



# Sustainable Futures

## School Activities





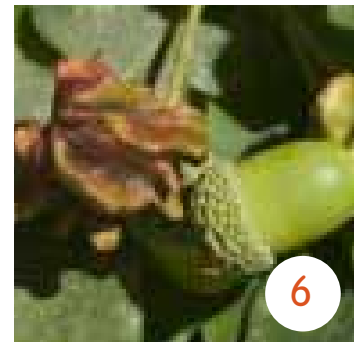
Downloadable Resource	Worksheet	Activity Worksheet	Curriculum area	Unit	Where	When	Link to Wyre education programme
<b>Sustainable Futures</b>	1	Consequences	KS2 GEOGRAPHY	5a-b Knowledge and understanding of environmental change and sustainable development	Indoors	All year POST VISIT	KS2 Forest and Sustainable Development
	2	Spot the difference	KS3 GEOGRAPHY	6d-h Weather and climate, ecosystems, population, distribution of economic activity Speaking and listening 7 Local history study	Indoors	All year PRE/POST VISIT	KS3 Sustainability KS3 Forest Issues
	3	Forester relay	KS2 GEOGRAPHY KS2 DESIGN TECHNOLOGY KS2 SCIENCE Sc2 Life processes and living things	5a-b Sustainable development 2 Working with tools, equipment, materials, and components to make quality products 3a-c Green plants: Growth and nutrition	Outdoors	All year	KS2 Forests and Sustainable Development KS2 Plants in the Forest KS3 Sustainability KS3 Forest Issues
	4	Road to extinction?	KS3 GEOGRAPHY KS3 MATHS	6f Population distribution and change 6f Sequences, functions and graphs	Outdoors	All year	KS3 Sustainability KS3 Forest Issues
	5	Ecological footprint	KS2/3 GEOGRAPHY KS3 GEOGRAPHY	5a-b Sustainable development 2d Use secondary sources of information 6d-f Weather and climate, ecosystems and population	Indoors	All year POST VISIT	KS2 Forests and Sustainable Development KS3 Sustainability

# SUSTAINABLE FUTURES - Worksheet 1

## Activity - Consequences

A series of images related to the management of the Wyre Forest are given to the students. Next to each they have to decide whether they show things that are GOOD for the environment or BAD. They also have to describe WHY for each image and what the CONSEQUENCE would be if it was not there. This can be run as a discussion or as a written activity.

- 1 Litter
- 2 Sedum roof
- 3 Squirrel trap
- 4 Bat box
- 5 Tree planting
- 6 Knopper Gall
- 7 Rhododendron
- 8 Falling trees
- 9 Waymark posts
- 10 Deer fencing
- 11 Cafe
- 12 GoApe





# SUSTAINABLE FUTURES - Worksheet 2

## Activity - Spot the difference

Students are asked to study and compare two maps of the Wyre Forest. The up to date OS map and an ancient map.

They should be able to describe the main differences. They should look at place names, landscape, river courses and tree coverage, size of urban developments, roads.

