

TEACHER NOTES

WHY IS THE CLWYDIAN RANGE AND DEE VALLEY A HUB FOR TRADE?

Learners first focus on Llangollen and its trade, past and present, before exploring how north Wales traded cattle with England historically using drovers. They find out about the Pontcysyllte Aqueduct and how it was built before designing, building and testing their own aqueduct. Learners explore what Wales exports to other countries before providing advice to the Welsh Government as to how we could improve trade exports.

CURRICULUM FOR WALES

Areas of Learning and Experience explored:

- Humanities
- Languages, Literacy and Communication
- Mathematics and Numeracy
- Science and Technology

Activity also incorporates aspects of cross-curricular skills outlined in the LNF and DCF.

RESOURCES

Internet enabled device and internet access.

Access to [Find out what every symbol means on an OS Explorer map - OS GetOutside](#).

Means of designing and constructing an aqueduct from recyclable materials, such as cardboard, plastic bottles, paper, string and any natural materials they find in the area plus scissors, metre rules, sports measuring tape, stopwatch.



DOING THE ACTIVITY

- Most tasks require learners to work in pairs or groups.
- Encourage learners to share their ideas, and through open questioning, explain and justify their ideas when possible. Focus questions have been suggested to guide learners through the tasks.
- Some tasks might be more effective if pairs or groups of learners have access to an internet enabled device.
- To access the scale in Google maps, click on 'View larger map'.
- When taking learners outdoors, it is essential that the [Countryside Code](#) is adhered to and any relevant risk assessments have been carried out with risks mitigated.

TASK 1

WHAT IS THE VALUE OF TRADE?

Explain to learners that the focus of this task is Llangollen and its trade. They will also look at how north Wales traded cattle with England.

Screen 3

Explain to learners that in the 19th Century, Llangollen was described as a market town, i.e. a centre for the exchange of different commodities.

In the first half of the 19th Century the principal industries were flannel manufacturing, tanning and brewing.

In the neighbourhood were mines of lead and iron-stone, quarries of slate and limestone but throughout the larger area the labouring class was chiefly dependent on agriculture. Ask learners to discuss the questions posed.

Focus questions

- What do you know about Llangollen? How do you know these things?
- What types of goods were made in Llangollen? Which of these goods could be sold to others?
- What other commodities were produced in the neighbourhood? Which of these do you think could be sold to others?
- Why do you think Llangollen was well placed to be a market town?

Screen 4

Ask learners to find Llangollen on the map and discuss the questions posed.

Focus questions

- Why is Llangollen in a good position to be a market town?
- What routes in and out of Llangollen could be used to transport goods? List as many as you can.
- What do you think are the main towns and cities where goods from Llangollen could be transported to?
- How do you think trade with other places has changed over the years? Why?

Screen 5

Explain to learners that Llangollen has a long history in trading.

Invite learners to look at the [Map - Coflein](#) and find Llangollen. The map shows heritage sites across Wales. Then, to discuss the questions posed.

Focus questions

- What heritage sites are in Llangollen? Have you been to any of these? When? What were they like?
- Which heritage sites could be linked to:
 - market trading
 - manufacturing goods - what goods did they manufacture?
- Looking in the area around Llangollen, what other sites show Llangollen's history of producing goods for trade?
- What evidence is there of trading with England or further afield? Why do you think that?

N.B. Learners might spot names of roads, e.g. Mill Street/Heol-y-Felin, Regent Street, Market Street, etc.

Screen 6

Ask learners to read the information onscreen about drovers driving cattle from Wales to England, view the map and discuss the questions posed.

Focus questions

- Why do you think tolls had to be paid at turnpikes?
- Why do you think cattle were shod before making the journey?
- How can you work out how long it would take to drive cattle from Llangollen to London? How many days would it take?

Screen 7

Further information about drover routes is given here.

Ask learners to use the map to follow the route on the map from Anglesey to Llangollen. Then, to discuss the questions posed.

Focus questions

- Which parts of the journey do you think would have been the most difficult? Why?
- Travelling at approximately 20 miles per day, where do you think the resting places would be? Why?
- Drovers' paths were approximately 20m across, with wide grass verges. Why do you think the paths were like this?
- Where do you think drovers and their cattle stayed overnight? Why?

Screen 8

Here an outline of drovers' costs to transport 300 cattle to London from Wales in 1856 is given. Ask learners to discuss the questions posed.

Focus questions

- What surprises you about these costs? Why?
- How can you work out the total cost of driving the cattle to London? What do you need to know first? What is the total cost?
- How much in total did it cost to drive 300 cattle to London in modern money?
- £1 in 1856 is worth about £140 in today's money. What's the total cost in today's money?

