Generation Code Offline

Objectives

- Participants will understand how computer science influences different areas of our lives, from health to sports to fashion.
- Participants will feel inspired by the possibilities of digital creation.
- Participants will come up with a concept for new technology.

Aim

For young people to explore the technology that surrounds them every day. Discovering how it is made and who creates this, inspiring an interest in learning to code.

Workshop Plan

Item	Duration (minutes)	Resource required
Introduction	20	 Post-its + pens
Code Caricature	20	 A3 paper + pens/colored pens
Guess who	15	 Code profiles x 2 (depending on group size) Coder signs resources
Computer Science is in everything	20	 Blindfold Computer science is changing everything slide deck x 2 (depending on group size)
Your digital vision	20	A3 paper + pens
Showcase	15	Small prizes
Reflections and close	10	 Survey Devices (phones/laptops/ tablets)

Introduction

Purpose: Understanding perceptions of code

Part 1:

- 1) 'What do you think of when you think of coding?' Ask everyone to answer this question by writing down/drawing 3 things they associate with the word coding. Make a visual representation across one wall of the room.
- 2) Discuss these initial perceptions. What have they come up with and why?

Part 2:

- 1) Ask participants to place themselves in the line in relation to how they feel about coding. Left to right : 'boring', middle is 'neutral' and right is 'exciting'
- 2) Ask attendees why they chose that placement and discuss
- 3) Conduct the same activity again, but this time coding is 'relevant to me' and 'not relevant to me'.
- 4) Ask attendees why they chose that placement and discuss and their current associations to coding.

Code Caricature

Purpose: Recognising our stereotypes!

- 1) Split the participants into groups.
- 2) Instructing activity is to be phrased openly: In your groups can you please draw what you think a coder looks like.
- 3) Instruct the groups to annotate their drawing too. Questioning this persons age/gender/ personality/ education/hobbies/ profession.
- 4) Facilitator asks questions as group feedbacks back: did you all have the same idea of what to draw? What aspect of the coder was hardest/easiest to draw?
- 5) To end the facilitator summaries what their current perceptions of a coder seems to be. Did they all draw similar things? Different? Has a stereotype emerged?

Note for facilitator: this workshop will go on to reveal that many different types of people code, learn at different ages, use code in different ways, all over the world. Don't reveal this at this stage!

Guess Who

Purpose: to meet real life coders, showcasing that a wide range of people engage in computer science. Coders create very different things for different reasons.

- 1) Split into groups of even numbers (ideally 4/5 per group)
- 2) Give each group a couple of the coder profile cards, so all 9 are spread amongst the groups.
- 3) The groups have to decide for each profile if this is someone who codes or not and put the profiles into two piles.
- 4) Groups feedback on their discussions and explain what they thought for each profile.
- 5) Go through the slides in the PowerPoint to give a brief background for each person and reveal **that they a**re all coders!
- 6) Quick questioning- does any of that surprise you? How does that link to the caricatures you drew? This reveals that there is no profile for a coder.

Computer Science is in everything.

Purpose: to understand what coding means, and it's the application in the real world.

Part 1: Human Robot – what is coding?



This game draws out the key difference between humans and robots! Robots can't make inferences or assumptions – they're stupid! They need to be given step-by-step instructions to achieve anything at all. A robot is only as clever as the person telling it what to do!

- 1. Ask for 2 volunteers, one will be the Human Robot, one will be the Coder.
- 2. Human Robot leaves the room.
- 3. With the group create a maze for the robot to go through in the room, use chairs or any other furniture to create barriers in the space. Put your prize at the end. Explain to the Coder that they will be giving instructions to direct the robot to their prize.
- 4. Explain to the Human Robot that they should try to forget everything human about them and just do as the instructions tell them to (i.e. if Coder says "turn left" they should keep going left in a circle until they say stop!)
- 5. Blindfold the Human Robot volunteer and bring them back into the room.
- 6. Coder leads Human Robot using verbal instruction only (no physical touch) until they get to the prize.
- 7. Reflect with the group on how successful they were which instructions were good and why? Which instructions would/wouldn't have worked with a real robot? (Note: the more specific and detailed the better e.g. turn 90 degrees left, then stop). Take away point: Computer code is a set of rules or instructions. It is made up of words and numbers and when you put them in the right order it will tell your computer what you want it to do. The outcome of giving instruction to a computer is the creation of computer programmes which operates the technology we see today, from traffic lights, to apps on our phones.

Part 2: To reveal how computer science enriches all areas of our lives.

1) Discuss or visually draw a timeline to map out the activities you have done in the day so far. From getting up in the morning to being at this workshop, what has involved the use of technology?

For example: boiling the kettle, watching the television and crossing the road when the green man to show you it's safe. Everyone has probably checked their phones this morning, maybe used an app. Technology is so embedded in our lives, and coding has created it.

- 2) In this next activity participants will build an understanding of how computer science is used and benefits all areas of life. They will be tasked to match pictures of different technology with the right description on how it used in the world.
- 3) Split into groups and hand out all the pictures of the different technology. Ensure the pages are cut in half, so the pictures and description are separate.
- 4) Ask the groups to discuss :
 - What do you think this picture means in relation to computer science?
 - Do your pictures have anything in common with another? I.e. have they been created for a similar purpose? Who might use this technology or benefit from it?
 - What are the differences?
 - Share some of these discussions as a whole room.
- 5) Hand out the descriptions of the technology. Can they match it to their pictures correctly?

Part 3: To understand the employment opportunities in the technology sector.

- 1) Recap on what we have done so far in the workshop
 - Who works in computer science?
 - Where do they work?
 - What do they do?
- 2) Facilitator to reveal, there are lots of different types of jobs if you are interested in learning how to develop technology. As seen throughout these activities, people are motivated to code for different reasons, to solve problems, because it's fun and creative, and because it can help people.

If you want to work for ASOS (the online fashion and beauty store), you don't need to be a fashion designer, you need to learn code. You might love sports, but instead of being a player you could consider a career in helping developing technology to help players analyse their performance.

Note to facilitator: you may want to ask a STEM Ambassador to come and speak/facilitate an activity at this point in the workshop. Please refer to Support and Information section on the platform.

Your Digital Design

Dream it, design it and put it in the world and see people benefit from it!



- 1) As groups, ask participants to come up with a new digital idea. They have to draw their design and annotate to explain what it does, how, who uses it and why.
- 2) For example:
 - A dress that you can wear to a party that can change colour every hour
 - A robot that can have conversations with people as a solution to loneliness in the elderly
 - An app which allows you to take an image/video of a crime which can be reported directly to the local police.

Showcase

- 1) Ask each group to present their idea.
- 2) Provide other participants with an opportunity to ask questions/ say what they like about each idea.
- 3) Facilitator should draw this to a conclusion by emphasising the importance of engaging in coding to make these ideas a reality.
- 4) Everyone votes on their favourite design, or have category winners i.e. most innovative, most popular, will change the world for the better. Award small prizes such as sweets or something meaningful to your hub.

Reflections and close

Ask participants to share their thoughts- what have you learnt from this workshop? How do you now feel about coding compared to the start? You may wish to do part 1 and 2 of the introduction again