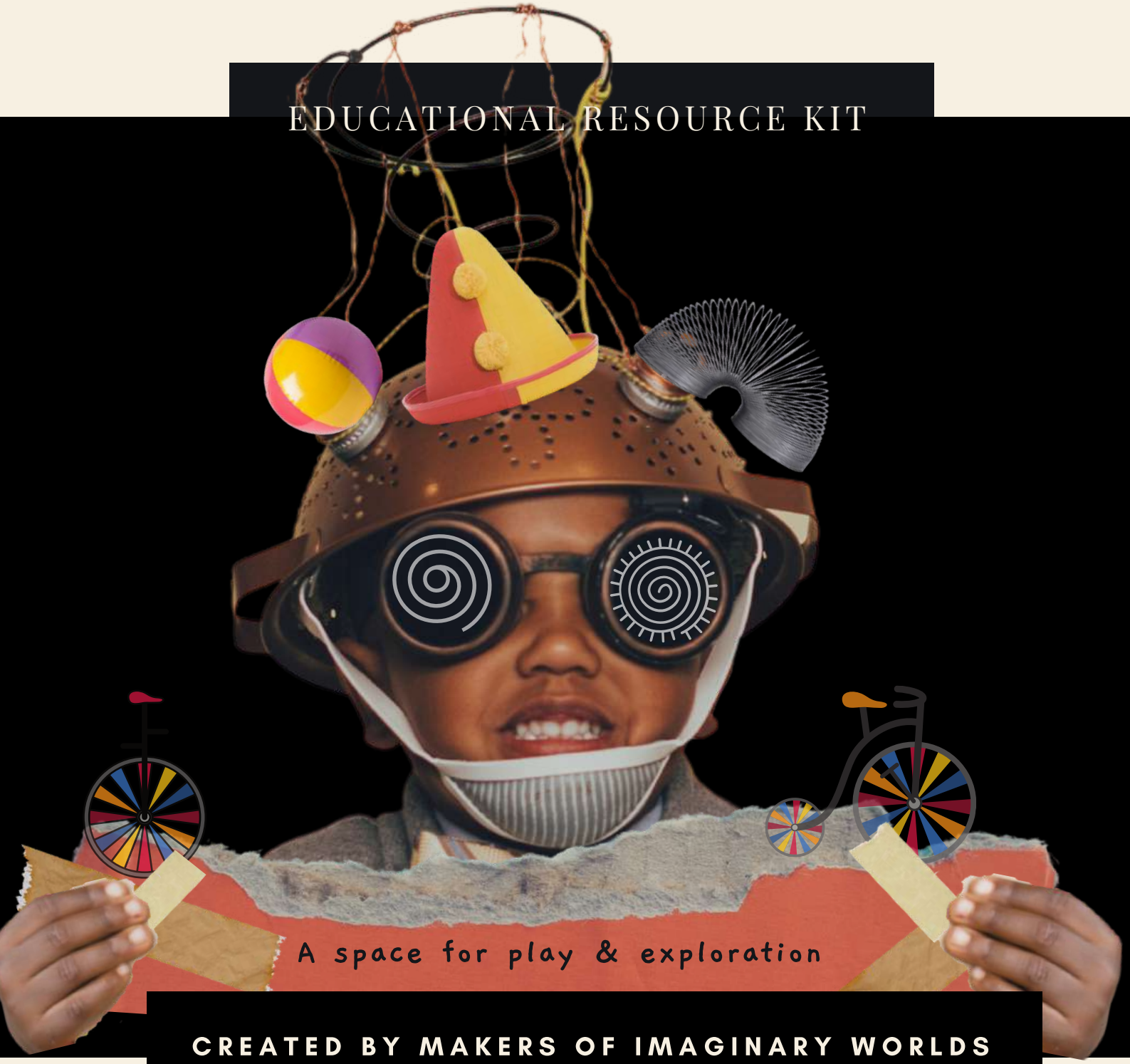
A CIRCUS TROUPE OF MECHANICAL CREATIONS

THINGAMABOBAS

EDUCATIONAL RESOURCE KIT



CREATED BY MAKERS OF IMAGINARY WORLDS

For parents, teachers and creative practitioners

About Us

Makers of Imaginary Worlds is a Nottingham based installation and performing arts company. We make dynamic spatial narrative experiences and sensory environments for performances, installations and storytelling for children 0-10 years. We are passionate about developing quality interactive work and believe that all children have the right to art and culture.

Participants

This resource reflects the creativity and work of many people. Thanks to the teachers from Fernwood School and Middleton Primary School in Nottingham who reviewed the resource content. The British Council *Spark 21* project and all the teachers and the young artists from Djanogly Strelley Primary School, Nottingham UK, and Sam Shui Natives Association Huen King Wing School, Hong Kong who participated in workshops to test the resource activities. You can see a wonderful exhibition of their work here.

Acknowledgements

Thank you to Dr Louisa Penfold for helping out with the editing of this education resource.

A special thanks to staff at Lakeside Arts, University of Nottingham for their support in both the installation and this resource. We owe our gratitude to all the many DIY and open source projects that inspire and enrich the activities adapted for this resource.

This resource is supported by Arts Council England (ACE). Their 10 year strategy Let's Create supports creativity through cultural participation. It aims to 'ensure that children and young people are able to fulfill their creative potential, and access the highest-quality cultural experiences where they live, go to school and spend their free time. Working in partnership with the Department of Education, ACE advocates the value of creativity in education as well as the importance of a rich curriculum that includes art and design, dance, drama, and music.'

GETTING THE MOST OUT OF THIS RESOURCE

Makers of Imaginary Worlds' *Thingamabobas* installation celebrates the coming together of storytelling, theatre, technology and the magic of everyday objects!

This resource, created especially for primary school teachers, parents and creative practitioners, is designed to deepen children's connections with the *Thingamabobas* contraptions through tinkering, design thinking and making. Through different creative projects, students will explore how to:

- Tinker and invent using design thinking
- Integrate old and new technologies into projects
- Apply sustainable creative practices that utilise the recycling and reuse of materials

This resource also features cross-curricular links with Key Stages 1 & 2 syllabus including art & design, design & technology, science and literacy subjects. You can view these links in the tables located within each activity.

You can learn more about *Thingamabobas* by visiting our website www.makersofimaginaryworlds.com where you can also view installation images, videos, worksheets and activities related to the show.

Happy tinkering!
Roma Patel and Rachel Ramchurn
Makers of Imaginary Worlds

CONTENTS

WHAT IS THINGAMABOBAS?

Thingamabobas is a playful, contactless, sensory installation where the audience is invited to take on the role of a circus crew and work with a 'caretaker' to bring a troupe of hybrid, performative, mechanical creations to life.

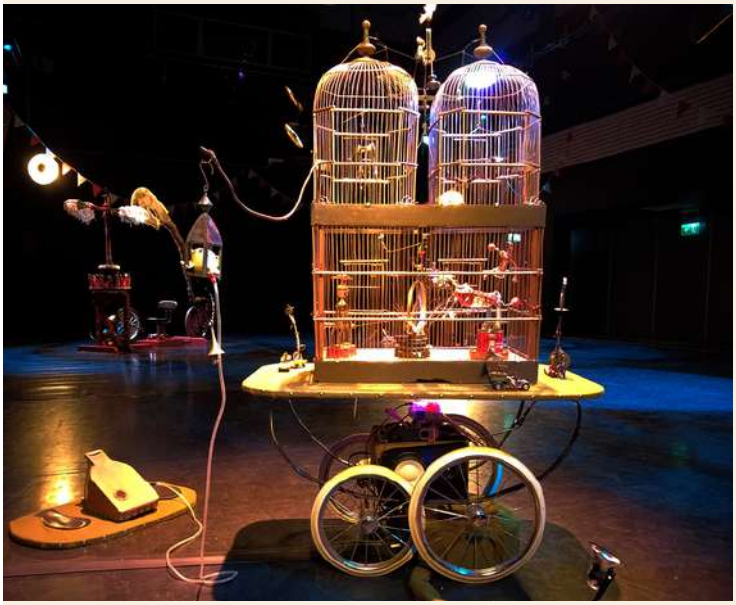
The origins of the word 'thingambob' can be traced back to the mid-18th century to describe a person or thing whose name has been forgotten or is unknown.

Thingamabobas draws inspiration from the absurd contraptions of Heath Robinson and Rowland Emett and Calder's Circus.

