Design the interior for Talgo's Hydrogen Train

Names:

Year Group:

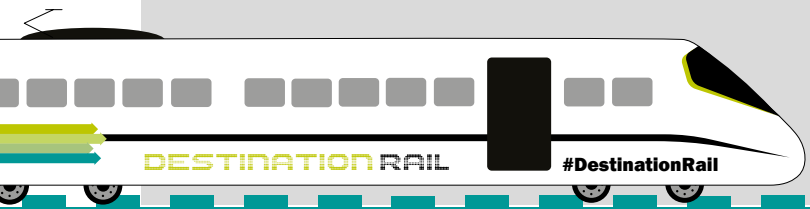
School:

A Spanish rail company, Talgo, has just come to Chesterfield! Talgo is leading the way in innovative and sustainable technology in rail. In 2020, they announced the development of their very first hydrogen-powered train, which is due to be ready by 2023.

Fun fact:
Hydrogen trains are emission free, meaning they're an environmentally friendly ('green') alternative to existing diesel powered trains. They are also considerably less noisy than their diesel counterparts!

Let's start by learning a little more about sustainability and hydrogen power!
Match the word to the definition. After all, this might come in handy for your challenge!
(If this is printed just draw a line to the match or in acrobat write the appriate letter in the box)

1. Sustainable		A. A device where energy is stored
2. Non-renewable		B. Something that performs in the best way possible while using the least amount of energy
3. Renewable		C. A resource that cannot be replaced after it has been used
4. Energy efficient		D. A resource that will be replenished
5. Hydrogen		E. A device where energy is generated by a chemical reaction
6. Battery		F. An activity that does not destroy resources
7. Fuel cell		G. An element that when mixed with oxygen produces electricity, heat and water



In acrobat, click the button below to reveal the answers

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Design the interior for Talgo's Hydrogen Train

Your challenge is to design and build a 3D model of a train interior. You must meet the following criteria:

- You must consider the **needs of all passengers** within your design
- The model must be **built out of recyclable materials**

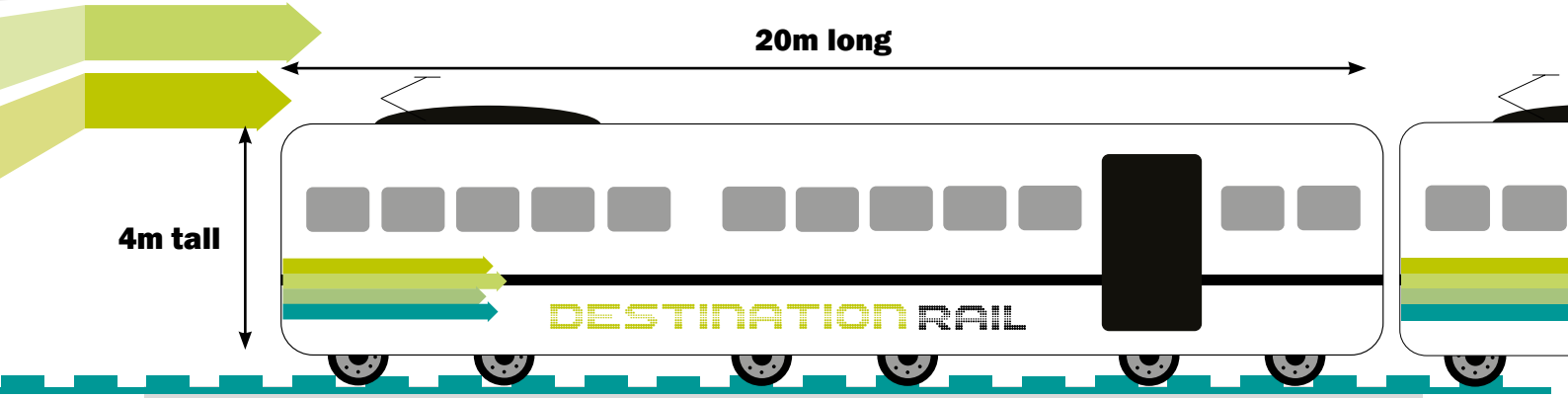
What do you want to see in the train of the future?

When designing and prototyping it is important to consider the size of different aspects:

An average seat on a train measures 50cm wide

A wheelchair user needs an aisle to be 90cm

A train carriage measures **2.5m wide**...



I'm heading back to uni after the holidays, It's a long journey and I'm pretty tired, I think I'll just listen to my music and take a nap

I'm off to my wheelchair basketball training session, Our team is competing this weekend!

I use the train line to commute to work. My journey takes 40 minutes and I work along the way, I have some very important emails to catch up on!

My family and I are going on holiday! I'm super excited about the adventures we'll have! We have everything we might possibly need packed in our suitcases!

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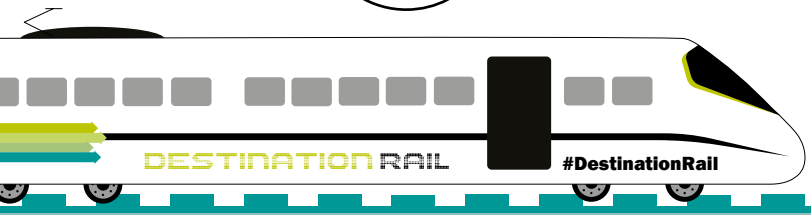
Use this page to create mind map of ideas that you would like to include in your model, you could include annotated sketches. *(There are spaces that can be typed into on Acrobat if needed)*

Train Interior Ideas



Use this space to explain why you have chosen to build the train interior in this way.

Things to think about:

- How does it help different types of passenger?
- What problems did you need to overcome when building?

Master Engineer Challenge:
Is your model to scale? What are the dimensions of your carriage?