



TRAFNIDIAETH CYMRU
TRANSPORT FOR WALES

• THE •
MAGNIFICENT TRAIN
JOURNEY

Teacher pack



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Foreword from the Minister for Climate Change

I'm delighted to introduce this school resource pack from Transport for Wales, which introduces children to some key themes around climate change and public transport.

Transport currently makes up 17% of Wales' carbon emissions, so providing young people with the motivation to change this is crucial. This pack provides teachers with lesson ideas and background information to share with their pupils about why transport is so important to protecting our environment.

This second edition of the pack has been updated to meet our new Curriculum for Wales. I'm pleased to see the Curriculum's core values – learning, employment and active citizenship – reflected in the resources. There is also an increased section on climate change, which it's no surprise that I support.

I hope you find the resources useful, and it helps you to inspire your learners to join me in tackling the Climate Emergency.



Introduction

At Transport for Wales (TfW), we want to inspire children and young people with our vision for a more sustainable transport network.

The teaching resources provided will guide you in introducing climate change to your learners and show its link to transport. After learning about the processes, learners are challenged to create a campaign of their own.

The pack links to the goals of the Wellbeing of Future Generations Act and covers topics that help learners understand some of the places and history that makes Wales and its borders special. Practically, they'll learn how to get to the places using public transport, but they'll also discover what it is about Wales that makes it worth protecting.

How to use the teacher pack

This teacher pack accompanies our interactive resource, which you can find [here](#).

The pack contains the tools and inspiration you'll need to take your class on The Magnificent Train Journey.

They'll learn about transport and the positive impact we can make on the environment by changing some of our own transport habits. Our goal is to help your class develop a strong sense of global citizenship and inspire them to use sustainable forms of transport.

There are lesson plans, resources and activities for five topics in this pack. It's designed for the Curriculum for Wales.

There are different options in each topic, allowing you to tailor your delivery to the learning needs of your class and the area of the curriculum you're focusing on. Although this teacher pack uses the new Curriculum for Wales as a basis, the 'mix and match' nature of the plans makes it suitable for use in England or the pre-2022 Welsh curriculum too.

Your five topics are:

- Sustainability and transport,
- Trains old and new,
- Stories from around Wales and the borders,
- Places to explore on the train
- and the Creation Station.

The interactive resource pack can be used in lessons in conjunction with the plans detailed below or could be used as a stand-alone resource for learners to guide their own learning path.

The activities are all available in this teacher pack – page 19 onwards – as static information or worksheets, but we recommend you use the interactive experience as much as possible. The relevant slides are indicated in each lesson plan.

The learning resources are also accompanied by an online game that challenges children to build their own railway networks. The game is on our website [here](#).

Links to the Curriculum for Wales

In the guidance for developing a new curriculum, Welsh Government say:

“Instilling learners with passion and pride in themselves, their communities and their country is central to the four purposes. Learners should be grounded in an understanding of the identities, landscapes and histories that come together to form their cynefin. This will not only allow them to develop a strong sense of their own identity and well-being, but to develop an understanding of others’ identities and make connections with people, places and histories elsewhere in Wales and across the world”
(gov.wales)

We’ve used this idea to ground our learning pack.

The ‘four purposes’ in the New Curriculum are covered throughout and we’ve highlighted the links to areas of learning in each lesson introduction.

Here’s how this learning pack promotes the four purposes:

- **Ambitious, capable learners, ready to learn throughout their lives**
At its core, The Magnificent Train Journey invites learners to use digital technologies creatively to communicate, find and analyse information. In the process, they’ll undertake research and evaluate what they find. And we certainly hope they enjoy it!
- **Enterprising, creative contributors, ready to play a full part in life and work**
At the end of the Journey, learners will connect and apply their knowledge and skills to create a climate action campaign. They’ll give their energy and skills so that other people will benefit from their learning.
- **Ethical, informed citizens of Wales and the world**
Engaging with the Magnificent Train Journey allows learners to learn about and show their commitment to the sustainability of the planet.
- **Healthy, confident individuals, ready to lead fulfilling lives as valued members of society**
The Journey is peppered with everyday tasks, like planning a journey, that will enable learners to have the skills and knowledge to manage everyday life as independently as they can.

About TfW

Who we are

We’re Transport for Wales (TfW), a not-for-profit company set up by the Welsh Government in 2015.

TfW is driving forward the Welsh Government’s vision of a high-quality, safe, integrated and affordable transport network. We’re developing a reliable, accessible and low-carbon network that the people of Wales can be proud of. Our continually evolving remit means that we’re building a sustainable transport network, fit for a thriving Welsh economy now and in the future.

Our remit

The Welsh Government sets TfW’s strategic goals in line with Prosperity for All: the national strategy, the Well-being of Future Generations (Wales) Act 2015, the Active Travel (Wales) Act 2013 and other policies, making sure that we operate efficiently and always act in the public interest.

Why we’re here

Wales is changing, which means our transport network also needs to change. Better public transport underpins sustainable economic growth and offers real benefits for people, improving access to employment opportunities, opening up new opportunities and better integration of education, health and other services.

A commitment to environmental sustainability is essential. Our aim is to transform the transport network in Wales and the borders so that it becomes truly sustainable and fit for future generations, working for both people and the planet.

Topic 1: Sustainability and transport

This topic will introduce learners to the concept of 'a greener future for Wales and the world'. This is a key element of the Future Generations Act and underpins the innovations being made in public transport.

Learners are introduced to the young climate activist Greta Thunberg and her campaign against global warming. We hope learners will be inspired by a young person known around the world for her actions and words.

The lesson also introduces learners to the main causes of global warming, looks at the impact transport makes to our climate and concludes by asking learners to consider what they can do to make a positive change.

Learning outcomes

Learners will:

1. Develop a broad understanding of 'climate change' and its causes
2. Look at transport and fuel in relation to climate change
3. Consider what kinds of positive action they can take as individuals and as a class

Links to curriculum

This lesson covers descriptions of learning in Humanities and Science and Technology



Humanities	<ul style="list-style-type: none"> • Our natural world is dynamic, influenced by processes and human actions • Informed, self-aware citizens engage with the challenges and opportunities that face humanity, and are able to take considered and ethical action
Science and Technology	<ul style="list-style-type: none"> • The world around us is full of living things which depend on each other for survival

Lesson Plan 1: Sustainability and transport

Section	Teacher notes and activities	Key questions	Resources
Introduction	<p>Who is Greta Thunberg?</p> <p>Open question to gauge level of awareness of Greta and climate change.</p> <p>Show image as starting point. Talk through Greta resource focusing on climate change.</p>	<p>Does anyone know who Greta Thunberg is?</p> <p>What can you tell me about her?</p> <p>Is she inspirational?</p>	Interactive resource pack, slide 11
Main body part 1	<p>Understanding climate change</p> <p>Use a video resource to introduce climate change. We like the "Climate change (according to a kid)" video linked here, but you may wish to find your own. This third-party resource isn't available in Welsh.</p> <p>Summarise key principles presented by video and ask questions.</p> <ul style="list-style-type: none"> - Earth is getting hotter - This is caused by a layer of 'greenhouse gases' acting as thermal layer around the earth - Greenhouse gasses are caused by carbon dioxide emissions <p>Task: Draw your own diagram of what climate change is.</p>	<p>What sorts of things produce carbon dioxide into the atmosphere?</p> <p>Which ones do you use or eat?</p> <p>How often?</p>	<p>Video</p> <p>Interactive resource pack, slides 6-7</p> <p>Climate Change [Lesson 1 Activity 1]</p>
Main body part 2	<p>Applying climate change to transport</p> <p>Discuss main forms of transport: walking, bike, bus, car, rail, planes. Ask them to put them on a continuum: good to bad for our planet.</p> <p>Ordering Task: Draw a line on the page-smiley earth at one end and sad at the other. Cut out the images (or draw them) Order them in terms of their kindness to environment.</p> <p>Talk about the forms of energy they use.</p>	<p>Why did you order them this way?</p> <p>What sort of energy do they use?</p> <p>Which ones do you use?</p> <p>Could you walk to places or use public transport more?</p>	<p>Interactive resource pack, slides 8-9</p> <p>Transport [Lesson 1 Activity 3]</p> <p>Energy [Lesson 1 Activity 4]</p>
Conclusion	<p>What can we do?</p> <p>Consider the impact of Welsh Government's legislation Well-being and Future Generations Act (2015)</p> <p>Discuss contribution as individuals or a school</p>	<p>What can we reuse or recycle?</p> <p>What can we stop doing?</p> <p>Can you think of an eco-friendly / recycling project we could do?</p>	Recycling [Lesson 1 Activity 2]

Lesson Plan 2: Sustainability and transport

Section	Teacher notes and activities	Key questions	Resources
Introduction	<p>Habitats</p> <p>Where do these animals live?</p> <p>Show images of animals – include mice, badgers and some insects as we'll mention those later – and ask the learners to name their homes.</p>	<p>Do you know what a 'habitat' is?</p> <p>What do you think animals look for in a habitat?</p>	
Main body part 1	<p>Biodiversity</p> <p>Use a video to introduce biodiversity. We like the Nature Conservancy's video Why Is Biodiversity So Important?, but you could find your own. This third-party resource isn't available in Welsh.</p> <p>Summarise key principles presented by video and ask questions.</p> <ul style="list-style-type: none"> - What is diversity? - And what is biodiversity? - Why does it matter? <p>TfW is building a new railway in South Wales. Think about what that might mean for biodiversity in the region.</p>	<p>Why is having diverse habitats important?</p> <p>What might happen if we lose all the bees/ badgers/ bunnies?</p> <p>Do you think it's scary?</p>	Interactive resource pack, slide 10
Main body part 2	<p>Take action</p> <p>Habitats may be lost around us, but we can give some creatures extra places to live.</p> <p>Look after the biodiversity on your doorstep</p> <p>Follow the instructions to build a bug hotel. It'll help the biodiversity in your school or garden, wherever you chose to park the hotel.</p>	<p>How can we help?</p> <p>What might live in our bug hotels?</p> <p>Why is it important for bees and other insects to have a home?</p>	Build a bug hotel [Lesson 1 Activity 5]
Conclusion	<p>What else could we do?</p> <p>Ask the learners other ways they could help to protect habitats.</p> <p>If there's any building work happening near your school, you could ask the learners what impact it might have</p>	<p>Is long grass better or worse for insects?</p> <p>Is there any grass we could leave longer?</p>	

Topic 2: Trains old and new

This topic inspires an interest in science, technology, engineering and mathematics (STEM) subjects by learning about the history of trains, railways and the innovations being made today in response to the climate emergency.

