

TEACHER NOTES

HOW ARE DIFFERENT AREAS REGENERATED?

Learners explore how the land their school is built on and the school itself has changed over the years. They survey the school grounds to look for changes and carry out research, storing their information digitally. The information gathered is used to write a social media post. Then, learners consider the local area and any green changes that have been made. They develop ideas around Wales' mining heritage and its history, especially coal mining in order to consider how these areas have been restored. Learners explore the meaning of regeneration and consider different types of it, applying this to regeneration of the school grounds. They then survey the local area again to identify spaces that could be regenerated. Learners action plan to regenerate a local space and produce a presentation of their action plans to an invited audience of local residents, business owners, local councillors, local environmental groups, etc. to request assistance.

CURRICULUM FOR WALES

Areas of Learning and Experience explored:

- Health and Well-being
- 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.

Materials to build a bee hotel – empty 2 litre drinks bottle, bamboo or other hollow stems (enough to fill bottle – roughly 15cm), one metre of string, scissors, secateurs or small hacksaw.

Measuring equipment, e.g. pedometers, sports measuring tapes.

Soil testing equipment, if required.

Means of taking photos or videos, e.g. tablets, smart phones.



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.
- 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

HOW HAS OUR LOCAL ENVIRONMENT CHANGED?

Explain to learners that this task should help them to explore how the land their school is built on has changed over the years.

Screen 3

The first screen encourages learners to consider what the Earth would be like with no humans and what part they can play to make the world a better place. Show learners the video [What If All Humans Suddenly Disappeared From The Earth?](#) (about 4 minutes and 30 seconds) and ask them to think about the questions posed.

Focus questions

- What surprised you about the video? Why?
- What did you learn from the video?
- How would nature be impacted if humans were removed from the Earth?
- What changes did you see? What caused these changes?
- Do you think these are good changes? Why?
- Thinking of where you live, what are the first things that would happen if there were no humans? Why?

You could ask learners to share their ideas with the class.

Screen 4

Explain to learners that our existence on Earth is a delicate balance between what we want and need and what the Earth is able to provide for us without becoming too damaged. Also, that any changes we make will have an impact on nature and the environment.

Screen 5

Explain to learners that they are going to find out what the land the school is on was like before the school was built and how the school might have changed in recent years. After gathering information, they will be challenged to write a post for school social media.

Screen 6

Invite groups of learners to carry out research to find out what the land the school is built on was like before the school existed. You could provide support for learners by suggesting things they could search for, e.g.

- old photographs and maps
- images or planning details from the local county council.

Learners could be encouraged to talk to teachers, family and friends and older members of the community. People living near the school might also be a likely source of information.

Ask learners to store the information they gather digitally.

Screens 7-8

Explain to learners that you will take them outside into the school grounds to look for clues as to whether the school has changed over time. Ask them to think about the questions posed before you take them out and to use them as a basis for their exploring when outside.

Focus questions

- Can you find any dates on the school building? Where? What is the date?
- Do some parts of the building look newer than other parts? How can you tell?
- Do you think the school grounds have ever changed? Why?
- Is there evidence of...
 - o walls being knocked down
 - o doors or windows being bricked up
 - o fences moved
 - o trees being removed or planted
 - o areas being made greener?
- Why do you think these changes might have been made?

Learners can add this information to their digital evidence.

Screen 9

After learners have gathered information from the school grounds, you now want them to consider how else they could gather evidence. Using the questions posed, invite them to think about and discuss how else they could gather information about how the school has changed in recent years.

Focus questions

- Where could you look for information? Why do you think that?
- Who could you ask about these changes? Why might they know?
- Where might you find old school photographs? Why do you think that?
- Could there be aerial photographs? How do you know?

This information can also be added to their digital evidence.

Screen 10

Learners have built up a digital base of information about changes to the school and the land on which it is built. Before writing their post for the school social media, you want them to think about how best to do this and to consider the questions posed.

Focus questions

- What would be the best way to present the information? Why do you think that?
- How could you make use of ICT in your post?
- How will you ensure you have permission to include images?
- How will you reference sources in your post? Why like this?
- How will you edit images digitally if required? Why like this?
- How could you create and share hyperlinks within the post?

