



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

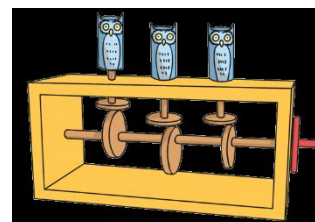
Intermittent movement

Handle & Follower

Irregular movement

Bell crank & Quick return

TASC wheel



Key Knowledge

Generate innovative ideas by carrying out research. Investigate famous manufacturing and engineering companies/organisations relevant to the project (NASA). Develop a design specification to guide their thinking. Develop and communicate ideas through discussion. **Draw plans that can be read/followed by someone else. Give a report using technical vocabulary.** Allocate tasks within a team. Select from and use a range of tools and equipment. Measure and drill hole in wooden strip for cam and follower. **Use a cam to make an up and down mechanism.** Test products with intended user and critically evaluate the quality of the design.

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.