Royal Academy of Engineering

THIS IS ENGINEERING

ENGINEERING *IN THE* MOVIES
CREATING MOVIE MAGIC

HOLLYWOOD

STEM
Animation Challenge

INTRODUCTION

Calling all primary and secondary school pupils aged 7 to 14!

Make a one-minute animated movie on your computer.

You can use any software you like including stop-motion animations.

CHALLENGE

- Teams of four +
- 2/3 KS2/3
- Advanced

In 1937, Disney created the first sound and colour animated feature film, SNOW WHITE AND THE SEVEN DWARFS, which was made using hand drawings.

Stop-motion animation was later used for special effects in many live-action films, such as **THE 7TH VOYAGE OF SINBAD** and **WALLACE AND GROMIT**.

The first fully computer-animated feature film was Pixar's **TOY STORY** in 1995. The same principle applied, replacing drawings and clay models with 3D computer drawing and modelling.

CHALLENGE

Here's your opportunity to create your own piece of movie magic. Team up with your classmates and film your own animation movie called...

LIGHTS, CAMERA, ENGINEER!

AF archive / Alamy Stock Photo

THE CHALLENGE

Create a minute-long digital animated film that tells a creative, fictional story about a concept related to engineering.

PREPARATION

One of the most important skills an engineer can have is the ability to describe what the solution is. Work together on the Team Brainstorming Worksheet to collaborate and develop the arc of your story. Once you have an agreed approach, you can start on the storyboard.

Storyboarding is the process by which each shot of the movie is sketched and/or described to provide a detailed concept of how the story will be told. Each team member could draw shots on Post-It notes and then place them on the storyboarding sheet. This method enables you to add, delete or reorder shots to adjust the story.

QUESTIONS

- How do you think this film relates to being an engineer?
- What was the hardest part of making a movie?
- What was the easiest part?
- Will your movie follow the storyboard exactly or will you make changes along the way?
- How is the process that you went through in creating your movie similar to the engineering design process?

WALK THROUGH

Play out the story before filming. This exercise is designed to help you refine and revise your story to make it more complete, interesting and well-structured before you begin filming.

FILM PRODUCTION

During production, the team should film shots or create the animation based on the storyboard using a digital video camera, tablet or smartphone. Teams are encouraged to work together and share resources.

EDITING

Any video editing software will do. Make sure you save the completed film as a recognisable film file format, such as MP4, and that the file is not too large to export and send. Required components of the finished film are:

- Title at or near the beginning.
- Credits at the end.
- Story arc that matches the storyboard.
- Engineering concept is addressed and correctly discussed.
- Special effects are incorporated into the movie. There are many free resources for this online.

ENGINEERING CONNECTIONS

The engineering design process is a method by which engineers first identify a problem and then formulate a plan to solve it. It always starts with defining the problem that needs to be solved and always ends with communicating the solution to others. One of the most important skills that an engineer needs is the ability to describe what the solution is. If an engineer can't explain what the solution is or how it is useful, it is the same as having no solution at all. Good luck!

TEAM BRAINSTORMING WORKSHEET

TEAM NAME .....