Then, ask them to write their posts and put them on the school's social media account.

Screen 11

Explain to learners that you want them to explore what green changes have happened locally. Invite them to ask family and close neighbours how the area around where they live has changed during their lifetime. Ask learners to identify green spaces and to find out about what was there before by encouraging people they interview, to share their opinions about...

- Why these changes might have happened.
- Whether the changes improved the area.
- How the changes affected the local people.
- How the local people responded to the changes.
- Who was responsible for the changes.

Screen 12

Ask learners to choose one of the changes they have been told about and to take photographs of what it looks like currently or alternatively, to find digital images on the internet. Online research might also enable them to find old photographs showing what this place looked like prior to the changes. Try to ensure that each group or pair research a different green change. Then, ask learners to create their digital presentation.

Screens 13-14

Invite learners show their chosen change to the class as a digital presentation. They might encourage peers to share their opinions about...

- Why these changes might have happened.
- Whether the changes improved the area.
- How the changes might have affected the local people.

TASK 2

HOW HAS WALES CHANGED?

Explain to learners that this task will support their understanding of the history and heritage.

Screen 3

Ask groups of learners to look at the photograph and to answer the questions in this order:

- What can you observe?
- What can you infer?
- What else do you want to know?
- How will you find out?

Screens 4-5

Explain to learners about Wales having a rich history of mining industries with coal, slate, copper, lead, zinc, iron, silver, tin, limestone, gold and arsenic having all been mined in the past. Wales was once the world's leading coal producer and coal was a vitally important part of the Welsh economy.

Invite learners to use the link to access a map showing the historic locations of coal mines in [Wales Coal Mines](#) - Wales and to discuss the questions posed.

Focus questions

- What do you notice about the map?
- What does the map tell you? Why do you think that?
- What conclusions can you draw from the map? How do you know?
- What would a map of coal mines in Wales look like today? Why do you think that?

Screen 6

Explain to learners that a by-product of coal mining is a stone waste called slag, which is piled up as a coal tip. Invite them to look at the photograph of a huge coal tip in mid-Wales and to consider the questions posed.

Focus questions

- What could be done with this coal tip? Why?
- What could be built on it? Why do you think that?
- Why might building on it be a problem? Why do you think that?
- What changes could be made to benefit the environment? How would this be a benefit?
- What changes would you want if you lived locally? Why?

You could ask learners to share their ideas with the class.

Screen 7

Explain to learners that coal tips are notoriously dangerous and provide them with brief details about the catastrophic collapse of a coal tip on the 21st of October 1966 in Aberfan in South Wales. The tip had been created on a mountain slope and overlaid a natural spring. Heavy rain led to a build-up of water within the tip, causing it to suddenly slide downhill as slurry, killing 116 children and 28 adults as it engulfed Pantglas Junior School and a row of houses.

Screen 8

Explain to learners that the Welsh Government has published a safety survey of all the remaining coal tips in Wales. Invite them to access the website: [Coal tip safety](#) and to read the information about the survey.

Ask them to access an interactive map at [Find disused coal tips](#) and to locate the school and work out the nearest category C and D coal tips.

Screen 9

Explain to learners that coal can be mined or taken directly from the ground in opencast mining. Invite them to watch the drone footage of Ffos-y-Fran opencast mine, near Merthyr Tydfil and to consider the questions posed. [Ffos-Y-Fran Opencast Mine - Merthyr Tydfil](#) (3 minutes and 15 seconds).

Focus questions

- What do you think was here before the area was mined? Why do you think that?
- What effects has this mine had on the environment? What makes you think that?
- How might the plants and animals have been affected? How do you know?
- How might the lives of people living in this area have changed? Why do you think that?

You could ask learners to share their ideas with the class.

Screen 10

Explain to learners that Ffos-y-Fran was the last opencast mine in Wales and closed in 2023. When these mines are closed the site is usually restored. Ask them to discuss the questions posed.

Focus questions

- Do you think it is important to restore sites such as this? Why?
- What would you do to restore this site? Why?
- How could you ensure plants and animals would flourish? Why would that work?
- What do you think local people might want on the site? Why do you think that?

