



Iron Man



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

Big Question
 How do forces affect everyday objects?

What to revisit?
 Y2 Science- Everyday Materials
 Y1 Design and Technology- Lever and linkage movements

Vertical Threads
 Resistance, friction, reflect, compare

How do objects move on different surfaces?

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 facing?
Investigation why do magnets

Can predict and test by experiment which surface has the least **friction?**

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

Using observation can I compare and group magnetic and non-magnetic materials? Can I observe how magnetic can repel some objects.

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, horseshoe)

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

Can I apply finishing touches to my persuasive poster, making my product appealing?

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

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

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

What is a circuit? Can I use computer aided design to create a range of simple circuits and label the components?

Considering the effectiveness of my prototypes, can I **reflect** upon my initial design idea to **adapt** my design?

Discussing various purposes, can I create a design criteria (FLUMPS) for my persuasive poster?

Considering simple circuits learnt, can I assemble a simple circuit to use in my product?

Reflecting upon the design criteria can I produce an annotated sketch to design a persuasive poster with moving mechanisms and an electrical circuit?

Can I produce prototypes of different lever & linkage movements, **compare** & rank them according to suitability? (linear, slider, rotary, oscillating).

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.

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

Curriculum Passport Challenge
 Children will create a mask using a range of materials.

DRIVER SUBJECTS ARE SCIENCE, AND D.T