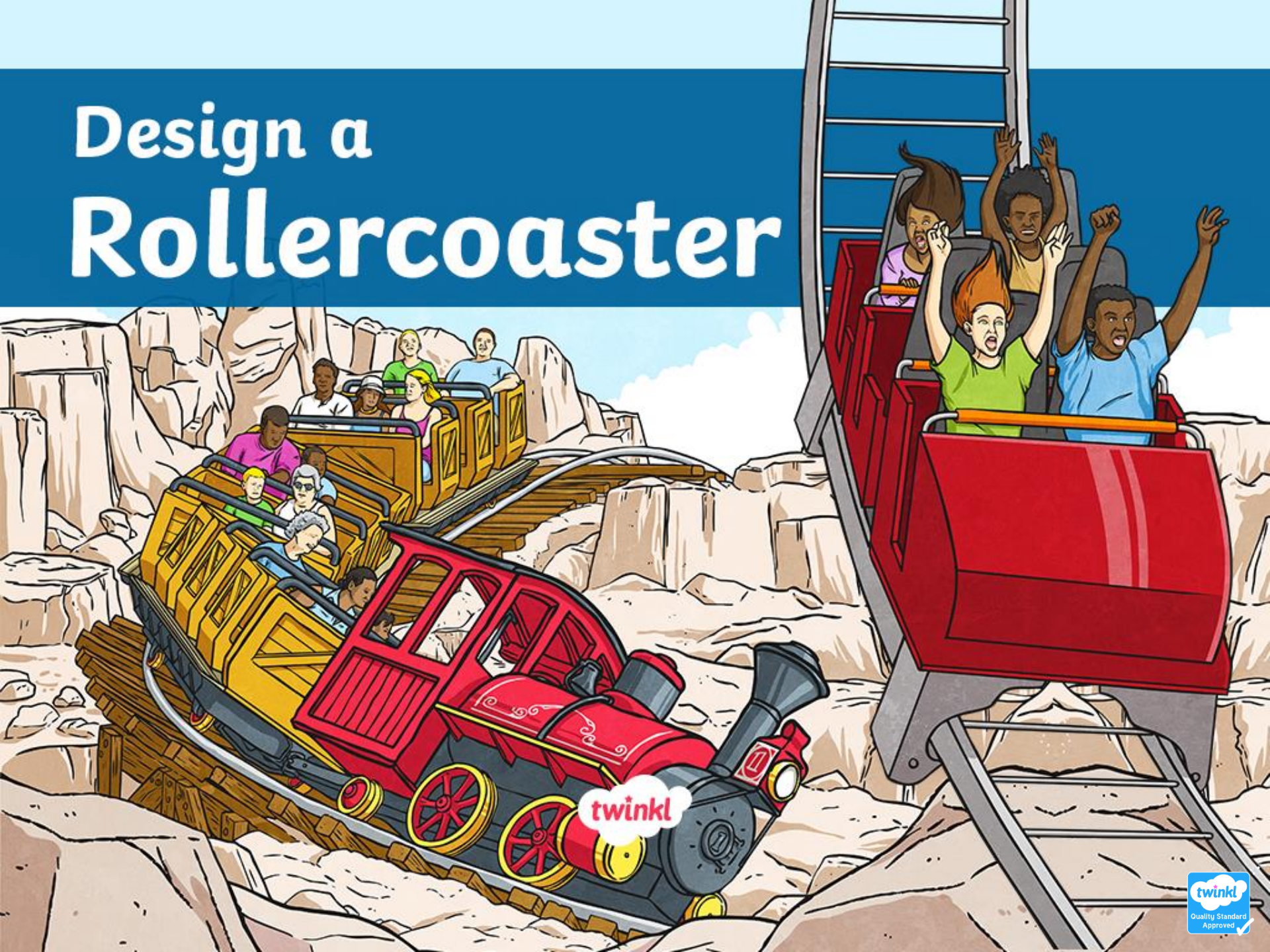


Design a Rollercoaster

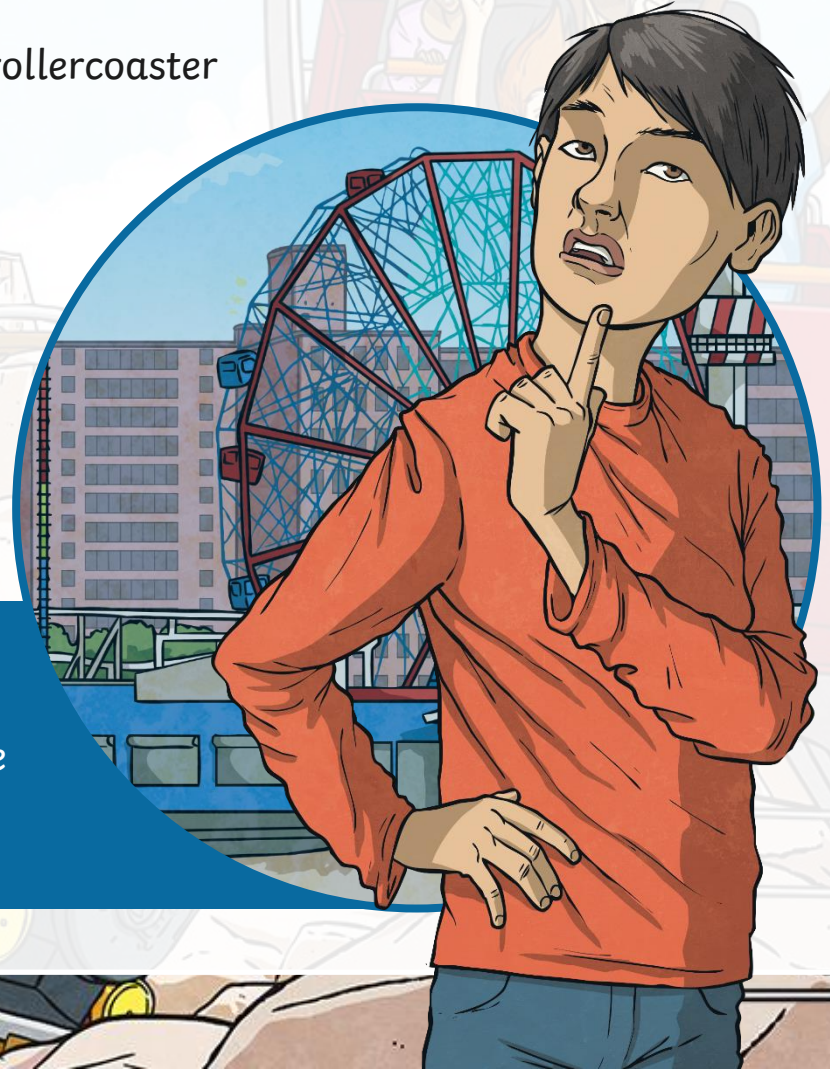


The Job's Yours!

You have been appointed the new chief rollercoaster designer for a top UK theme park.

Your first assignment is to design a rollercoaster to be built next year.