We want to encourage learners to take a fresh look at STEM and become the innovators of the future.

Learners are encouraged to explore energy and use their imagination to consider the future of train travel.

Learning outcomes

This lesson builds on Lesson 1 on sustainability.

Learners will:

1. Learn about the history of trains in Wales and how trains are powered
2. Look at the innovations in new trains and develop their own ideas for trains for the future
3. Explore first-hand what it takes to move an object
4. Locate places discussed on a map

Links to curriculum

This lesson covers descriptions of learning in Humanities and Science and Technology

Humanities	<ul style="list-style-type: none"> • Enquiry, exploration and investigation inspire curiosity about the world, its past, present and future.
Science and Technology	<ul style="list-style-type: none"> • Design thinking and engineering offer technical and creative ways to meet society's needs and wants.



Lesson Plan 2: Trains old and new

Section	Teacher notes and activities	Key questions	Resources
Introduction	<p>Introduce learners to the first train travel and links to Wales and ask them to consider why this might have happened.</p> <p>Explore impact.</p> <p>Ask learner to mark places on a map.</p>	<p>Do you know where in the world's first steam-powered railway journey took place?</p> <p>Why do you think it was there at the iron works?</p> <p>What difference did it make to people working in the mines?</p> <p>How might iron have been transported to the canal before?</p> <p>Have you learnt anything else from the video?</p>	<p>Transport for Wales Video</p> <p>Map of Wales [Lesson 2 Activity 1]</p>
Main body part 1	<p>Introduce 'Trains and Power'</p> <p>Use resource as starting point.</p>	<p>The way trains are powered has changed.</p> <p>What have been the main forms of power?</p> <p>Why has it changed?</p>	<p>Interactive resource pack, slides 20-24</p>
Main body part 2	<p>Learners get first-hand experience of power and energy.</p> <p>Build and power your own train.</p> <p>Build a train using materials you have in your recycling box and explore ways to make the train move. Options might be:</p> <ul style="list-style-type: none"> • blowing • attach string and pull along • use a balloon • paperclip and magnet <p>Debrief: There are lots of ways to power machines. Consider this in the final exercise when designing a train of the future.</p>	<p>How could you attach wheels that move?</p> <p>How could you make the train move without you physically pushing it?</p> <p>You can use anything you find in the classroom.</p>	<p>Any model making materials, including scrap materials. You could use Lego here too.</p> <p>Trains [Lesson 2 Activity 2]</p>



Section	Teacher notes and activities	Key questions	Resources
Conclusion	<p>Trains of the future</p> <p>In Wales and its borders, we're replacing all our trains and we're moving towards a combination of renewable-powered electric and diesel trains.</p> <p>Learners will design a train of the future. They should consider power sources such as solar, wind power, 100% electric, or maybe even no trains or human trains!</p>	<p>How is it powered?</p> <p>What do the carriages look like?</p> <p>Does it have rails?</p> <p>Let your imagination run free.</p>	<p>Paper and pencil [Lesson 2 Activity 3]</p>
Optional	<p>There are many careers in the railways.</p> <p>You could also play our Magnificent Train Journey game that challenges children to build their own railway networks here</p>	<p>Would you like to work with trains, on the railways?</p>	<p>Interactive resource pack, slides 29-30</p>

Topic 3: Stories from around Wales and its borders

In this topic we focus on stories and mythical tales from across Wales and the borders. These provide learners with a sense of history and culture, as well as fueling their imagination to create their own stories.

Stories are a powerful communication tool and have been used to pass down knowledge, to share ideas and shift perspectives. They evoke emotion and can bring 'facts' to life in a more meaningful way.

The mix of stories here bring different elements: traditional mythology of dragons and giants, mystery, crime and biography.

We recommend you choose one to focus on and then encourage learners to create their own characters and stories. There is a character and story guide to help them create their own.

Learning outcomes

Learners will:

1. Explore stories and myths from around Wales and its borders
2. Use their imagination to create characters and their own stories
3. Locate places discussed on a map

Links to curriculum

This lesson covers descriptions of learning in Humanities and Languages, Literacy and Communication



Humanities	<ul style="list-style-type: none"> • Enquiry, exploration and investigation inspire curiosity about the world, its past, present and future.
Languages, Literacy and Communication	<ul style="list-style-type: none"> • Literature fires imagination and inspires creativity • Understanding language is key to understanding the world around us.

Lesson Plan 3: Stories from around Wales and the Borders

Section	Teacher notes and activities	Key questions	Resources
Introduction	<p>Introduce 'myths and legends'. Consider the difference between a 'myth' and other kinds of story.</p> <p>(Think about The Mabinigion, Dragons, King Arthur, Merlin, Lady of the Lake)</p>	<p>How many can you name?</p> <p>Do you know any?</p>	
Main body part 1	<p>Look at whole resource. It includes some myths and some real stories from history.</p> <p>Learners locate the stories on the maps from the previous lesson.</p> <p>Focus on one story to share and discuss.</p> <p>Consider how the story links to the place.</p> <p>They can use the answers to inform the story-writing activity.</p> <p>Optional: Ask learners to bring the story to life and interpret it in their own way by illustrating it.</p>	<p>Is this a myth, a legend or did this really happen?</p> <ul style="list-style-type: none"> - What did you like about the story? - Is there a hero of the story? - Is there a 'villain'? - Why do you think this story has been passed down and is still told today? <p>Draw a picture to illustrate the story</p>	<p>Stories resource [Lesson 3 Activity 1]</p> <p>You could listen to the stories on the Interactive Resource.</p> <p>Five stories are available in the interactive resource pack. See slide 33.</p>
Main body part 2	<p>Learners create their own mythical character.</p> <p>Learners write their own myth.</p> <p>They could do this alone or partner up with another learner so they have two characters for their story.</p>	<p>What does it look like, what special powers does it have?</p> <p>Could your character be part of that story?</p>	<p>Character resource [Lesson 3 Activity 2]</p> <p>Story writing [Lesson 3 Activity 3]</p>
Conclusion	<p>Let's visit the place of our favourite legend.</p> <p>Learners plan a journey to the story locations using public transport.</p>	<p>How would we get there using public transport?</p> <p>Why would we want to use public transport? Think about the environment here.</p>	<p>Train Network [Lesson 3 Activity 4]</p> <p>Learners may wish to use Traveline www.traveline.info</p>

Topic 4: Places to explore on the train

This topic will inspire the learners' interest in the world around them. Learners will develop a sense of place and of wonder in both the natural and built environment. Some places are fun, but they are all educational in some way with a transport, engineering, or sustainability theme.

The places we visit are: The Welsh Mountain Zoo in North Wales, Pontcysyllte World Heritage Site on the Border of Wales and Shropshire, National Show Caves in Brecon Beacons (Dan-yr-ogof Caves), the Centre for Alternative Technology in Machynlleth and the Wales Millennium Centre in Cardiff.

There are options in how you can deliver this, and specific activities are provided linked to each place we visit.

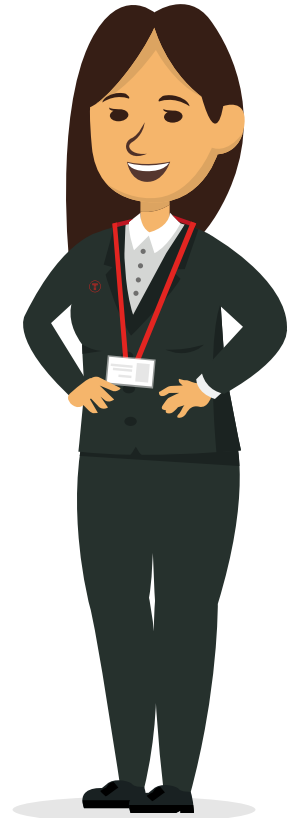
Learning outcomes

Learners will:

1. Locate places on a map
2. Consider the social, cultural and geographic reasons why places are where they are
3. Carry out some independent research into a place of their choice
4. Undertake practical activities to encourage design thinking

Links to curriculum

This lesson covers descriptions of learning in Humanities and Science and Technology.



Humanities	<ul style="list-style-type: none"> • Enquiry, exploration and investigation inspire curiosity about the world, its past, present and future. • Our natural world is dynamic, influenced by processes and human actions.
Science and Technology	<ul style="list-style-type: none"> • Design thinking and engineering offer technical and creative ways to meet society's needs and wants.

