



Generation Code

Beginner

**Information for teachers
and group leaders**

Workshop Synopsis

Pupils will have fun getting to grips with computer programming in our interactive coding workshops. In these practical sessions we'll be using the latest child-friendly Raspberry Pi computers and Mirobots to inspire children to get creative with technology. Children will go beyond using screens to use basic coding languages, to control real world objects in fun and unexpected ways.

The Beginner workshop is an introduction to computing and the concept of algorithms; using analogue and digital activities children will explore how to give instructions to computers by creating simple programs to control a robot.

Designed for classes that are just starting computing and is an introduction to the computing curriculum covering the basics.

What will the workshop involve?

Generation Code is an exciting 1 hour interactive workshop that covers key parts of the Primary Computing curriculum, and is designed for students that are just starting on their computing journey. The children will have the opportunity to use a Raspberry Pi computer to program a Mirobot robot. By doing this they explore concept of algorithms and how to write simple programs.

The workshop is led by our expert Enablers and will provide opportunities for children to use equipment and resources they may not otherwise get the chance to.

Is there anything I need to do to prepare the children before the visit?

This 1 hour workshop is designed for classes that are just starting their journey into computing. So no prior knowledge is necessary as the workshop starts from the basics of what an algorithm is and builds on that to start some simple programming.

Evaluation

Eureka! constantly aims to improve its programmes for school groups and feedback from adults and children is an essential part of this. We try and capture as much feedback as possible from teachers and children to guide our future programmes.

Teachers will be given a questionnaire at the end of the workshop and we'd appreciate it if you could fill this in on the day and hand to a member of staff or post back to Eureka!

After your visit we will send out a questionnaire for the children to complete (preferably within 1 week of the visit). Copies of both forms are included in this pack.

Additional resources & information

The following pages contain various supporting resources and information related to the workshop.

Please find the following documents in this pack:

1. **National Curriculum links** – showing how the workshop fits in with the national curriculum for science.
2. **Equipment Used** – description and links to the equipment used in the workshop.
3. **Teacher's assessment chart** – this outlines the aims and objectives of the show, including the key activities which children will be taking part in and their learning outcomes.
4. **Evaluation forms** – form for the lead teacher and children to complete.

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Primary National Curriculum links

Computing

1. understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
2. create and debug simple programs
3. use logical reasoning to predict the behaviour of simple programs

Maths

1. describe position, direction and movement, including whole, half, quarter and three-quarter turns

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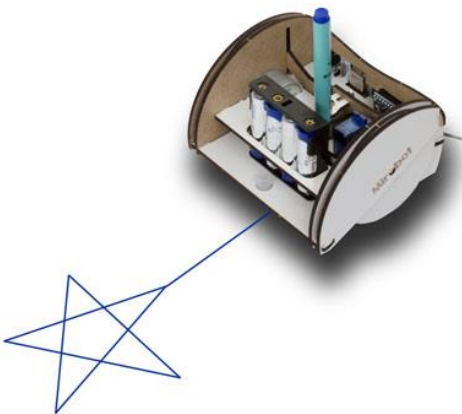
Equipment



Raspberry Pi is a low cost basic computer intended to spur interest in computing for school age children.



pi-topCEED is an exciting and easy way to create a desktop computer using a Raspberry Pi. It's plug and play ready, all you need is a Raspberry Pi, keyboard and mouse.



Mirobot is a drawing robot that's designed to help build children's understanding of everything from engineering to programming and geometry.

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Teacher assessment chart

Aims and objectives – by the end of this workshop children should have learned:

1. What an algorithm is and that computers follow these precise and unambiguous instructions.
2. How to write a simple algorithm in the real world (as a human crane) and the digital world (navigating a Mirobot)
3. To use a simple arrow based interface to control a robot.
4. Write a simple program to navigate the Mirobot around the table to specific points.

Overview: Through a series of interactive activities, powerpoint presentation and discussion, this workshop will cover the basics of the computing curriculum, introducing the concept of algorithms.

Activities	Learning Outcomes
Introduction to the session, what is an algorithm?	<i>That an algorithm is a set of instructions that computers use and follow.</i>
Human Crane activity: how to write a set of instructions to complete a task, creating their own algorithm.	<i>How to write a set of clear and unambiguous instructions, and how to follow them. That not being clear or forgetting an instruction means the computer won't be able to complete its task.</i>
Introduction to Mirobots and the arrow interface to control them.	<i>Using knowledge from previous activity, how to put separate instructions together to create a simple program for a robot to follow.</i>
Creating an algorithm to control the Mirobot.	<i>Writing a simple program that makes the robot move as intended. If it doesn't not move as intended then debugging the program to make it work right.</i>
Writing a simple program to navigate the Mirobot around the table to get to the treasure.	<i>Combination of previous activities, writing a simple program that aims to accomplish a specific task.</i>
Plenary for the session.	<i>Recap of the workshop and reinforce the main learning objectives.</i>

Teacher questionnaire

We would like to find out what you thought of Generation Code. Please complete this form and return it to a member of staff. Thank you for your assistance.

What is the name of your school?		
What is the postcode or road name of your school?		
What year group did you bring today?		
Approximately how many pupils did you bring today?		
Approximately how many of these are on pupil premium?		

1. How would you rate the following aspects of the day? (Please tick)

	Very good	Good	Average	Poor	Very Poor
The knowledge of the staff running the workshop					
Accessibility of the content					
Venue for the workshop					
Overall, how would you rate the workshop					

2. What did you particularly like about today's activities?

3. Do you have any comments or suggestions that you'd like to share with us?

4. Are there any topics you would like to see covered in future Eureka! workshops/shows?

Please turn over →

5. Do you feel that the day was good value for money? (Please circle your response)

Yes

No

Not Sure

5b. Please explain your answer

6. How did you hear about the workshop (please tick all that apply)

- ☐ Received leaflet/email direct from Eureka!
- ☐ Word-of-mouth recommendation from colleague
- ☐ Eureka! website or social media
- ☐ Other {please specify}

7. Measuring impact – for teachers

Please read the following statements and tick the option which most applies to you.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Impact on my pupils					
I feel this visit inspired my pupils					
My pupils learned something new about computing					
I feel my pupils will be more confident about computing than before they came					
Eureka! is a good place to learn about computing in a different way to school					
I feel my pupils will be more interested in computing than before they came					
About me					
I discovered something new during my visit					
The visit made me feel more positive towards computing					
I would recommend a visit to other teachers					

Thank you for taking the time to complete this form and if you have any other comments about the day overall, please use the space below.

Please return completed forms to leanne.wise@eureka.org.uk or alternatively post to:

Leanne Wise, Play & Learning Officer, Eureka! The National Children's Museum, Discovery Road, Halifax, HX1 2NE