ENGINEERING IN THE MOVIES

THE MAGIC DRUM

STEM

Technology and Engineering Focus
INTRODUCTION

Originally a vintage toy from the 1830s, a zoetrope (translated from the Greek ‘wheel of life’) applies the same principles filmmakers have used since the start of cinema.

This principle is the illusion of motion from the rapid succession of static pictures. Every film you have ever watched is made up of individual pictures speeding by in quick succession. A zoetrope is just an early version of that.

A movie is traditionally made from 24 frames of individual images played per second to create the moving picture. This led to animation classics such as PINOCCHIO, THE LION KING and CARS.

CHALLENGE

1. Take at least 12 photos of your classmate, changing their movement slightly in each picture. Print the photos and stick them to the strip template on the next page.

2. Alternatively, you can draw a dancing cartoon character in each frame (see Figure 1).

3. Cut out the strips and stick the ends together to form a ring with the images facing inwards.

4. Cut vertical slits into the black heavy card and stick to a circular base (such as a paper plate) using tape or a glue gun to make a cylinder.

5. Insert a pencil in the centre of the base and secure with the glue gun.

6. Insert your animation strip and spin the handle to see your drawings come to life (see Figure 2).

EXTENSION

Use wood and plastics to build a longer lasting more durable zoetrope. Add a motor to generate the spin.

YOUTUBE GUIDE

www.bbc.co.uk/cbbc/thingstodo/art-ninja-zoetrope-make?collection=art-ninja-makes
Animation Strips: Draw or print your animated still images onto this template. 12 images are needed. Cut out the three strip sections and connect ends together (B to A), leaving the beginning end disconnected from the last end (They are easier to store and insert into the Zoetrope when left one long strip, instead of a connected circle).
Royal Academy of Engineering

As the UK’s national academy for engineering, we bring together the most successful and talented engineers for a shared purpose: to advance and promote excellence in engineering.

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Supporting the development of successful engineering innovation and businesses in the UK in order to create wealth, employment and benefit for the nation.

Address the engineering skills crisis
Meeting the UK’s needs by inspiring a generation of young people from all backgrounds and equipping them with the high quality skills they need for a rewarding career in engineering.

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