Screen 9

Explain to learners that cattle were commonly used as primitive money. We can note this from the origins of words in English and Welsh, as shown onscreen. Ask learners to discuss the questions posed.

Focus questions

- How can looking at common origins of words help us to understand the past?
- Thinking of word origins – where do you think these came from:
 - o penguin
 - o eirin gwlanog
 - o draenog?

Screens 10-11

Invite pairs of learners to generate good questions to try and work out what the image is showing them using the question starters. Then, to share their questions in a group and try and work out answers to them. It may be at this point some research is needed. However, it might be better to just continue with the task as they will find out more about the image as they do so.

Screen 12

Explain to learners that much of the trade in cattle from Wales to London was done on letters of credit. The trade promoted the development of banking systems in both London and Wales.

Towns and even villages had their own banks. Their banknotes depicted the area with cultural references.

Invite learners to search online for images of Welsh banknotes and store them digitally. Try to ensure the images are of both sides of each banknote.

Screen 13

Invite learners to look at the images of Welsh banknotes and discuss the questions posed.

Focus questions

- What is each banknote worth?
- What images and symbols are used on the notes?
- What cultural references are there on the notes?
- What colours are used?
- What is the font like? Why do you think these fonts were used?
- Who signed the banknotes? Why were they signed?

Screen 14

Inform learners that they are going to design their own local banknote. Ask them to discuss the questions posed to plan their approach.



Focus questions

- What symbols and/or images are you going to use? Why have you chosen these?
- How much is your banknote going to be worth? Why?
- What colours are you going to use? Why?
- How big is your banknote going to be? Why?
- Who is going to sign your banknote? Why have you chosen this person?
- What is your bank going to be called? Why?
- How could you make sure that no one could forge one of your banknotes?

Screen 15

Ask learners to design their own local banknote.

Screen 16

Invite learners to share their banknote with others, asking them to feedback on:

- How well your banknote links with the local area in terms of:
 - images
 - symbols
 - cultural references.
- How clear your banknote is in terms of its value and authenticity.

TASK 2

HOW CAN WE BUILD AN AQUEDUCT?

Explain to learners that they will explore the Pontcysyllte Aqueduct and how it was built before designing, building and testing their own aqueduct.

Screen 3

Show the video: [Pontcysyllte Aqueduct](#) (about two minutes). Ask learners to look at the map and discuss the questions posed.

Focus questions

- Why do you think the aqueduct was built?
- What does the aqueduct join with?
- Follow the canal's path, why would the canal be useful for trade?

Screen 4

Inform learners that they are going to find out more about building the Pontcysyllte aqueduct.

Ask them to access the webpage: [Pontcysyllte Aqueduct](#) and read about how the aqueduct was built.

Then, to watch the animation: [The Pontcysyllte Aqueduct, Trefor, Wrexham - Royal Commission Animation](#) (about 8 minutes). Ask learners to discuss the questions posed.

Focus questions

- What materials were used to build the aqueduct? Where were they from?
- How long did it take to build? Why do you think it took so long?
- How do you think the ground was prepared for the build – in the river and on land?
- Why was the building of the aqueduct such an outstanding achievement?

Screen 5

Invite learners to write a Tweet/X to announce the opening of the Pontcysyllte aqueduct. Remind them that they only have 280 characters.

Screen 6

Inform learners that they are going to build an aqueduct over a stream to mimic the Pontcysyllte aqueduct.

Tell them that there are two things to think about...

- how to make a sturdy bridge over a stream
- how to make sure the bridge is adapted to carry flowing water.

Let them know that they will use recyclable materials, such as cardboard, plastic bottles, paper, string and any natural materials they find in the area.

Screen 7

Learners will first need to make a site visit to see where they will build their aqueduct. Ask them to discuss the questions posed.

Focus questions

- What information will you need to collect on the site visit?
- What measurements will you need to take?
- How tall will your aqueduct be? Why?
- How will you ensure water flows across your aqueduct?
- What types of natural materials are there in the area that you could use?

Screen 8

Take learners outside to visit the site and gather information.

Screen 9

Ask groups of learners to design their aqueduct, as described onscreen.

Screen 10

Ask learners to prepare to go outside to build their aqueduct. Ask them to discuss the questions posed.

Focus questions

- What materials do you need to take with you? Why?
- What other equipment will you need? Why?
- How will you measure the rate of water flow? Why is this important?

N.B. *Once they have built and tested their aqueduct, remove all the materials and bring them back to school to recycle.*

Screen 11

Take learners outside to build and test their aqueduct.

Screen 12

Ask learners to look back at the diagrams they drew for their design of the aqueduct and discuss the questions posed.

