

Entry Task

Play a mystery bag game. Pull items from bag and consider magnetism. Were we correct or incorrect? Why might this be?



Iron Man



Big Question

How do forces affect everyday objects?

How do objects move on different surfaces?

Resistance

Can I explain that a magnet has two poles? Can I predict whether two magnets will attract or repel each other, depending on which pole are

Can predict and test by experiment which surface has the least

Can I observe how magnets attract some materials and not others? Can I observe how magnetic force can act at ad

Using observation can I compare and group magnetic and non-magnetic materials? Can I observe how magnetic can

Can I create a fair test to investigate the strength of magnets? Can magnetic forces act at a distance?

What are the everyday uses of different magnets? (bar, ring, button, horse-shoe)

What are mechanisms and how do they function (levers and pivots, Y1)?

Can I evaluate my product against the design brief and listen to the opinions of others for strengths and areas of development?

Can I act upon feedback and make amendments to my final design?

Can I finish constructing my final design, testing my mechanisms and problem solving if they do not work?

Can I begin to use a range of techniques to draw and make my final idea, joining and combining materials with accuracy?

Can I identify different lever and linkage movements and rank them according to suitability? (linear, slider, rotary and oscillating).

Why do designers make exploded diagrams? Can I produce an exploded diagram of my final design?

Considering the intended user, can I create a design criteria for a persuasive picture with moving components?

Can I draw an annotated sketch, explaining how it is suitable for my intended user and how the mechanism works?

Considering mechanisms learnt, can I produce a prototype of my developing idea?

Considering the effectiveness of my prototype, can I reflect upon my initial design idea to improve my design?

Celebration/Evaluation

In small groups, children will give a verbal presentation about forces and metals, explaining what they are and how they impact every day life.

Curriculum Passport Challenge

Children will create an Iron Man mask using a range of materials.

What to revisit?

Y2 Building towers to support weights

Y2 Everyday Materials

Y1 Creating a Moon buggy

Vertical Threads

Resistance, Friction

Key Vocabulary

As a scientist, I will use... Forces - magnetic, non-magnetic, pole, north, south, gravity, friction, resist, attraction, repulsion

As a design technician, I will use... mechanism, lever, pivot, functionality, linkage, linear, slider, rotary, oscillating, intended user, design criteria, prototype, effectiveness, improvement, annotated sketch, exploded diagrams, accuracy, materials, constructing, testing, amendments

DRIVER SUBJECTS ARE SCIENCE, AND D.T