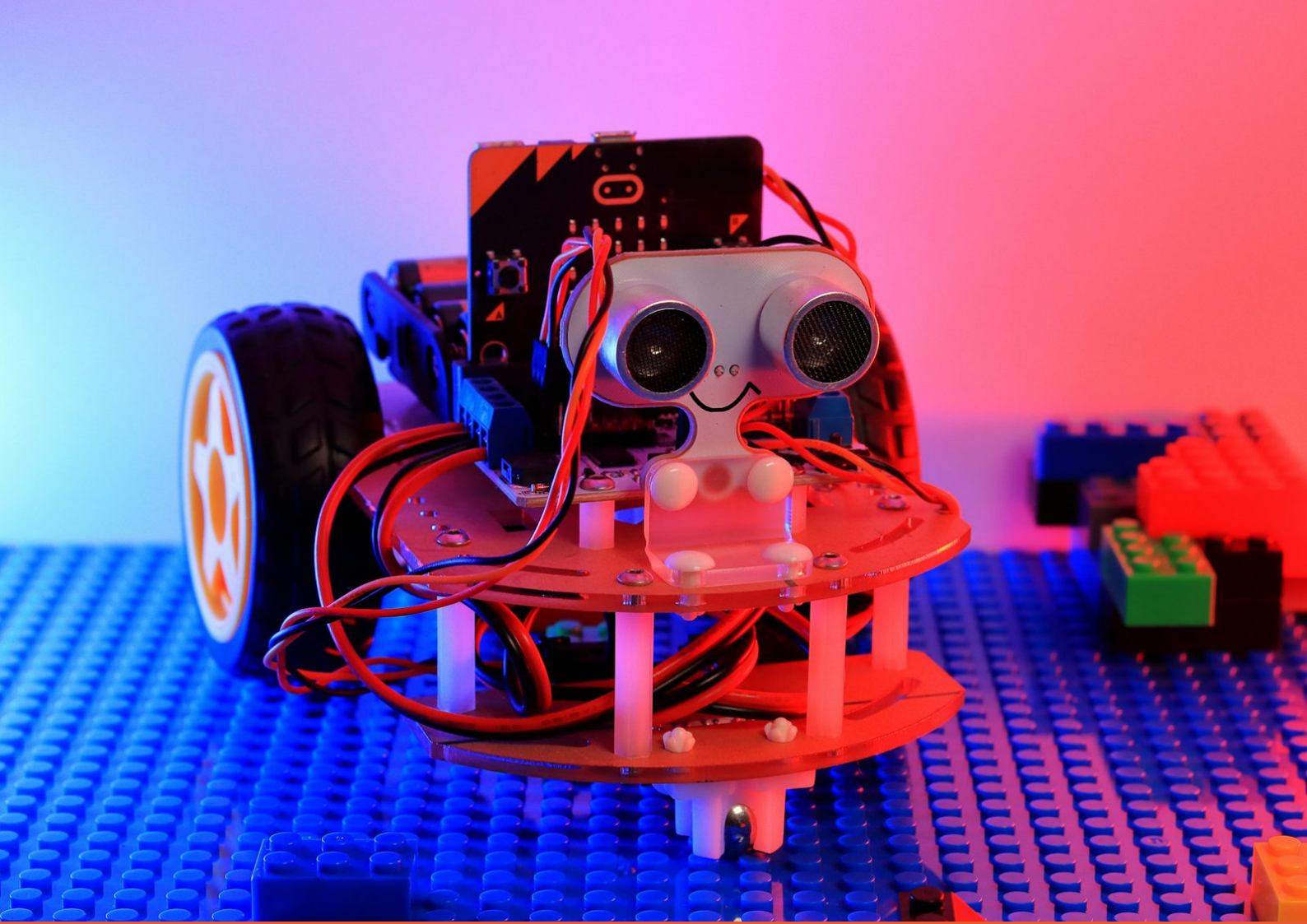




EduTrend Contents

EDUTECH · LEARNING TO PROGRAM ROBOTS · MIDDLE SCHOOL

Blocks to Python

Compare a block program with its Python version and edit in text

Ages 12–14

Level: Intermediate

60 minutes

Pairs · up to 30

Activity 04

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

ACTIVITY 04 · AT A GLANCE

Blocks to Python

Pairs open a block program they understand, such as the patrol robot, then switch the editor to Python view. They match each block to its lines of code, noting indentation and syntax. They then make three changes in Python, such as speed, time and a new condition, test on the robot and fix syntax errors.

Learning outcomes

By the end of the session students can:

- match blocks to text code;
- read Python syntax;
- edit code in text;
- fix syntax errors.

KEY WORDS

Python · syntax · indentation · function · error message · text-based

CURRICULUM LINKS

English: precise language. Maths: logic. Computing: text-based programming.

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)

- Robot kit with an editor offering blocks and Python (such as MakeCode or SPIKE)
- Device
- Worksheets 1, 2 and 3

Before the session

- Prepare a familiar block program.
- Check the Python view works.
- Print a syntax reference.
- Print worksheets.

SAFETY

Test robots only in marked areas. Keep drinks away from devices.

ACTIVITY 04 · SESSION PLAN

Step by step

Students who understand loops and conditions in blocks transfer that understanding to text quickly.

Time	What happens	Say or ask
0–8 min Hook	Show the same program in blocks and text.	<i>“What do you recognise?”</i>
8–22 min Match	Match blocks to lines.	<i>“What does indentation show?”</i>
22–42 min Edit	Make three changes in Python.	<i>“Did it run?”</i>
42–52 min Errors	Fix syntax errors.	<i>“What does the error say?”</i>
52–60 min Reflect	Blocks or text?	<i>“What are the advantages?”</i>

CHALLENGE CARD (print or copy onto the board)

Match a block program to its Python version, make three changes in Python, fix any errors and explain the advantages of text code.

ACTIVITY 04 · FACILITATOR NOTES

The programming know-how in brief

Many robot editors can show the same program as blocks or as Python. Comparing them helps students see that loops, conditions and functions are the same ideas written differently.

In Python, indentation shows which lines belong inside a loop or condition. Text code is faster to edit for long programs but needs exact spelling and punctuation.

Common ideas to listen for

- “Python is a different kind of program.” The logic is the same.
- “Indentation is just style.” In Python it changes meaning.
- “Error messages are useless.” They point to the problem.

Adapting the activity

Support

Provide a matching sheet with examples.

Stretch

Write a new function in Python.

WORKSHEET 1

Block to text

Name: _____

Class: _____ Date: _____

Match each block.

Block to text

Block	Python line(s)
1	
2	
3	
4	
5	

WORKSHEET 2

My changes

Record changes and errors.

My changes

Change	Error?	Fix
1		
2		
3		

WORKSHEET 3

Blocks or text?

Compare.

Advantages of each

FOR THE TEACHER

Assessment checklist

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

Student	Matches code	Edits in Python	Fixes errors

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

ABOUT THIS ACTIVITY

Blocks to Python is a sample activity from the EduTrend Contents Edutech Learning to Program Robots programme (middle school, level: intermediate). 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.

© 2026 EduTrend Contents. This activity may be printed and copied for use with students in your own school, club or home. It may not be resold or published elsewhere. Photos: Gabriel Vasiliu / Unsplash.