses the strawberry, model changing a step and trying again.
- 6. Run A Debugging. Say that robots make errors too. Have pupils compare the on-screen arrows to their drawing box by box, name any bug aloud, rewind to the last correct dot and replay slowly.
- 7. The Final Creation (The Car). Use a steady point, say, do rhythm: point to the next arrow, say the direction, wait a few seconds for everyone to draw, then move on. Colour the car at the end.

WHAT TO WATCH FOR

- Pupils guess ahead and draw where they think the picture is going rather than following the current arrow. Enforce pencils up between steps and one arrow at a time. Ask for thumbs up when a line reaches the dot before moving on.
- Pupils treat order as unimportant and think any sequence with the right arrows will work. Return to the join-the-dots point: swap two arrows on the board and show the picture come out wrong, then fix the order together.
- Pupils see a mismatch as failure rather than a bug to find. Name the specific bug calmly, for example box three went left instead of down, rewind to the last correct dot and celebrate the fix.

DIFFERENTIATION

- Emerging: Sit beside them and trace each arrow with a finger before they draw, one step at a time. Slow the point, say, do rhythm and check their line reaches the dot before the next arrow.
- Developing: Let them work the on-screen puzzles in pairs, taking turns choosing the next arrow. Have them read the arrow direction aloud before drawing each line.
- Proficient: Ask them to explain their sequence back to you and predict the finished picture before revealing it. Challenge them to spot and name a deliberate bug you place in a board sequence.