



KEY STAGE 2 INTRODUCTION

Voice Your Choice! will engage all students in finding out about the critical role plants and animals play in their habitats and in the global trade.

They will examine the potential threats facing these species, such as climate change, and explore what they can do to conserve them.

A scenario is set and students are divided into a number of groups to investigate the reasons for saving a particular plant or animal. Each group puts their case to the class and the votes are cast...

This activity is for use at Key Stage 2. Voice Your Choice! could be run over two lessons: the first where the students find out information and the second where they present their case. A visit to a botanic garden would enrich this activity as students could view the species for which they made their case.

LEARNING OBJECTIVES

FOR STUDENTS TO UNDERSTAND:

- that species are interconnected
- that each species has a value and that it is difficult to value one more than another
- some of the threats facing plants and animals
- that they can do something about the threats facing plants and animals

FOR STUDENTS TO DEVELOP THEIR SKILLS IN:

- investigating, collecting and presenting evidence
- working together in groups

LINKS TO THE NATIONAL CURRICULUM

Voice Your Choice! is linked to the **Science and Geography National Curriculum**, providing plenty of opportunity for students to acquire personal, learning and thinking skills (PLTS).*

Voice Your Choice! also offers an opportunity for teachers to include cross-curriculum dimensions in their teaching, in particular, '**Creativity and critical thinking**' and '**Global dimension and sustainable development**'.

*Please see the 'National Curriculum links' document for the precise links.



VOICE YOUR CHOICE

TEACHER'S NOTES

RESOURCES

PROVIDED

- **Notes for teachers**
On the species plus website addresses for further information
- **Framework**
For students to find out further information
- **Downloadable resources**
Stickers for badges, ballot box, voting slips

NEEDED

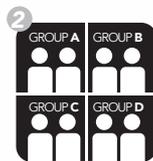
- Books, atlases and computers for research

KEY STAGE 2 TEACHING ACTIVITY

1 THE SCENARIO

Provide the students with the following scenario:

“ A farmer is selling off her land for development. The developers have agreed to save one species. You work for a conservation organisation and believe that your species must be the one that is saved. **Your organisation needs to make a case to present to the developers.** ”



2 Divide the class into 4 groups and give each group a species to defend.

Provide them with information cards about the species and a framework for investigation.



3 Provide the class with time to research and build their case.

Students could develop their own promotional and lobbying materials to persuade people to vote for them.



4 The groups present their case.

This could be to their own class, another class or to an assembly.



5 Voting slips are handed out and the ballot is cast.

If the groups present to their own class, individuals are not allowed to vote for their own species.



6 The result of the ballot is announced and discussed by everyone.



www.bgci.org

KEY STAGE 2 SCENARIO

The following information provides an overview of the importance of each group of species and the type of information students need to be encouraged to investigate.

SPECIES SET + LEARNING OUTCOMES



TREES

Trees and forests, photosynthesis, the carbon cycle, deforestation



BEES

Pollination, the importance of bees in our economy



ALGAE

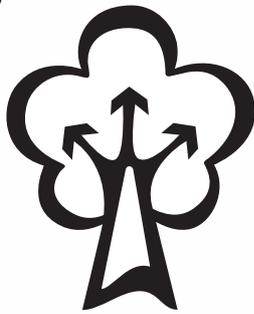
The water cycle and how small plants can be the basis for important ecosystems, the potential of algae for biofuels



FUNGI

Fungi and their close relationship with plant roots, importance of fungi in our daily lives

TREES



Trees produce oxygen for us to breathe and provide a home for billions of animals and insects around the world. As the largest, tallest and longest living organisms on the planet, trees are miracles of natural engineering and science. They can extract water and salts from the soil and lift them, sometimes as high as 400ft, to the leaf canopy above.

Using a process called photosynthesis, trees take carbon dioxide, a greenhouse gas, from the air and combine it with the water and salts for their own food. As a by-product of photosynthesis they release oxygen, essential for all animal life on earth.

Trees also provide many different kinds of useful chemicals, seeds and fruit for animals and people to eat, as well as building materials and some of our most important medicines. They stabilise the soil to prevent erosion and even have an impact on our rainfall.

