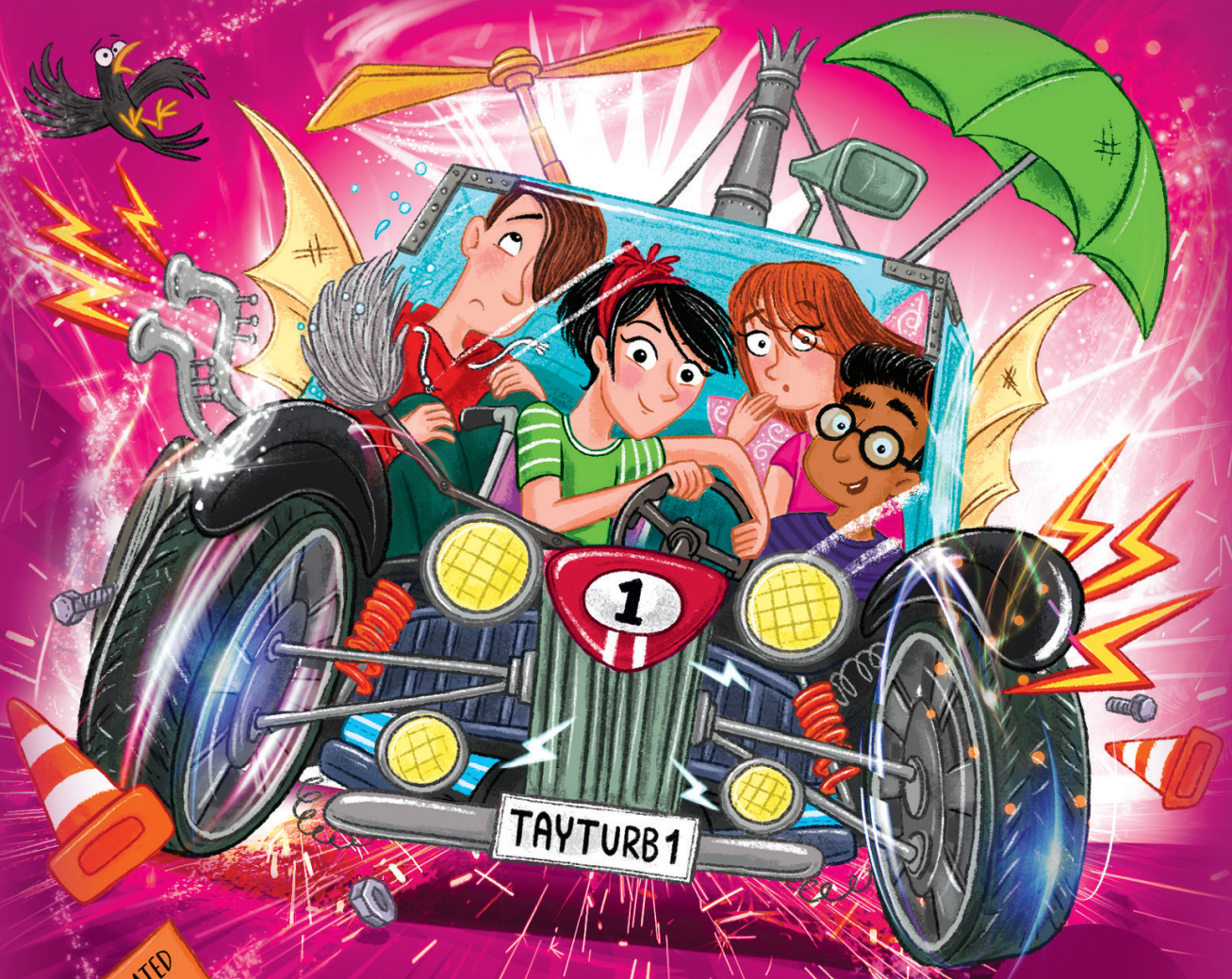
THE TAYLOR TURBOCHASER

IT'S A ROAD-TRIP ROLLERCOASTER!



ILLUSTRATED BY STEVEN LENTON

TEACHING RESOURCES

THE TAYLOR TURBOCHASER

TEACHING RESOURCES

Research

David Baddiel's latest book, The Taylor Turbochaser, provides an ideal opportunity to investigate equality and disability in the classroom. The main protagonist, Amy, is a wheelchair user and car enthusiast who is craving a new design for her wheelchair.

Use the first two chapters of The Taylor Turbochaser as a hook into designing a new prototype for a wheelchair. Talk about the character of Amy and make a list comparing her old wheelchair with her new wheelchair.

Why is her new one better? What features does it include?

