



# Science lesson 3

## – Student worksheet

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### Learning aim:

To analyse and interpret data on biodiversity and explain the importance of biodiversity.

### Scenario:

Dallan is a junior executive working in the marketing department of a company called Ace Engineering which has 3 different sites around the country. The company are publishing a newsletter and want him to provide some good news to boost public relations entitled, 'The impact we've had on the planet.' Dallan asked the sustainability champions at the 3 sites 6 months ago to develop an area that would increase biodiversity. They have now sent him the details of what they did and some graphs and data about numbers of organisms before and after the project to show if biodiversity has increased. You must help him find out what biodiversity is and then analyse the data the sustainability champions have sent him. Dallan also needs you to help him write a blurb and some additional details for the company newsletter. (A blurb is a short description that promotes a creative work, person or business.)

### Career spotlight:

Marketing executives promote an organisation's products, service or brand. They are responsible for researching customer and market trends to inform campaigns, organising and promoting events, writing content for marketing campaigns and analysing data to plan and evaluate marketing activity. They need to have a range of skills including creativity, the ability to sell products and services, good attention to detail and highly developed written and verbal communication skills.

Question 1 – Read the information and highlight words that are living things or needed by living things.

Biodiversity on our planet is very important, but what is it?

‘Bio’ means life and diversity means range, so biodiversity means all the different types of living things on our planet including animals, plants and even bacteria. Living things keep Earth alive by providing food for us, each other, making the oxygen in the air we breathe and even keep the water clean. Without these things, some species may become extinct (which is when a species dies out and there are none left).

A species is a group of living things that look alike and reproduce to have fertile young. (Fertile means the young can reproduce.)

Humans have started to understand how important it is to increase biodiversity. For example, when trees are cut down, birds have nowhere to nest and other organisms e.g., insects that lived in the trees that birds fed on are gone. When coal is burned to make electricity, it releases carbon dioxide gas which is causing global warming and is increasing the temperature of the Earth.

Insects like bees need wildflowers and are important in helping the plants we use for food to grow.

Conservation means trying to prevent a loss of biodiversity. Examples of how humans are trying to conserve populations include the re-planting of trees, sowing wildflowers instead of growing grass and using wind and solar power, instead of burning coal.

Population means a group of the same species that live in one place.

Question 2 - Use the passage you have read to find out and complete the meaning of the key words below.

Keyword	Meaning
Biodiversity	
Species	
Extinct	
Fertile	
Conservation	
Population	

Question 3 - Use the passage to give 2 examples of how living things keep Earth alive.

i) \_\_\_\_\_

\_\_\_\_\_

ii) \_\_\_\_\_

\_\_\_\_\_

Question 4 - Use the passage to give 2 examples of how humans are reducing biodiversity on the planet.

i) \_\_\_\_\_

\_\_\_\_\_

ii) \_\_\_\_\_

\_\_\_\_\_

Question 5 - Use the passage to give 2 examples of how humans are trying to conserve the planet.