The work brings together elements of robotics, found objects, technology, and circus performers such as acrobats, trapeze artists, tightrope walkers, jugglers, and unicyclists.

A team of artists and creative technologists developed the work in spring 2021. They crafted the four sculptures (pictured on the next page) from a variety of traditional materials, children's toys, and repurposed materials that they put to use in innovative ways.

The result is a set of eye-catching artworks that ignite curiosity in audiences young and old!

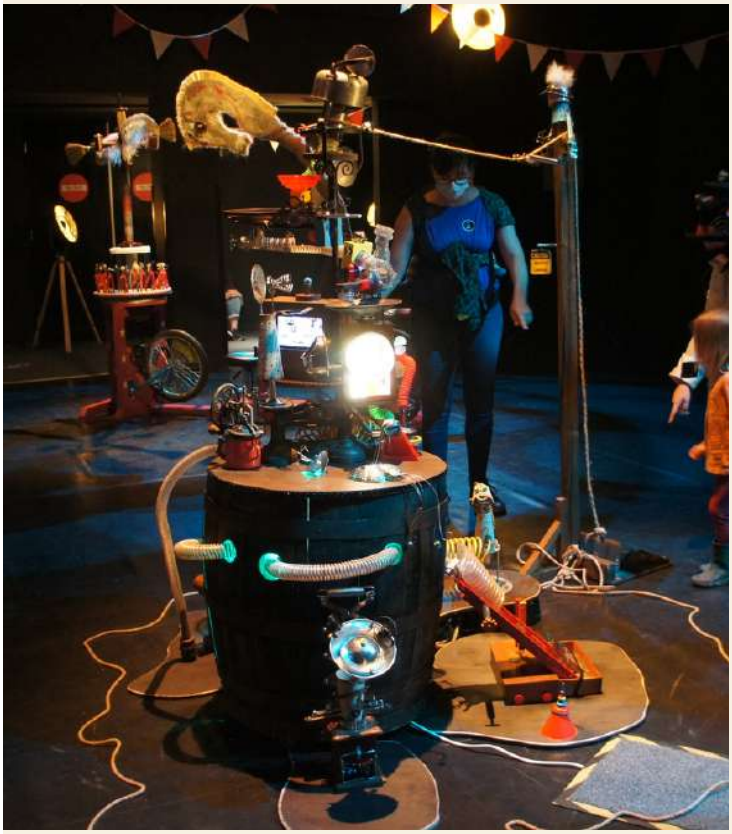


THE MICRO MACHINEARIUM

The Micro Machinearium is a miniature circus troupe (made from recycled materials) housed in an original 19th French century birdcage. It features miniature performers made from found objects. The inflatable animal and interactive lights and sounds are activated by the audience.

THE POWER HORSE

The Power Horse is an absurd sculpture that draws inspiration form Heath Robinson's drawings. It requires a person to pedal it in order to animated the zoetrope dancers and brush the horses head.



THE SMART CHEF

The Smart Chef is a crazy contraption that sorts coloured glass beads as they travel through its tunnels and tracks. It uses machine learning to sort the marbles as they journey to their respective destinations.

THE DANCER

The Never Ending Dancer (NED) is a robotic arm dressed in feathers and a beautiful skirt. Looking downwards, it waits patiently for the next dance partner. NED uses facial recognition to track and follow the audience movements.

MAKE YOUR OWN CONTRAPTIONS

The following three tinkering projects, inspired by The Tinkering Studio and Bernie Zubrowski workshops, allow children to engage in design thinking and tinkering. They are a great way for children to test things out, make mistakes, ask questions and solve problems!

These activities cross into multiple curriculum areas including electricity, making circuits, building structures, mechanical movements, cams, selecting and understanding material properties, making mockups, sharing ideas, and recording observations.

Children can extend on skills and techniques developed in these activities to construct their own whimsical Thingamaboba.

WHAT IS DESIGN THINKING?

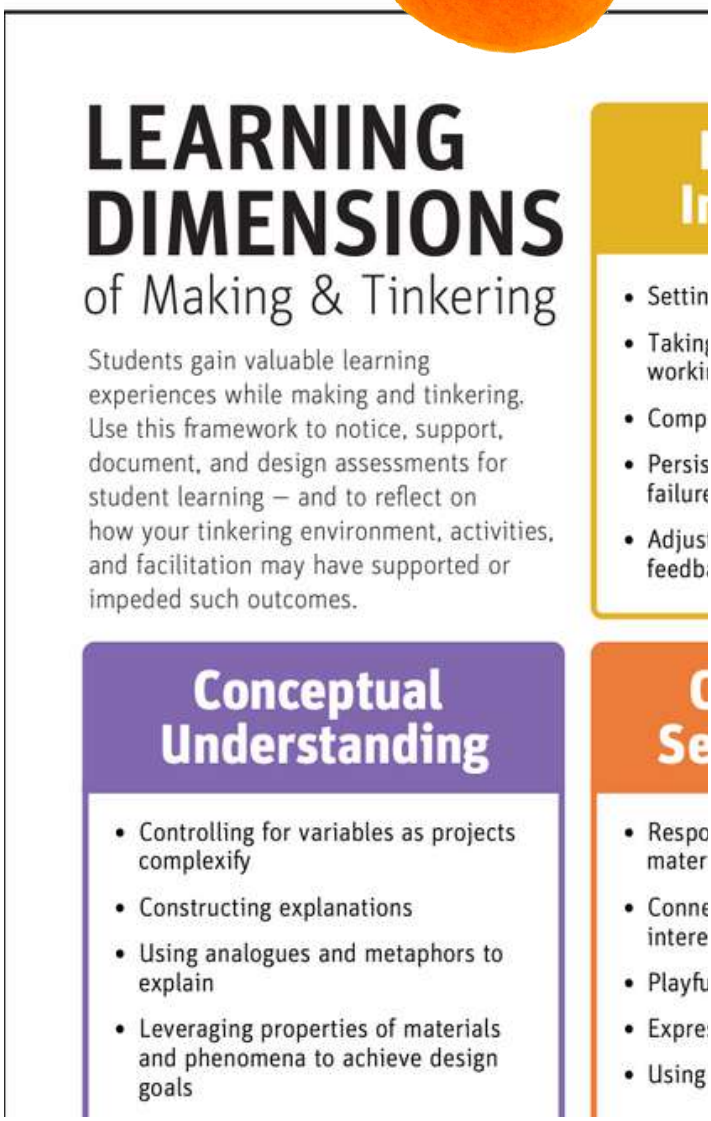
Designers, inventors, and engineers use creative processes to design and invent products. Design thinking is a hands-on approach to learning that encourages learning mindsets that emerge from experimenting, brainstorming, problem-solving, and reflecting on mistakes.

This process is key in developing children's creativity, confidence, and critical thinking. The diagram on the following page illustrates how design thinking can be adapted to children's learning.

Tinkering, a creative process that links hands-on learning and play, can be used to support design thinking. Tinkering gives children the opportunity to invent, experiment, and be curious about materials.

Both design thinking and tinkering promote inquiry-based learning, creativity, and problem-solving.

SEE PAGE 26 FOR MORE INFORMATION

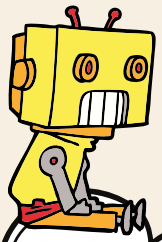


LEARNING DIMENSIONS
of Making & Tinkering

Students gain valuable learning experiences while making and tinkering. Use this framework to notice, support, document, and design assessments for student learning – and to reflect on how your tinkering environment, activities, and facilitation may have supported or impeded such outcomes.

Conceptual Understanding

- Controlling for variables as projects complexify
- Constructing explanations
- Using analogues and metaphors to explain
- Leveraging properties of materials and phenomena to achieve design goals



IDENTIFY THE PROBLEM

How to create an exhibition of silly Thingamabobas?

LOOK & DRAW

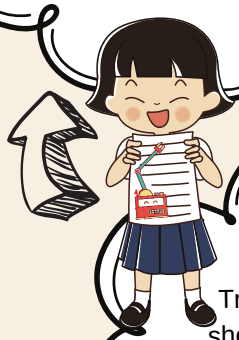
What have you learnt from Thingamabobas and other exhibitions you have seen. Find out what other people think.

DISPLAY

Find a space and create your gallery of inventions and welcome your visitors

IMAGINE

Think of several ideas for your inventions draw them and choose one or combine them.



TEST

Try out your design - show and tell. Find out what others think and make or record and make changes.

TINKER

Prototype/ mockups of design ideas. Choose materials to build your invention.