Lesson Plan 4: Places to explore on the train

Section	Teacher notes and activities	Key questions	Resources
Introduction	Wales and the borders has many places to visit.	What are some of your favourite places you have visited?	
Main body part 1	<p>Talk through the Famous Places resource.</p> <p>Ask class to consider why places are where they are.</p> <p>Think back to lesson two here. We learnt that train lines were primarily built to transport goods (in Wales, that was coal, iron and slate).</p>	<p>Can you locate all the places on your map?</p> <p>Why is the WMC in Cardiff Bay and not Colwyn Bay where the Zoo is?</p> <p>Why is the Centre for Alternative technology in mid-Wales?</p> <p>Why might it be easier to visit Cardiff on a train than the National Show Caves?</p>	<p>Map of Wales and its borders [Lesson 4 Activity 8]</p> <p>Interactive resource pack, slide 46</p>
Main body part 2	<p>Choose one place. Ask learners to do some independent research using the internet to find out the place. You could suggest they find out at least three things that interest them about it.</p> <p>Ask the learners to present and share what they find.</p> <p>They could create a poster to share with the class. The poster should include the three interesting things, its location and cost of entry.</p>	Which one of these places most interests you?	<p>Internet</p> <p>Papers, marker pens</p> <p>Research a destination [Lesson 4 Activity 6]</p>
Additional Activities	Choose one of the 'Fun Creative Activities' associated with each place in your resources.		Activities Resource [Lesson 4 Activities 1 - 5]
Conclusion	<p>Places closer to home</p> <p>Think now about somewhere near you that means a lot.</p>	<p>Is there a place close to our school that you think is interesting?</p> <p>Why do you like it?</p> <p>Could you describe it as an 'attraction' to encourage people to go?</p>	Advertising [Lesson 5 Activity 7]

Topic 5: 'Creation Station'

Learners have a chance to reflect on the previous sessions, before committing to taking action on some of the things they've learnt. They're tasked to follow Greta Thunberg and produce a climate action campaign of their own.

The first part of the lesson is about considering and evaluating ideas and the second part is about creating. There are options provided for the different formats with guides for writing a story, a letter and a presentation.

Learning outcomes

Learners will:

1. Review and reflect on their ideas
2. Understand how to use persuasion
3. Create a letter, story or presentation to persuade

Links to curriculum

This lesson covers descriptions of learning in Expressive Arts, Humanities and Languages, Literacy and Communication



Expressive Arts	<ul style="list-style-type: none"> • Exploring the expressive arts is essential to developing artistic skills and knowledge and it enables learners to become curious and creative individuals. • Creating combines skills and knowledge, drawing on the senses, inspiration and imagination
Humanities	<ul style="list-style-type: none"> • Human societies are complex and diverse, and shaped by human actions and beliefs. • Informed, self-aware citizens engage with the challenges and opportunities that face humanity, and are able to take considered and ethical action.
Languages, Literacy and Communication	<ul style="list-style-type: none"> • Expressing ourselves through languages is key to communication.

Lesson Plan 5: 'Creation Station'

Section	Teacher notes and activities	Key questions	Resources
Introduction	<p>Recap</p> <p>Learners to spend time remembering what they've learnt during the Magnificent Train Journey.</p> <p>Ask them to cast their minds back to session 1. What can they recall about Greta Thunberg?</p>	<p>What's the most important thing you've learnt?</p> <p>Why might we want to take a stand?</p> <p>How has Greta made an impact?</p> <p>What links the sessions together?</p>	
Main body part 1	<p>Climate action</p> <p>Learners will develop a campaign on an issue relating to climate change.</p> <p>Ask them to look back at Session 1, Activity 2, where they wrote a list of actions they could take at home or school to reduce climate impact. Could those ideas be a basis for their campaign?</p> <p>We'd encourage the class to work together on one goal, featuring different approaches, but you could ask each learner to work individually.</p> <p>Persuasion</p> <p>Consider what we mean by 'persuade'.</p> <p>Ask the learners to each select one option so that they can contribute to the campaign:</p> <ul style="list-style-type: none"> • Write a story • Write a letter • Make a presentation 	<p>What climate action do you care about?</p> <p>What do you think you have the power to change or influence?</p> <p>Why is it important?</p> <p>What did Greta do in her campaigns?</p> <p>Can you think of a time you've had to persuade someone?</p> <p>What did you do?</p>	<p>Interactive resource pack, slide 64</p> <p>You could also return to Session 1 for a reminder</p> <p>Interactive resource pack, slide 65</p>

Section	Teacher notes and activities	Key questions	Resources
Option: story	<p>Write a story</p> <p>Explain how stories can be persuasive. Is there a story you've read as a class that has had a persuasive message?</p> <p>Stories often have a similar structure. Use 'Story Mountain' from lesson three to talk through story building.</p>	<p>What will be the message in your story?</p> <p>How will people react to your story?</p>	Interactive resource pack, slide 66
Option: letter	<p>Write a letter</p> <p>Discuss why we might write letters (or emails). You might consider access to decision-makers, the power of multiple voices or being able to say what you like without being interrupted.</p> <p>Help the learners decide who to write to. For a school issue, it may be the head teacher, or maybe a parent for an issue at home. For older learners, you may wish to write to a Member of the Senedd or Parliament.</p> <p>Follow the letter structure</p>	<p>What do you need to say?</p> <p>Who are you going to write to?</p> <p>What do you want them to know and what do you want them to do about it?</p>	Interactive resource pack, slide 67
Option: presentation	<p>Make a presentation</p> <p>Watch Greta Thunberg's speech.</p> <p>Ask learners about what she's saying and how it's persuading the audience.</p> <p>Help the learners decide who they will give their presentation to. It may be the class, or maybe in an assembly.</p> <p>Use the prompts to create the presentation.</p>	<p>What do you need to say?</p> <p>Who are you going to say it to?</p> <p>What do you want them to know and what do you want them to do about it?</p>	<p>Greta video here</p> <p>Interactive resource pack, slide 68</p>
Conclusion	<p>Congratulations</p> <p>You've made it to the end of the journey. Da iawn!</p> <p>Invite learners to think big about what they could do next to help against climate change.</p> <p>Could any of their ambitions be achieved? How?</p>	<p>What comes next?</p> <p>Will our campaigns work?</p> <p>What else could we do?</p>	Interactive resource pack, slide 69

Resources

Activity Sheets

Lesson 1

Activity 1-5 20-24

Lesson 2

Activity 1-3 25-27

Lesson 3

Activity 1-4 28-31

Lesson 4

Activity 1-8 32-39

Lesson 5

Activity 1-3 40-42

Draw your own diagram of what climate change is.

It could include:

- The sun
- The earth
- Trees
- At least one form of transport
- Different sources of carbon dioxide gas
- At least one negative consequence of climate change
- Labels

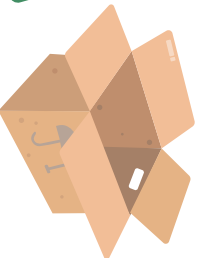
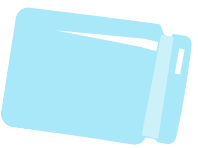


Based on everything you've learned about, let's take some action.
Even small things can make a difference.

What could we reuse or recycle?

Paper? Glass? Boxes?

What else?

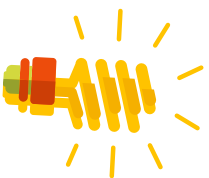
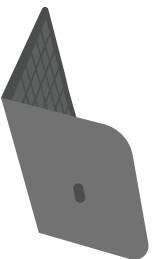


What can we stop doing?

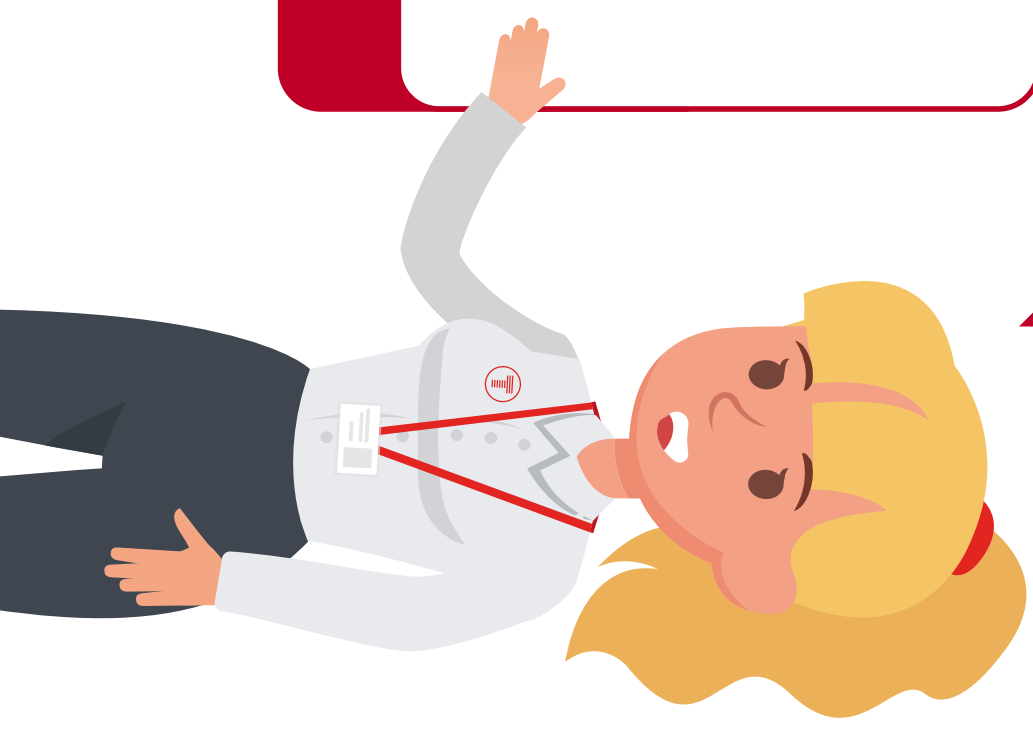
Leaving computers on?