Ensure the children understand what wheelchair users need to support their mobility. If possible, invite a wheelchair user into the class to talk about their experiences.

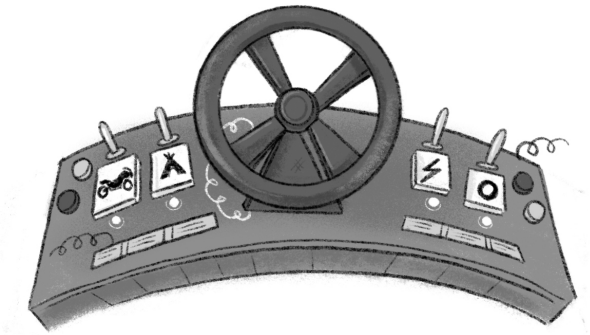
Share the images on the Research sheet. Talk about the different wheelchair users' experiences and what they need their wheelchair to do for them.

HarperCollins *Children's Books*

Station 1 – Switches

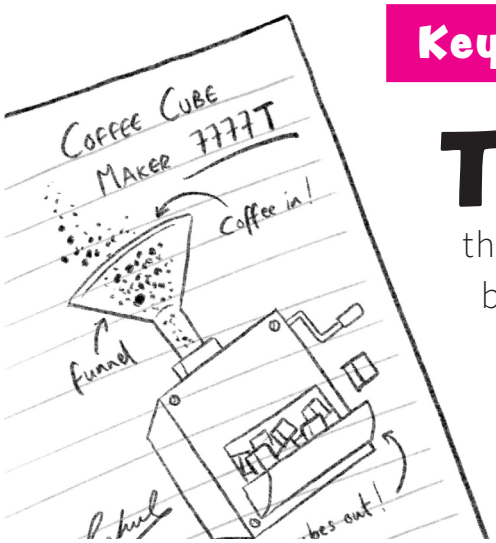
Set up different stations around the classroom so the children can explore each element of their product. At the first station, ask the children to investigate making circuits with switches.

You'll need;
- **paper clips**
- **split pins**
- **card**
- **foil**
- **crocodile clips**
- **batteries**
- **motors or bulbs**



Ask the children to use the diagrams (**Station 1 - Switches**) to create two different types of switch. Which one would be easier for someone like Amy to use? Help the children understand that the push switch acts in a similar way to the lever on Amy's wheelchair.

Include two types of switches: paper clip/paper fastener switches and push switches, made with foil and cardboard.

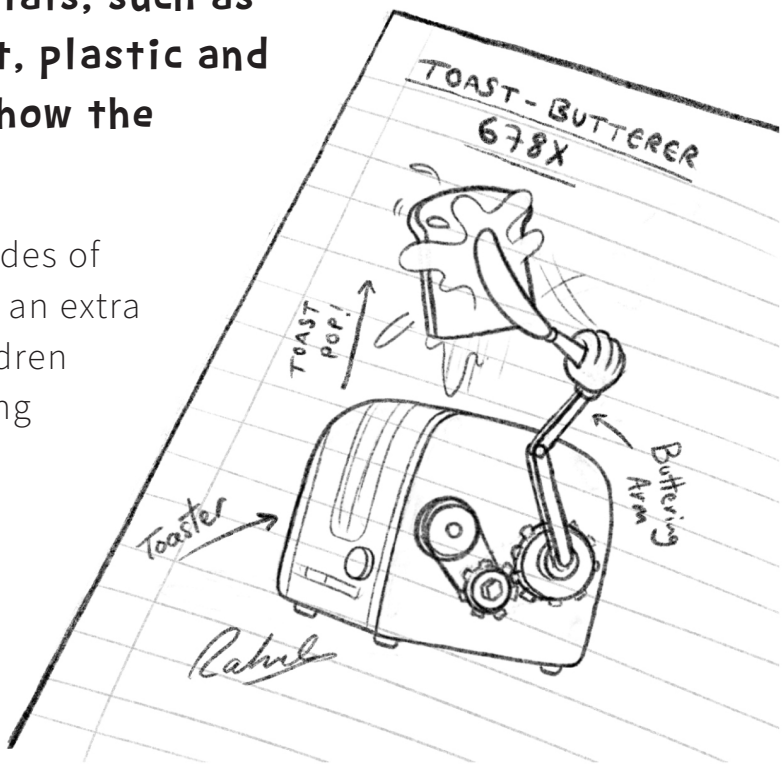


Key Parts

The second station should be set up to investigate how battery powered motors can make wheels move. Ask the children to explore how a wooden pulley and a rubber band might be attached to a circuit with a motor to make it turn. If you're not sure how to do this, there are plenty of instructional videos online. This is the most complex task, so any adult support is best focused here.

