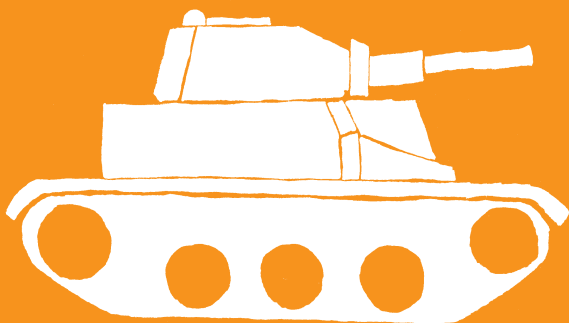


ENGINEERING
CHALLENGE

06

COTTON REEL TANK



THE
JAMES
DYSON
FOUNDATION

COTTON REEL TANK

Designed by Neil,
Electronics engineer at Dyson

The brief

Build a tank out of a cotton reel.

The method

1. Thread the rubber band through the cotton reel.
2. Break one matchstick in half. Tie one end of the rubber band around the half matchstick and secure it to the end of the cotton reel using sticky tape.
3. Cut 2cm and use a pencil to make a hole in the middle of it. Thread onto the other end of the rubber band. Place the other match through the loop of the band.
4. Wind up the match to create tension. Place it on the floor and let it go.

Materials

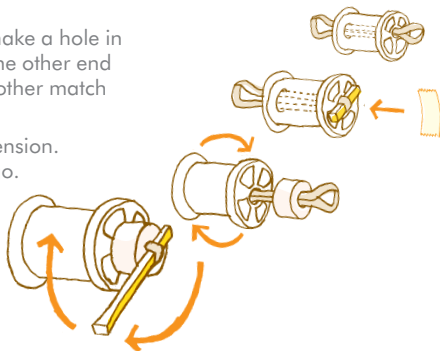
A cotton reel

A long white candle

A rubber band

Sticky tape

Two matchsticks,
with their heads removed



How does it work?

Winding up the rubber band creates potential energy. When the band is released this stored energy converts into kinetic energy, causing the tank to move.

Design icons



In a car, potential energy exists in the form of liquid gasoline. It is converted into kinetic energy as the fuel is ignited in the engine's combustion chamber.