Switching off lights during the day
when we don't really need them?

What else?

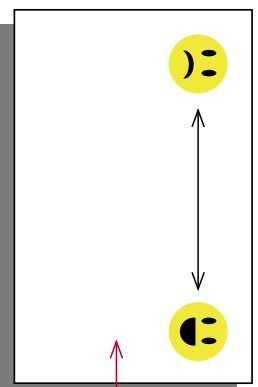


Can you think of an eco-friendly or recycling project we could do?



How environmentally friendly are these power sources?

1. Draw a line on the page with a smiley earth at one end and sad earth at the other.



2. Draw your own picture of these energy sources on your line in order from best (smiley face) to worst (sad face).



Petrol



Wave



Wind



Solar



Nuclear



Wood



Coal



Electricity



Gas

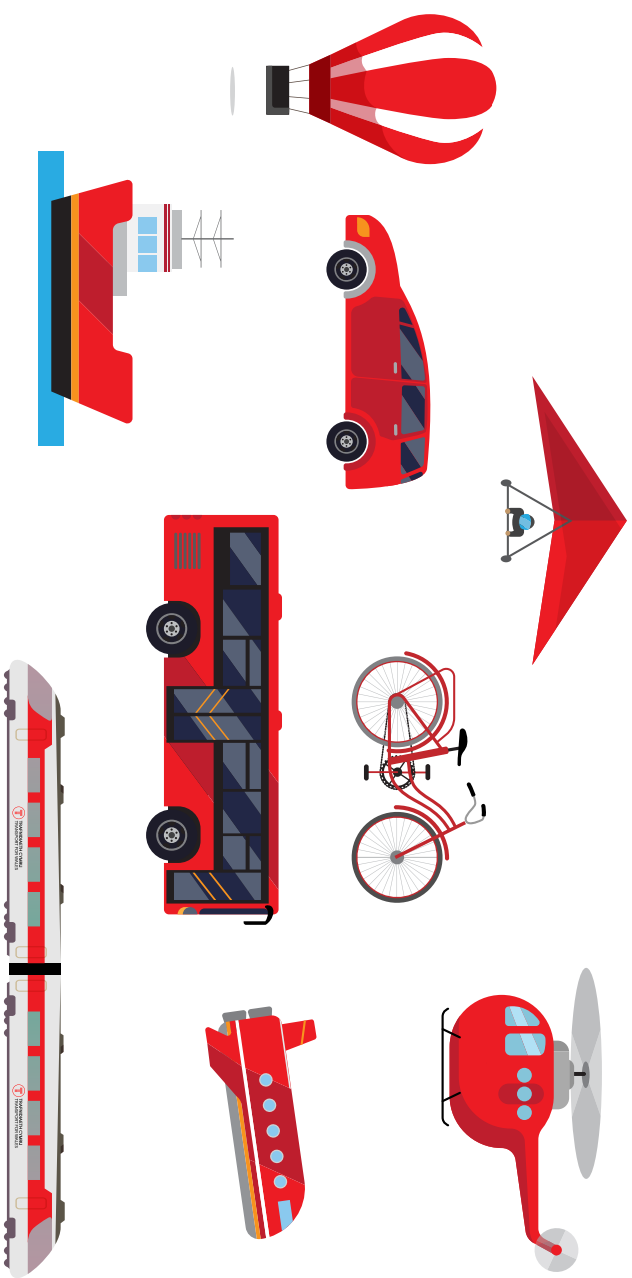
Can any of these be used to power transport?



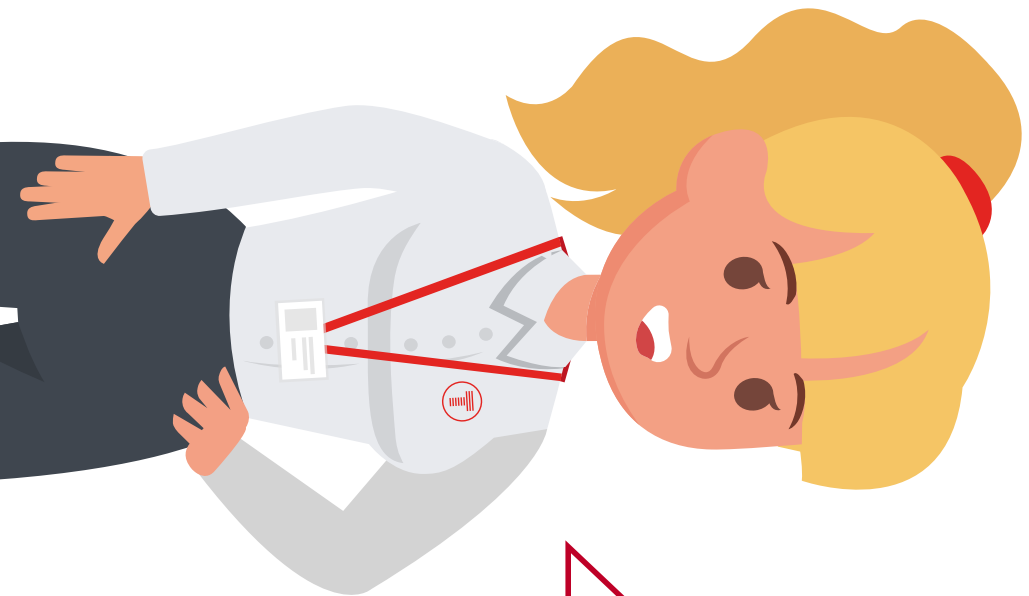
All transport uses fuel.

Even when you walk, you're using fuel: your body uses food to power it.

What sort of fuel do these forms of transport use?



Which ones are good for the environment and why?

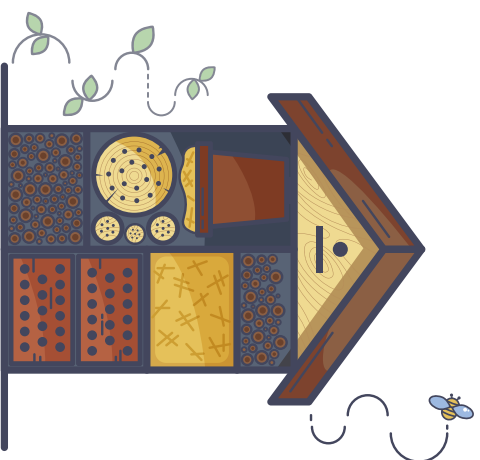


Look after the biodiversity on your doorstep.

Build a bug hotel

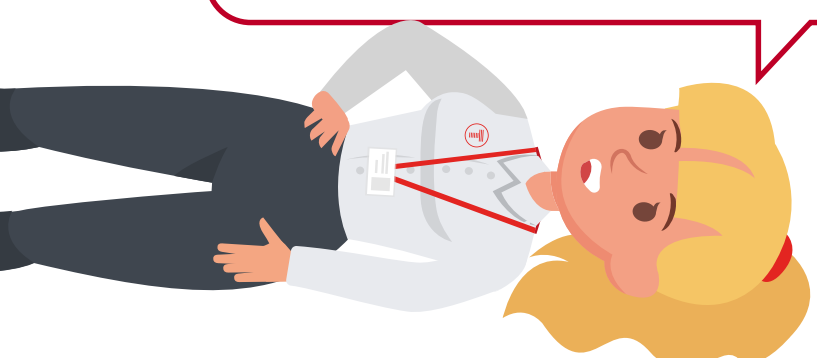
What you can use:

- | Natural materials | Recyclables |
|-------------------|-------------------|
| Leaves | Toilet paper roll |
| Pinecones | Scrap Paper |
| Bark & twigs | Bricks |
| Flowers | Palettes |
| Moss | Cardboard |
| Grass | Drainpipes |
| Stones | Lollypop Sticks |
| Shells | Plant Pots |



What type of bugs might move in?

Good question. That will depend on whether you live in a city, close to a city or in the countryside. But if we are just giving a loose summary of the types of critters you may encounter, here are some possibilities.