At the third station, give the children a range of different materials, such as wood, wadding, cotton, felt, plastic and card. Ask them to explore how the chair could be made.

What are the benefits and downsides of using each material? If you've got an extra adult, you could also ask the children to practise their cutting and joining techniques for the wood they will use to make their chassis later in the lesson. At each station, ask the children to note down their ideas on the **Key Parts** sheets provided.



My Design

Once the children have had a chance to explore the different processes, they'll be ready to design their prototype wheelchair. As a class, generate the success criteria for the chair, referring back to the needs of wheelchair users identified at the start of the session. Ensure the children consider the ease of use, practicality, comfort and style elements of their design. Show the children an example of an exploded diagram and model how to create your own design.

In pairs, ask the children to create and label each part of their diagram using the My Design sheets. They should use accurate measurements where possible, and make a list of the equipment they will need to make their product.

Children who need a further challenge could be asked to justify their design choices, linking back to the success criteria established previously. Children who might need more support could be given a sheet to help them structure and record their ideas.

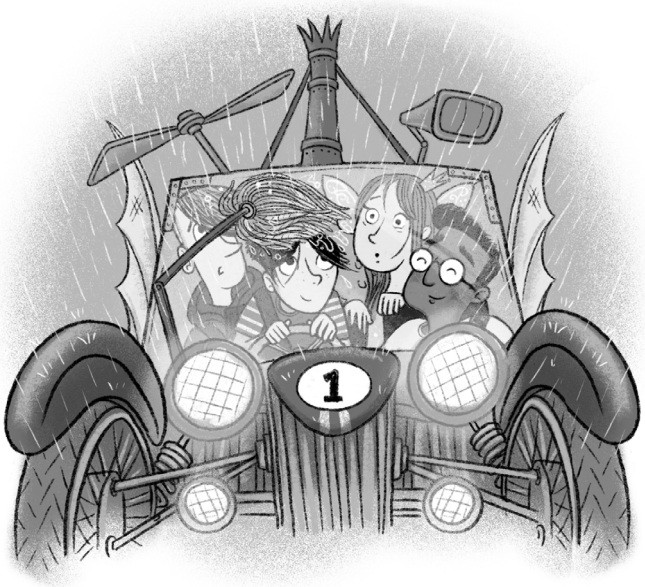
Let's Build!

When the investigation and design stages are complete, bring the children back together and discuss some of their ideas.

During the discussion, allow children to refine their designs if needed, as this will offer support to those who need it and ensure the best possible end result. Talk about the steps needed for making the chassis with motor-powered wheels and remind the children about the design brief you created together.

At this point, they'll be raring to go, so let them loose! Stop the children at various points if you need to model a particular skill. It can be helpful to train up a few 'experts' in making circuits work before the lesson to support other children if necessary.

Make sure the children focus not only on the technical aspects of the design, but also how they are going to make it comfortable and stylish. Refer back to Amy's love of cars, for example, and ask the children to think about how they can incorporate that into their product.



Research

What do these people need their wheelchairs to do for them?

