

# Key Stage 4 English Work Pack for Science Week

*Dear Students and Parents/Carers,*

*There are three levels of work in this English pack.*

*You should work at the level that feels best for you. It should feel a little bit tricky, but not be so hard that you cannot do it.*

*Thank you for your hard work.*

*Mrs Childs*

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Roller coaster tasks.

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  - ⇒ Reading comprehension
  - ⇒ Two writing tasks



## Task 1 (easier)

### 1. Building a roller coaster - making a sensible order

Building a roller coaster is a difficult job! Can you put the pictures in order, to make a sensible story?

build



ideas



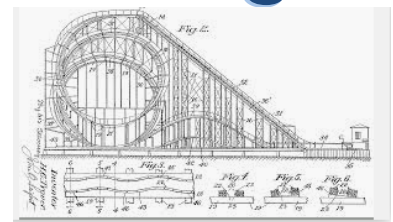
train staff



Open!



design



Tip: You can cut out the words and put them into order if you like.



Now read the text on the next page and answer the questions which follow.

## 2. Reading Comprehension

Please read the text and then answer the questions.

### Roller Coaster Facts

The roller coaster is a kind of amusement park ride. Here are some facts!

- They look a bit like a train.
- They have carriages that go on a track.
- The track has hills that go up and dips that go down.
- Sometimes they turn trains upside-down.
- The track can be made from wood or steel.
- Some are very tall and they travel very fast.
- They work because of gravity, a force that pulls things down to the ground.



What is a roller coaster?

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What can roller coaster tracks be made from?

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What is gravity?

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### 3. Describe being on a roller coaster

First watch this video of an old, wooden roller coaster in Japan:

<https://www.youtube.com/watch?v=2WaxrzSK5CI>



Write three sentences explaining how you might feel if you were on this ride.

Use describing words.

Please check you have a capital letter at the start of every sentence.

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2. \_\_\_\_\_

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3. \_\_\_\_\_

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## Task 3 (medium)

### 1. Building a Roller Coaster

Building a roller coaster can be a difficult job. Put the stages of the work into a sensible order.

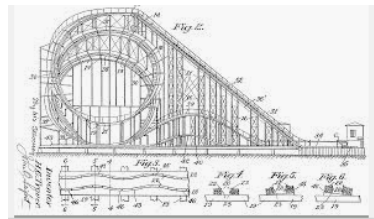
build



train staff



design



ideas



Open!



testing

You can cut out the words and put them into order if you like.



## 2. Reading Comprehension

*Please read the text and then answer the questions. Use full sentences in your answers.*

The roller coaster is a kind of amusement park ride. A roller coaster is usually a small train. It has a number of carriages that travel on a track. This track has hills that go up and valleys that go down. Sometimes it has other features that will turn the train upside-down. The track can be made from wood or steel. Some roller coasters are made for children, so they do not travel very fast. Other roller coasters are made very tall and they travel very fast. Riders are generally held in place with a bar, a belt, or something similar.

Scientifically, a roller coaster works because of gravity, a force that pulls things down to the ground. Most roller coaster trains are pulled to the top of a hill with a machine. The train will slide down the track, which has a number of hills and valleys. As it slides downhill it goes faster, and it slows down when climbing.

In what way is a roller coaster like a small train?

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What can roller coaster tracks be made from?

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How are riders usually held in place?

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How does a roller coaster work?

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### 3. Describing being on a roller coaster

First watch this video of an old, wooden roller coaster in Japan:

<https://www.youtube.com/watch?v=2WaxrzSK5CI>



Write a short paragraph explaining how you might feel if you were on this ride.

Remember to use adjectives in your work (describing words).

Please check your writing carefully.

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

## Task Three (harder)

### 1. Building a roller coaster in a sensible order

Building a roller coaster is a very complicated job! Can you put the headings below into a sensible order, so that the roller coaster can be built safely?



Tips:

- You may need to look up some phrases. For example, what is *animal acclimation*? Why might this be needed?
- It may help to cut up the headings so that you can move them around until you find a sensible order.

Now read the document on the next pages. Check and see if you have the same order. If you have access to the internet you can find the originals here:

<https://www.floridatix.com/blog/how-to-build-a-roller-coaster/>





# HOW TO MAKE A ROLLERCOASTER

(FROM START TO FINISH)

**Ever wondered what exactly goes into creating a rollercoaster, or any theme park ride for that matter?**

As you can imagine, it's a big job. From coming up to the initial concept to hours of rigorous testing, creating a ride can take anything from three to five years, or even more!