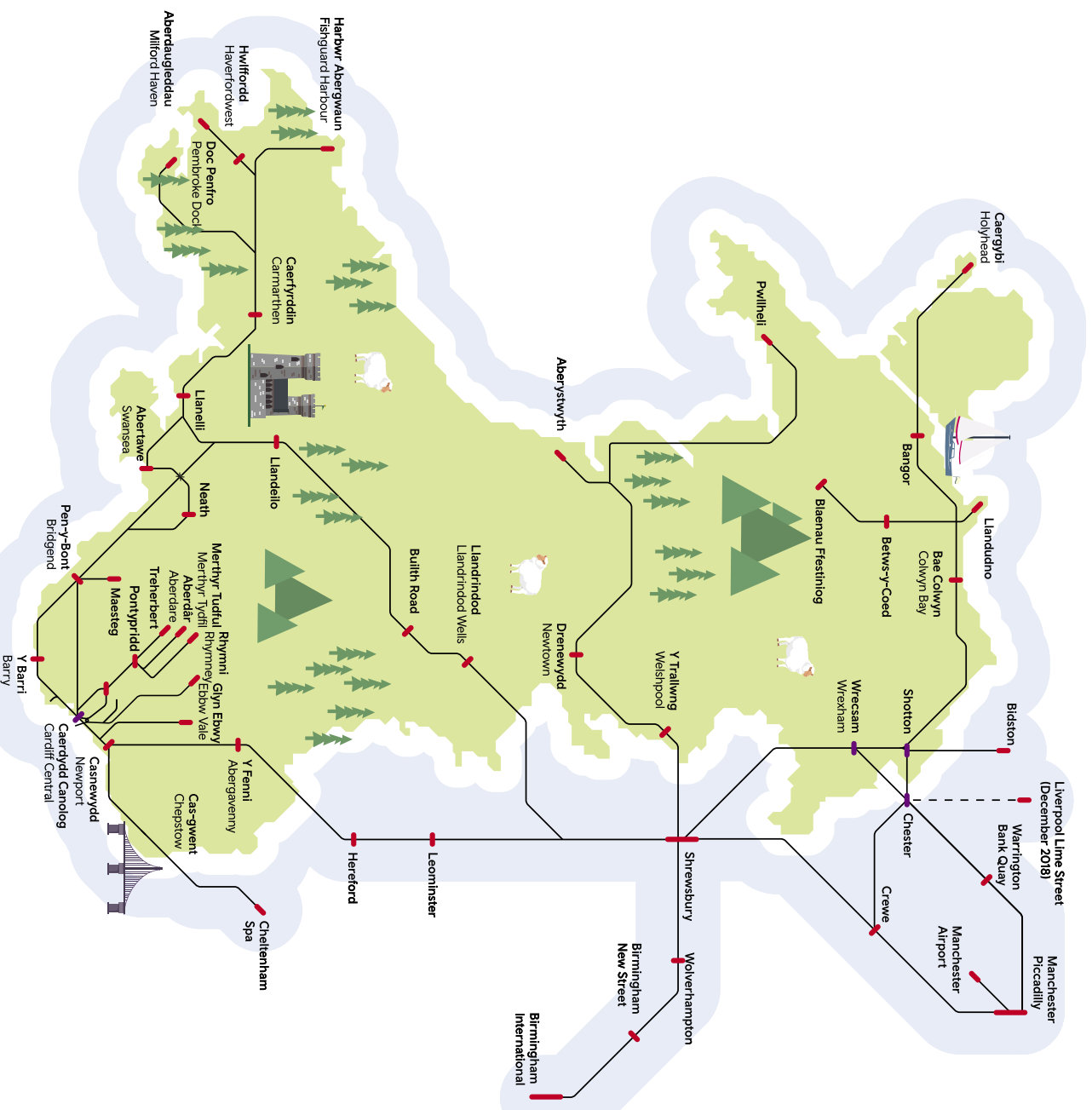
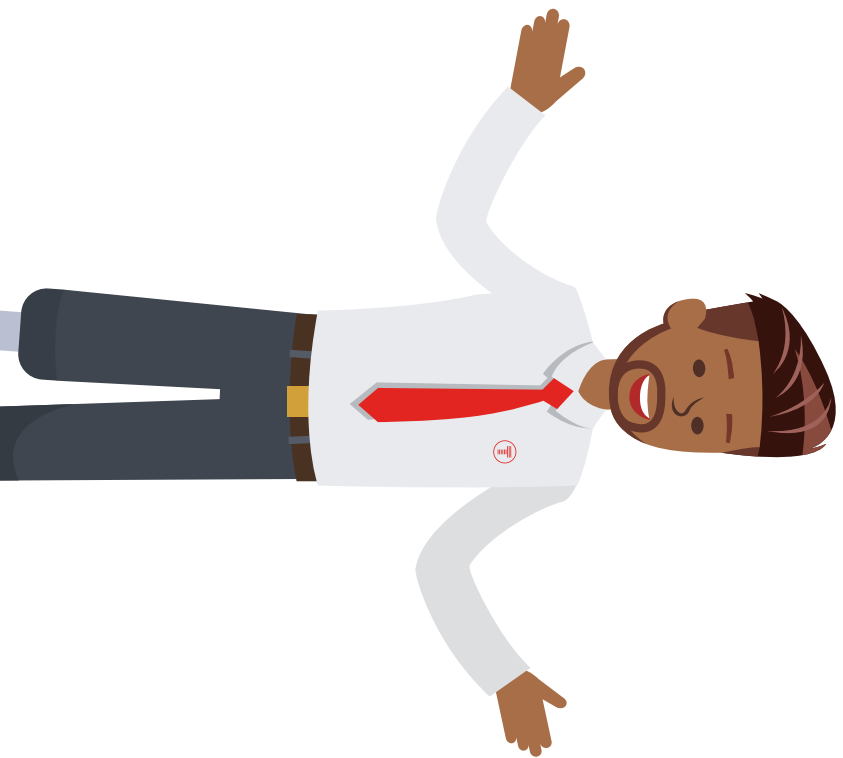


Lesson 2 - Activity 1

That's a lot of history in the
Wales and Borders rail network.

So far we've learnt about
Merthyr Tydfil and Swansea.

Can you find and mark
those places on the map?



Name: _____

Build and power your own train

It's time to get creative. Now you've seen some ways that engineers have found to power their trains, it's your turn.

Build a train using materials you have.



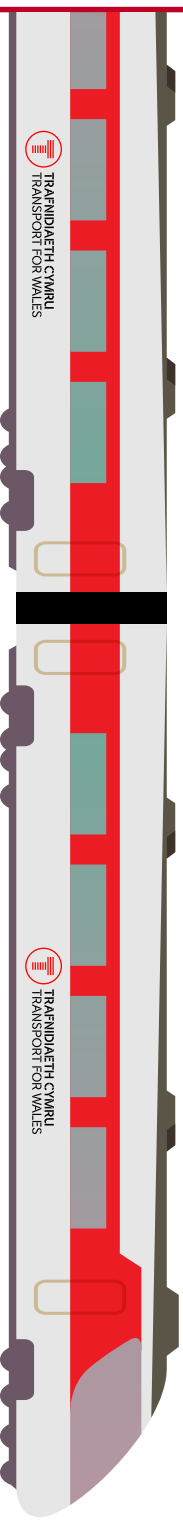
Top Tip

Your recycling bin might be a great place to find things to build with.

Once you've made your train, find as many ways as you can to make the train move without pushing it.

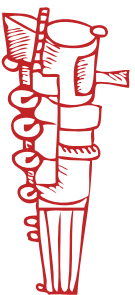
You might want to try:

- Blowing it
- Attaching a string and pulling it along
- Using a balloon
- Using a paperclip and magnet

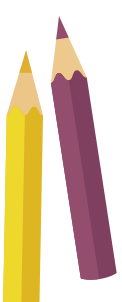


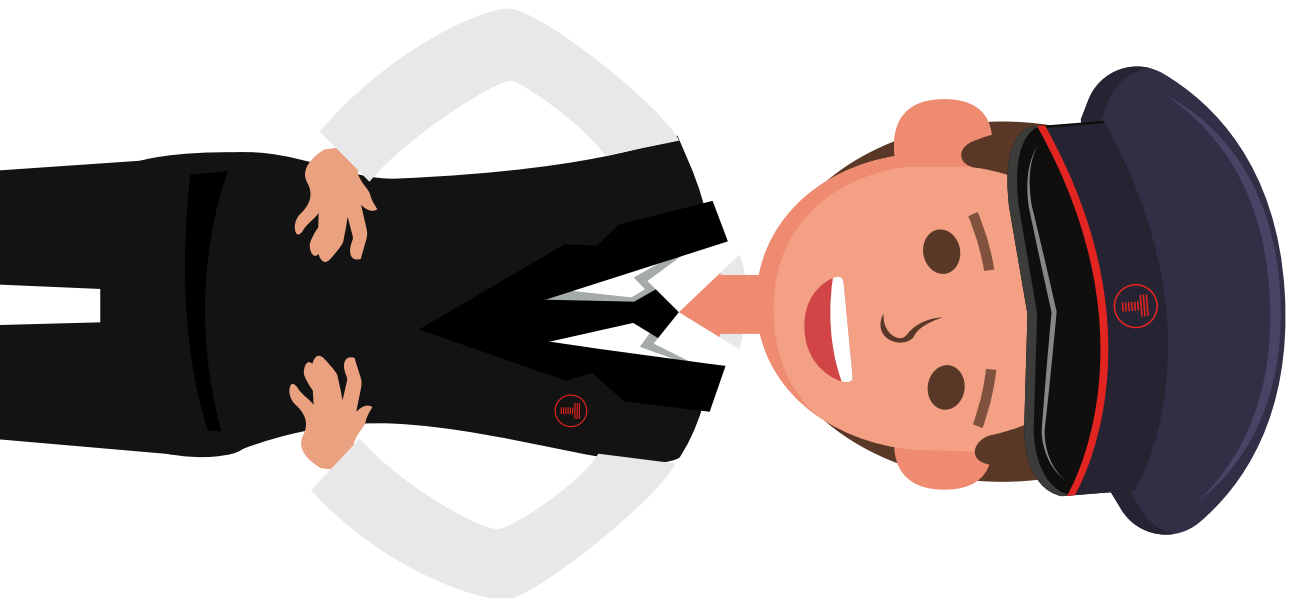
Design a train for the future

Your task is to design your dream train of the future.



How is it powered? What do the carriages look like?
Let your imagination run free.
Draw a picture and add some labels to explain your design.





Comprehension questions

Pick your favourite story.

Answer the following questions. Write down your answers.

1. Is this a myth, a legend or did this really happen?
2. What did you like about the story?
3. Is there a hero of the story?
4. Is there a villain?
5. Why do you think this story has been passed down and is still told today?

Bonus task: Draw a picture to illustrate the story.

Create your own mythical character!

Use these sentence starters to create your own mythical creature. Write down your answers.

1. My character is called...

.....

2. My character looks like this...

.....

