

The Collaborative Robot

40 minutes

Unplugged Coding - Art

WHAT THIS LESSON DOES

Join your robot crew to build a spaceship as a team. Work in pairs, follow step-by-step code to draw different parts of the rocket, hand over tasks, and complete the mission together with creativity and collaboration.

WHAT STUDENTS SHOULD BE ABLE TO DO

- Understand the importance of teamwork in achieving a shared goal.
- Develop skills in following sequential instructions to complete a task.
- Practise effective communication and coordination with a partner.
- Recognise the value of individual contributions within a collaborative effort.
- Enhance creativity through customising and personalising a joint project.

BEFORE THE LESSON

- This is an unplugged lesson: pupils need no devices. Print one dot-to-dot rocket worksheet per pair and have two different coloured markers ready for each pair.
- Open the two on-screen interactives (Student A code and Student B code) on the projector beforehand and check the arrows display, since you point to each one as pupils draw.
- Sort pairs in advance so the handover moment stays calm.

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HOW THE LESSON RUNS

Introduction

Introduce the "Robot Team"

Student A

The Handoff

Student B

The Big Reveal

Colour and customise the spaceship.

TEACHING MOVES

- 1. Introduction. Set the crew story quickly, then split the job: one pupil draws the bottom half, one the top. Hand each a different colour so it is clear later who drew what.
- 2. Introduce the "Robot Team". Stress that each pupil has their own code and their own half. Nobody draws the whole rocket alone, which is the point of the lesson.
- 3. Student A. Display the Student A interactive and point to each arrow in turn. Student A draws one line per arrow, dot to dot, waiting for you before each move.
- 4. The Handoff. Call "handover!" and run a slow "3, 2, 1" so the marker passes calmly. Name it as how one robot finishes its task before the next begins.
- 5. Student B. Switch to the Student B interactive. Point to each arrow so Student B continues from the last dot and connects the top half to the bottom.
- 6. The Big Reveal. Hold the finished page up and point to each pupil's half. Ask them to say where one person's work stops and the other's starts, so the teamwork is visible.
- 7. Colour and customise the spaceship. Have the pair agree one colour rule aloud before starting, then take turns. Steer them to keep the pattern the same on both sides.

WHAT TO WATCH FOR

- A pupil draws ahead to the wrong dot or skips an arrow, because they think they know where the line goes. Pause the pair and point back to the current arrow. Ask which dot the code says to go to next, and have them draw only that one line before looking up again.
- Pupils treat the two halves as two separate pictures rather than one rocket, so the second half does not connect. At the handover, point to the exact dot where Student A stopped and confirm Student B starts from that same dot, not a fresh one.

DIFFERENTIATION

- Emerging: Draw the first arrow of their half with them, saying the direction aloud, then step back for the next. Let them keep a finger on the current dot so they do not lose their place between arrows.
- Developing: Ask them to say the next move aloud before drawing it, so following the code becomes their decision rather than yours.
- Proficient: Once finished, have the pair explain back to you which robot drew which part and why the handover had to happen where it did. Set them to invent one extra detail in the colouring step and describe the rule they agreed for it.