Genre ***(related to engineering)***
Determines the style of your movie

Concept ***(team plan)***
Explain this concept in your movie

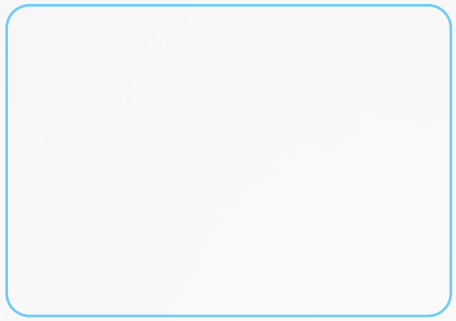
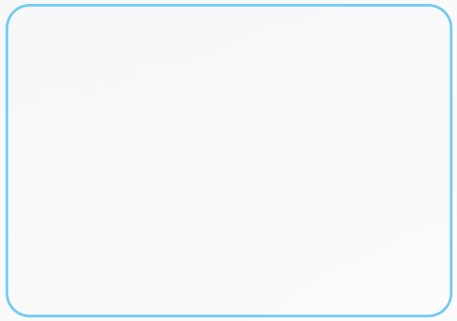
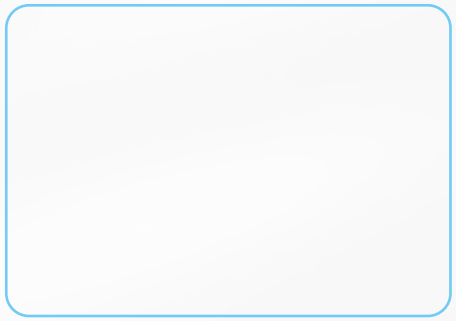
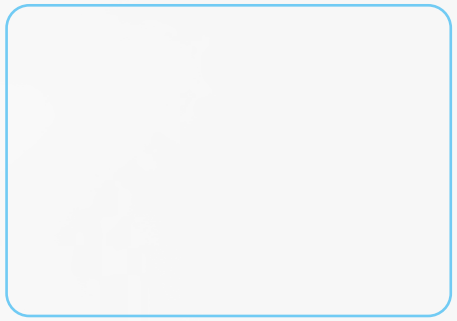
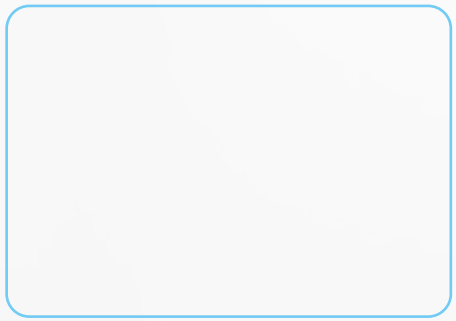
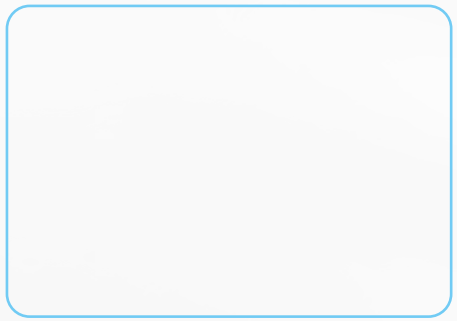
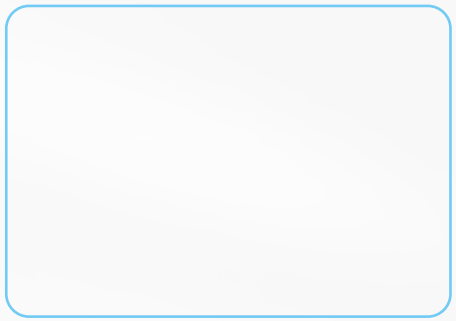
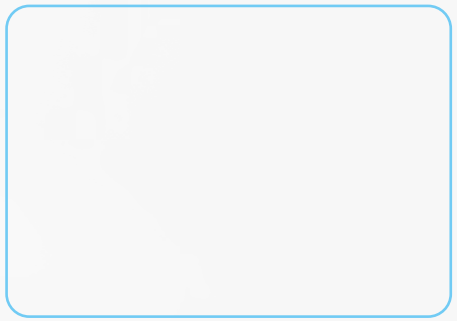
Line ***(a concept related to engineering)***
Incorporate this line in your movie

Story ***(your choice)***
Focus on the content and determine the style of the movie

Audience ***(your choice)***
Who are you making this movie for and why?

STORYBOARD

TEAM NAME ..... **PRODUCTION** ..... **PAGE** .....

Royal Academy of Engineering

The Royal Academy of Engineering is harnessing the power of engineering to build a sustainable society and an inclusive economy that works for everyone.

In collaboration with our Fellows and partners, we're growing talent and developing skills for the future, driving innovation and building global partnerships, and influencing policy and engaging the public.

Together we're working to tackle the greatest challenges of our age.

What we do

Talent & diversity

We're growing talent by training, supporting, mentoring and funding the most talented and creative researchers, innovators and leaders from across the engineering profession.

We're developing skills for the future by identifying the challenges of an ever-changing world and developing the skills and approaches we need to build a resilient and diverse engineering profession.

Innovation

We're driving innovation by investing in some of the country's most creative and exciting engineering ideas and businesses.

We're building global partnerships that bring the world's best engineers from industry, entrepreneurship and academia together to collaborate on creative innovations that address the greatest global challenges of our age.

Policy & engagement

We're influencing policy through the National Engineering Policy Centre – providing independent expert support to policymakers on issues of importance.

We're engaging the public by opening their eyes to the wonders of engineering and inspiring young people to become the next generation of engineers.

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