The Importance of Bees

KS3

National curriculum objectives

Working scientifically national curriculum objective:

- developing their scientific vocabulary and articulating scientific concepts clearly and precisely

Subject Knowledge national curriculum objective:

- interactions and interdependencies: Relationships in an ecosystem
- the importance of plant reproduction through insect pollination in human food security

Resources (you will need):

None required

15 MINUTE STAND ALONE OR 30 MINUTE OPENING ACTIVITY

Activity content:
Ask learners to draw/write one pollinating insect and ten plants, such as a bee and wheat, in the middle of a page. By noting down every species they can think of that connect to it, adding chains and layers as they working outwards, they will inadvertently create a food web.

Share with the pupils that over recent decades changes of land-use has occurred due to a growing human population. The development of land for farming of food crops with greater surface areas has resulted in less hedging, less natural cover for animals and a lack of suitable habitats for dens, burrows and nests. Green and Brown field sites (areas of large natural space) are also been developed and turned into 'Grey' sites, areas of concrete for housing developments, roads and infrastructure. More people means more food is needed and more places to live and work. As well as this, the demand for quicker growing and reliable food crops has led to an increase in insecticides and pesticide use; chemicals used to keep certain pests away. Some people believe that these two factors (the loss of space and the increased chemical use) is leading to a toxic build up within the natural environment. Neonicotinoids have been directly linked to the decrease in Bee population in some parts of the world, reducing the natural life spans and in some cases, total collapse of colonies.

Ask pupils to return to their food webs. Tell the pupils that each plant they have drawn represents 10 plants, i.e. 100 plants in total, the amount a bee visits in an average flight. Ask them to cross out five of the plants to represent half of pollinating insects in the world disappearing. Ask them to discuss in pairs or group what would happen to the rest of the food web. Which animals on the web would decrease in number? Are there any that might totally disappear? Why?

Class reflection:
Ask pupils to consider where the chemicals 'go' that are used in food production? What would happen over time if more and more were used? Relate this back to the web and toxins entering the food and water supply. Explore the word 'organic' and what it means? Why would buying organic food not just be better for pollinating insects, but also animals and humans alike?

Homework idea:
Investigate how much of the food they consume is organic. Does the term organic only relate to food, or other products as well?

Philosopher question:
In a growing society, food (and water) have become critical. What would happen if there was a world food shortage? How could we, as a society, mitigate it? What impact would growing more food have on our health, animal populations and the wider environment?