You could ask learners to share their ideas with the class.

Screen 11

The International Council on Mining and Metals promotes sustainable mining. Invite learners to watch the [video](#) and discuss the questions posed.

Focus questions

- Who decides what to do with land that has been destroyed by mining?
- Who pays for the restoration of the land?
- What sorts of ideas for restoration are given in the video? Which ideas might be good to restore the Ffos-y-Fran site? Why?

You could ask learners to share their ideas with the class.

TASK 3

WHAT IS REGENERATION?

In this task, learners explore the meaning of regeneration and consider different types of it.

Screens 3-4

Explain to learners that you want them to look at the photograph and consider the past, present and future of what they can see. Invite them to consider the questions posed and to use their ideas to fill in the table.

Focus questions

PAST

- What do you think this was once? Why?
- What clues are there to tell you about its past?
- What do you think has happened? Why?
- Why do you think these things have happened?

PRESENT

- What do you see?
- Who do you think is responsible for this place? How do you know?
- Why do you think they haven't done something about it?

FUTURE

- What could be done to improve this place? Why would that improve it?

Screen 5

Explain to learners that there are many spaces around us that are rarely or no longer used and that these are often an eyesore and many are potentially dangerous. Invite learners to look at the photograph and to think about and discuss the questions posed.

Focus questions

- What do you think has happened here?
- How might this be dangerous?
- What ideas do you have about improving this space?
- If you were to improve this space, what order would you do it in? Why?
- How might you check that the environment was suitable for local plants and animals?

Screens 6-7

Explain to learners that you want them to consider what the word 'regeneration' means to them. In groups, invite them to think of synonyms for 'regeneration' and to record their ideas in the box on screen. Show learners the seven synonyms provided (revive, rejuvenate, renaissance, restore, rebirth, redevelop, renew) and ask them if any of their synonyms are shown. Use this as an opportunity to engage learners in a discussion about the meaning of regeneration in different contexts.

Screen 8

Explain to learners that they will now consider natural regeneration. Invite them to look at the image and to discuss the questions posed.

Focus questions

- What do you see in the image?
- Is this place real? Why do you think that?
- What do you think the image is trying to tell us? How do you know?

Screen 9

Explain to learners that the UK needs more trees and that woodland cover needs to increase from 13% to 19% by 2050 to reach our national carbon net zero commitment. Despite planting millions of native trees yearly, allowing nature to take its course is also an effective and efficient method of increasing ground cover. Natural regeneration is the process by which trees, shrubs and annual plants self-seed and spread. Given the right conditions, most plants are very good at it. Invite learners to discuss the questions posed with a partner.

Focus questions

Why do you think that...

- the Climate Change Committee has said that woodland cover in the UK must increase
- our national carbon net zero goal is important
- trees provide ground cover
- ground cover helps other plants and animals
- trees are good at natural regeneration?

Screen 10

Ask learners to watch the video that shows natural regeneration.

Screen 11

Explain to learners that assisted natural regeneration is when plants are helped to provide more ground cover. This is usually done by local people who eliminate barriers and threats to plants' growth, using their knowledge of the land and ancestral traditions.

Assisted natural regeneration in Wales includes the restoration of ancient temperate rainforests at Bryn Ifan, Gwynedd. The North Wales Wildlife Trust will plant 40 hectares of rainforest. It will use native planting and assist natural regeneration. While some areas will be dedicated to nature-friendly farming, conservationists will also improve nearby wetlands to help the marsh fritillary butterfly. Tree species will include oak, birch and alder, and the area will be managed by conservation grazing.

Screen 12

Explain to learners that they are going to be assisting natural regeneration in the school grounds. When you take them outside to survey and decide where needs to be regenerated, they will need to consider the questions posed.

Focus questions

- What plants do you see growing? How do you know what they are?
- What threats are there to their growth? Why do you think that?
- How could you assist plants to grow and thrive in the area? Why would these ideas help plants?
- Where in the school grounds could more plants grow well? Why do you think that?
- What effect might more plants have on insect populations? How do you know?
- What effect might more plants have on other animal populations? How do you know?
- What barriers are there to prevent further plant growth? What could you do to remove these barriers?

