

Investigating Nature's Calendar: Key Stage 3

SI – S3 in Scotland

Phenology

Phenology is the study of the timing of natural events, such as when trees come into leaf or when the first ladybird or butterfly is seen each year. The UK Phenology Network collects information about a variety of species to help scientists understand how they might be responding to climate change.

One important set of data looks at when the first snowdrop flowers in a particular place. This is seen by many as one of the key indications as to when spring starts.



Roy Battrell

Snowdrops



Margaret Barton

For over 50 years a phenologist in Newcastle has been recording the date of the first snowdrop (*Galanthus nivalis*) flower that he saw growing in a "wild" location. Some of these results are shown in a graph – see separate sheet.

Questions

Use the points plotted on the graph to answer the next four questions.

Remember: The date of first flowering is the number of days after the 31st December.

To work out what the date is, read the number off the graph and count the number of days past 31st December.

Q1. In which year did the snowdrops flower the earliest?

Q2. In which year did the snowdrops flower the latest?

Q3. In which year did they flower 40 days after the 31st December?

Q4. On what **date** did the snowdrops first flower in 1990?

Q5. Draw a line of best fit on the graph.

Use the **line of best fit** on the graph to answer the next question.

Q6. Try and describe the pattern that the graph is showing.

In your answer write about:

- What is happening to the date that the snowdrops flower (does it get earlier, later, stay the same or something else?)
- What might happen to the time when snowdrops flower in the future

Below is part of an article about the changes in the seasons.

IS SPRING MOVING?

Scientists looking at the UK climate are noticing changes in the seasons. By looking at when various natural events happen each year they are trying to look for patterns.

Some of the things that they study include

- When trees first grow leaves
- When fruit ripens
- When certain plants show their first flowers
- When birds migrate



Use the information in the article and the data you have to try and answer the following questions.

Q7. What might be happening to the start of spring?

In your answer write about:

- Whether you think it is changing
- How it is changing
- What evidence you have for this

Q8. The data in the graph is from one person in Newcastle. If you wanted to be more certain about any patterns that might be happening over the UK what would you need to do?

Q9. What do you think might be causing these changes?

You may want to include ideas about weather, temperature and influences on the environment in your answer.