3. Its special powers are...

.....

4. My character lives...

.....

5. My character likes to do...

.....

Words to describe my character are...
Choose from these:

- small big powerful
wicked helpful happy
noisy smelly fun
cheeky kind magical



Write your own myth or legend!

Use the 'Story Mountain' to create your own story.

There's lots of characters in folklore.
Could your story include any of these?

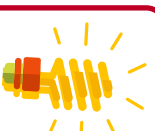
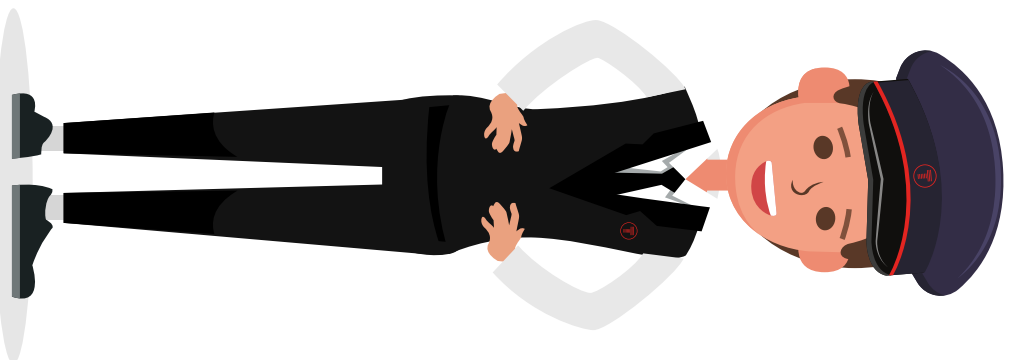
Coblynau - helpful spirits who assisted miners.

Morgens - mythical water spirits that are said to lure men into the water with their beauty and tales of treasures.

Y Tylwyth Teg - fairies that live in lakes and streams. There are lots of stories of them in Nantlle Valley, Snowdonia.

Y Gwyllygi - a frightening black dog, thought to have inspired the hounds of the Baskervilles.

Afanc - A Celtic water monster, that appears in lots of stories. They're said to feast upon people foolish enough to enter their waters.



Top Tip

Complete the 'create a mythical character' task first and use your character in your story!

3. Problem

But they...
(What's the problem or challenge they run into?)

4. Resolution

They had an idea...
(How do they get over it?)

5. Ending

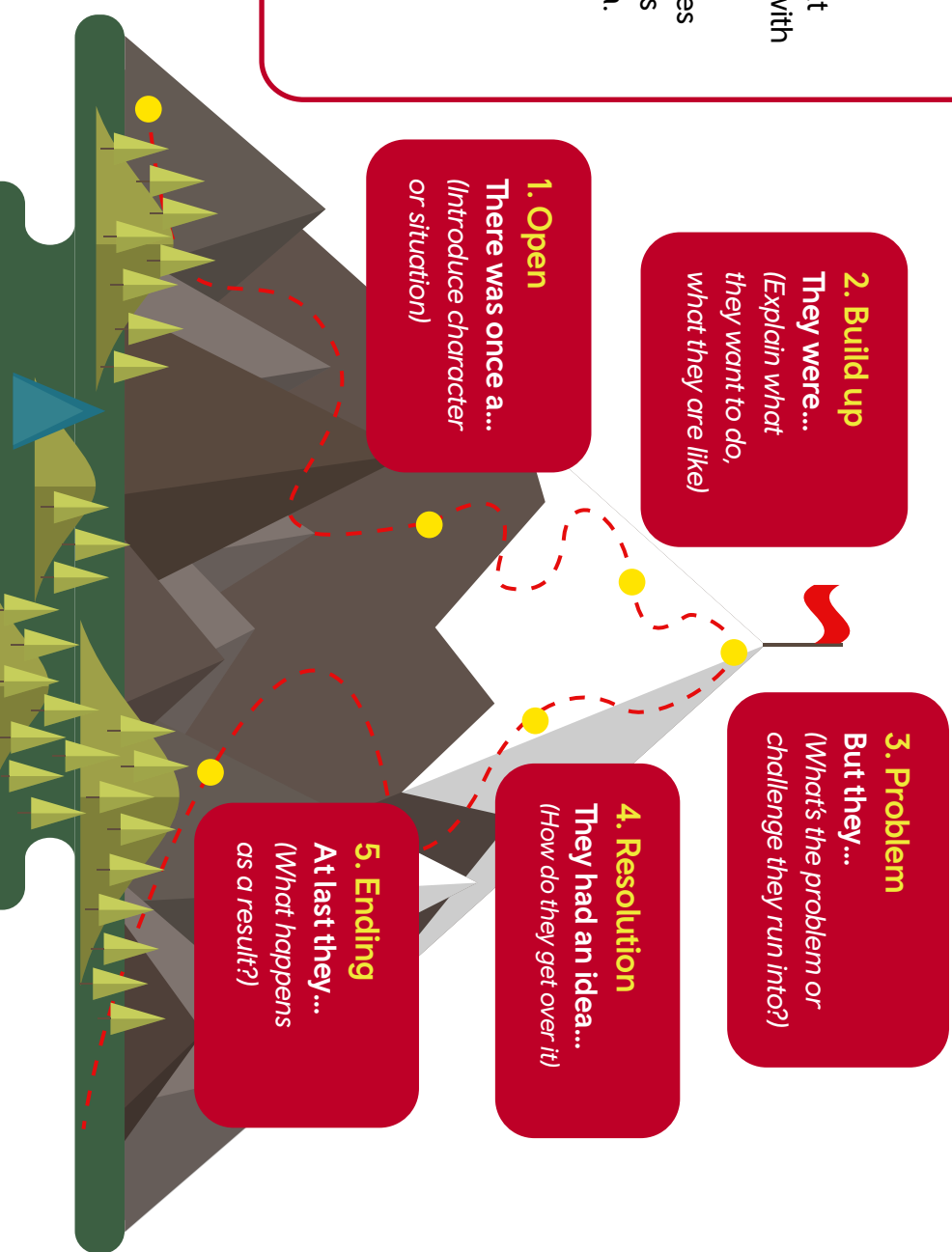
At last they...
(What happens as a result?)

1. Open

There was once a...
(Introduce character or situation)

2. Build up

They were...
(Explain what they want to do, what they are like)



Travelling to story locations

The stories we read are about real places in Wales and its borders.

1. Mark the locations of the stories on your map.

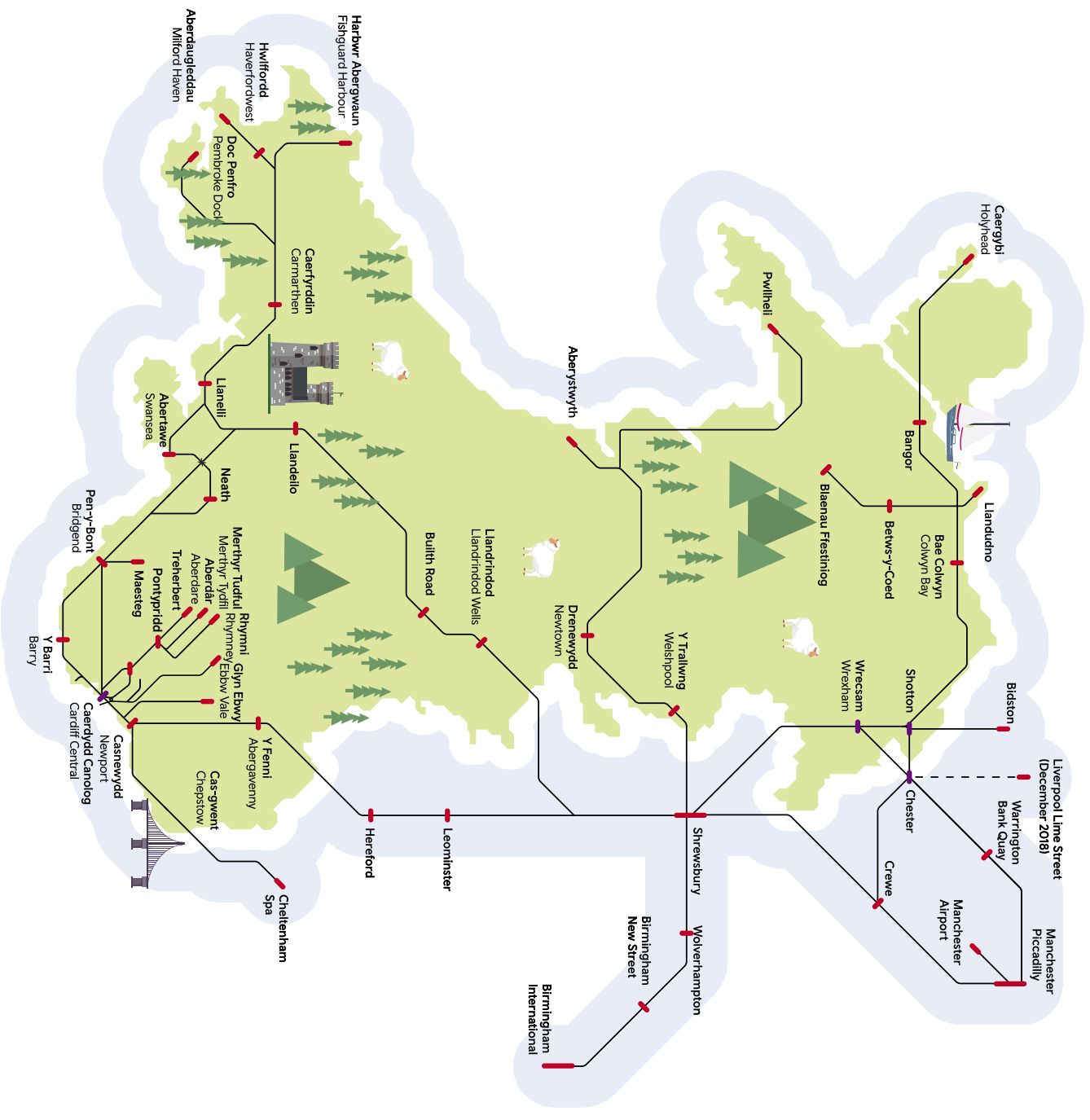
You might need to do some research to help.