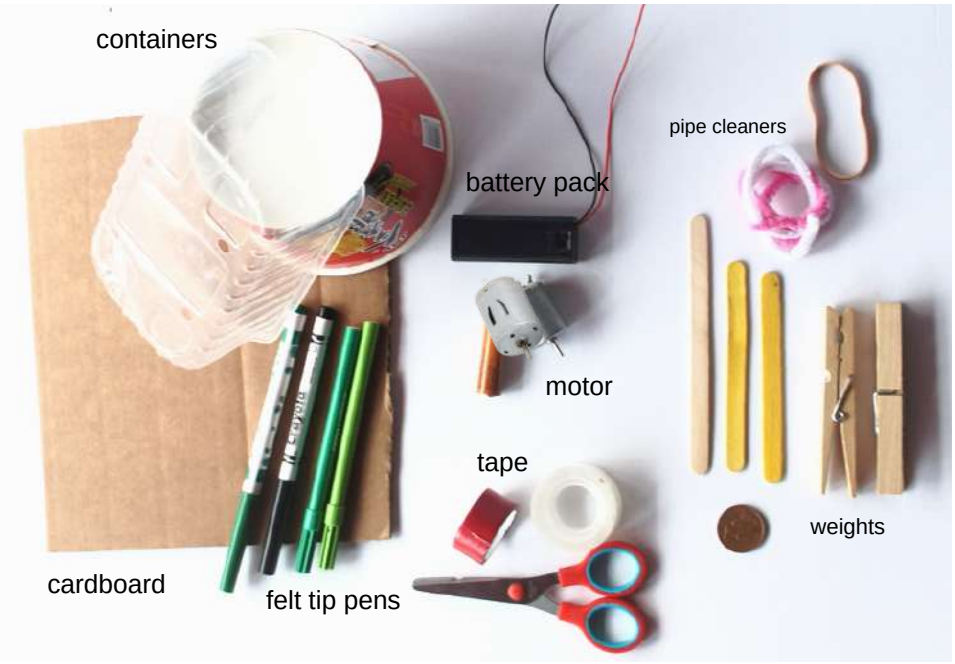
SEE PAGES 15-17 FOR MORE DETAILS OF EACH DESIGN STAGE. PAGE 21 FOR FURTHER ONLINE RESOURCES

Adapt the stages to suit your learners

ADAPTED FROM DESIGN THINKNG METHODS AND THE EXPLORATORIUM TINKERING STUDIO TENNENTS

MAKE A SCRIBBLE BOT

Time: 45 mins



CHALLENGE

Make a sculpture that can create colourful scribbles using recycled containers, markers, paper, and a DC motor.

YOU NEED

- Paper cup or small recycled container
- Felt tip/ marker
- Pipe cleaners
- Masking and electrical tape
- DC motor 1.5v to 4.5v
- Single or double AA battery pack with a switch
- Cardboard
- Roll of paper or large sheets
- small weights-coins, nuts or washers, toys, lolly sticks
- Art materials - paints, cards, etc.

Optional

- Clothes pegs
- Split pins/ paper fasteners

BEFORE YOU START

Lengthen the exposed wires attached to the battery case as they are usually short. If the motor has wires attached you need to length these as well.

WHAT IS HAPPENING?

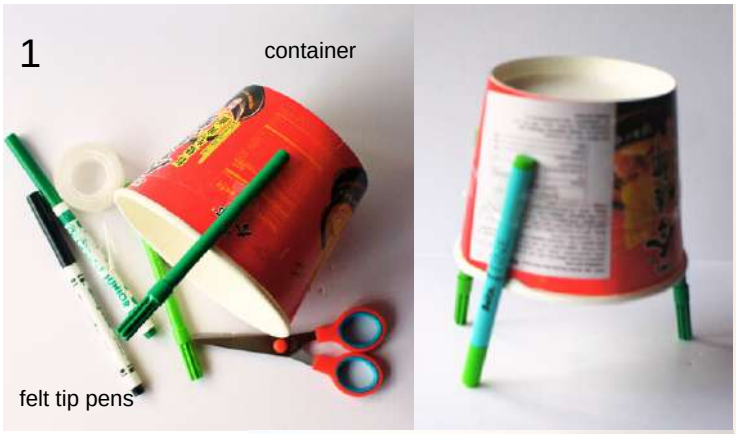
The scribble bot is a contraption that moves and jitters around by offsetting its parts, i.e. the motor or different materials attached to it. It's an intriguing and silly contraption for children and is a fun way to introduce electrical circuits. Making it work can be tricky but it gives learners the chance to apply creative thinking to problem-solving, think with their hands when making art.
The activity sheet helps the learners log their observations. This activity can be completed individually or in groups.

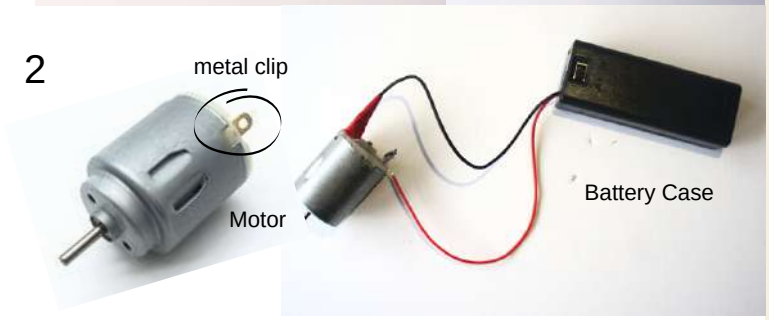
ART MOVEMENTS, ARTISTS & MAKERS

Automatism- see page 21
William Anastasi-Artist
Drawing machine by various Artist 70 years

CURRICULUM LINKS	
DESIGN & TECHNOLOGY	✓
ART & DESIGN	✓
SCIENCE	✓
LITERACY	✓

STEP- BY -STEP GUIDE





Introduction
For creative inspiration, show or demonstrate a pre-made example of a Scribble Bot such as:

Step 1- Make the body
- Think about what you want the Scribble Bot to look like.
- Decide how many felt tips pens you need (at least 3 are required).
- Tape the felt tip pens securely around the container making sure they are all at the same height.

Step 2- Make a circuit
- Thread and wrap the black wire from the battery case into the hole of the metal clip attached to the motor.
- Tape up the wires using electrical tape.
- Repeat the steps for the red/ positive wire.
- Switch on the circuit to try it out.

Step 3- Make it move
- Position and tape the motor and battery case on top of the container. Make sure the motor sticks out on one side of the container.
- Get a large sheet of paper, then remove the covers of the felt tip pens and test if it works.
- Don't worry if it doesn't move, it may take a few goes. Try to adjust the battery case or motor or add a larger propellor to offset it.

Step 4- Personalise it
- Think about it as a moving sculpture. How might it look? Is it a creature?
- Add different materials to the scribble bot's body.
- Make & decorate different propellers.

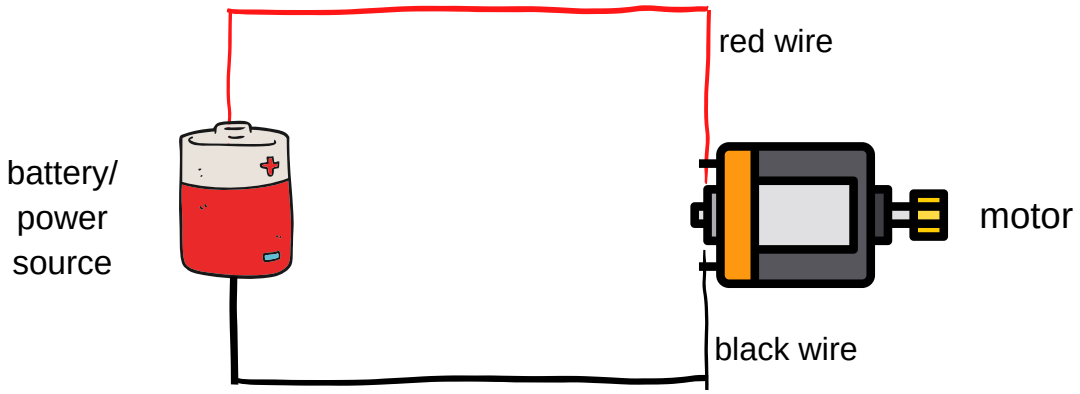
Step 5- Fill in the activity sheet
Use the *Scribble Bot* activity sheet on page 23 to record your findings and observations.