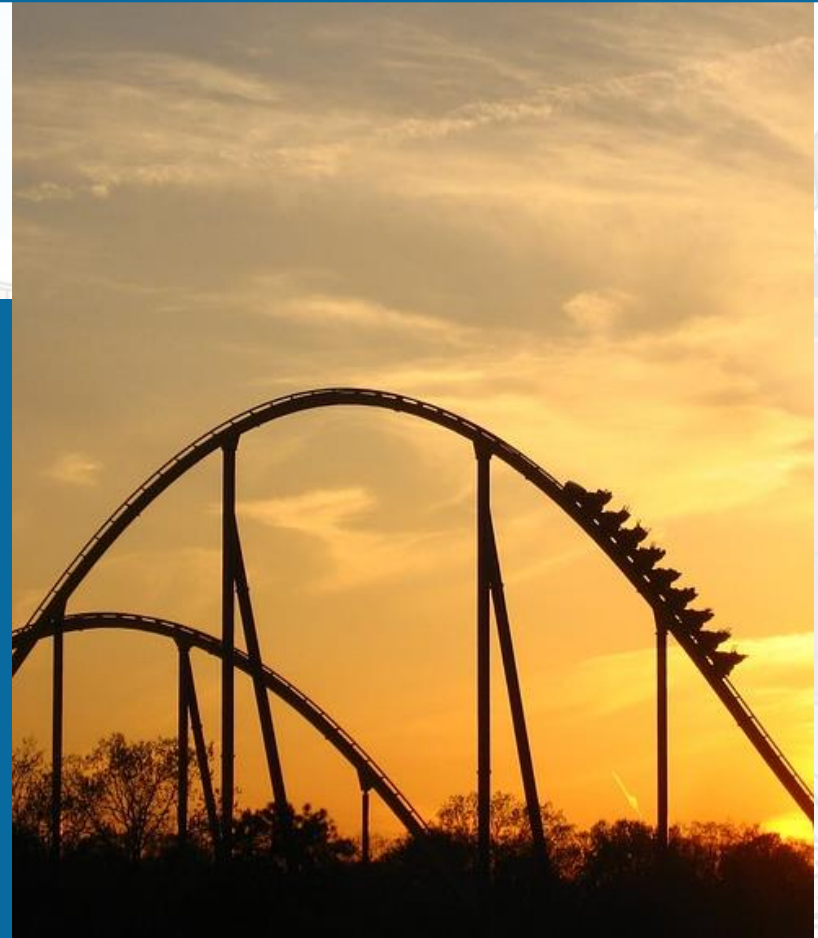
As with all professional designers doing jobs like this, you will need to create a scale model (not full size!) which can be tested in your classroom – by a marble, not you unfortunately!



