



Imagineering

Engineering with imagination



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WALT DISNEY Imagineering

For almost 100 years Disney has been using **innovative** technologies to create magical stories. In 1928 Mickey Mouse was first shown to audiences who were stunned to hear a cartoon make sound for the very first time. Using new technology Disney had brought drawings to life.



(innovative: new / original / never been done before)

In 1955 Walt Disney began to tell stories in a brand new way. He wanted to create a living, breathing fairy-tale land. He imagined a world where you could visit a fairy tale castle and walk through its gates meeting princesses and heroes along the way. He called this place Disneyland.

Walt dreamed that Disneyland would inspire people from all over the world. To make this dream a reality he needed a team of amazing people. To build a real life fairytale he would need artists, scientists & engineers to work together to create the sights, sounds, smells and everything else that would make Disneyland special.

He named the men and women on this team: **IMAGINEERS**

Experiment

Research

Plan

Build

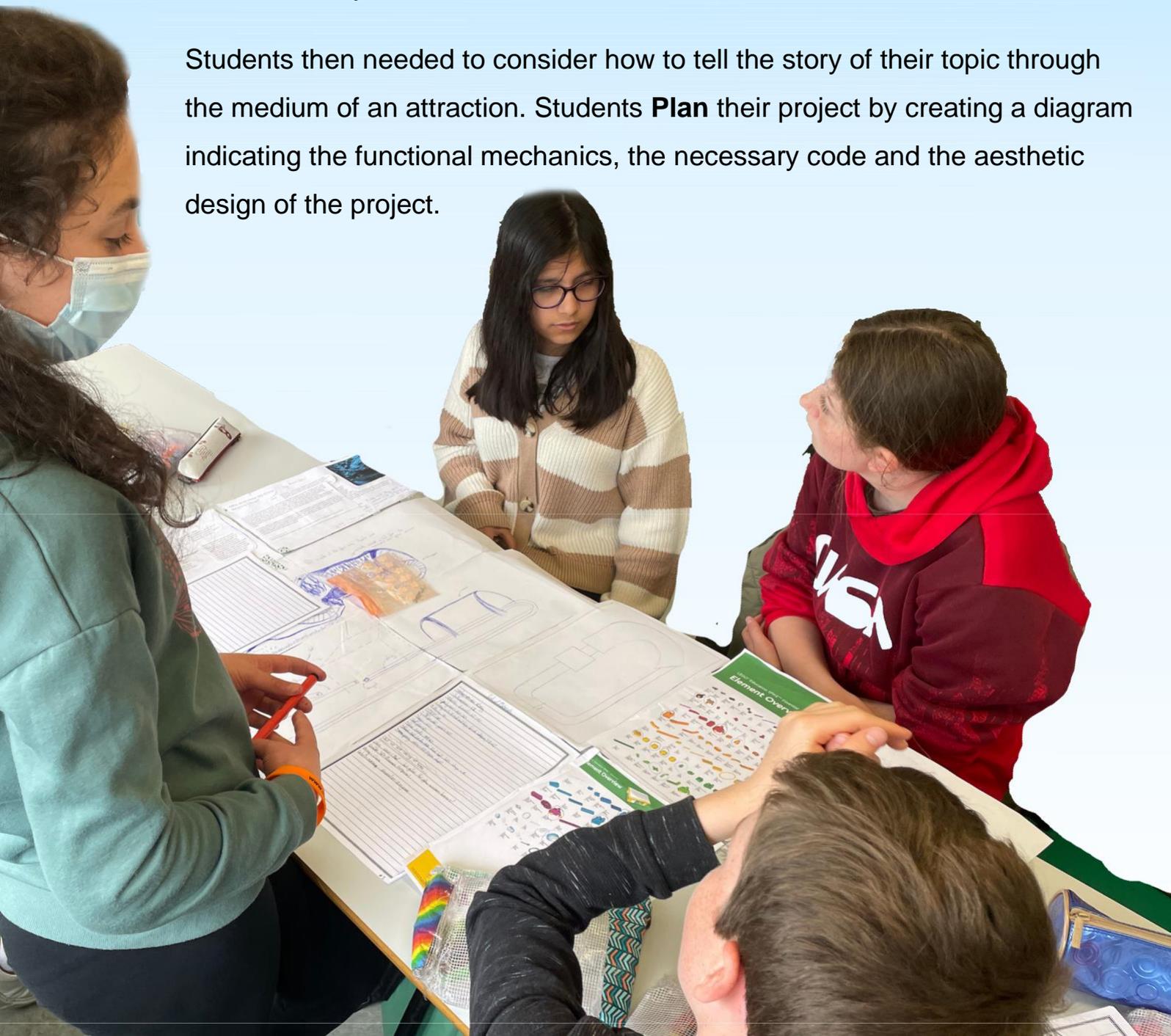


Students begin by **experimenting** with constructing and coding lego fun-fair attractions using the Lego Spike Essentials Kit: Unit: Amazing Amusement Park. Students learn to construct and code swings, delivery systems, entrance hubs as well as motors, light sensors and LED panels.

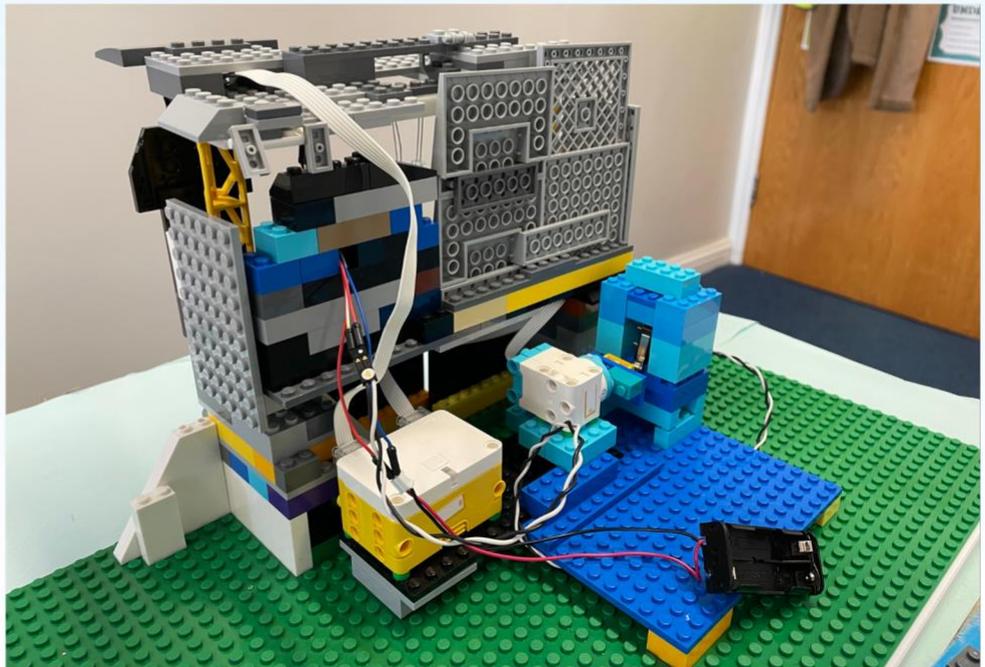
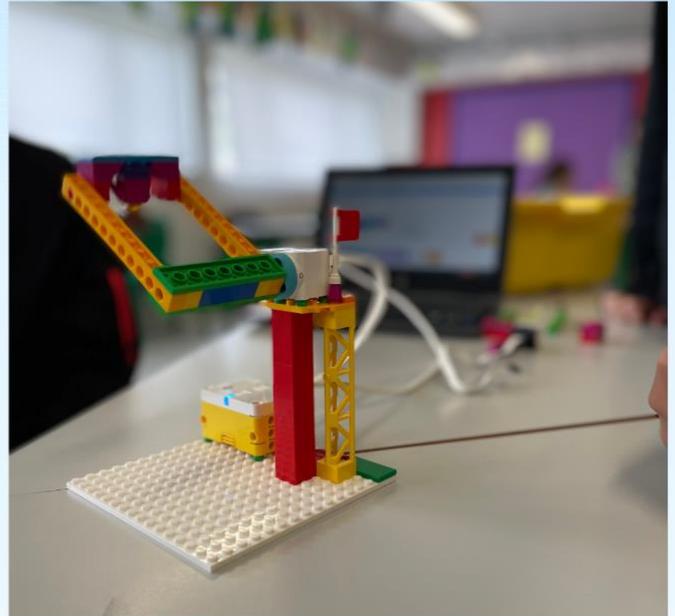
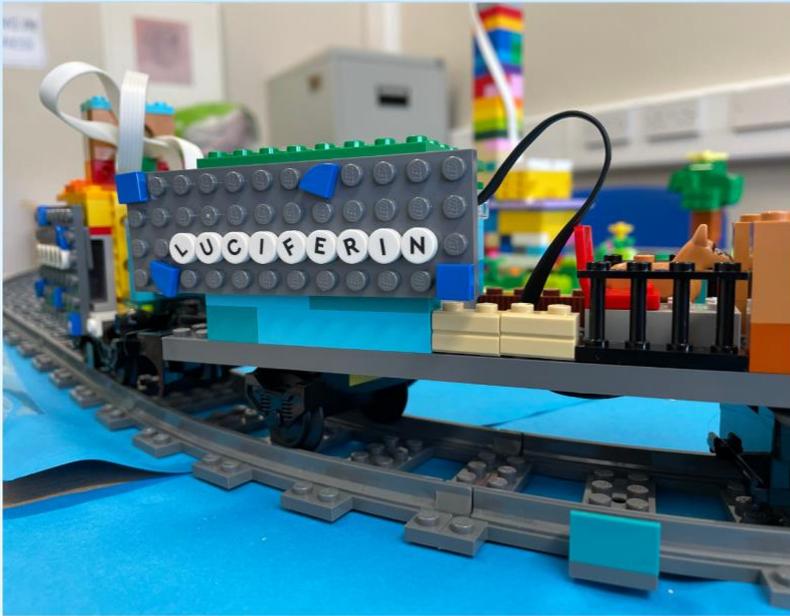
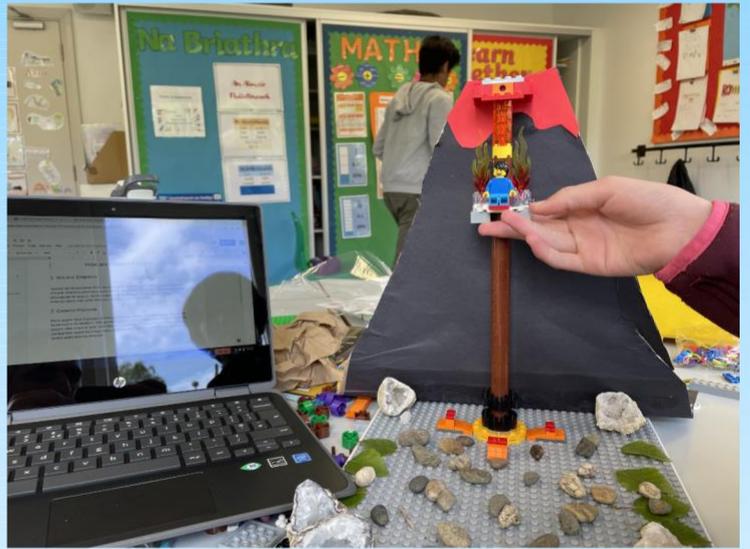
Following this step students **Research** their topic. In our case students researched:

- Bioluminescence
- Global Temperature Change
- Rock Formation
- Ocean Pollution
- The Water Cycle

Students then needed to consider how to tell the story of their topic through the medium of an attraction. Students **Plan** their project by creating a diagram indicating the functional mechanics, the necessary code and the aesthetic design of the project.



IMAGINEERS AT WORK

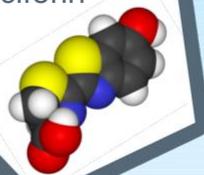


The Spark in the Dark

LUCIFERASE

Oxygen

Luciferin



The Spark in the Dark train is built around the theme of bioluminescence and demonstrates how Luciferin and Oxygen can be catalyzed by Luciferase to produce a naturally occurring emission of light.

When the two chemicals are combined they travel around the track before encountering the enzyme. Once this happens the train enters the glowworm cave where a light sensor has been coded to switch on the 'glowworms' which have been constructed using individual LED bulbs. A further light sensor has been used to ensure the train leaves the cave with it's own shimmering LED panel.

The park's rotating tower ensures that patrons can learn about bioluminescence from all angles before they explore the glowing forest filled with light-emitting organisms. The forest itself is further surrounded by a selection of bioluminescent marine creatures.