Screen 13

Take learners out into the school grounds. Ask them to identify areas where they might be able to assist natural regeneration by helping plants to grow.



Screen 14

Tell learners that they will consider how else they can help. Explain to them about bee hotels and how they can be made to provide nesting sites for solitary bees. These bees are important for pollination, which has a positive effect on plant growth.

Before they go outside ask learners to consider the questions posed and also to consider them whilst outside.

Focus questions

- Should the bee hotel be in the shade? Why?
- Should the bee hotel be close to the school building or the border of the school grounds? Why do you think that?
- Where is the best place for the bee hotel? Why do you think that?

Screen 15

Take learners outside into the school grounds and ask them to decide where they could locate a bee hotel and to discuss the questions posed.

Screen 16

Invite them to use the link and follow the instructions to make a bee hotel.

[Make your own bee hotel](#)

Ask learners to place their bee hotel in the area selected and observe in early spring and summer to check whether bees are using the hotel.

TASK 4

WHAT NEEDS REGENERATING IN OUR LOCAL AREA?

Explain to learners that they will survey the local area to identify spaces that could be regenerated. Then, produce a presentation of their action plans to an invited audience of local residents, business owners, local councillors, local environmental groups, etc. You could ask learners to use digital means for storing the data and information collected, as in Task 1.

Screen 3

Explain to learners that you want them to explore the local area and identify and list spaces that could be regenerated, taking photos of each one and noting where they are. Ask them to discuss the questions posed.

Focus questions

- What type of space will you be looking for?
- How will you know when you see a space that could be regenerated?

Screen 4

Ask learners to review their list of spaces that are possibilities for a regeneration project and to consider.

Focus questions

- What ideas do you have for improving these spaces?
- Which of these do you think would make the best regeneration project? Why?

Ask learners to choose one of the spaces as the focus for their regeneration project.

Screen 5

Invite learners to consider their choice for a regeneration project and to locate this space on the map provided. Ask them to identify people/buildings/businesses that may be affected by their project and to discuss the questions posed.

Focus questions

- What could be done with this space? Why do you think that?
- Why would you make these changes? Why would they be an improvement?
- What would be the advantages to people/buildings/businesses? Why?
- Would there be any disadvantages to people/buildings/businesses? Why?
- Would the changes you make be sustainable? Why do you think that?
- What would be the barriers to these changes? How could you overcome these?

Screens 6-7

Explain to learners that you want them to consider the positives, minuses and interesting points of regenerating the space. Invite learners to type their ideas into the relevant section of the PMI diagram.

Ask learners to look at their minus ideas and discuss with their group the questions posed.

Focus questions

- How can each minus idea be overcome? What would we need to do?

Screen 8

Explain to learners that they are going to create an action plan for their regeneration project. However, before starting there are many things to consider. Invite them to discuss with their group the questions posed.

Focus questions

- How can we decide which changes to make?
- How can we find out what local people and businesses think?
- How will the project affect the environment?
- What expert advice can we find?
- What resources will we need? Why?
- Who do we need permission from?
- What research can we make use of?
- How long will the project take? Why?
- How can we monitor and evaluate the impact of the changes we make?

Screen 9

Remind learners that they have explored ideas about how they might develop and improve a space for a regeneration project. Explain to them that they will revisit the project site to gather more information to help them decide how to make improvements. Ask them to consider the questions posed.

Focus questions

- What photographs could you take to help you plan? Why would these help?
- What measurements could you take? Why? How will you do these?
- How might you decide what plants to grow? Could you, for example...
 - o test the soil
 - o identify food chains/webs
 - o carry out research
 - o find out what grows well nearby?
- What other information might be useful to collect? Why?

Screen 10

Take the learners back to the site of their regeneration project and invite them to gather more information to help them decide how they will make improvements.

Screen 11

Explain to groups of learners that you want them to review all the information they have gathered about the site of their regeneration project. Each member of each group should use sticky notes to record the changes and improvements they would like to make to the space.

Invite them to storyboard development ideas, following the instructions provided:

- collect the sticky notes and remove duplicates
- place the notes on a blank wall
- move the notes around to find the best order for your development
- agree the order and make a record of your storyboard.