i) \_\_\_\_\_

\_\_\_\_\_

ii) \_\_\_\_\_

\_\_\_\_\_

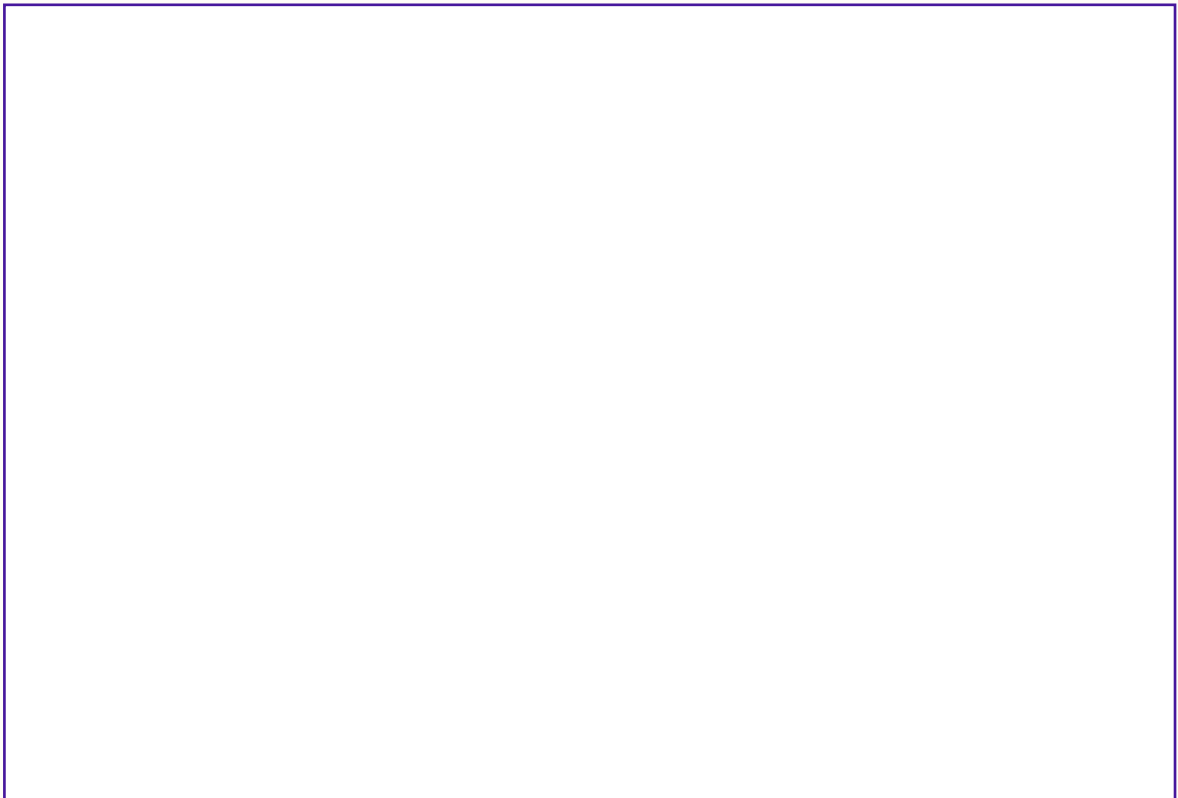
Question 6 - Each site had different ways of trying to increase biodiversity at their offices. These are shown below.

Site 1 - planted 10 different wildflowers in the car park.

Site 2 - made a living wall by planting 3 different types of plants that grew down the wall by the reception door.

Site 3 - built a small pond containing 2 water plants and 3 fish.

Predict which site you think will have made the biggest impact on biodiversity. Give a reason why.

A large, empty rectangular box with a thin purple border, intended for the student to write their prediction and reasoning.

Question 7 - Look at the graphs which show the numbers and types of insects at the 3 sites. Each site reported on the numbers of 4 of the same type of insects and the numbers of all species of plants and insects before and after the project, to make it easy to compare the impact.

- a) Complete the last column of each table by finding the change in number of species at each site.

