

Magnetic mysteries

Knowledge organiser

Year 3

Egyptian model with mysterious movement

Construction means building and joining materials to make structures that are **strong**, **stable** and **useful**. Designers think about how parts fit together, and which materials will keep a model secure and long-lasting.



In this project, you will design and make a 3D ancient Egyptian model with a **mysterious moving part** created by magnets. Magnets can make objects move without touching, which is perfect for a hidden surprise, such as a treasure reveal or secret door. Designers use joining methods to make their models strong and stable.



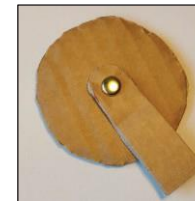
Your ideas will be inspired by ancient Egyptian buildings, objects, colours and symbols, such as pyramids, hieroglyphics, scarab beetles and gold and blue patterns.

Key vocabulary

3D (three dimensional) 	appealing 	attract 	feedback 	force 
functional 	hidden 	improve 	interactive 	join 
material 	movement 	reinforce 	secure 	stable 
strengthen 	successful 	symbol 	template 	test 

Joining methods

Glue and tape are good, but different joining methods can make your model even **stronger** and **more stable**.



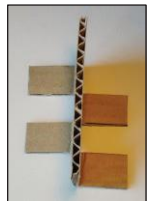
split pin



tie



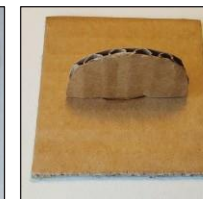
flange



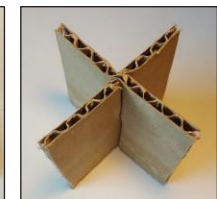
tabs



L-brace



tab slot



slot

Magnets

Magnets are used in **everyday objects** like toys, games, catches, motors and machines.



Magnets create a force that can pull (attract) or push (repel) objects without touching them.

Magnets attract magnetic materials such as iron and steel. They do not attract metals like aluminium, copper or gold

All magnets have **north** and **south poles**:

- same poles repel
- opposite poles attract



Egyptian features



pyramid, sphinx



the mask of Tutankhamun



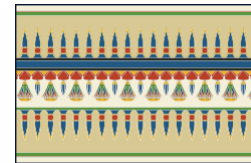
gold, blue, turquoise



hieroglyphics



canopic jars



patterns



Egyptian symbols

Safety

Making **models in DT** is fun and creative, but we need to be careful to stay safe.

Magnet safety:

- never put magnets in your mouth
- hand in all magnets at the end

Tool & making safety:

- cut away from your body and keep fingers clear
- never touch hot glue
- keep your workstation tidy
- ask for help if something is too tricky



The design steps

Designers follow four steps:



1. **Research** – look at examples to see what works well



2. **Design** – draw and label ideas, thinking about looks and function



3. **Make** – use tools and techniques, keeping work neat and strong



4. **Evaluate** – test it, celebrate what worked and spot ways to improve