

Working Scientifically

What we should already know...

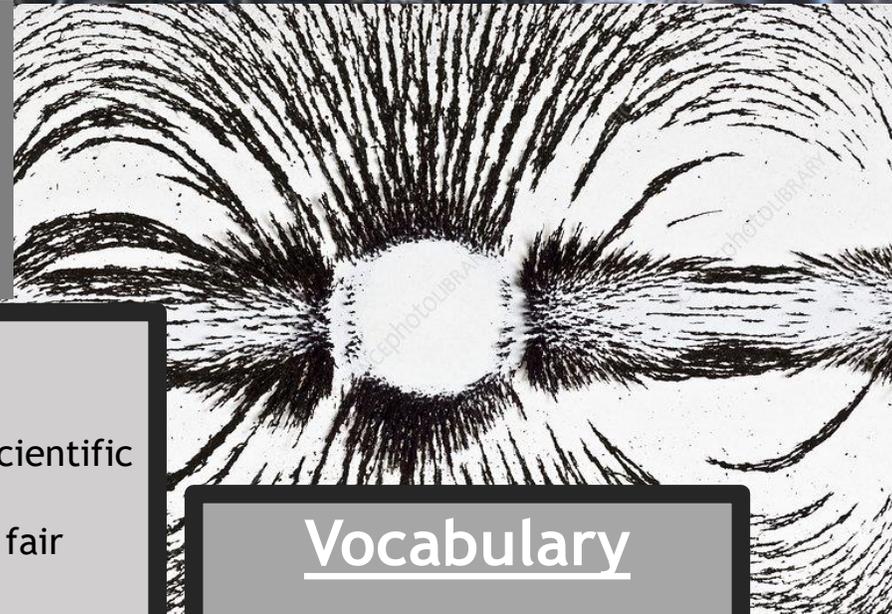
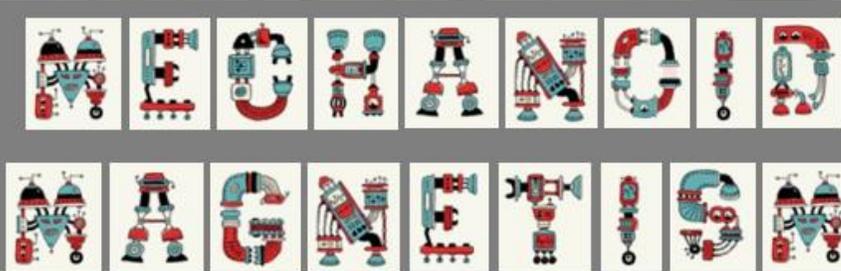
- Ask simple questions and recognises that simple questions can be answered in different ways.
- Observe closely using simple equipment.
- Identify things to measure or observe that are relevant to the question or idea they are investigating using a simple test (in a group or independently)
- Record data in a wider range of given ways
- Use their data and results to answer questions
- Use observations and ideas to suggest answers to questions.

As Scientists, we will...