2. Mark your own location on your map.

A teacher or someone at home might be able to help.

3. Can you see a route to get to each location from where you live?

If you're struggling, you can use www.traveline.info to plan a route.



Welsh Mountain Zoo, Colwyn Bay

Task 1: Research activity

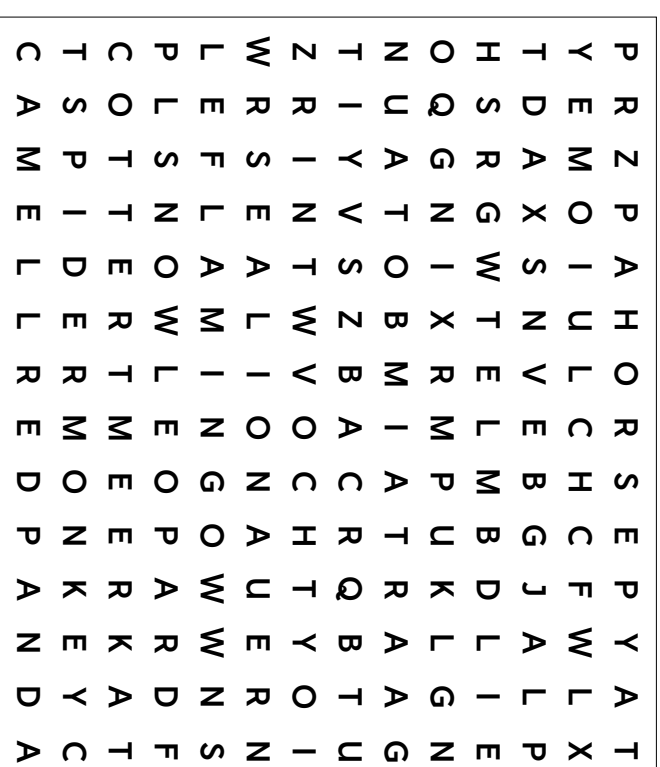
The zoo does a lot of conservation around the world.

Find out more about this from their website and extend the lines on your map of Wales to different places around the world.



Task 2: Quick activity

Try our wordsearch of zoo animals.



- ALLIGATOR CAMEL CAMEL FLAMINGO GIBBON HORSE LEMUR
- MACAW MARGAY MEERKAT OSTRICH OTTER
- PENGUIN PINE MARTEN PYTHON RED PANDA SNOW LEOPARD
- SEA LION RED SQUIRREL SPIDER MONKEY WALLABY

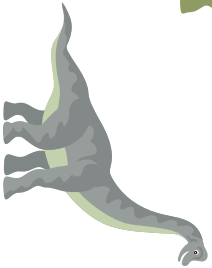
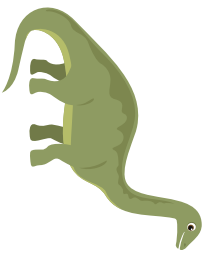
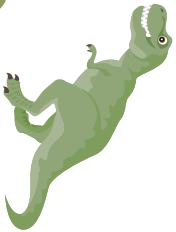
Dan-yr-Ogof Caves



There are dinosaurs at Dan-yr-ogof Caves.

1. How many dinosaurs can you name?

2. Draw a picture of your favourite dinosaur.



Pontcysyllte World Heritage Site



Construction activity

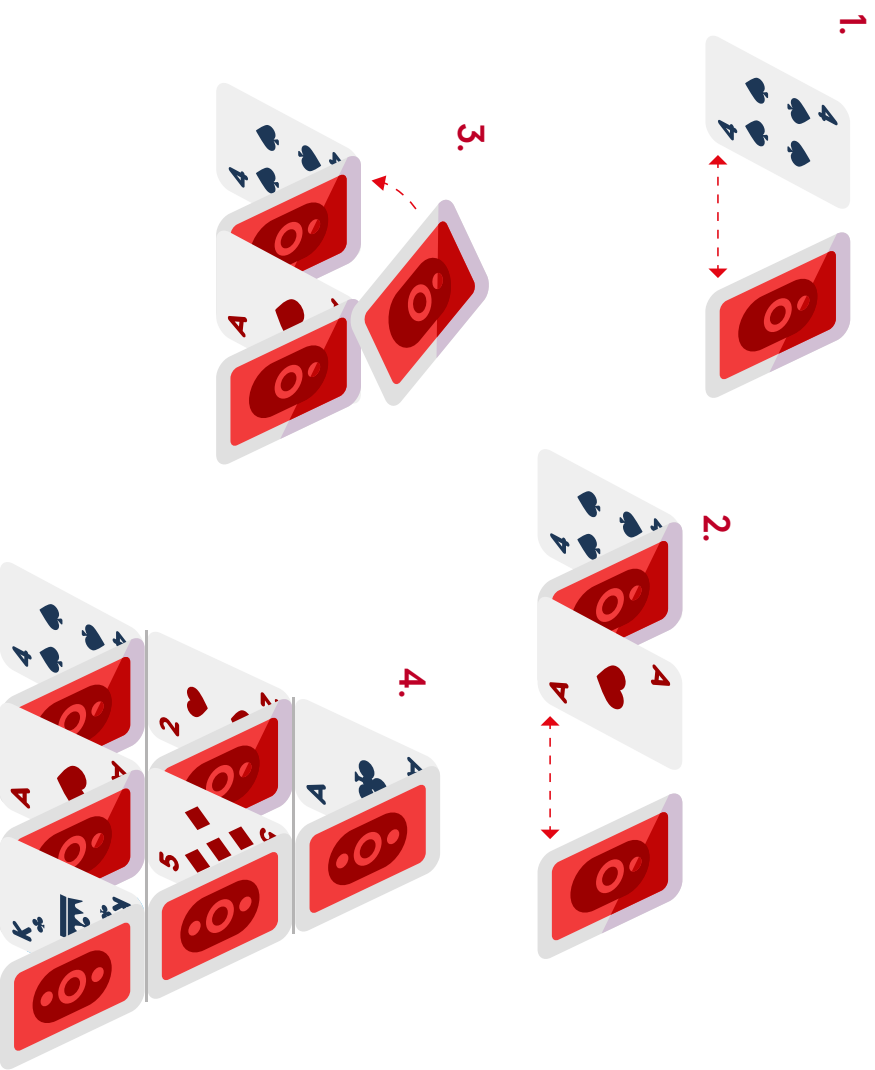
Could you build a bridge? Use a pack of cards to build your own aqueduct.

1. Take two cards, stand them up on a table and lean them against each other to make a triangle.
2. Then do the same again next to it. You should now have two triangles next to each other.
3. Lay two cards flat across the top. You have a bridge.

How long can you make it?

4. You can also add another level to your bridge by adding cards to the top.

Have fun seeing how high you can go!



Centre for Alternative Energy



Construction activity

Wind power is one of the things used at the Centre for Alternative Energy.

Can you build a windmill from paper?

What you need:

1. Thick paper cut into a square
2. Drawing pin
3. Cardboard straw or pencil with a rubber on the end.

Step 1: Cut out a square sheet of paper 20cm x 20cm.

If you want to make it more colourful decorate both sides using different colours or patterns.

Step 2: Make diagonal lines across them as below

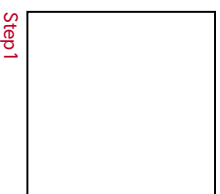
Step 3: Cut along diagonal lines leaving about 4cm from the centre.

Step 4: Make holes using your pin on all 4 corners and in the middle

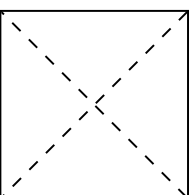
Step 5: Fold in the corners of the paper to the centre and place your drawing pin through all the holes.

Step 6: Pin into your cardboard straw or to the rubber on the end of your pencil.

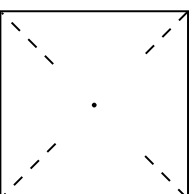
Step 7: Blow and watch your windmill spin round. See if you can catch some wind outside too.



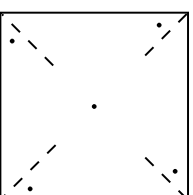
Step 1



Step 2



Step 3



Step 4

Wales Millennium Centre



Construction activity

Make a model
of the Wales
Millennium Centre.

Like the real building,
it should be made
from some materials
you find outside.

If you had to carve
some words into your
school building what
would you choose?



Name: _____

Learn more about a destination of your choice



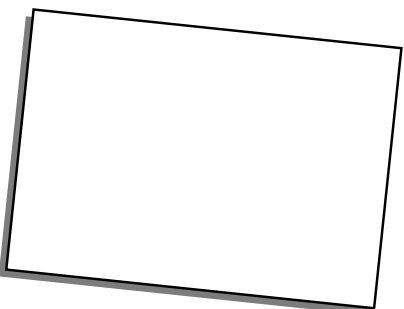
Do some independent research using the internet to find out a place. Find out at least three things that interest you about it. Got your information? On to the next task.