Focus questions

- Which elements of the diagrams were the same as the completed aqueduct?
- Which elements of the diagrams were changed as you tried to build the aqueduct? Why did they change?

Then, to amend or redraw their diagrams to show the final design and how it worked.



TASK 3

WHAT DOES WALES EXPORT TO OTHER COUNTRIES?

Explain to learners that they will explore what Wales exports to other countries before providing advice to the Welsh Government as to how we could improve trade exports.

Screen 3

In groups, ask learners to interrogate the image.

Screen 4

Explain to learners that in the past, Airbus used the River Dee to transport wings from its Broughton factory to the final assembly line in Toulouse, France.

Ask learners to open the map and discuss the questions posed.

Focus questions

- What was the wings' route from Broughton to Toulouse? List the towns the wings passed through.
- How can you work out how far the wings travelled? How far is it from Broughton to Toulouse?
- Why do you think Airbus used the River Dee to transport the wings?

Screen 5

Show the video: [STUNNING EMIRATES A380 Take Off!](#) (nearly 4 minutes).

Data about the wings and their transport are given onscreen. Ask learners to discuss the questions posed.

Focus questions

- How many people do you think the A380 can carry? How can you estimate this from the video?
- How can you estimate the area of a wing? What is the estimated area of a wing? What units should you use? Why?
- Why do you think the wings were built and transported in jigs? List as many reasons as you can.

Screen 6

Show the video: [River Dee -World-beating Airbus A380 Wings are on their way!](#) (just over a minute).

Ask learners to read the onscreen text about the Afon Dyfrdwy barge and answer the questions posed.

Focus questions

- Why do you think there are issues with the river depth? How could the design of the barge take this depth into account?
- How do you think the barge could disturb wildlife in the river? Why is this a problem?
- How does the design of the barge try to minimise any disturbance to wildlife?

Screen 7

Explain to learners that there are always environmental concerns with aircraft projects. The screen gives claims made by Airbus about its A380.

Ask learners to consider the ideas onscreen about Airbus's claims to decide who they agree with and why.

Screen 8

Explain to learners that the Airbus A380 has had orders from 14 airlines, shown onscreen.

Also, that the production of the last aircraft finished in 2021 and Airbus will not recover its investment, with development costs of €25 billion (\$29.7 billion). Ask learners to discuss the questions posed.

Focus questions

- Have you seen an Airbus 380? When?
- Have you flown on an Airbus 380? Where did you fly to and from?
- Where do you think each of these airline companies are based? Why?
- How can you work out how much each aircraft cost to make in \$? What is the value of each aircraft in \$?
- How can you find out how much each aircraft cost to make in £? What is the value of each aircraft in £?
- Why do you think Airbus will not recover its investment?

Screen 9

Explain to learners that Wales exports many products. An excerpt from Welsh international goods trade: April 2023 to March 2024 (headline data), Welsh Government 2024, is given onscreen.

Ask learners to read the text and discuss the questions posed.



Focus questions

- What are the categories of exports mentioned? Where do you think aeroplane wings fit in these categories? Why?
- How could you show these figures more clearly? Why would this help you make sense of the figures?
- How could you use Excel to show these figures more clearly?

Then, to extract the relevant figures from the text.

Screen 10

Ask learners to use Excel to show the data extracted from Screen 9. Instructions are given onscreen.

Screen 11

Invite learners to access the data on Welsh exports from 2015 to 2023 and download the data onto their device. Then, to use Excel functions to sort and chart the data to help them to discuss the questions posed.

Focus questions

- What trends can you see in the data?
- Which categories of exports are consistently of higher values?
- Which are the highest valued categories? Does this surprise you? Why?
- Why do you think there was a dip in exports in 2020?
- If you were First Minister of Wales, would you be happy with the data? Why? What could you do to improve the data?

Screen 12

Tell learners they are going to propose advice to the Welsh Government as to how to improve trade exports. Ask them to think back to the data and their ideas to discuss the questions posed.

Focus questions

- In which areas do you think Wales could improve its trade exports? Why?
- What could be done in each of these areas to improve trade? How would these ideas improve trade? (You may need to do some research to investigate your selected areas.)



Screen 13

Ask learners to select three of their ideas to improve export trade and to draft advice they could give to the Welsh Government on these three ideas, using data to back their advice where possible.

Then, to write a brief formal paragraph on each one to show how implementing their advice should improve export trade.

Screen 14

Explain to learners that you want them to use the reflection triangle to consider how they produced advice for the Welsh Government on export trade.

Invite learners to drag and drop the terms provided to show their thoughts and to consider what other strategies they used and to record their ideas.