



Knowledge Organiser: YEAR 4 Mechanical Systems

DT

TOPIC

Topic: Slingshot cars

Media: wooden dowels, wheels and lolly sticks + cardboard

Key inspirations: Slingshot physics involves the use of stored elastic energy to shoot a projectile at high speed. Children as far back as the Romans made toys with a slingshot mechanism!

Key focus: Design and create a slingshot car

OBJECTIVES

- Work independently to produce an accurate, functioning car chassis.
- Design a shape that is suitable for the project.
- Attempt to reduce air resistance through the design of the shape.
- Produce panels that will fit the chassis and can be assembled effectively using the tabs they have designed.
- Construct car bodies effectively.
- Conduct a trial accurately and draw conclusions and improvements from the results.

KEY SKILLS

Design:

Design a slingshot car with a particular child in mind.

Building:

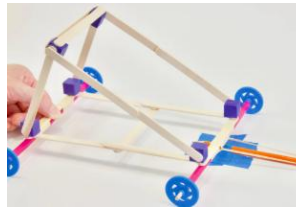
Build a stable chassis which will support the body of your car. Construct the car's body from cardboard and securely attach it to the chassis.

Embellishing:

Add decorative designs to your car's body which will appeal to your target audience.

KEY VOCABULARY

aesthetic
 air resistance
 chassis
 design
 design criteria
 function
 kinetic energy
 mechanism
 net
 potential energy
 structure



Constructing the chassis



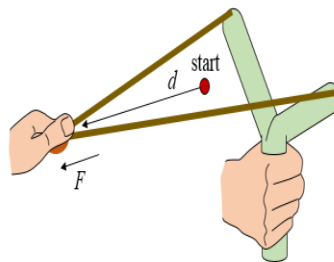
Building the car's body



Decorating the car's body

Did you know?

A slingshot mechanism allows potential energy to be converted to kinetic energy.



Early toy cars were made in 1901- that's 125 years ago!



Sports cars can go faster because their low, streamlined shape means they encounter less air resistance.



