



EduTrend Contents

EDUTECH · LEARNING TO PROGRAM ROBOTS · PRIMARY

Plan Before You Press

Plan a floor robot's route on paper before pressing any buttons

Ages 6–9

Level: Foundation

40 minutes

Pairs · up to 30

Activity 01

Inside: activity at a glance · step-by-step session plan · facilitator notes · 3 pupil worksheets · assessment checklist

ACTIVITY 01 · AT A GLANCE

Plan Before You Press

Pairs get a mat with a start and a target. Before touching the robot, they lay out arrow cards to plan the route, then press the buttons in the same order and test. When the robot goes wrong, they compare the cards with its path, find the wrong step and fix it. They then try a longer route.

Learning outcomes

By the end of the session pupils can:

- plan a sequence before acting;
- enter a stored sequence;
- compare plan and result;
- find and fix a wrong step.

KEY WORDS

sequence · plan · forward · turn ·
clear · debug

CURRICULUM LINKS

Maths: position and direction.
English: sequencing words. PE:
turning left and right.

1**SENSE**

What can it detect?

2**THINK**

What should it
decide?

3**ACT**

What should it do?

4**TEST**

Run it

5**DEBUG**

Find and fix

6**IMPROVE**

Make it better

Materials (per pair)

- Floor robot (for example Bee-Bot) or an unplugged “robot” partner
- Grid mat
- Arrow cards
- Worksheets 1, 2 and 3

Before the session

- Charge robots.
- Lay out mats with start and target.
- Print arrow cards.
- Print worksheets.

SAFETY

Keep mats on the floor away from walkways.
Adults handle charging.

ACTIVITY 01 · SESSION PLAN

Step by step

Remind pupils to clear the robot's memory before each new program.

Time	What happens	Say or ask
0–5 min Hook	Robot goes wrong without a plan.	<i>"Why did it get lost?"</i>
5–15 min Plan	Lay out arrow cards.	<i>"Where does it turn?"</i>
15–25 min Test	Enter and run.	<i>"Did it match your plan?"</i>
25–35 min Debug	Find and fix wrong steps.	<i>"Which card was wrong?"</i>
35–40 min Extend	Longer route.	<i>"How did planning help?"</i>

CHALLENGE CARD (print or copy onto the board)

Plan a route with arrow cards before programming a floor robot, test it and fix any wrong step until it reaches the target.

ACTIVITY 01 · FACILITATOR NOTES

The programming know-how in brief

Floor robots store a sequence of button presses and carry them out in order. Planning the steps first builds the habit of thinking before acting, which is at the heart of programming.

If the robot goes wrong, the plan helps find exactly which step caused the error. Clearing the memory before each new program stops old steps being added by mistake.

Common ideas to listen for

- “The robot turns and moves at once.” A turn happens on the spot.
- “Left is always the same way.” It depends on which way the robot faces.
- “Just press and see.” Planning saves time.

Adapting the activity

Support

Use routes with one turn.

Stretch

Add obstacles and find the shortest route.

WORKSHEET 1

My plan

Name: _____

Class: _____ Date: _____

Draw your arrows.

My plan

Step	Arrow
1	
2	
3	
4	
5	
6	

WORKSHEET 2

Test

Did it work?

Test

Try	Reached target?	Wrong step
1		
2		
3		

WORKSHEET 3

What I learned

Why plan first?

How planning helped

FOR THE TEACHER

Assessment checklist

Use during the session. One sheet covers up to eight pupils; copy as needed.

Pupil	Plans before pressing	Compares plan and path	Fixes the wrong step

Suggested codes: W = working towards · E = expected · G = greater depth

ABOUT THIS ACTIVITY

Plan Before You Press is a sample activity from the EduTrend Contents Edutech Learning to Program Robots programme (primary, level: foundation). Every activity in the programme follows the same format: a practical challenge, a clear session plan, facilitator notes and ready-to-print worksheets, so that teachers, club leaders and parents can run it without extra preparation.

Full 15-, 20- and 32-week programmes are available from EduStore at edutrend.org.

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