## LAYOUT

3

ALSO KNOWN AS SCHEMATIC DESIGN; WE MAP OUT EXACTLY WHAT AREAS WE WILL NEED SPACE FOR, AND HOW THEY ARE INTEGRATED WITH THE RIDE:

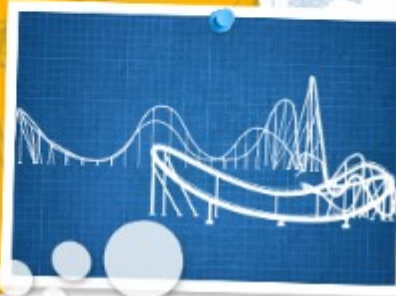
- ✓ AN AREA FOR THE RIDE ITSELF
- ✓ MAINTENANCE BUILDING
- ✓ QUEUEING AREA
- ✓ STATION BUILDING
- ✓ THERE MIGHT ALSO BE AN ANIMAL HABITAT, SHOP, FOOD AREA OR OTHERS

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## DESIGN DEVELOPMENT

PRODUCING DRAWINGS WHICH WILL SHOW THE PLANS AND ELEVATIONS FOR EVERY ASPECT OF THE PROJECT.


THIS INCLUDES THE DESIGN FOR THE RIDE ITSELF, AS WELL AS THE ARCHITECTURE AND ALL UTILITIES.



## CONSTRUCTION DOCUMENTS

5

CREATING THE DRAWINGS THAT ARE USED TO PHYSICALLY BUILD AND FABRICATE THE RIDE AND THE VARIOUS AREAS SURROUNDING IT.





6

## TECHNICAL

TIME FOR CONSTRUCTION TO BEGIN!  
THIS INVOLVES:

- ✓ DEVELOPING THE SITE FOR THE NEW RIDE - UNDERGROUND UTILITIES AND FOUNDATIONS
- ✓ CONSTRUCTION WORK ON THE BUILDINGS, THEMING AND UTILITIES
- ✓ LAST BUT NOT LEAST, INSTALLING THE RIDE ITSELF!



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## ANIMAL ACCLIMATION

SOME RIDES MIGHT INVOLVE AN ANIMAL HABITAT AS PART OF THE EXPERIENCE.

IF SO, A CERTAIN AMOUNT OF TIME IS ALLOCATED FOR "ACCLIMATION" - TO LET THE ANIMALS SETTLE INTO THEIR NEW ENVIRONMENT



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## TESTING

ALL NEW RIDES GO THROUGH A RIGOROUS COMMISSIONING, EVALUATION AND ACCEPTANCE PROCESS THAT'S CUSTOM-GEARED FOR THAT SPECIFIC RIDE.

THIS PROCESS MAY INCLUDE:

- ✓ LOAD TESTING: THIS IS OFTEN DONE USING "WATER DUMMIES" - PLASTIC TORSOS THAT ARE FILLED WITH WATER TO SIMULATE THE WEIGHTS OF REAL PEOPLE
- ✓ OPERATING HUNDREDS AND HUNDREDS OF CYCLES, WITH AND WITHOUT THE WEIGHT
- ✓ BEFORE OPENING TO THE PUBLIC, THERE IS A PERIOD OF RUNNING TIME TO SIMULATE NORMAL RIDE OPERATION





## 2. Unfamiliar Words

Underline any words or phrases that you don't know. First try to think what they might mean by reading the sentence. Next look them up in a dictionary or by using Google. Are your ideas are right? Fill in this table:

Unfamiliar word or phrase	What I think it might mean	What the dictionary or Google says
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### 3. Reading Comprehension Tasks

Read the text again. Please answer the following questions. Use full sentences in your answers.

Name three kinds of experts who might be involved in designing and planning a new roller coaster.

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What is another word for *layout*?

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The word *utilities* is used a lot in the text. What are these? Can you think of the kind of utilities that a new roller coaster might need?

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What are *water dummies*? Why are they used?

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Why does the text say it is important to train theme park staff in every aspect of the ride?

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Now watch the video of the Sea World roller coaster in action.

<https://seaworld.com/orlando/rides/?tags=Roller-Coaster>

Write at least one simile to explain how you might feel on a roller coaster ride (if you need a reminder about similes, have a look over the page :).

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## Reminder—Similes

Similes are phrases that we use when we liken one thing to something else. We use them to try and create a picture in someone's mind. Often we use the words 'as' or 'like' when we write similes.

For example:

*I feel as light as a feather* - this helps us to imagine that they must be feeling very light and floaty as feathers are like that.



*She is like a dog with a bone* - this helps us to imagine that once she has got hold of something (it might be an idea or a thought), she won't let it go. Just as a dog doesn't let go of a bone!



Now write a short paragraph describing an experience of being on a roller coaster. Use your simile in your writing. Remember to check your own work carefully and to make sure that every sentence has punctuation.

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