Site 1 - planted 10 different wildflowers in the car park

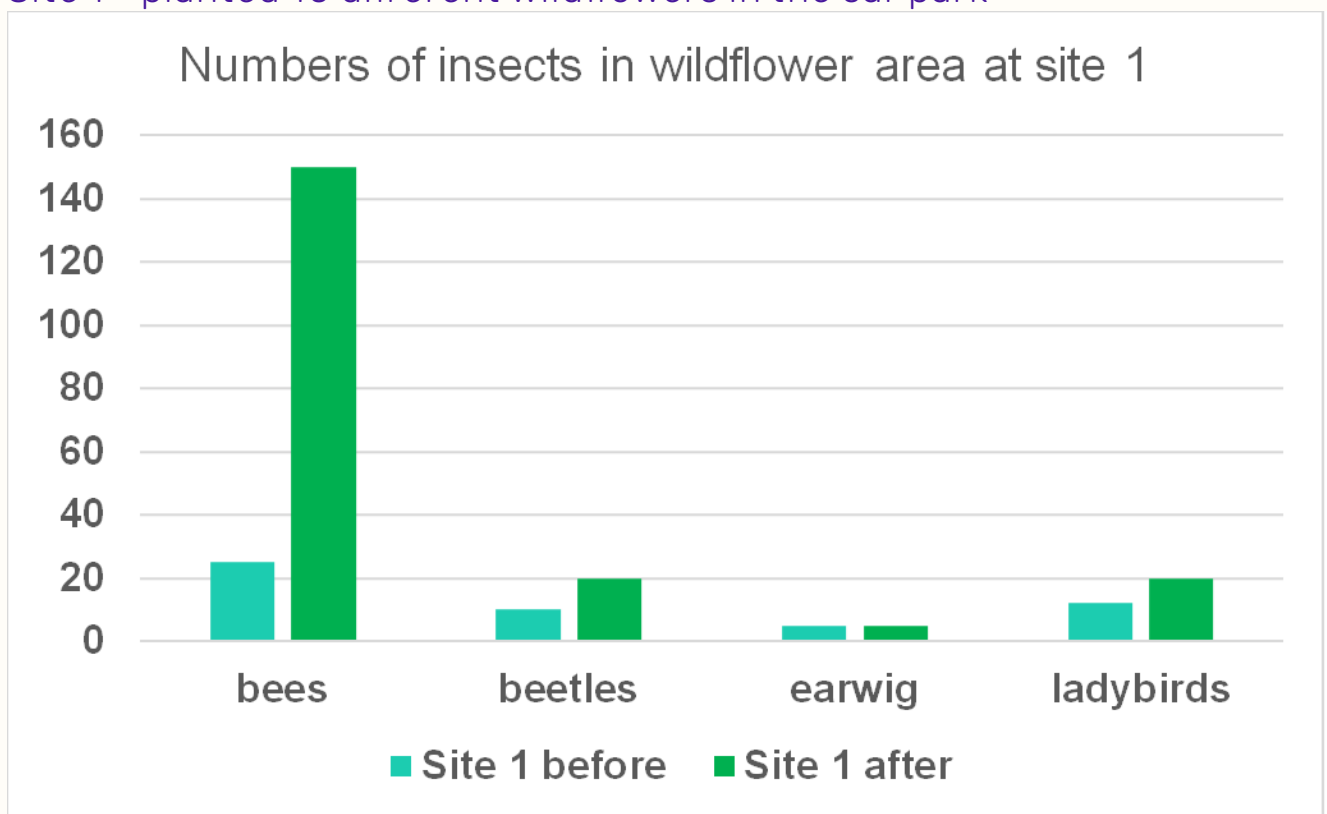


Table 1

Numbers of different species of plants and insects before	Numbers of different species of plants and insects after	Change in numbers of species
10	18	

Site 2 - made a living wall on the building by planting 3 different types of plants that grew down the wall