Experiments to try with KS2 students:
- Attach different types of pens, chalk, and mark-making materials.
- Redesign it by using a flat cover or card.
- Make your own switch.

Electrical Circuits

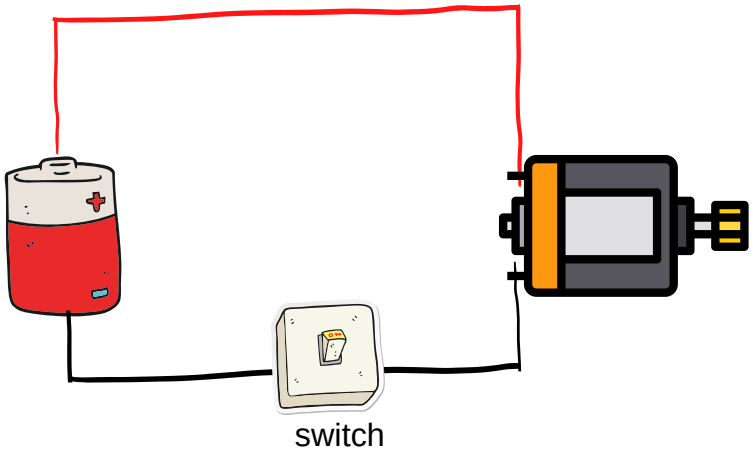
An electrical circuit is the path that electricity flows through and it must have a battery or power source.

A simple circuit

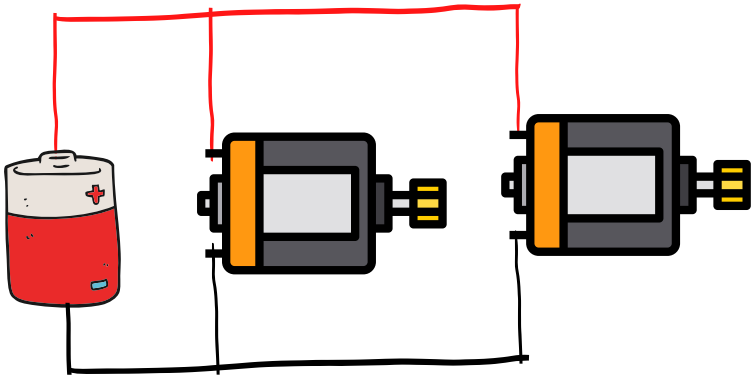


The wire connects the power to the motor to complete the circuit

A circuit with a switch



A parallel circuit



MAKE MOVING CREATURES

Time: 60 mins

CHALLENGE
Design and make moving creatures. The aim is to use different techniques to make moving creatures from household recycled materials.

YOU NEED
- Cardboard boxes/cereal boxes
- Wooden pegs
- Recycle plastic bottles or cardboard tubes
- Blue tac
- Split pins
- Tape,
- Double-sided tape
- garden wire
- Bamboo sticks or dowel 30 to 45 cm
- Art materials, i.e. markers, card etc
- Other recyle materials

CURRICULUM LINKS	
DESIGN & TECHNOLOGY	✓
ART & DESIGN	✓
SCIENCE	✓

WHAT IS HAPPENING?
This task helps children to gain skills in making kinetic moving creatures using three simple techniques. Children will learn to make creatures that have different moving parts such as wings, mouths, and limbs.
The exercises are short and can be completed within an hour at the KS2 level. KS1 may need two sessions.

GETTING STARTED
The first thing you'll need to do is watch the how-to-do video made by the artist Michelle Reader (see the link on the next page). She demonstrates how to make moving contraptions and creatures using recycled materials.

Michelle worked on the 'Thingamabobas' installation and has worked with recycled materials since 1997. She makes bespoke recycled and sustainable sculptures often created from waste materials.
Worksheet: Write a short story about your creature.

ARTIST-DESIGNER-MAKERS
Kinetic Art
Tinguely Machine Builder
Roland Emmet- Contraptions

MAKE YOUR OWN CONTRAPTIONS

STEP BY STEP VIDEO

Michelle Reader made the Thingambobas that performed in the Micro Machinarium




Making moving creatures video

Techniques to help you build your own moving creatures.

Using recycled materials in Art

A short documentary where Michelle talks about why she reuses waste materials to create unique figurative recycled sculptures.

To find out more about her artwork visit her website

Great for your Arts Award

MAKE A MECHANICAL SCULPTURE

Time: 60 mins

MAKE YOUR OWN CONTRAPTIONS

CHALLENGE

Design and build a moving sculpture that uses a cam mechanism, levers and a hand crank to make it move.

YOU NEED

- Small cardboard box 15 to 20cm
- Thick cardboard
- Bamboo skewer/sticks 30cm
- Drink straws- (recycled plastic or paper)
- Hole making tool (screws or nails)
- Masking tape
- Glue gun
- Pipe cleaners
- Art materials, i.e. markers, card etc

Optional

- Recycled materials-plastic bottles, cans, old toys

BEFORE YOU START

If time is limited and you are working with younger children (KS1) then it may be necessary to prepare the cams and boxes before the workshop. When learners are working in small groups it is useful to have an example or image of each step (see next page) and assign tasks to each learner in the group.

WHAT IS HAPPENING

In this task, learners will build an automaton with a cam follower mechanism and develop it into a moving sculpture. It's a playful challenge that will give them insight into mechanisms that have been used for centuries in everyday machines, clocks, and for entertainment.

Automata, is a nonelectrical moving device. The word automata derive from the Greek meaning "acting of one's own will." Like robots, ancient automata were designed to imitate animals and humans.

ARTIST-DESIGNER-MAKERS

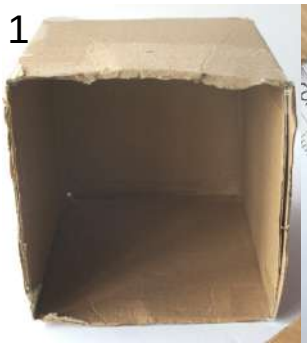
History of Robots
Dug North- Automato artist
Yu Chenrui Automato artist

CURRICULUM LINKS	
DESIGN & TECHNOLOGY	✓
ART & DESIGN	✓
SCIENCE	✓

The power horse in the Thingamabobas uses a similar mechanism.

STEP- BY -STEP GUIDE

1



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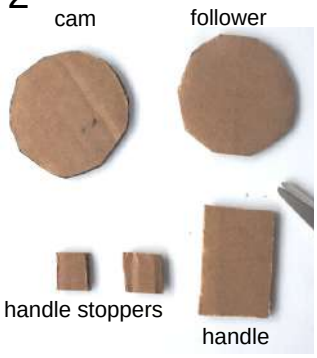

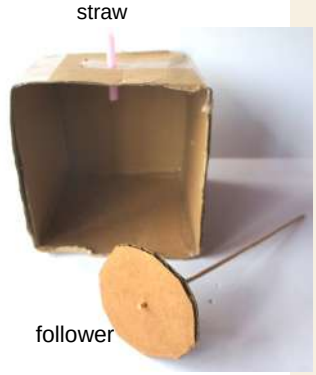

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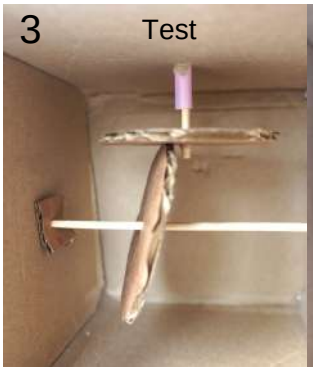

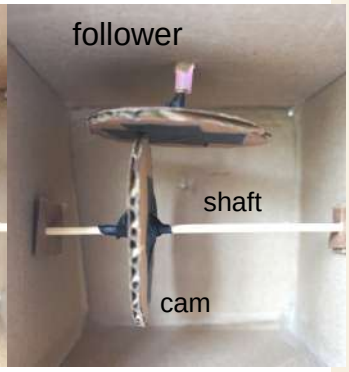

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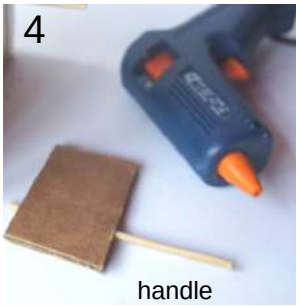
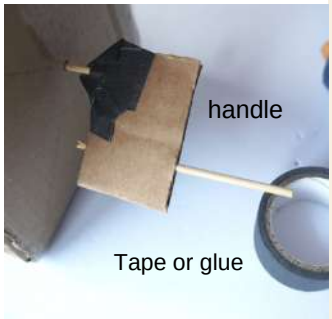




5

Introduction

Demonstrate pre-made automata or use the example on this video link:

Step 1-Prepare the Box

- Cut off the flaps on the front of a small box.
- Find the middle point of each side of the box by drawing a line on either corner to make an X.
- Pierce a hole in the centre of the X on the top, right, and left sides of the box.