Ask learners to consider the questions posed.

Focus questions

- What should you do first in the development process? Why do you think that?
- What is the best order for your changes? How do you know that?
- What will be the final change you will make? Why?
- What will you do if you don't agree on the order? Is this fair? Why?

Screen 12

Ask learners to review their storyboard to consider how their ideas could help the local environment by discussing the questions posed.

Focus questions

- How will your regeneration project affect the local area?
- What effect will it have on people? Why?
- What effect will it have on businesses? Why?
- What plants and animals are there in this area? How will these be affected? Why do you think that?



Screen 13

In order to find out local opinions about their ideas, ask learners to create a questionnaire to find out how local residents and businesses feel about their proposed regeneration. To assist their thinking, invite them to discuss the questions posed.

Focus questions

- What format will you use for your questionnaire? Why?
- Will it be hard copy or digital? Why?
- What are the key questions you need to ask? Why do you think that?
- What new information could you gather? How do you know that?
- How will you make use of the responses you receive? Why would you use them in this way?

Screen 14

Suggest to learners that they use the advice of experts to help them plan, e.g. science teacher, gardener and local environmentalist. Ask them to discuss the questions posed.

Focus questions

- What advice could these people give to you? How do you know?
- Where could you find these people? Why do you think that?
- How could you contact people such as this and invite them into school to look at your proposals?
- How could you make use of the advice they gave you?

Then to contact the relevant people and ask for their advice.

Screen 15

Explain to learners that any development will need permission from the relevant authorities. Ask them to consider the questions posed.

Focus questions

- Who do you think you would need permission from? Why?
- Who do you think owns the space? Why do you think that?
- How could you find out who owns the space?
- What do you think they would say if you contacted them? Why?
- How could you contact them? Why do it like this?

Then, to contact the relevant people and find out what they need to do to get permission for their regeneration project.

Screen 16

Invite learners to consider how they will monitor and evaluate their project by considering the questions posed.

Focus questions

- If you carried out your regeneration project how could you:
 - o regularly check its progress
 - o evaluate its impact on the people/businesses
 - o evaluate its impact on the environment and biodiversity?

Screen 17

Now learners have collected their information, they can start to action plan. Ask them to use what they have learned to create an action plan to outline their proposed regeneration project.

Remind them to consider...

- the opinions of local people and businesses
- how the development will affect the local environment
- the expert advice they were given
- the findings from their research
- the resources they will need
- their monitoring and evaluation ideas.

Screen 18

Explain to learners that they will develop a digital presentation about their regeneration project to an audience to encourage them to support the project. The audience will be a mixture of local residents, business owners, local councillors, local environmental groups, etc. Ask them to consider the questions posed.

Focus questions

- How could members of the audience support your project?
- What could they do? How might this be helpful?
- What could they provide in terms of resources?



Screen 19

Explain that creating the best possible digital presentation requires careful planning. Ask learners to consider the questions posed.

Focus questions

- How will you ensure the information you present is relevant and easy to understand and analyse?
- Who could you practise in front of? Why? How could you use their advice?
- How will you ensure that you have a captivating script that you don't have to stick too closely to?
- What preparation can you do?
- Will you present every piece of information in the same way? Why?
- How could you mix things up for the audience? Why might this be helpful?
- How could including personal stories improve the presentation?
- How might referring to people you know in the audience help the presentation? Why do you think that?

Screen 20

Explain to learners that using the right tools to vary their presentation can make it more interesting and informative. Ask them to consider the questions posed and then to develop their presentation.

Focus questions

- How will you keep the presentation as simple as possible?
- What interactive tools could you use for your presentation? Why?
- What tools might keep the audience interested? How do you know?
- How could video clips support you? What if you use too many?
- Where will you look for good quality images to include? Why?
- Would these images be free? How do you know? Would they have a copyright? What makes you think that?
- How will you make use of features such as icons and infographics in your presentation?

Screens 21-22

Invite learners to present their ideas for their regeneration project to try to encourage others to support the project. If possible, ask learners to carry out their regeneration project.