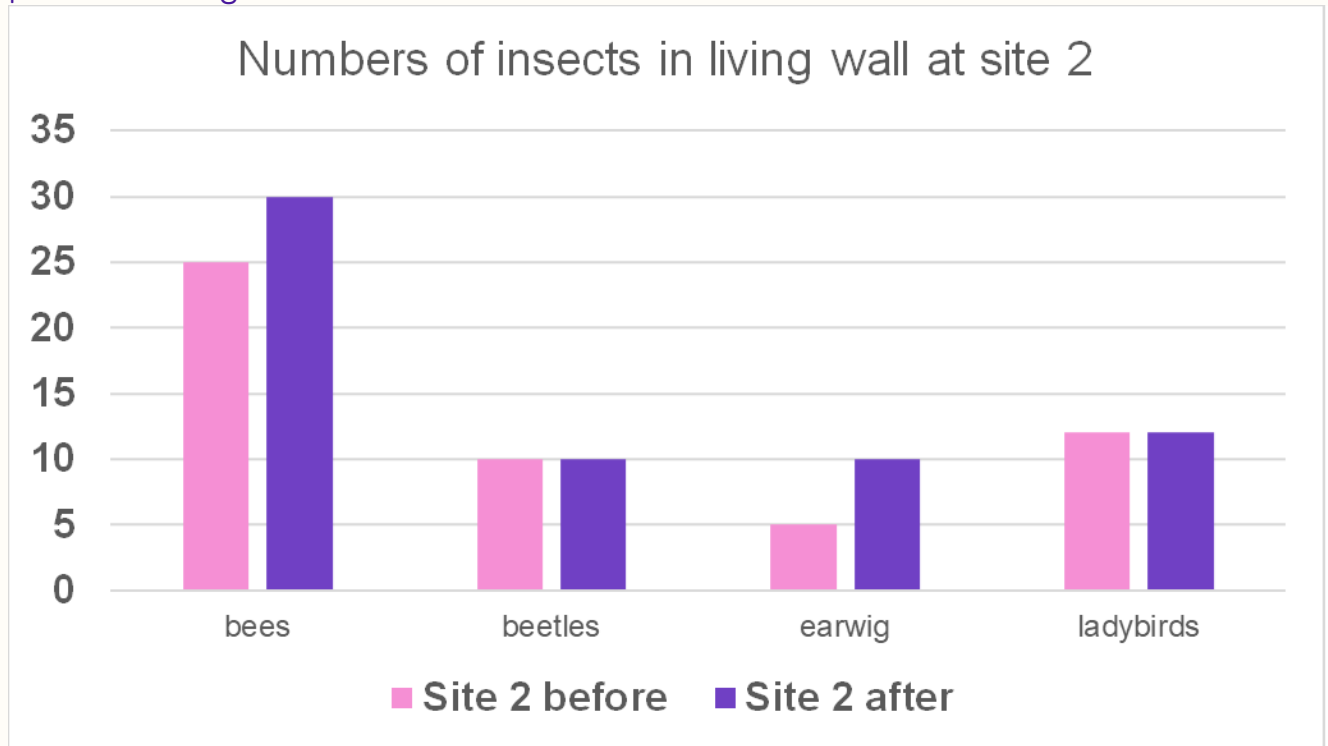
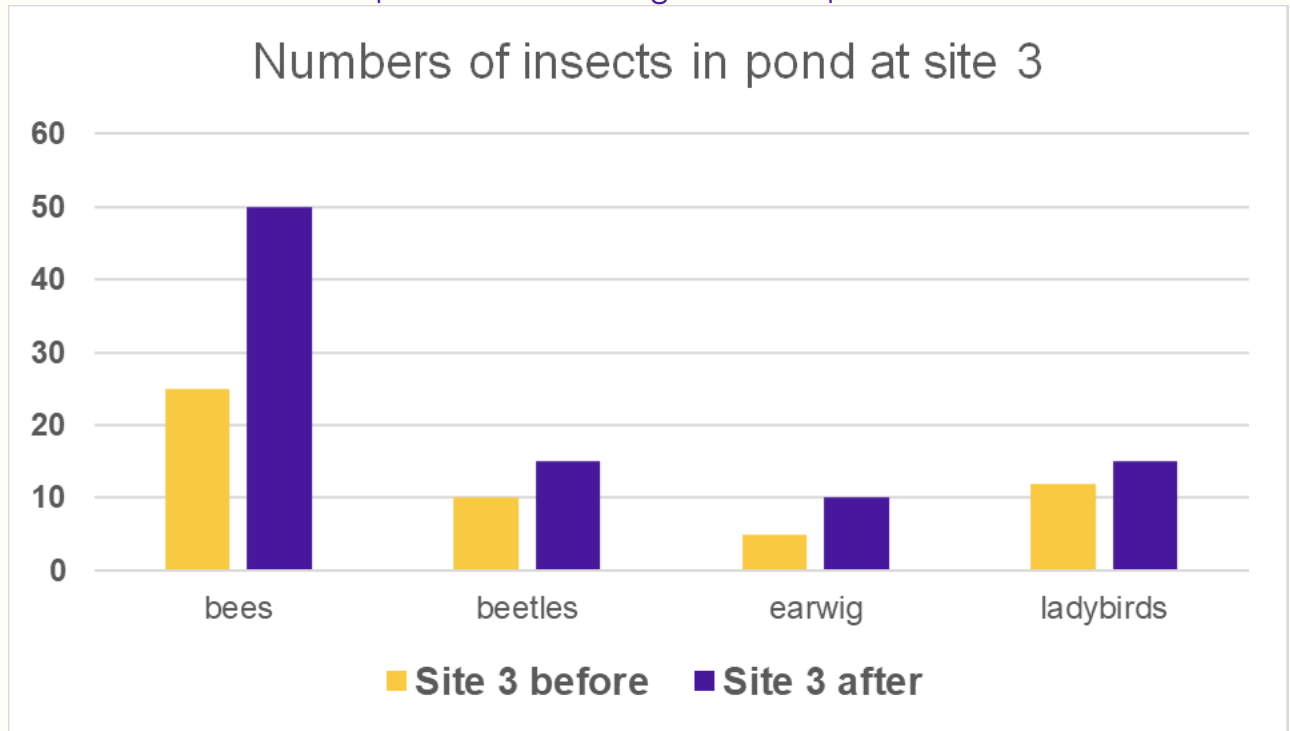


Table 2

Numbers of different species of plants and insects before	Numbers of different species of plants and insects after	Change in numbers of species
6	12	



Site 3 - built a small pond containing 2 water plants and 3 fish



**Table 3**

Numbers of different species of plants and insects before	Numbers of different species of plants and insects after	Change in numbers of species
12	14	

b) Which site – 1, 2 or 3 – had the biggest increase in:

- i) Bees
- ii) Beetles
- iii) Earwigs
- iv) Ladybirds

c) Which site has the highest increase in the total number of species?

d) Which site was the most successful at increasing biodiversity AND why do you think this was?

e) Which site has the lowest increase in biodiversity AND give a reason why you think this was?

f) Give a reason why the biodiversity increased at all sites.

Question 8 – Produce a 100-word blurb for Dallan at Ace Engineering. (A blurb is a short description that promotes a creative work, person or business.) The blurb will be used in the newsletter’s environmental impact page as good news. Examples of how to start your blurb are ‘Plant for the planet’ or ‘Creating a future for all’. You then need to summarise why biodiversity is important and how Ace Engineering have been successful at increasing it.