**Create a poster advertising
this place to your class.**



The poster should include
the three interesting things,
its location and cost of entry.



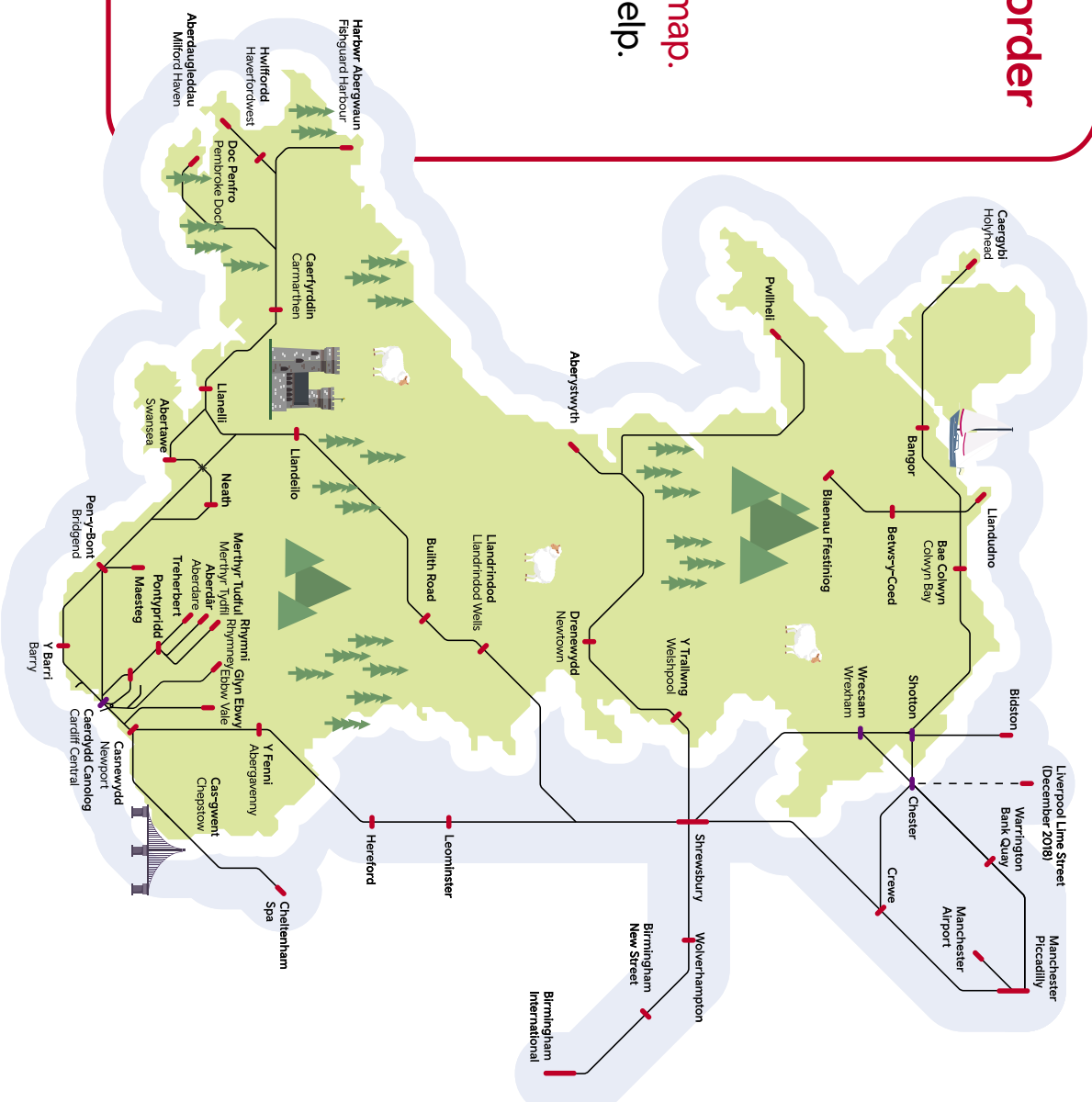
Visiting places in Wales and its border



Research task

We've visited the places on the magnificent train, but one day you may be able to visit them for real.

1. **Mark the locations of the places on your map.**
You might need to do some research to help.
2. **Mark your own location on your map.**
A teacher or someone at home might be able to help.
3. **Can you draw the route to get to each location from where you live?**
Use www.traveline.info to plan a route.



Lesson 5 - Activity 1

Stories can be really persuasive, especially when they help the reader understand a problem.

Think about your campaign topic. Is there a way you can turn it into a story? You've had some practise writing a short story. This time, write a story that shows why your topic is important.



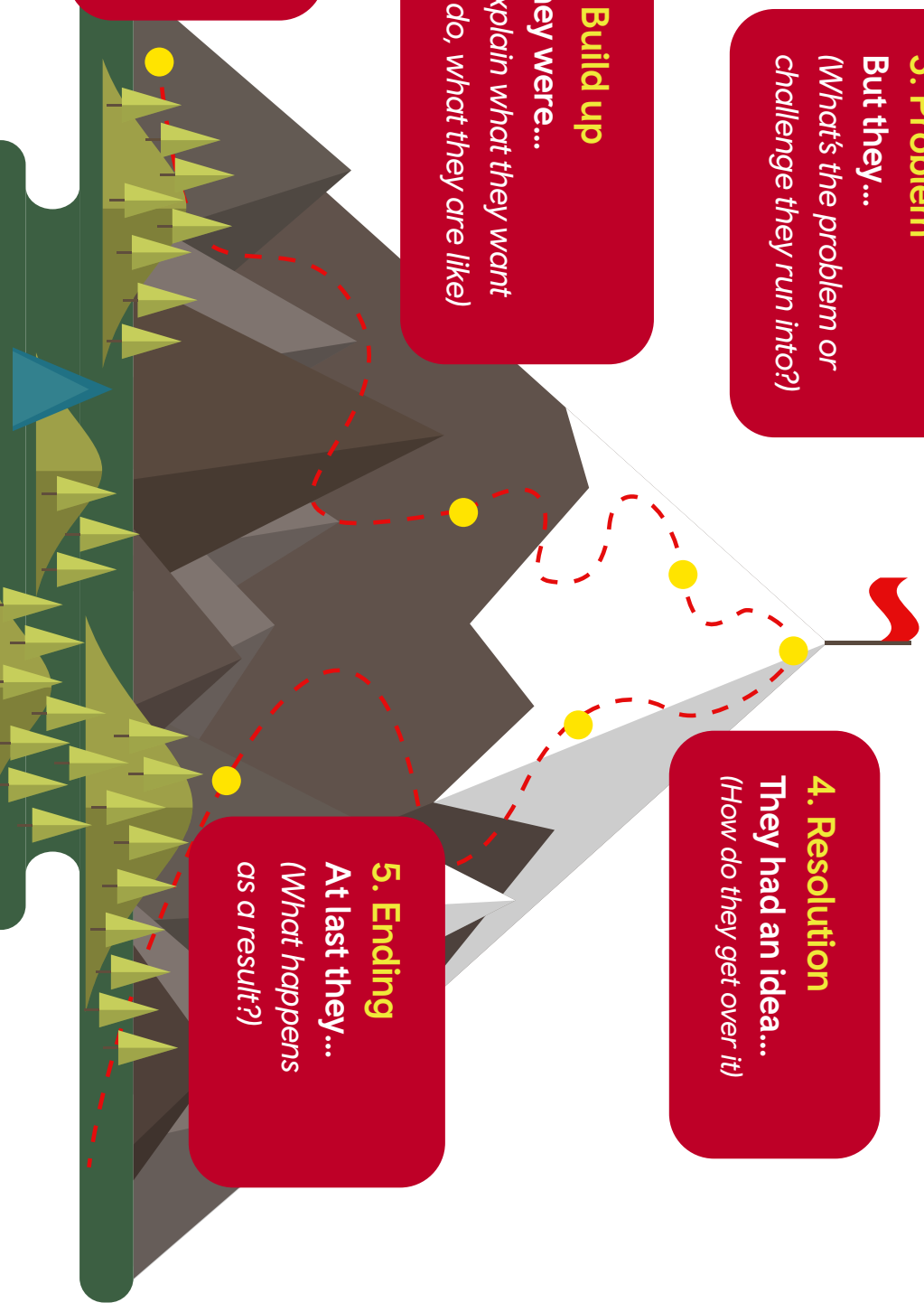
1. Open
There was once a...
(Introduce character or situation)

2. Build up
They were...
(Explain what they want to do, what they are like)

3. Problem
But they...
(What's the problem or challenge they run into?)

4. Resolution
They had an idea...
(How do they get over it?)

5. Ending
At last they...
(What happens as a result?)



Name: _____

Let's write a letter

Your letter is going to persuade someone to do what you're suggesting.

In your letter, make sure you include:

Your address

The date

Dear...

Write what you want to change

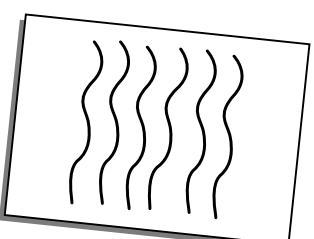
List three facts or examples that show why you are right

Yours sincerely... (this is where your name goes!)



Top Tip

A parent, guardian or teacher can help you identify who you might wish to write to.





Make a presentation

Let's spread the message further. Could you share what you've learnt with others at your school?

An impactful presentation will share some information and give the audience a call to action – this means tell them to do something!

Your presentation should have:

- At least one fact about the cause of climate change
- At least one fact about the consequences of climate change
- Your call to action. What would you like people to do about it?

You can use PowerPoint if it's available or you could plan a speech.