Step 2-Make the Mechanism

The cam and follower disc help the sculpture spin.

- Draw and cut 4 circles from cardboard, for the cam and the follower.
- Cut a rectangle for a handle and 2 square stoppers for it from cardboard.
- Make a hole in the center of the cam, follower, and handle stoppers.
- Push the bottom of a rod into the hole of the follower, then tape or glue on both sides.
- Cut a straw around 4 to 5cm -in length- and push it through the hole on the top of the box.

Step 3-Putting it together

- Thread the follower through the hole on top of the box from the inside.
- Thread the shaft (skewer), cam, and handle stoppers through the holes on the side of the box.
- Check that the follower is touching the cam then test it (by turning the shaft), adjust the placement of the cam and follower if it's not working.
- Once it's working, tape or glue the cam and straw.

Step 4-Craft the handle/crank

- Cut a short piece of a new rod and push it through the cardboard handle and tape or glue it.
- Put a stopper on either side of the shaft tape/glue the top of the handle into the shaft.

Step 5-Personalise it!

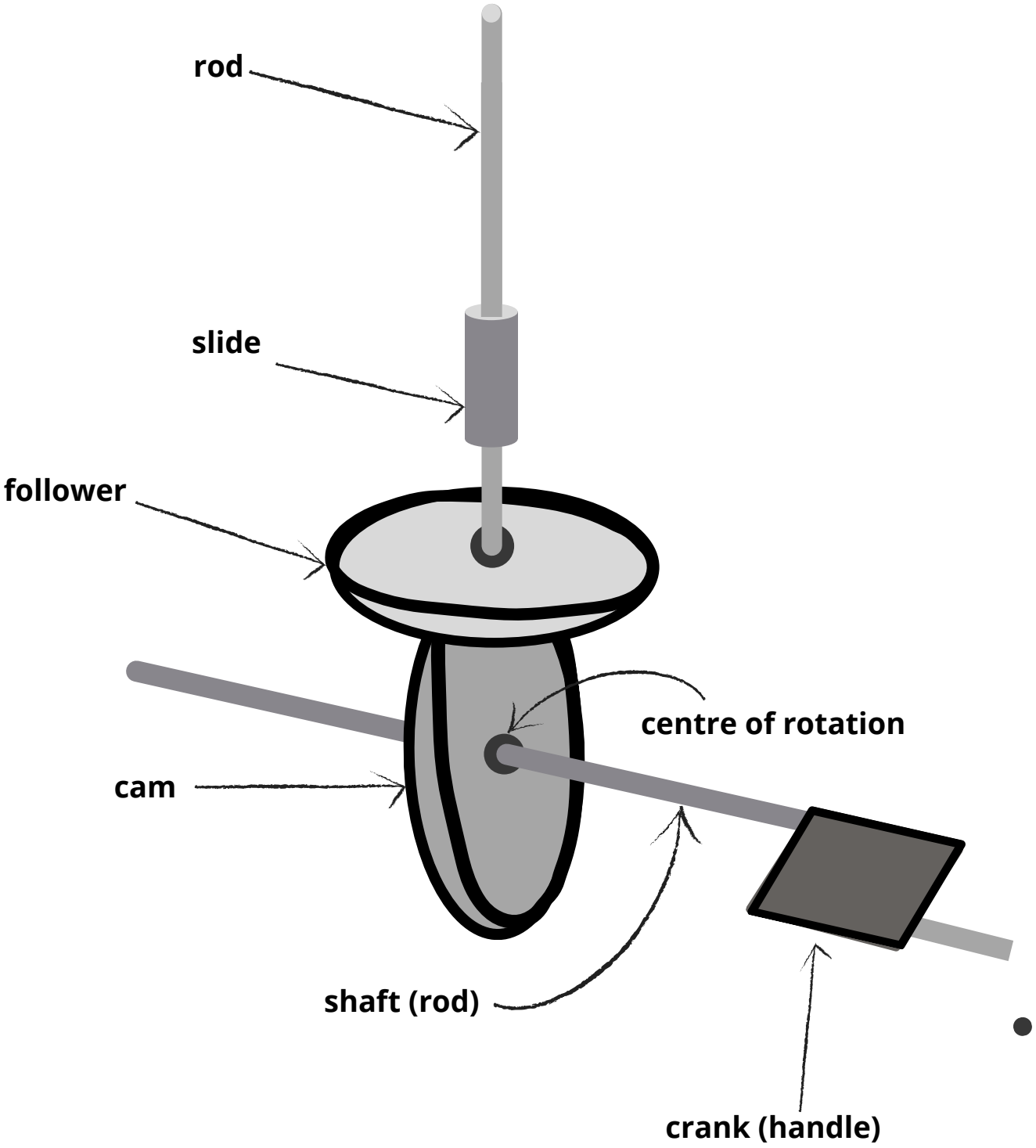
- Make a sculpture on the top of the box that can be attached to the follower.
- Use art and recycled materials to build it.
- Add a scene around it.

Step 6- Fill in the activity sheet

Experiments to try at KS2 level:

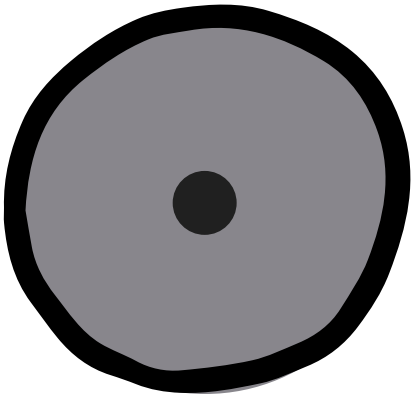
- Use two or more cams
- Use different a shape cam. The shape and where the hole is will affect how the sculpture moves.

Cam Mechanism

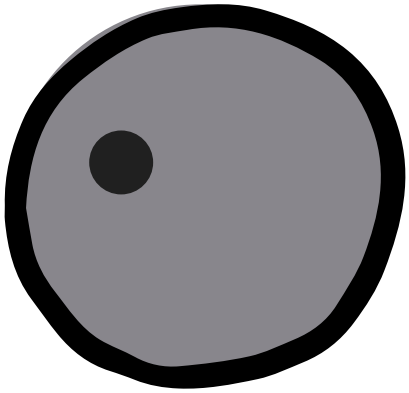


Different Shaped Cams

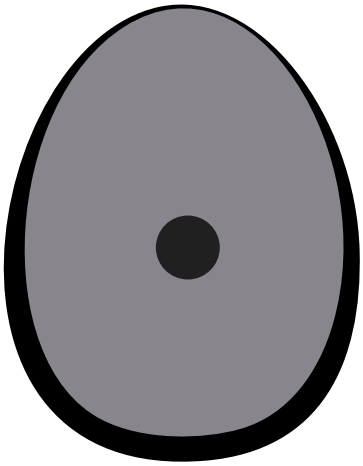
Different shaped cams creates different type of movements in your sculpture.



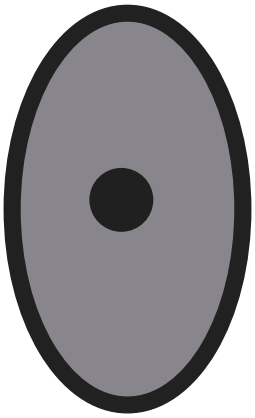
Circle



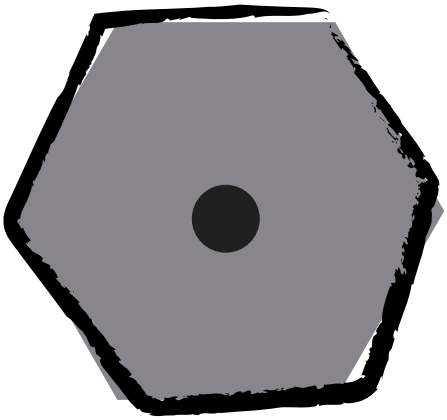
Eccentric



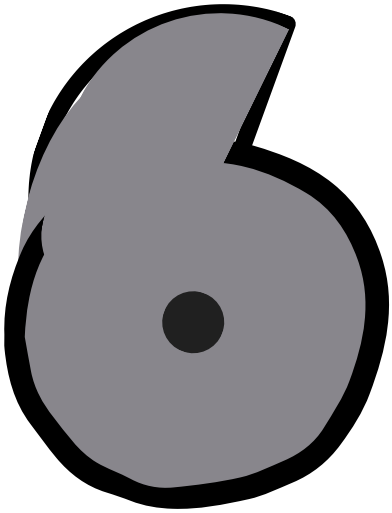
Egg-shaped



Oval



Hexagon



Snail

MAKE A THINGAMABOBAS EXHIBITION

In this section, children will develop their inventions using design thinking.

