



Generation Code Intermediate

**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.

In the Intermediate workshop, children will learn how to control and program a BBC Micro:bit using a block based language similar to Scratch. Using this knowledge they will then write a program to test various items for their conductivity using the BBC Micro:bit

Designed for classes that have already covered the basics of computing and want something more challenging to cover some of the higher level curriculum points.

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 have already done some computing and coding in class. The children will have the opportunity to use a Raspberry Pi computer to program a BBC Micro:bit. By doing this they explore how to combine digital and physical systems for specific purposes, in this case testing conductivity.

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 have already done some computing in the classroom. The students should ideally have some experience of using Scratch and the basics of computing, however they do not need to much experience.

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.

Generation Code Intermediate Workshop

Primary National Curriculum links

Computing

1. design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems
2. work with variables and various forms of input and output

Science

1. recognise some common conductors and insulators, and associate metals with being good conductors

Generation Code Advanced Workshop

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.



The BBC micro:bit is a powerful handheld, fully programmable, computer designed to encourage children to get involved in writing software and building new things that will be controlled by it.

Generation Code Intermediate Workshop

Teacher assessment chart

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

1. How to use the Micro:bit coding interface to program a Micro:bit with simple programs.
2. How to use input and output in a Micro:bit program.
3. What materials conduct electricity.
4. How to use conditional statements when writing computer programs.
5. How to write a simple program that uses a Micro:bit to test if an item can conduct electricity.

Overview: Through a series of interactive activities, powerpoint presentation and discussion, this workshop will look at the creating a simple program on a BBC Micro:bit to test electrical conductivity.

Activities	Learning Outcomes
Introduction to the session, the Micro:bit and the interface for writing programs to it.	<i>What a Micro:bit is and how to write programs to it.</i>
Write a simple program to the Micro:bit	<i>How to use the Micro:bit interface to write a simple program that displays something on the leds on the front.</i>
Incorporate input into a program on the Micro:bit	<i>How to modify the simple program previously written so that it responds to the buttons on the Micro:bit.</i>
Conductivity: discuss and predict the conductivity of some given items.	<i>What kinds of items conduct electricity.</i>
Write a simple program including input, output and conditionals to test conductivity.	<i>How to use what they learnt about writing a simple program with inputs and outputs, and incorporate conditionals to test for conductivity.</i>
Test the items for conductivity.	<i>What materials actually conduct electricity.</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, Eureka! The National Children's Museum, Discovery Road, Halifax, HX1 2NE