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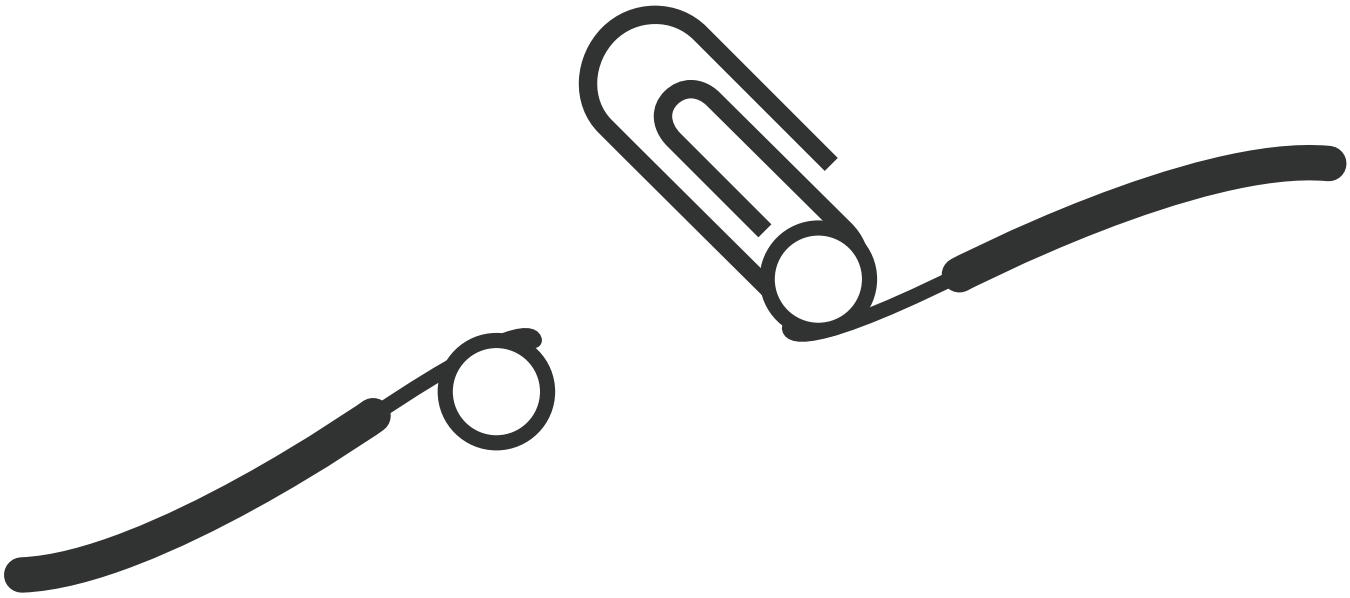
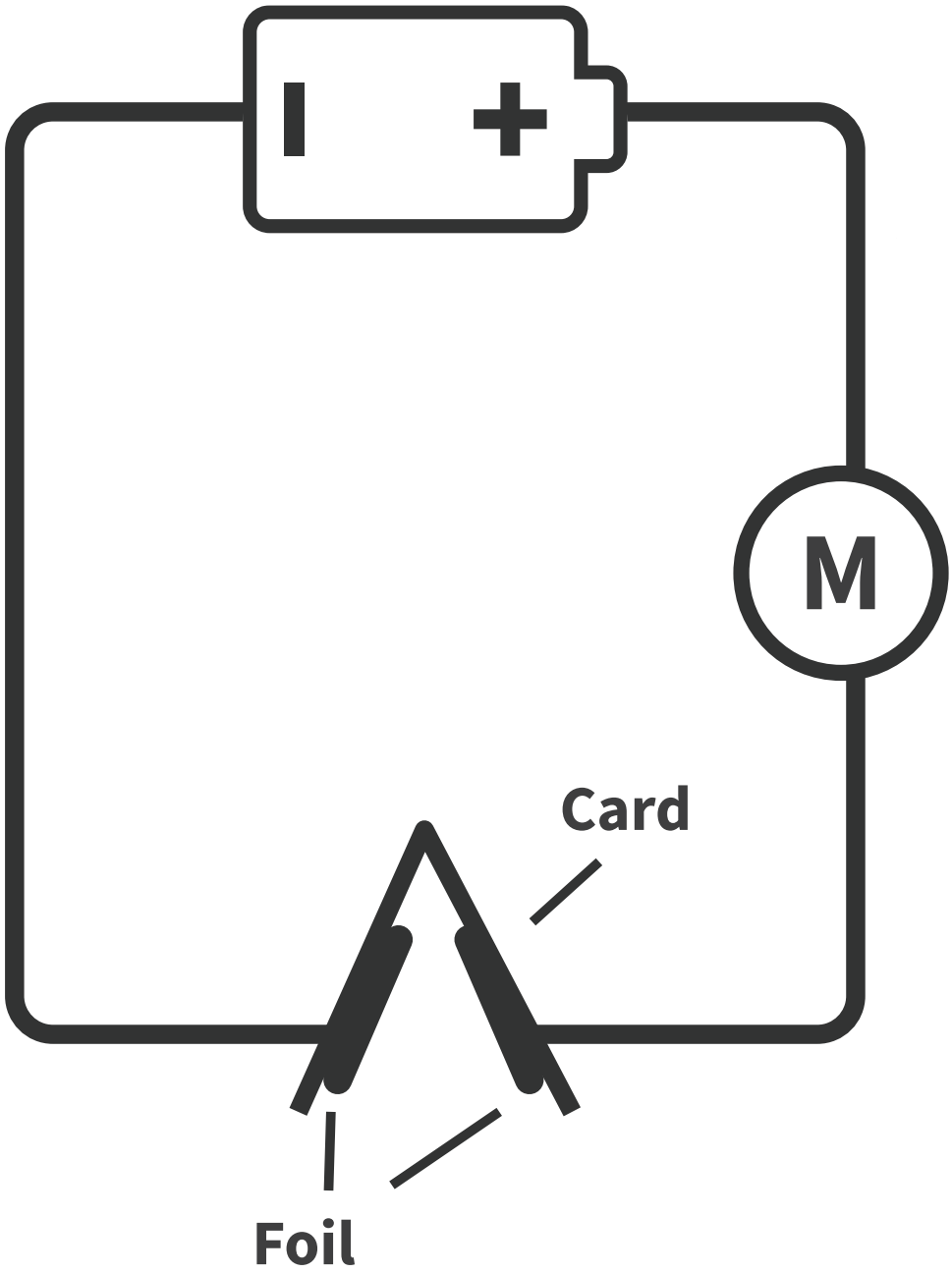
Paperclip/paper fastener switch

