Year 5 Knowledge Organiser

DT Autumn Term

Mars Buggy

What I should already know.

- Record the plan by drawing (labelled sketched) or writing.
- Incorporate a circuit with a bulb or buzzer into a model.
- Create shell or frame structure, strengthen frames with diagonal struts.
- Make structures more stable by giving them wide base.
- Consider and explain how the finished product could be improved.
- Discuss how the finished product meets the design criteria and how well it meets the needs of the user.

Electrical and Mechanical Systems

What will I know by the end of the unit?

To investigate existing products which use mechanisms, including cams.

To know the different types of movement cams can create.

To design and make a cam within a Mars buggy context, relating to the Space theme in Year 5.

To work in a team on a D&T project and evaluate the product together.

Vocabulary

Cam

Mechanisms

Design priorities

Linear movement

Free movement

Reciprocating movement

Guided into place

Rotary movement

Axle

Oscillating movement

Off-centre hole

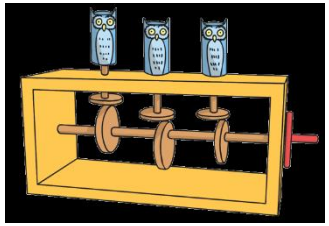
Intermittent movement

Handle & Follower

Irregular movement

Bell crank & Quick return

TASC wheel



Key Knowledge

Investigate products/images to collect ideas.
Use found information to inform decisions.
Draw plans that can be read/followed by someone else.
Give a report using technical vocabulary.
Sketch and model alternative ideas.
Develop one idea in depth.
Join materials using appropriate methods.
Use a cam to make an up and down mechanism.
Build frameworks using a range of materials.
Use glue gun with close supervision.
Add electrical circuit for lights if in design.
Reflect on their work using design criteria stating how well the design fits the needs of the user.
Identify what does and does not work in the product.
Make suggestions as how their design could be improved.

Outcome

Investigate!

Research mechanisms, including cams. Use the information gained from this and link it to the Space theme in Year 5. As a team, design and make a Mars buggy using a cam for its movement.