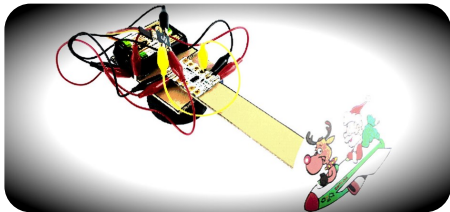


Year 5: Structures and Mechanisms/Electrical Systems and Control

How can we make UK holidays more appealing to children?

Design Brief

As a result of flight restrictions and increasingly warm weather in this country, more British people are choosing to holiday at home.



Design, make and evaluate a prototype for a carousel ride for younger children to entertain them and help boost sales at a busy seaside resort.

Skills



designing a theme for your ride

```

program start
do forever
  let Servo Angle = -80
  let Motor Speed = 20
  do 60 times
    motor 2 FORWARD at Motor Speed %
    servo A Servo Angle degrees
    increase Servo Angle by 1
    increase Motor Speed by 1
  wait 100 milliseconds
loop
  
```



assembling and programming Crumble components

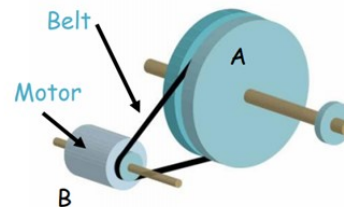
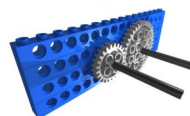
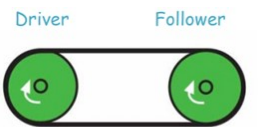
Design a Fairground Ride

You will consider:

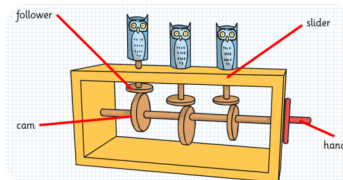
- appearance/aesthetics - *how will it look?*
- cost - *how much money will it be?*
- customer - *how will you make your ride appealing to children?*
- environment - *will you use sustainable materials and renewable energy?*
- size - *how big or small is it?*
- safety - *how will you make it safe to ride on?*
- function/purpose - *how will it be thrilling and fun?*
- materials - *what materials will you use?*
- manufacture - *how will you make and power it?*



Technical Knowledge



The small pulley (B) rotates much more quickly than the large pulley (A)



James Dyson

James Dyson is a famous industrial designer, inventor, entrepreneur and business man.



He is most famous for inventing the Dyson vacuum cleaner.

Evaluate

Does your prototype carousel ride meet your design specification?

Would it appeal to your target market?



Vocabulary

cam	A rotating link that changes rotary into linear motion.
drive belt	This connects and drives pulleys to move.
driver	The gear that inputs movement into the system.
follower	The gear that outputs movement.
gear	A wheel with teeth around its circumference.
prototype	A test model of your design.
pulley	A grooved wheel for a drive belt.
ratio	The relationship between drive movement and other parts of a system or machine.
rotate	To move in a circle around an axis.
spindle	A rod on a motor for a pulley to fit on.
structure	This supports its own weight plus a load.
transmit	To transfer movement from one part to another.

CRC Article 29: All children have the right to develop their skills and talents.