You can adapt the process to suit your resources, time, and student's needs.

Each stage is outlined with the accompanying worksheets that can be found at end of this kit.

LOOK & THINK

This stage is about observation and thinking. Children will take on the role of an inventor. Designers and Inventors observe the world and objects to help them invent better products. They can reflect on what they have seen or experienced to help them make their own Thingamabobas exhibition. See an example of work made by children in UK and Hong Kong - Gallery

TASK 1

After looking at the video and presentation of the Thingamabobas installation, children can discuss their observations of the installation. The *Look & Draw* worksheet supplied can be used to help learners describe and draw aspects from the Thingamabobas installation or film. Alternatively, this can be done on a whiteboard with the child and children.

YOU NEED

- Thingamabobas Film
- Thingmabobas presentation
- *Look and Draw Worksheets (on page 25)*
- *Mind Map worksheets (on page 26)*
- Pencils

Optional

- Large sheets
- Markers
- White labels (design company name tag)

TASK 2

Choose a theme

Explain the design diagram on page 8 and introduce the children to the problem. Using a whiteboard, make a list of different exhibition themes suggested by the child/ children. Then vote for one.

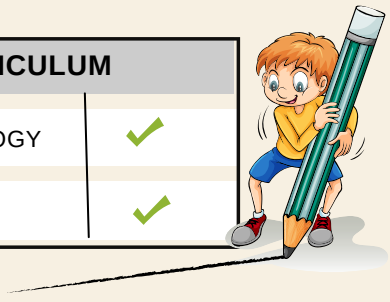
TASK 3

Think or Draw design Ideas

Thinking about the chosen theme, each child makes a mind map on a large sheet or uses the *Mind Map worksheets* to write or draw several design ideas. Children can work in pairs. Younger children will find it easier to draw ideas. If working in a group children can give their design/ invention company a name and make badges to wear.

KS2 extension: learners can identify the parameters for their exhibition. Think about: WHAT, WHEN, WHERE, HOW the exhibition will happen.

NATIONAL CURRICULUM	
DESIGN & TECHNOLOGY	✓
ART & DESIGN	✓



IMAGINE & TINKER

EXHIBITION OF SILLY INVENTIONS

Think of several ideas for your silly inventions draw them and choose one to mock up/prototype

IMAGINE

Idea Generation & Selection

This stage involves children drawing up one of their ideas and discussing them with other children or an adult. They can choose one idea or combine some of their ideas to make one prototype/ mockup. This stage is about making choices about their ideas and what they make. This task can be done individually or in a group.

TASK 1

Children sketch one idea or combine several ideas from the mindmap they created in the previous task. They then present the ideas to the group/ class and get feedback. In the next stage, they make changes and choose materials

Prompts: Think about your Thingamaboba's name, how does it work, what it does, how it sounds. Label the parts.

YOU NEED

- Worksheets
- Pencils, paints
- Boxes, recycled materials
- Glue
- Paper

TINKER

Implementing and Building

Tinkering encourages creative thinking through learning from mistakes, design changes, and iterations. This process helps children gain valuable skills in problem-solving and critical thinking.

TASK 2

Make a mock-up/prototype of their design drawing. The children gather the materials required then they can begin to build their 2D drawing into a 3D prototype, adjusting and making active changes to their design if necessary.

KS 2 Extension

Create a sketch book to record their observations and use them to review and revisit ideas.

Create cross-sectional and exploded diagrams of their Thingamaboba.

Listen to or read a a story about invention, see page 23 for links

EXHIBITION OF SILLY INVENTIONS

TEST & DISPLAY

Children can try out their creation, make adjustments and share their design process with others through testing and display. This stage is fundamental in the design process.

TASK

Demonstrate their prototype and talk to others about their work. Make the necessary changes to improve the design.

Find a suitable space to display/exhibit their Thingamabobas. Discuss what is required to help visitors to the exhibition understand their artwork.

Think about what labels/signs are required i.e. name of your Thingamaboba, any instructions for the audience and material list, etc.

Set up the display in the chosen space and label their Thingamabobas.

Upload pics to Thingamabobas online Gallery (optional).

YOU NEED

Worksheets
Pencils
Paper
String
Dispaly board

RELATED RESOURCES

A collection of online resources to support learners and educators dig deeper.

Online Resources

ART MOVEMENTS, ARTISTS & MAKERS

Scribble Bot Sculpture

Automatism Automatic Drawing

Automatist artists use chance and accident to create artworks. They make work without consciously thinking about what they are creating, it's kind of like doodling on a bigger scale.

William Anastasi

Willian Anastasi was born in 1933 and he created what he called Blind Drawings. He made the work with the eyes closed. He let the movements of the pencil on paper be directed by sound of the music he played.

Artist Drawing Machines

A video showing drawing machines from various artists spanning over 70 years including Jean Tinguely's drawing machines from the 1950. Examples of automation in at and technology.

Moving Creatures

Kinetic Art & Sculpture

Kinetic artists make art and sculptures that that moves. Calders mobiles are one of the most famous pieces of work at height of this movement between 1920s and 1960s.

Tinguely Machine Builder

Build your own online Tinguely machine with the 'Tinguely Machine Builder'. Using different components from the Jean Tinguely artworks, you can virtually bring your own machine to life.

Rowland Emett Contraptions

Rowland Emett was a British artist, designer and the creator of kinetic sculptures, He uses material from the kitchen utensils to scrap metal. His machines featured in the film Chitty, chitty bang bang.

Mechanical Sculpture

History of Robotics

Early automata are considered to be the first robots. The short video explores the history of Robots and automata.

Doug North Artist

In this video Automata Artisit Doug talks about his work and demonstrates how an automata works.

Yu Chenrui Artist

Yu Chenrui is an automota Artist he makes wonderful wooden sculptures that move.The link contains videos of his works.

Online Resources

RELATED RESOURCES

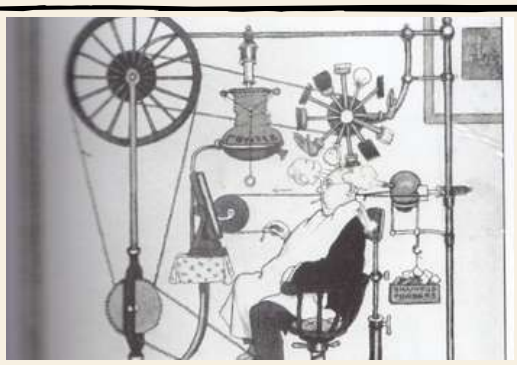
Inventors

How to be a kid inventor?

Kid President talks about how to be a kid inventors and gives great examples of his invention. He visits a jet engines factory to find out how they are made.

Inventors Storytime

We have collected a series of videos of some inspiring children stories about inventors and scientist read by astronauts in space, great storytellers and authors.



William Heath Robinson

William Heath Robinson (1872-1944) English cartoonist and illustrator, for his drawings of complicated and crazy inventions made him famous

Crazy Contraptions

Be inspired by Wallace & Gromit wonderful inventions and crazy contraptions.

MEET AN INVENTOR

Robotics Engineers -Marc-Henri & Edouard, Founders of Niryo

Just like Makers of Imaginary Worlds, Niryo's aim is to imagine solutions that would give young people and students resources to discover and / or deepen their knowledge about a specific subject.

What did you study to become a robotic engineer?

Robotics is technically multidisciplinary, mixing mechanics, electronics, and software. To work as a robotics engineer, you need to specialise in one of these areas. For my part, I studied at the ISEN Lille, with a specialisation in electronics in robotics.

Who is your favorite inventor?

I tend to be inspired by the present and the future rather than the past. So my most inspiring inventors are rather today's entrepreneurs, like example Elon Musk.

Why did you start making robots?