By taking carbon dioxide from the atmosphere, trees have a vital part to play in tackling climate change. And in providing shade and cover, they help to prevent excessive heating up of the earth's surface by the sun.

RESOURCES

http://wiki.answers.com/Q/What_is_the_importance_of_trees
<http://www.treeforall.org.uk/>
<http://www.british-trees.com/>

ALGAE



Algae are plants or plant-like organisms that contain chlorophyll and other pigments that trap light from the sun. This light energy is then converted into food molecules in a process called photosynthesis. Most algae store energy as some form of carbohydrate (complex sugars).

Microscopic algae are the source of much of Earth's oxygen. Algae are also very important ecologically because they are the beginning of the food chain for other animals. Phytoplankton, a mostly single-celled type of algae, are eaten by small animals called zooplankton (mostly crustaceans such as tiny shrimp) that drift near the surface of the sea. The zooplankton are in turn fed upon by larger zooplankton, small fish, and some whales. Larger fish eat the smaller ones. At the top of the open-water food web may be fish-eating birds, seals, whales, very large fish such as sharks or bluefin tuna, and humans.

The larger algae provide shelter and habitat for fish and other invertebrate animals. As these algae die, they are consumed by organisms called decomposers (mostly fungi and bacteria). The decomposers feed on decaying plants and release important minerals that are used by other organisms in the food web. In addition, the plant matter partially digested by the decomposers serves as food for worms, snails, and clams.

RESOURCES

<http://www.scienceclarified.com/A-AI/Algae.html>
<http://www.naturegrid.org.uk/biodiversity/plants/crypalga.html>
<http://www.carbontrust.co.uk/technology/directedresearch/algae.htm>

KEY STAGE 2 SCENARIO

(cont'd)

SPECIES SET + LEARNING OUTCOMES



TREES

Trees and forests, photosynthesis, the carbon cycle, deforestation



BEES

Pollination, the importance of bees in our economy



ALGAE

The water cycle and how small plants can be the basis for important ecosystems, the potential of algae for biofuels



FUNGI

Fungi and their close relationship with plant roots, importance of fungi in our daily lives

BEES



Bees do so much more than just make delicious honey. They pollinate all kinds of fruit and vegetables and some estimates suggest that as much as one third of all human food production depends on bees - that's one in three mouthfuls of food you eat being pollinated by a bee at some point!

In the UK alone the value of bee pollination has been calculated at around £1billion a year.

However, bee populations (both wild and kept) have declined hugely in recent years and hives are even being stolen from farms. The bees are battling disease, drought, pesticides, urban expansion and a mysterious plague known as colony collapse disorder. Climate change, in particular warmer winters and wetter summers, has also had a major impact on all pollinators, especially bees. The consequences for plant, animal and human life could be devastating.

RESOURCES

<http://www.bumblebeeconservation.org/>
<http://www.britishbee.org.uk/bees4kids/index.php>
<http://www.saveourbees.org.uk/register.asp>

FUNGI



Fungi are among the most important organisms on the planet, for all sorts of reasons, but here are just three:

Recycling: Fungi, together with bacteria, are responsible for most of the recycling which returns dead material to the soil in a form in which it can be reused. Without fungi, these recycling activities would be seriously reduced. We would be buried under several metres of dead plant and animal remains. Yuk!

Plant growth: Fungi are essential for the good growth of most plants, including crops. They interact in the soil with the plant roots, enabling the plant to grow more efficiently. Plants form the basis of most food chains, so if their growth was restricted or impaired all animal life, including human, would be at risk of starvation..

Food: Fungi are also important directly as food for humans. Many mushrooms are edible and different species are cultivated for sale worldwide. While this is a very small proportion of the actual food that we eat, fungi are also widely used in the production of many foods and drinks. These include cheeses, beer and wine, bread, some cakes, and some soya bean products.

RESOURCES

<http://www.countrysideinfo.co.uk/fungi/importce.htm>
<http://www.fungi4schools.org/>
<http://www.treesforlife.org.uk/forest/ecological/mycorrhizas>