

Name: Date:

What we are expecting you to know and do!

Control task – Robotic buggy

Applications:

You should be familiar with the use of at least one of the following software applications:

- Controlling screen images
- Controlling external devices

Skills:

You should be able to demonstrate the following ICT skills.

- Writing a sequence of instructions to control a device or screen image.

Hardware including:

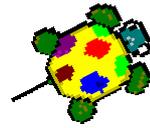
- Input/output devices - keyboard, mouse, interactive whiteboard, graphics slate/tablet, monitor, printer, turtle graphics, everyday devices that can be controlled remotely;
- Storage media - hard copy (print out), hard disk (HDD), floppy disk, CD, memory cards/sticks

You should know:

- how technology can be used appropriately to control remote devices

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Devices that respond to signals

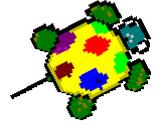
When working with ICT control means to make something work in a specific way. For example:

- A washing machine will wash clothes if we press the correct buttons or dials.
- A microwave will cook food if we press the controls in the right way.

<p>1. You can use a remote control handset to control a TV, video, DVD and stereo.</p> <p><i>Draw a remote and responding device.</i></p>	<p>2.</p>
<p>3.</p>	<p>4. You can make a 'turtle' move round the screen by giving the computer simple commands. We use LOGO to do this.</p> <p><i>Draw the Logo icon</i></p>

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Logo commands

Use this sheet to remind yourself about some of the common commands used in Logo programming language.

1. Make the turtle move forward
2. Make the turtle turn right (right angle)
3. Make the turtle turn left (right angle).....
4. Clear the (graphics) screen
5. Clear the text screen



Logo programming language can be used to simulate different environments to test how well real things work.

A factory buys a robot buggy which carries boxes from one area of a factory to another. The factory worker needs to programme the robot to move around the factory to pick up a box, take it to a different area and put it down.

We use Logo to pretend to be the factory and we test the set (sequence) of commands needed to complete the task.

Why is Logo a good application to do this task?

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Robotic buggy

You work in a factory that has a robotic buggy that moves around the factory delivering parcels.

The route of the buggy has to be programmed into a computer.

The company wants to make sure you know what you are doing. They do this by testing you using a model of the system. The object that you move around the screen is usually known as a turtle.

