

CREATIVE CODER KIT

TECH
WILL
SAVE
US

LIGHT, MOVEMENT & CODING

Explore the Creative Coder through a series of progressive 1 hour sessions using the Tech Will Save Us online MAKE platform.

01 : INTRO & CONSTRUCTION

02 : ANIMATION

03 : GESTURES

04 : SENSORS

05 : TIMER

06 : THEATRE - BUILD IT

07 : THEATRE - THE STORY

08 : THEATRE - DESIGN

09 : THEATRE - DRESS REHEARSAL

10 : THEATRE - SHOW TIME

Meets UK Statutory Curriculum:

YEAR 4 Electricity
KS2 Computing, Design & Technology

8+

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SESSION OVERVIEW



01: INTRO & CONSTRUCTION

Explore inputs and outputs in our world. Understand where the inputs and outputs are on the Creative Coder. Assemble the Creative Coder and test preloaded apps.

02: ANIMATIONS

Explore the coding environment by using the light blocks. Understand how to upload the code onto the Creative Coder. Practice uploading new code onto the Creative Coder

03: GESTURES

Explore the coding environment by using the light blocks and gestures. Understand how to upload the new code onto the Creative Coder. Apply the new code by making a gesture activated light pattern.

04: SENSORS

Explore the sensors and if & loops blocks in the coding environment. Understand how they can detect which way the Creative Coder is facing. Apply by making a spooky storytelling light.

05: TIMER

Explore the timer blocks in the coding environment. Understand how to edit and create new timers. Apply the new code by playing a timer-based game like Hot Potato.

06: THEATRE - BUILD IT

Explore using the Creative Coder as a dramatic lighting source. Understand how to build a support for it. Construct a cardboard puppet theatre.

07: THEATRE - THE STORY

Explore the structure of a simple story. Understand how to write a simple script. Apply knowledge by using the writing frame to write a short story.

08: THEATRE - DESIGN

Explore using silhouettes to tell a story. Understand how to code your Creative Coder to set the scene with lights. Write a script and create card characters/set shadows.

09: THEATRE - DRESS REHEARSAL

Give your shadow play a run through. Decide what is working and what could be improved. Make your changes.

10: THEATRE - SHOW TIME

Take turns to perform the shadow plays to the group. Identify 2 that worked well and one thing to improve. Celebrate the hard work and joining of craft, electronics and coding!

Welcome to the Digital Explorer Sessions

This 10 week plan is a curated set of Makes from the TWSU archive that aims to progress Makers through making with the Creative Coder. It is by no means exhaustive, and deviation in response to your groups interests is encouraged!

Makes

The sessions refer to Makes, which are online step by step tutorials on the TWSU Make platform. Click on the images to access them directly.

We are constantly adding new Makes to the online archive, all of which are free to use. There are loads more online than are used here, and these are great extension or alternative activities.

If there is a Make that doesn't exist that you think should, let us know. If you want it, others probably do too.

make.techwillsaveus.com

Make Account

All Makers can set up their own free Make account to help them store their code and track making progress.

Resources

Every session requires that Makers have access to:

- Computer with internet access
- Micro USB cable
- Creative Coder

Additional resources needed are listed at the bottom of each session.

KEEP THE CREATIVE CODER BOXES, they will be used as part of some of the makes!

Creativity

Every Make has the potential to be unique and we aim to provide space for Makers to explore their creativity. We celebrate risk taking and failure as much as success.

When things go wrong...

We embrace the fact that Making can be as frustrating as it is rewarding, and we hope this is something you can communicate to your Makers too. Making mistakes is a critical part of how we learn, and often allow that 'Ureka' moment to happen. Allow the physical and emotional space to make these mistakes.

Cross Curriculum

The very nature of these sessions means that they encompass STEAM through coding, maths, design, physics and cardboard engineering.

Sharing

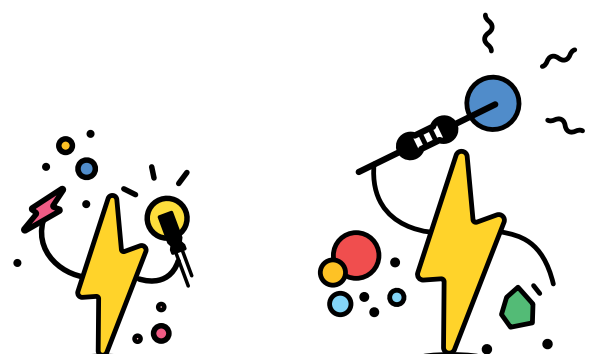
Celebrate your Makers work by sharing with your community.

We always love seeing what people Make, so why not send us a photo of your finished projects for us to share online with our own global maker community at:

make@techwillsaveus.com

Enjoy

Making is fun!





Computing Key stage 2

Pupils should be taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Design & Technology Key Stage 2

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups (Y)
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design (Y)

Make

- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately (Y)
- select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities (Y)

Evaluate

- investigate and analyse a range of existing products (Y)
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work (Y)
- understand how key events and individuals in design and technology have helped shape the world (N)

Technical knowledge

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- apply their understanding of computing to program, monitor and control their products

*These areas are not covered within this scheme of work

Science

Light (Lower KS2)

Pupils should be taught to:

- recognise that they need light in order to see things and that dark is the absence of light
- notice that light is reflected from surfaces
- recognise that light from the sun can be dangerous and that there are ways to protect their eyes
- recognise that shadows are formed when the light from a light source is blocked by an opaque object
- find patterns in the way that the size of shadows change

Physical Education Key Stage 2

- use running, jumping, throwing and catching in isolation and in combination
- play competitive games, modified where appropriate [for example, badminton, basketball, cricket, football, hockey, netball, rounders and tennis], and apply basic principles suitable for attacking and defending
- develop flexibility, strength, technique, control and balance [for example, through athletics and gymnastics]
- perform dances using a range of movement patterns
- take part in outdoor and adventurous activity challenges both individually and within a team
- compare their performances with previous ones and demonstrate improvement to achieve their personal best.

Art & Design Key stage 2

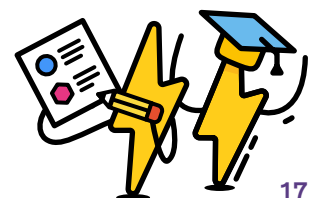
Pupils should be taught to

- develop their techniques, including their control and their use of materials, with creativity, experimentation and an increasing awareness of different kinds of art, craft and design.
- to create sketch books to record their observations and use them to review and revisit ideas
- to improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials [for example, pencil, charcoal, paint, clay]
- about great artists, architects and designers in history

*These areas are not covered within this scheme of work

Sound Waves (Lower KS2)

- identify how sounds are made, associating some of them with something vibrating recognise that vibrations from sounds travel through a medium to the ear find patterns between the pitch of a sound and features of the object that produced it
- find patterns between the volume of a sound and the strength of the vibrations that produced it recognise that sounds get fainter as the distance from the sound source increases.





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