I am convinced that tomorrow's world will be better thanks to technology. think that technology will be able to help us with all the ungrateful tasks.
When I did my Masters in robotics in school, I was very frustrated that I didn't have access to manipulator arms (identical to those found in the industry) but smaller and easier to use. That's why I created Niryo!

How long did it take to invent your first robot?

Technically, I had electromechanical skills.
So I designed the CAD and the electronic boards of the first robot. From a software point of view, I didn't have the skills, so a colleague from my class quickly joined me and we worked in a very iterative and agile way and It took about 3 months to have the first prototype and 12 months to have a marketable robot.

When was NED created?

Niryo decided, a few years later, to go one step further and to create Ned, an improved and more robust version of the successful Niryo One."

Online Resources

RELATED RESOURCES

For Educators

Design Thinking

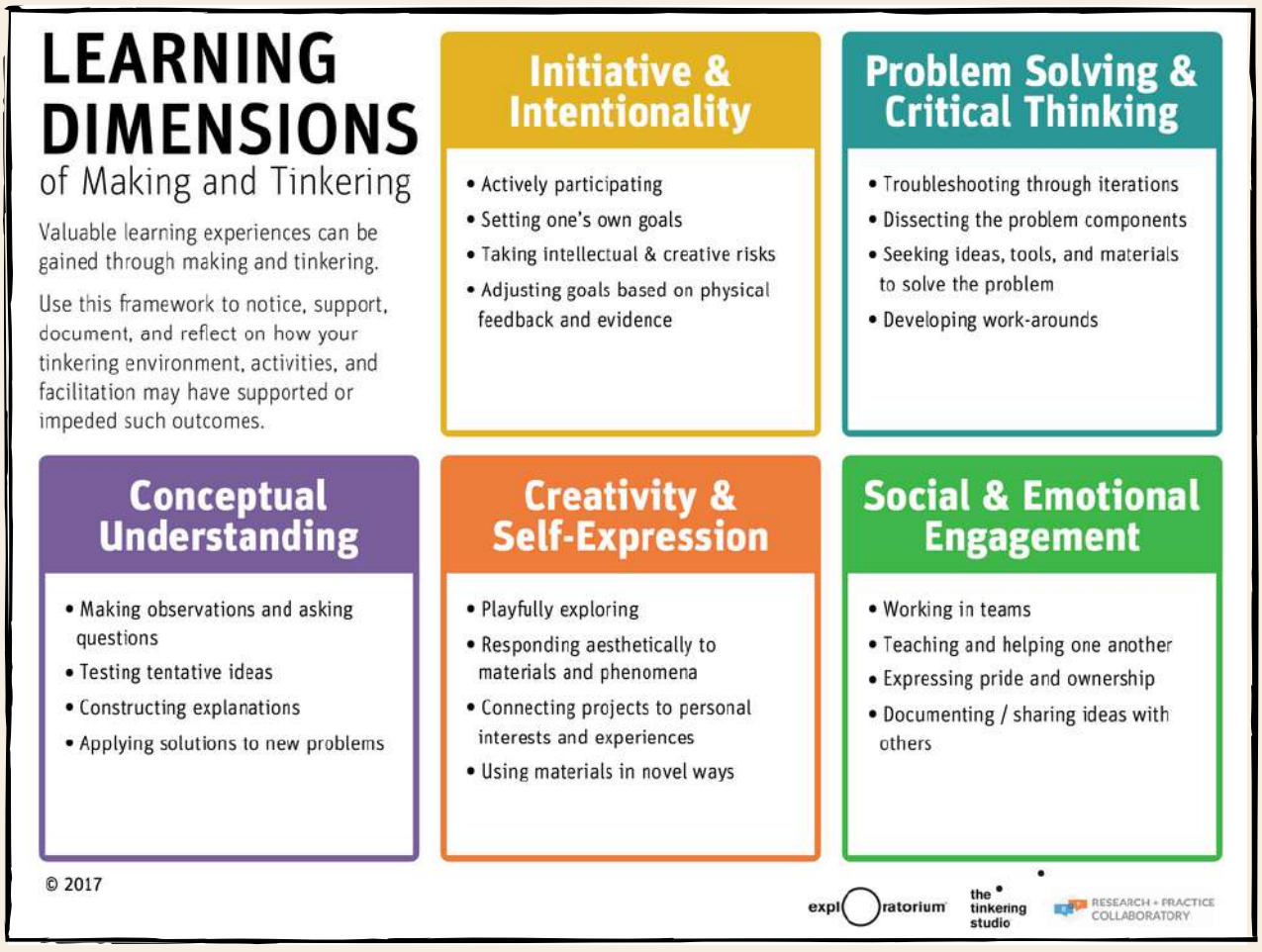
Great Pod cast for adults to find out more about approaches of design thinking for kids made researchers from by Stanford University.

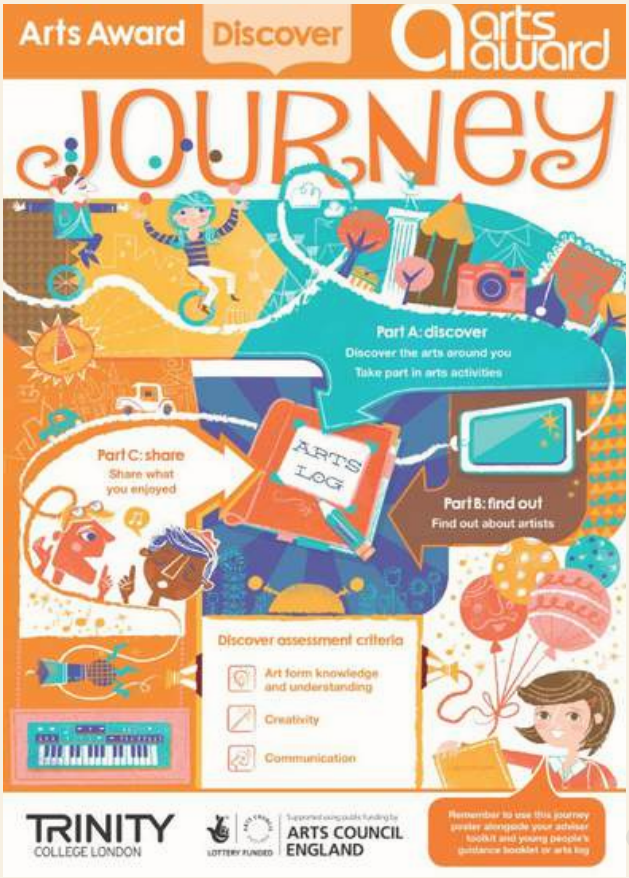
Learning Dimensions

Document to find out more about Learning Dimensions chart below published by the Tinkering studio.

Tinkering

A video from an Online conference about Tinkering concept for teachers, educators and artists.