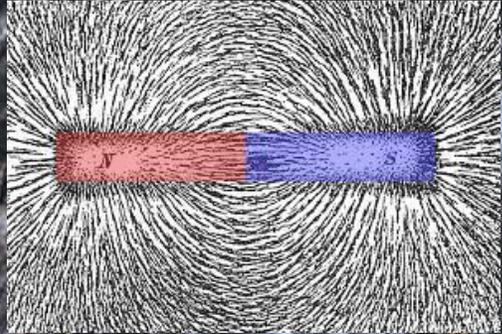
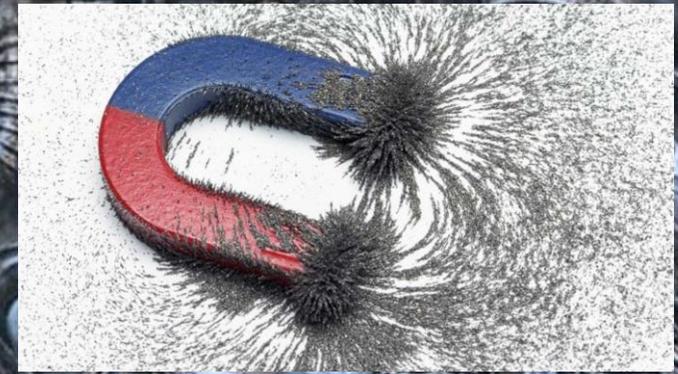
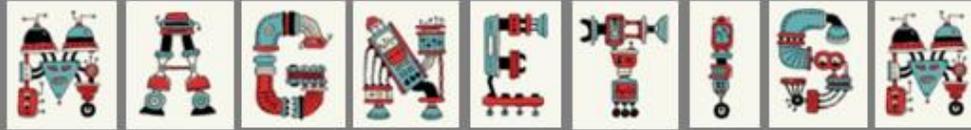
- Ask relevant questions and use different types of scientific enquiries to answer them
- Make systematic and careful observations during a fair test
- Plan and carry out a simple fair test relevant to the question or ideas
- they are investigating
- Take and record accurate measurements using standard units (e.g. to a whole cm)
- Gather and record data in to simple formats e.g. tables, bar charts and pictograms
- Use simple scientific language to present findings
- Record and report findings from enquiries in labelled drawings and diagrams
- Draw simple conclusions using my own results
- Begin to recognise when a test is not fair and suggest improvements
- Identify differences and similarities

Vocabulary

fair test, comparative, observation, accurate, standard units, equipment, gather, record, classify, present, data, tables, bar graph, presentation, conclusion, prediction, differences, similarities, theory, hypothesis, dependent variable, independent variable, results



Science



What we should already know...

Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

As Scientists, we will...

- Compare how things move on different surfaces
- Notice that some forces need contact between two objects, but magnetic forces can act at a distance
- Observe how magnets attract or repel each other and attract some materials and not others
- Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials
- Describe the two poles of a magnet
- Predict whether two magnets will attract or repel each other depending on which poles are facing

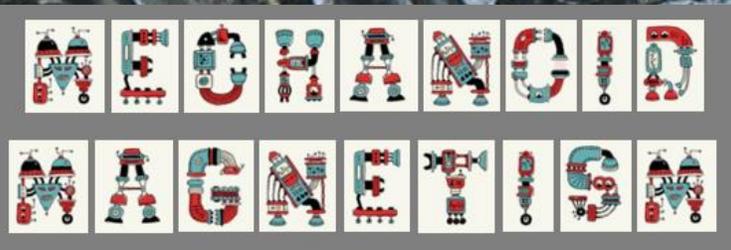
Vocabulary

force, push, pull, friction, surfaces, materials, contact, magnet, magnetic, non-magnetic, attraction, repulsion, pole, north, south, sliding friction, static friction, resist, elastic



**Application of knowledge Outcome -
Make a magnetic robot**

Art



What we should already know...

- Use sketch books to experiment with artistic ideas of their own in sketchbooks.
- Experiment with different techniques and make sensible choices about what to do next to improve.
- Deliberately choose to use particular materials, media and techniques for a given purpose
- Develop and exercise some care and control over their art work (*e.g. they do not accept the first mark but seek to refine and improve*)
- Express clear preferences and give some reasons for these (*e.g. "I like that because..."*)
- Talk about the materials, techniques and processes they have used, using an appropriate vocabulary

As artists, we will...

- Use sketch books to collect, record and review artistic ideas from a range of different sources.
- Develop technical skills by experimenting with, and testing the qualities of a range of different materials and techniques.
- Select, and use appropriately, a variety of materials and techniques in order to create their own work.
- Reflect upon what they like and dislike about their own work in order to improve it.
- Use graded pencils to create different tones
- Begin to show consideration in the choice of pencil grade they use
- Use techniques to show the effects of light on form (reflection/shadow).
- Develop scale and proportion in art work.
- Begin to show an awareness of objects having a third dimension.