Design Features

When it's done, some specific things that the owners of the game might think about for any game design needs to include the four following features:

- There should be at least one 360° loop.
- The whole track must be 2m or longer.
- There must be one part of the rollercoaster that is a 45° drop.
- At least one part of the rollercoaster must be 1.5m or higher from the ground/surface.



The Materials

To get your thinking started, think about all the advantages of each of these materials. You but all materials also have a few disadvantages or things to be aware of before you use them. Click on the boxes to reveal the contents.

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 to start testing what works and what doesn't.

Carry out some tests in your group and make notes on the outcomes before sharing them with your teacher and class.

Think about:

- the speed needed to make a marble go around the loop;
- how to stop the marble from falling out of the run;
- how to keep parts of the run stable so it won't fall over.



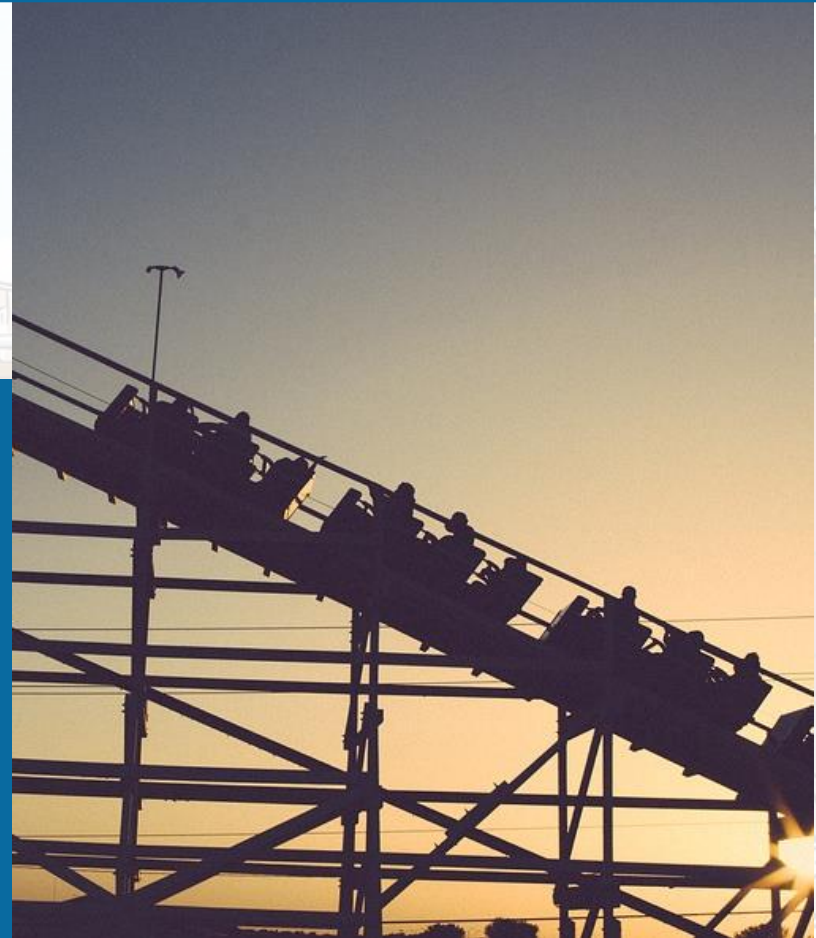
Design Time

Use the design sheets to work on your design.