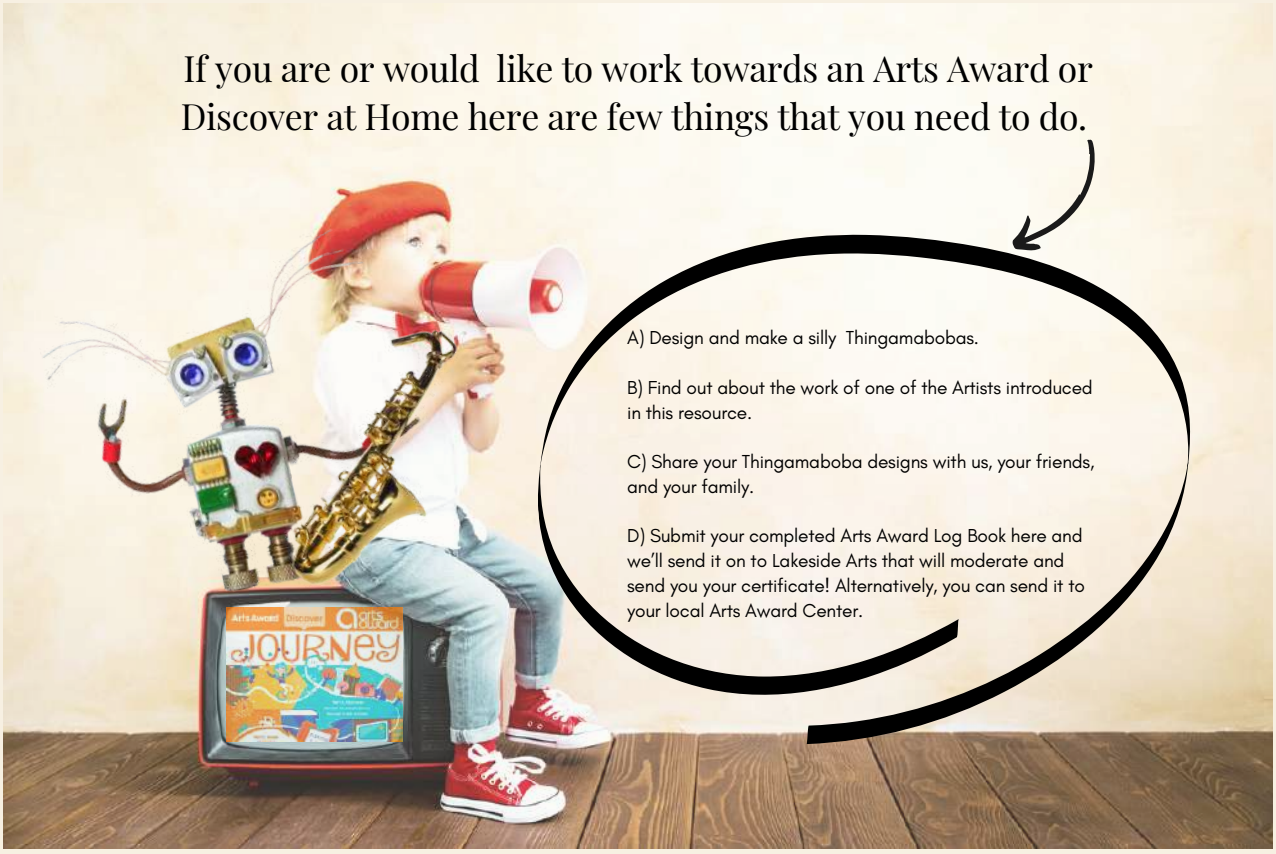


Arts Award

Our partner Lakeside Arts, Nottingham is an Arts Award supporter, *Discover at Home* is an exciting way to take part in our art activity and get a chance to earn a certificate by doing what you enjoy!

It is a special home version of the Arts Award for children under 11 years old. 'Arts logs' are used to record children's achievements in the arts as well as collect 'evidence' of their participation (proof that children have completed each part of Discover at Home)'.

You can find more information about the nationwide program and the *Discover at Home* special Arts Award Logbook can be downloaded here.



Discover at Home is a set of resources from Arts Award and Trinity College London, with expert support provided regionally in England by Arts Council England's Bridge Organisations.

WORKSHEETS

NAME: _____ DATE: _____

THE SCRIBBLE BOT DESIGN LOG

NAME OF YOUR MACHINE _____

HOW DOES IT DRAW?: _____

_____

WHAT MATERIALS DID YOU USE?

WHAT DID YOU DO?

STEP 1: _____

_____

STEP 2: _____

_____

STEP 3: _____

_____

STEP 4: _____

_____

DRAW AND LABEL THE PARTS ON YOUR MACHINE

What do you now know?

NAME: DATE:

MECHANICAL SCULPTURE

Draw and label your automata sculpture

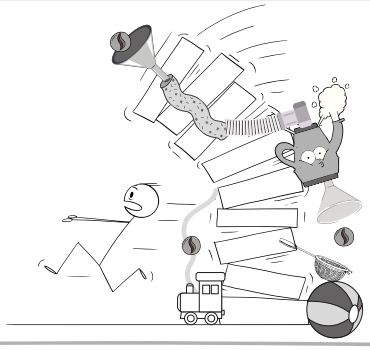
Tell us how your sculpture works?

What is the name of your sculpture?

What inspired you to create this sculpture?

NAME: DATE:

If my Creature is alive...



In the box below, complete the story.

Let your imagination run wild with a story!

You woke up in the morning to find the creature you made was alive. Imagine how you would react and what happened next?

What is the name of the creature?

Where were you when you first found out?

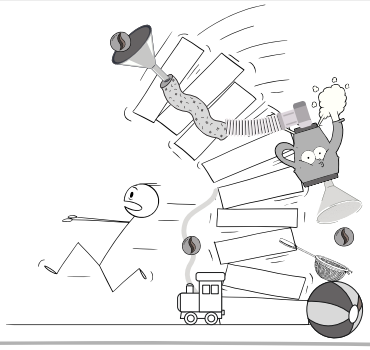
How did it make you feel?

How do you and your creature spend the day?

What happens in the end?

NAME: **DATE:**

Once upon a time...



Complete the story using the writing prompt below.

Let your imagination run wild with a story!

You woke up this morning to find the creature you made was alive. Imagine how you would react and what happened next?

KS2

Name: _____ Date: _____

LOOK & DRAW

Draw your favourite Thingamaboba.

Think about the Thingamabobas then answer the following questions in 1 to 3 complete sentences.

What are the things you saw in the Thingamabobas installation or film? Describe the kinds of objects shapes, textures or colours get your attention.

What do the Thingamabobas remind you of?

What do The Thingamabobas make you wonder?

NAME: _____ DATE: _____

LOOK & DRAW

THINGAMABOBAS

What do you enjoy most about what the Thingamabobas do?

_____

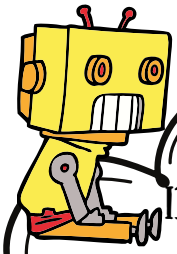
_____

_____

_____

My favourite Thingamabobas is (draw or write):

IMAGINE & INVENT



IDENTIFY THE PROBLEM

Can you create an exhibition of fun & silly inventions and contraptions.

LOOK & THINK

Think about the exhibitions you have visited. What can you learn for them? What is required to put on your exhibition? Find out what other people think.

DISPLAY

Find a space to display your inventions and welcome your visitors.

IMAGINE & DRAW

Imagine all the fun things you can invention. Use a mind map to write or draw all your ideas. Then choose one to draw in detail or combine several ideas in one drawing.

TEST

Try out your design - show and tell. Find out what others think. Make or write down any changes to help make your invention better.

TINKER

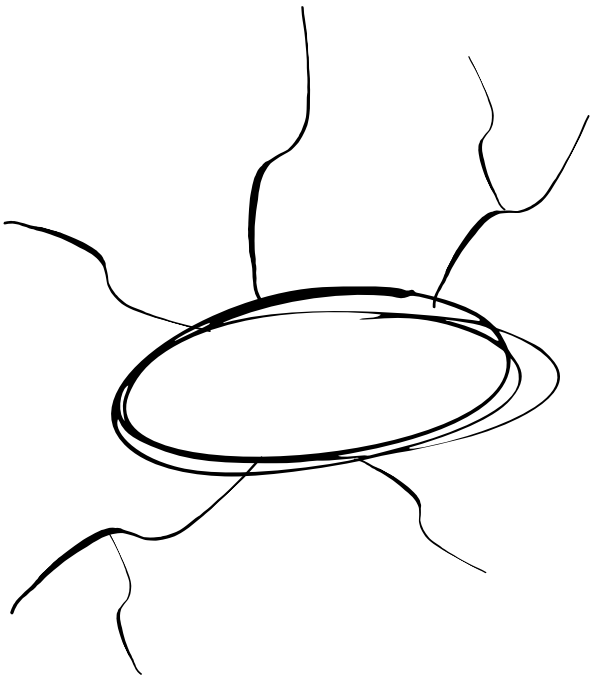
Time to build a prototype or mockup of your idea. Choose the materials you need to build your invention. Make changes. if something does work, continue to adjust your original ideas as you build.

THINK ABOUT INVENTING SOMETHING THAT DOES NOT EXISTS!

MAKE A MINDMAP

NAME: DATE:

Use this mind map to develop a bunch of awesome ideas!
Nothing is too crazy !



NAME: _____ DATE: _____

Draw one of your ideas here.

WHAT DOES YOUR INVENTION LOOK LIKE!

Does your invention have a name?

WHAT DOES IT DO? HOW DOES IT WORK?

Inventor's Log

(KS1)

what is the name of your invention _____

1	DRAW THE INVENTION YOU MADE:

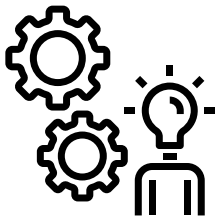
2	LIST THE MATERIALS USED

3	HOW DOES IT WORK?

NAME _____

DATE _____

(KS2)



Inventor's Log

Title of your invention _____

1 What did you invent and why?

2 List the materials used

3 How does it work?

4 Evaluate

What worked well?

What didn't work well?

5 What did you learn about:

Science:

Art & Design:

6 Next time I will:

Name _____

Date _____

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