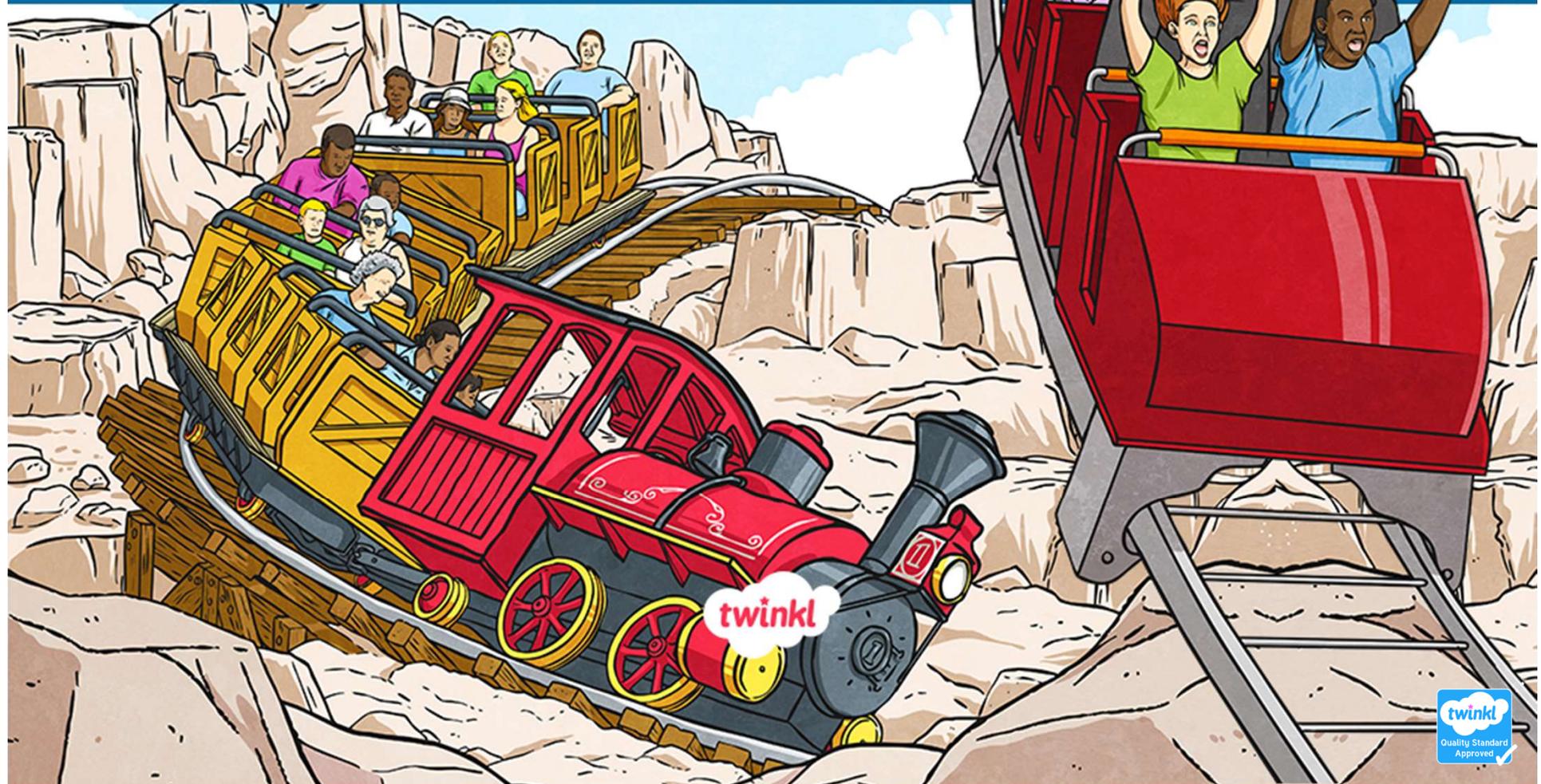


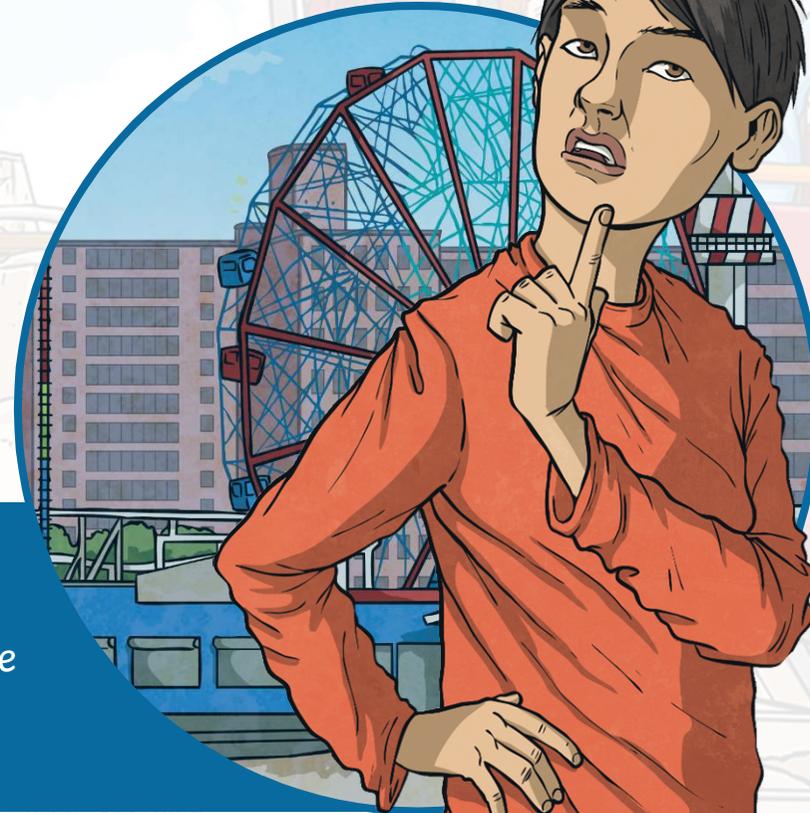
# Design a Rollercoaster



# Rollercoaster Designer

Your task is to design and make a brand new rollercoaster!

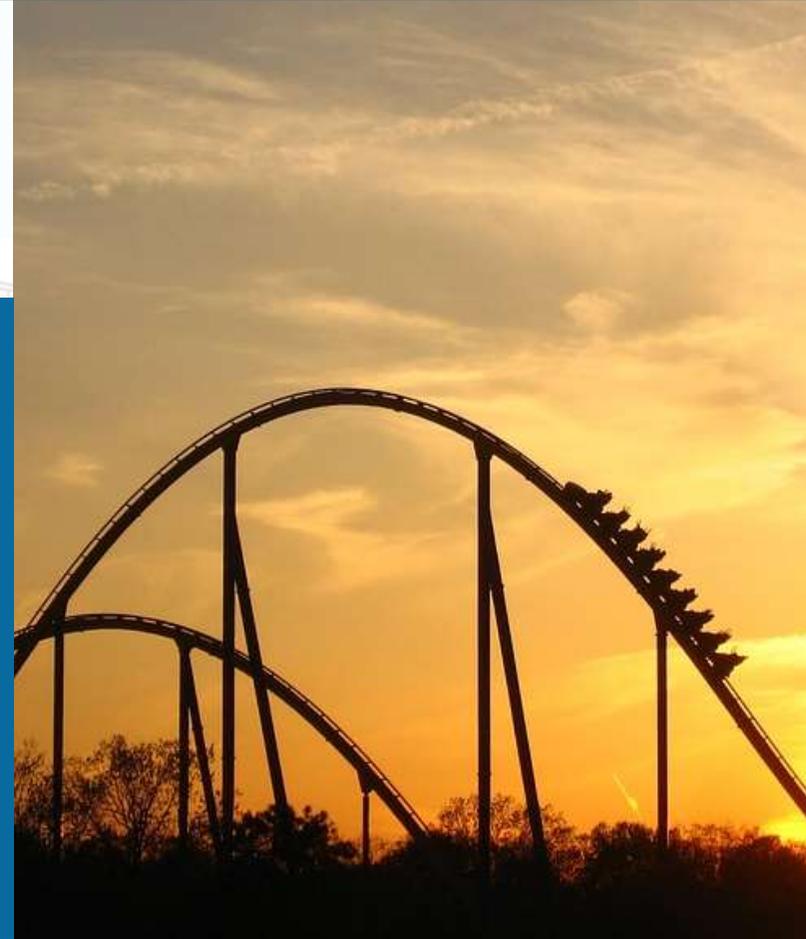
As with all professional designers doing jobs like this, you will need to create a model which can be tested – by a marble or similar small ball, not you unfortunately!



# Design Features

There are some specifications and your design should include the following features:

- The whole track must be 2m or longer.
- There must be one part of the rollercoaster that is a  $45^\circ$  drop.
- At least one part of the rollercoaster must be 1.5m or higher from the ground/surface.



# The Materials

Your rollercoaster doesn't all have to be made from the same materials but all materials used have to be big enough for a marble or small ball to test it.

To get you started, think about the advantages of each of these materials. You might also have your own ideas or materials to use.

Material	Plastic tubing	Plastic pipe	Cardboard tubes	Folded v-shaped cardboard
Explanation	Very flexible, transparent rubber tubing	Semi-flexible plumbing pipe	Insides of kitchen roll and other items	A v-shaped design made from flat card
Advantages				
Disadvantages				

# Tests

Before putting pencil to paper with your design, you need to gather some materials and a marble or small ball to start testing what works and what doesn't.

Carry out some tests and make notes on the outcomes.

Think about:

- the speed needed to keep the ball rolling;
- how to stop the ball from falling out of the run;
- how to keep parts of the run stable so it won't fall over.



# Annotated Design

Create an annotated rollercoaster design.

Remember the features you need to include and what you have learnt from your tests.

The three features:

- The whole track must be 2m or longer.
- There must be one part of the rollercoaster that is a  $45^\circ$  drop.
- At least one part of the rollercoaster must be 1.5m or higher from the ground/surface.



# Construction

Use your design sheet to create your design for real!

Remember, if something isn't working, make a change to improve it – don't be scared of adaptations. Keep testing as you go to make sure each part works.



# The Big Reveal!



Please send photos or videos of your completed ride in action to Mrs French on Office 365.