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

The four features:

- There should be at least one 360° loop.
- The whole track must be 2m or longer.
- There must be one part of the rollercoaster that is a 45° drop.
- At least one part of the rollercoaster must be 1.5m or higher from the ground/surface.



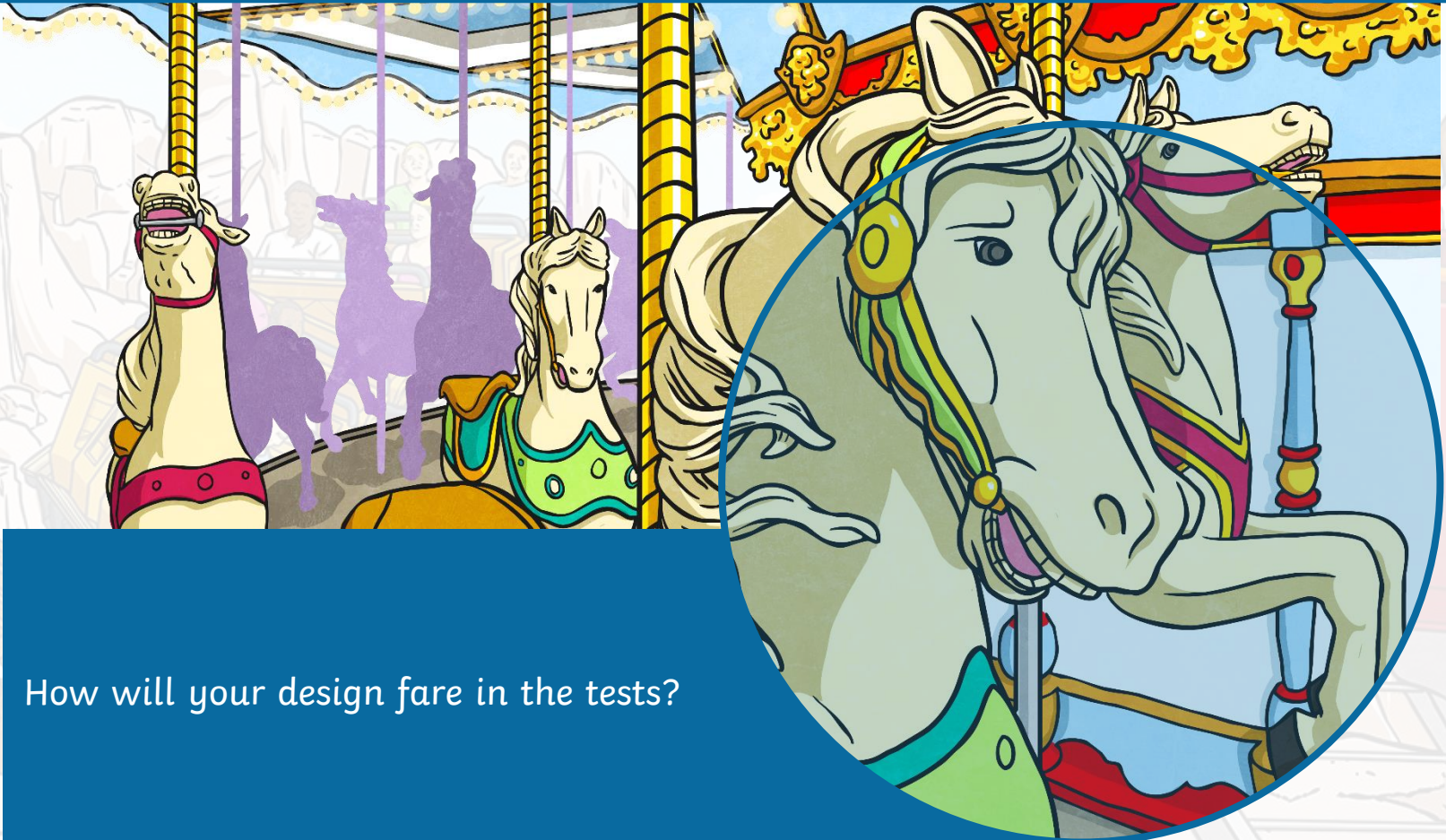
Construction Time

Use design sheets 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!



How will your design fare in the tests?

Evaluation Time

Is it back the drawing board, some little design tweaks or on to rollercoaster glory?

Use the evaluation sheets to take some time to think about how your design fared in the tests and how well it fitted the design brief.

If you had the task again, what would you do differently?

Has it made you want to be a rollercoaster designer?





twinkl