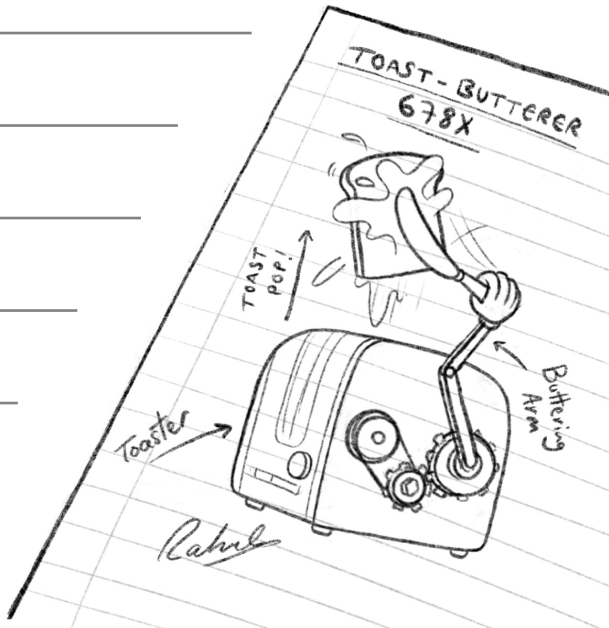


HarperCollins *Children's Books*

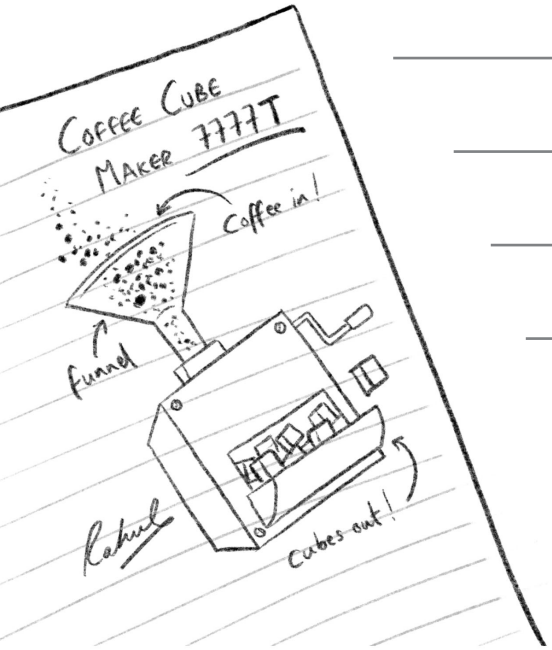
Push switch made with foil and cardboard



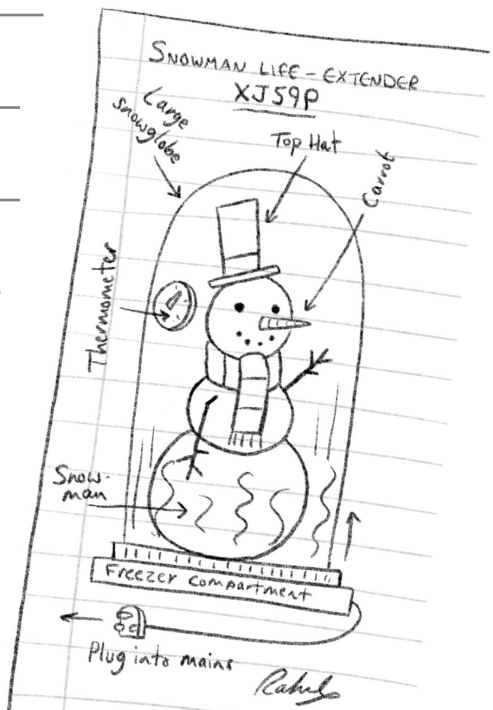
How I will make my switch



How my pulley and motor will work



Materials I can use and why



My Design

How I will make my chassis

Equipment and materials I will need...

My Design

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How my circuit will work

Equipment and materials I will need...

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My chair design

Equipment and materials I will need...