Vocabulary

Pattern, shape, line, form, tone, texture, colour, mood

scale

Horizon

Focal point

Observational

Landscape

Portrait

Figures

View finder

Landscape

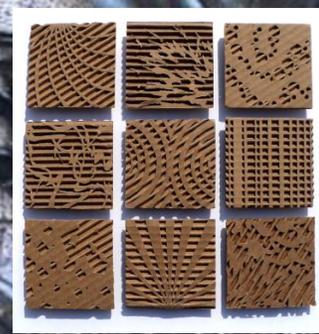
Portrait

Composition

Mid ground

Back ground

Foreground



Application of knowledge Outcome - Cardboard Relief art work

What we should already know...

Design:

Design purposeful, functional, appealing products for themselves and other users based on design criteria

Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]

Make:

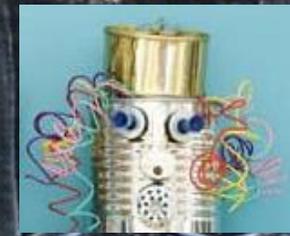
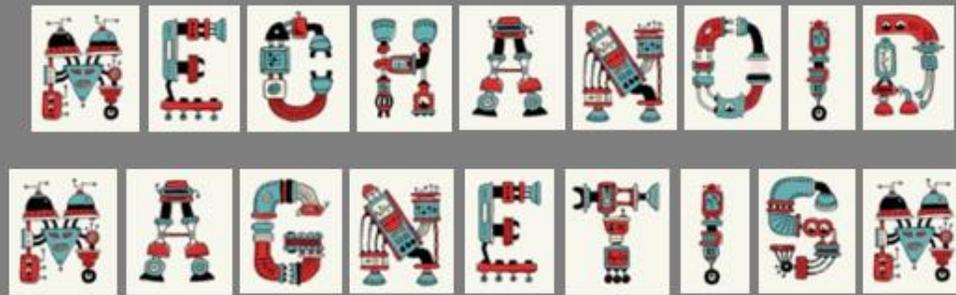
Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics
Explore and evaluate a range of existing products

Evaluate:

Evaluate their ideas and products against design criteria

Vocabulary:

idea, shape, make, construct, purpose, customer, aim, develop, template, use, appearance, transparent, opaque, wood, plastic, absorbent, wheel, wool, decoration, pattern, style, lever, survey
equipment, tools, saw, cut, join, finish, construct, material, sew, glue, attach, stable, axle, glue gun, joint, scissors, screwdriver, ruler. review, improve



As design technologists, we will...

Design:

- 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
- Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams and prototypes

Make:

- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
- 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

Evaluate:

- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work

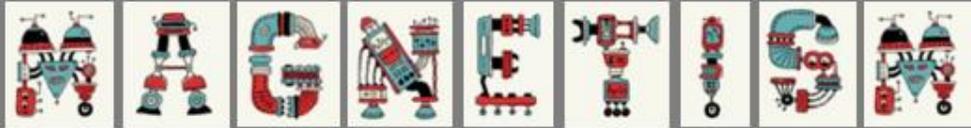
Vocabulary

functional, appealing, aesthetic, brief, construction, purpose, criteria, usability, develop, evaluate, innovate, material, modification, modify, process, product, prototype, quality, research, safety, specification, suitable, glue, strengthening, right angle, reinforces, evaluate, illustrate, critical, analyse,



Application of knowledge
Outcome -
Design and make a magnetic robot





Our School Drivers...

Wow Moments

Cardboard relief based on the Iron Man

Make a magnetic robot

Scientific investigations



Key Drivers

Be Resilient

* Children will develop their resilience by evaluating their art work and design and technology work and make adaptations where necessary

Be Creative

* Create a piece of art work using cardboard relief

* Create their own robot using recycled materials and magnets.