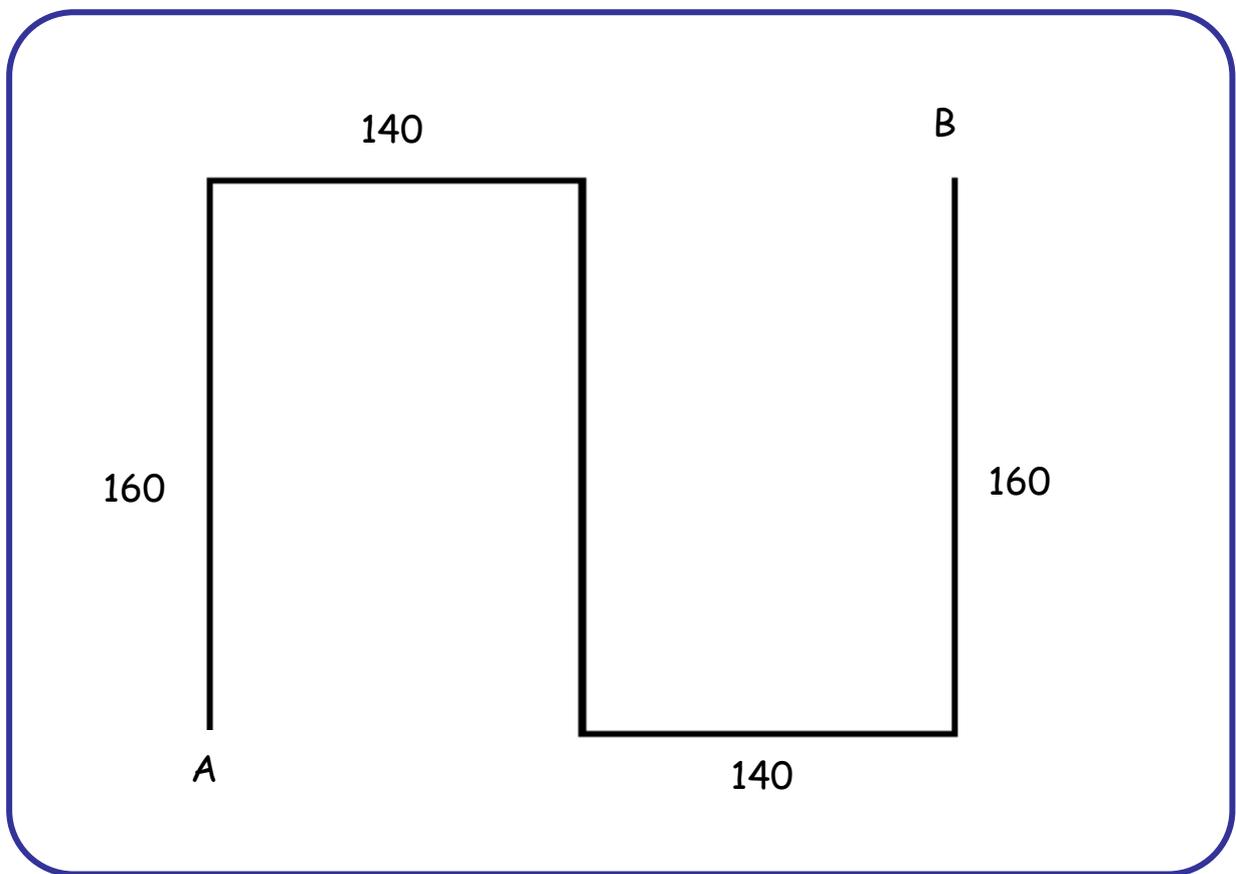
1. Make the turtle move forward a distance of 50 and then stop.
Print out your result.
2. The company gives you a test to see if you can control the turtle.
Make the turtle draw a square that has sides of length 50.
3. Save your list of instructions under the title "Square" and close the program.
4. Load the instructions "Square" in again.

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Robotic buggy

The company are pleased with your work and give you the pattern that the real buggy will follow in the factory. They ask you to model this on the computer.

Make the turtle move from A to B following the route shown.



Print out your route and your list of instructions.

Write down what has happened to the turtle.

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Control task 1 - robotic buggy

Mark scheme

Criteria	Activity	Evidence	Mark	Mark Awarded
Control items using given options Worksheet 4 (Q1)	Pupil uses software to move turtle forward and then stop	Hard copy of work	1	
Name devices that respond to signals Worksheet 2 (Q2&3)	Pupil names two devices (i.e. TV, VCR, computer, entertainment system)	Two devices are written down	1	

Control screen image of device purposefully Worksheet 4 (Q2)	Control of turtle making it follow a square with sides of 50	Hard copy of instructions Hard copy of square	1 1	
Store work Worksheet 4 (Q3)	Pupil saves work	Teacher observation of activity	1	
Retrieve work Worksheet 4 (Q4)	Pupil retrieves work	Teacher observation of activity	1	

Achieve specific outcomes Worksheet 5	Turtle is moved from A to B following prescribed route	Hard copy of instruction and route followed	2	
Describe effects of their actions Worksheet 5	Write down what happened to the turtle	Written statement	1	
Evaluate Worksheet 3	Pupil describes an advantage or disadvantage	Statement on final hard copy	1	
		Total	10	

When evaluating, it is not essential that comparisons are used. Examples of acceptable statements would be, 'this was a good application to use because it's easy to change things', or 'menus are easy to use, quicker than doing by hand'.

Unacceptable statements are to do with 'enjoyment' or 'effort'.