Say what has changed and suggest why

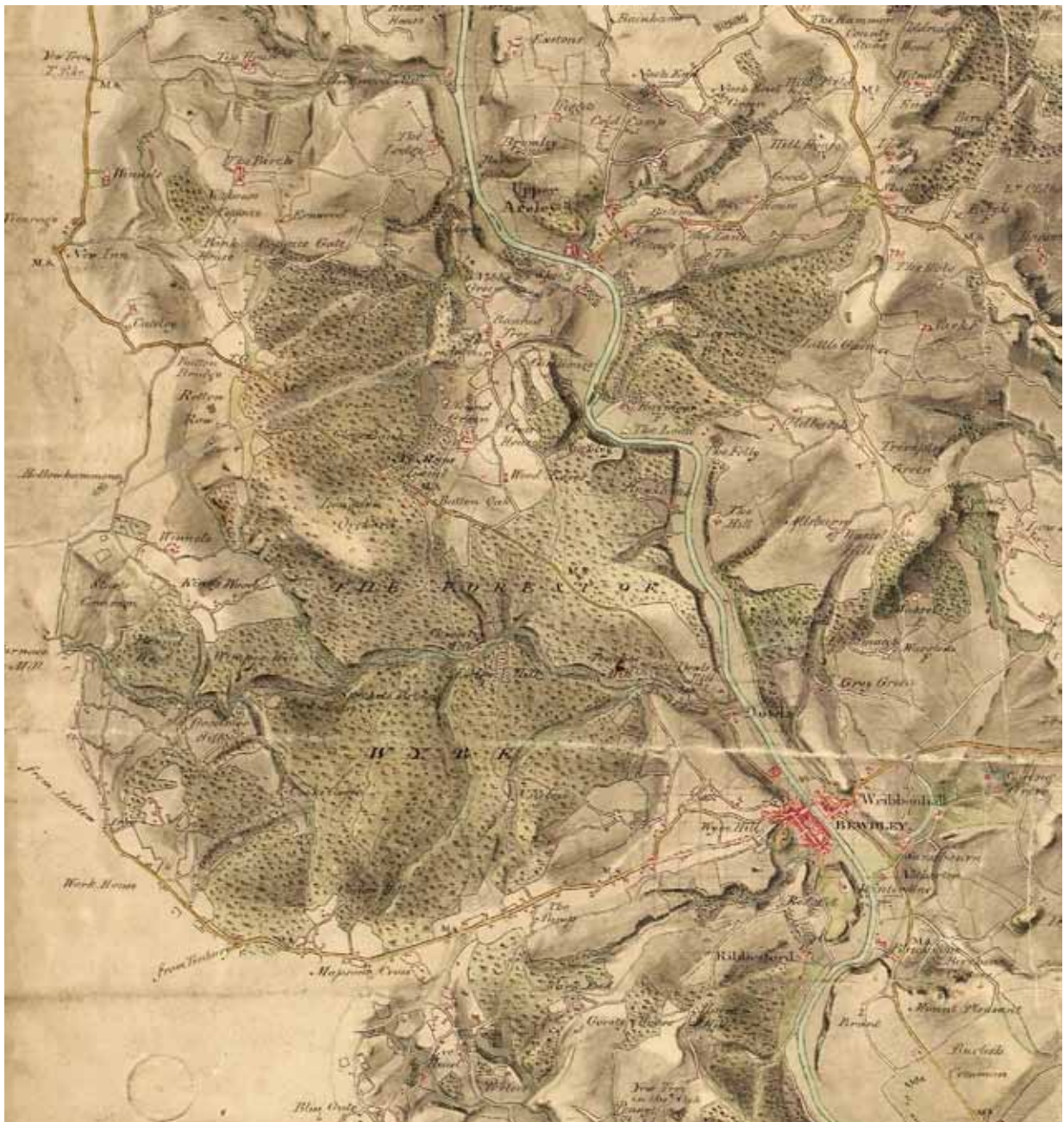
Discuss the impacts of all these changes on people and wildlife.

Explain the importance of Wyre Forest for people and wildlife.

Suggest how this might change again in the future, taking into consideration population growth and climate change. What other things might influence the landscape?

Draw a map of Wyre Forest as you think it will look in 2050 and 2100

Can they suggest positive measures that are taking place today or that might take place in the future to ensure the future of the forest for generations to come?



# SUSTAINABLE FUTURES - Worksheet 3

## Activity - Forester relay

A fun game, based on Jenga, that involves the students creating a costume, constructing their own giant Jenga, dressing up and racing each other. They will learn about being a Forester and the importance of different trees.

You will need:

(For costumes x 2 sets)

Trousers (large)

Boots (large)

Helmet (with visor) - made from cardboard

Chainsaw - made from cardboard

Gloves (large)

Jacket (large)



(For Jenga x 2 sets)

60 lengths of 2" x 2" timber @ 12cm long each or 4" x 4" timber @ 30cm long each (for giant Jenga)

Mark an equal number of pieces of timber on all sides with one of 6 tree species as follows:

Oak

Ash

Birch

Douglas Fir

Scots Pine

True Service Tree

Divide the group up into 2 teams standing in lines alongside each other. Place the costume about 10 metres ahead. About 20 metres ahead place a board with the Jenga pieces stacked up neatly with the trees randomly scattered amongst it. On the sound of you calling "Chainsaw away" the first person on each team runs to the pile of clothes and gets dressed. They then run to the Jenga and try to remove a piece of wood without knocking over the whole thing. They have to keep the gloves on but can use both hands if needed and the chainsaw if it helps. They then collect the piece and run back with it to the team at which point the next person sets off and repeats this. This keeps going until everyone in the team has had a go or one of the Jenga piles collapses. If this happens then the team whose Jenga has collapsed has to stop, but the other team can continue.

At the end the pieces collected are scored against a score sheet which gives low points for trees that are fast growing and managed for timber production and high points for slow growing trees that are vital for wildlife. An explanation of the score sheet should be given. The team with the lowest score wins. A team who knocks over the jenga will automatically gain 30 points. The team home first gets 20 points deducted from their final score.



