Education @ Drayton Manor THEME PARK

CREATIVE COASTERS

Session Brief | U KS2 (90mins)

Combine the interesting topics of rollercoaster forces with a challenging team building task. Pupils will investigate how rollercoasters work by looking at some of the forces involved and what energy is needed. Then, pupils will look at where rollercoaster come from, how much they cost and how they are constructed. This leads into a team building challenge using our K'nex building kits to see which team can build the most stable structure.

Session Content

- How rollercoasters work - energy and gravity with k'nex loop experiment
- Air resistance on rollercoasters- k'nex loop experiment continued
- Friction on rollercoasters-look at real wheels
- Where rollercoasters come from and cost
- Construction of a rollercoaster
- K'nex building challenge in groups

National Curriculum Links

- Use some design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.
- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.
- Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.
- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.

Pre-visit

- Pupils can investigate how a rollercoaster moves and how they are constructed.
- Set pupils a competition to build a marble rollercoaster using cardboard tubing, masking tape and a marble.

During visit

- Take photographs of our rollercoasters to take back to school.
- Ride each rollercoaster giving it a mark out of 10 and a reason why. Which was your favourite ride?

Post-visit

- Annotate the photos taken during your visit, labelling the forces involves, and what makes it a good supporting structure.

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