

How to Design the World's Best Roller Coaster – Wood v. Steel

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1 *The decision to build your roller coaster from wood or steel will need to be made on which material will provide the best ride.*

3 Wooden roller coasters are unusual. In 2007, there were 2,088 roller coasters in the world: 1,921 were steel and just 167 were wooden.

5 **What's good (and bad) about wood?**

GOOD: Wooden roller coasters have a special character. The noise they make and the feel of riding one as the wood bends and sways is exciting. Wood is also a renewable material.

9 BAD: Wood is not as strong as steel. Its shape can be affected by heat, cold, wet and dryness. Wooden roller coasters are mainly built and painted by hand, which may take a long time and cost a lot of money.

12 **What's good (and bad) about steel?**

GOOD: Steel is stronger than even the strongest wood, so steel roller coasters can have higher speeds and more forceful turns. The parts of the roller coaster can be made with 100% accuracy in a factory, then assembled at the amusement park. Steel's shape is not affected by normal temperatures or the weather. Steel roller coasters last for longer than wooden ones.

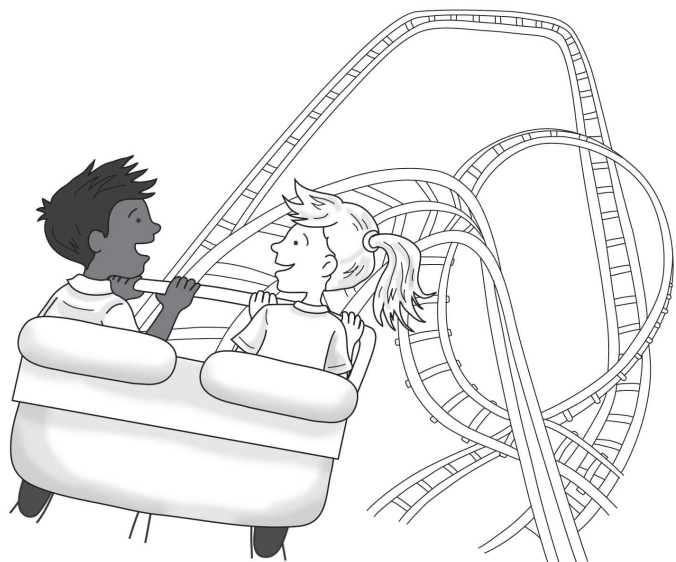
18 BAD: Steel roller coasters do not flex and sway, nor make the rickety-clack noise that people enjoy aboard a wooden ride. Steel is not renewable (though it can be recycled).

21 **The final decision**

Steel is stronger and can be used to build a more extreme roller coaster. And since this design is for the best roller coaster in the world, it is going to have some extreme features.

28 Steel cannot provide the noise and feel of a wooden roller coaster, but a steel ride can make up for that in sheer thrills and excitement.

33 *So which material will you make your roller coaster from? What will help you to decide?*



Name:	Class:	Date:
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1 “Wood v. Steel”

In the heading, what does “v.” stand for?

2a

1 mark

2 “Wooden roller coasters have a special character.”

In this sentence, which word is closest in meaning to “character”?

Tick **one**.

advantage appeal appearance strength

2a

1 mark

3 Why would a wooden roller coaster not be a good idea in a country like Canada, which has cold winters and hot summers?

2d

1 mark

4 Find and copy **one** feature of a wooden roller coaster that makes it exciting to ride.

2b

1 mark

5 The parts of which type of roller coasters can be made with 100% accuracy in a factory?

2b

1 mark

6 Why does the writer use the sub-headings “GOOD” and “BAD” about both wood and steel?

2f

1 mark

7 Put a tick in **one** box in each row to show whether each of the following statements is a **fact** or an **opinion**.

	Fact	Opinion
The feel of riding a wooden roller coaster is exciting.	<input type="checkbox"/>	<input type="checkbox"/>
The ratchet-clack noise of a wooden roller coaster is enjoyable.	<input type="checkbox"/>	<input type="checkbox"/>
Steel roller coasters last longer than wooden ones.	<input type="checkbox"/>	<input type="checkbox"/>
Steel roller coasters can have higher speeds.	<input type="checkbox"/>	<input type="checkbox"/>

2d

2 marks

8 Tick **one** box in each row to show whether each person should choose to ride a **wooden** or **steel** roller coaster.

	Wooden	Steel
I want to experience the roller coaster swaying.	<input type="checkbox"/>	<input type="checkbox"/>
I want to ride at high speeds.	<input type="checkbox"/>	<input type="checkbox"/>
I want a ride that costs less.	<input type="checkbox"/>	<input type="checkbox"/>
I want the most exciting and thrilling ride I can find.	<input type="checkbox"/>	<input type="checkbox"/>

2h

2 marks

9 If you were designing this roller coaster, what would you use to build it?

Give **two** reasons for your choice, using evidence from the text to support your answer.

2c

3 marks