## Forester relay - score sheet

Species	Score
True Service	10
Oak	7
Ash	5
Birch	3
Douglas Fir	2
Scots Pine	1
Knock over Jenga	30
1st team to finish	-20



# SUSTAINABLE FUTURES - Worksheet 4

## Activity - Road to extinction?

There will soon be seven billion people on the planet. By 2045 global population is projected to reach nine billion. Can the planet take the strain?

With the population still growing by about 80 million each year, it's hard not to be alarmed. Right now on Earth, water tables are falling, soil is eroding, glaciers are melting, and fish stocks are vanishing. Close to a billion people go hungry each day. Decades from now, there will likely be two billion more mouths to feed, mostly in poor countries. There will be billions more people wanting and deserving to boost themselves out of poverty. If they follow the path blazed by wealthy countries—clearing forests, burning coal and oil, freely scattering fertilizers and pesticides—they too will be stepping hard on the planet's natural resources. How exactly is this going to work?

Here is a game that can be played to examine what will happen if the population keeps growing at the current rate and what impact this will have on our resources. Students will begin to understand the principals of exponential growth.

**You will need:**

A bucket

Loads of acorns

Lots of pieces of paper to represent children

**Assumptions:**

Assume a resource of 10 acorns needed per person in a lifetime.

Assume a lifetime is approx 80 years covering 3 generations.



**Round 1** (assume the average number of children per couple is 2)

Generation 1 - To start the game select a boy and a girl. They have to collect 10 acorns each.

Generation 2 - 2 more students are picked to play the 2nd generation and have to collect 10 acorns each

Generation 3 - 4 more students are picked by the 2nd generation to join in to play the 3rd generation and have to collect 10 acorns each

**How many acorns and how many people are there at this point?**

**Round 2** (assume the average number of children per couple is 3 and repeat the game) ie:

Generation 1 - To start the game pick a boy and a girl. They have to collect 10 acorns each.

Generation 2 - 3 more students are picked to play the 2nd generation and have to collect 10 acorns each

Generation 3 - 9 more students are picked by the 2nd generation to join in to play the 3rd generation and have to collect 10 acorns each

**How many acorns and how many people are there at this point?**

**Round 3** (assume the average number of children per couple is 4 and repeat the game)

**Round 4** (assume the average number of children per couple is 5 and repeat the game)

If you run out of students to play the parts of the children start using pieces of paper to represent each child and everyone has to help to collect enough acorns for 10 per person. Pile up the acorns on the pieces of paper.

Try collecting all your acorns from under one Oak tree only. How soon do start to run out of acorns?

**DON'T FORGET to put all the acorns back when you've finished playing.**

**In class:**

Can you draw a flow chart and a graph to show what happened in the game?

If the population is 7 billion what would happen if everyone stopped having children?

What would happen if the average number of children per couple was 1?

What would happen if the average number of children per couple was 4?

What is the average at present? Can you work this out given that the projection is for a growth of 2 billion in 35 years?

What other factors can you think of that affect population growth?

See how much space would be needed to have a party for 7 Billion

<http://ngm.nationalgeographic.com/video/player#/?titleID=7-billion-animation&catID=1>

And what about Biodiversity? Play this game.

<http://ngm.nationalgeographic.com/2011/01/seven-billion/biodiversity-game>

Use this interactive map to find out more about the global population, climate, land and water systems

<http://education.nationalgeographic.com/education/mapping/interactive-map/>





# SUSTAINABLE FUTURES - Worksheet 4

## Activity - Ecological footprint

This is an activity for students to work out their own ecological footprint.

They can use this online calculator to help them. They will probably need to do this as homework and ask their parent/guardian some questions.

Follow this link:

<http://footprint.wwf.org.uk/>

Following this activity students could discuss ways in which they might be able to reduce their carbon footprint. What are the implications of not changing? What makes it difficult to make changes? How might they influence others to make changes?

To download The Forestry Commission's Climate Change and Trees information pack follow this link:

<http://www.forestry.gov.uk/forestry/INFD-6XDCK4>

To print and colour your own poster celebrating the role trees play in reducing climate change, follow this link:

<http://www.forestry.gov.uk/forestry/infid-74sgtj>

For more secondary level downloads related to sustainable futures follow this link:

<http://www.forestry.gov.uk/forestry/INFD-8HNF4V>

For more Further and Higher Education level downloads related to sustainable futures follow this link:

<http://www.forestry.gov.uk/forestry/INFD-8HNFDU>

