Indoors

1D Keeping Scientific Records

Project Box Resources

- ✓ Power point slides 18-21
- ✓ Herbarium photographs laminated

Additional resources

- ✓ Completed field record sheets from activity 1B
- ✓ Press or heavy books
- ✓ Recycled newspaper
- ✓ Squares of felt or blotting paper optional
- ✓ Identification guides
- ✓ Corrugated cardboard
- ✓ Sheets of A4 card
- ✓ Plastic sleeves
- ✓ Magnifying glasses

Activities (2/3 lessons)

Presenting and interpreting data: Pupils consider how to represent their data so they can answer scientific questions about the biodiversity of the woodland and different areas within it.
Analysing survey results: Discuss everyone's survey results and collate into one list to send to the Local Record Centre. Use your ID books and online resources to identify where else in the UK they are found, including which species are rare. If possible, ask the Local Record Centre to send information they hold about the survey site and compare this information with what your survey found.
Creating an Herbarium sample: Use the Powerpoint slides and laminated images of herbarium specimens to stimulate class discussion.

1. Look at the laminated images of herbarium specimens.
2. Identify the specimen using keys, guides and ID sheets.
3. Each specimen should be placed between a folded newspaper sheet (optional blotting paper or felt could be placed between the newspaper and plant to help absorption of moisture)
4. The newspaper covering the plant should then be placed between two pieces of corrugated card, to help dry the specimens by allowing air flow.
5. Each covered plant specimen should then be layered in groups of 5-10 and pressed by weighing under heavy objects or putting between two pieces of plywood and tying with a belt.
6. Mount the specimens on card or thick paper using thinned PVA glue.
7. Label the specimen with key information (write directly on the sheet or use a printer label): Origin / location; Collector and date; Scientific and common name.

Class discussion: What are the advantages and disadvantages of collecting and using written survey information about plants as opposed to herbarium specimens?

Extension / follow-up activities

- Create a database of the biodiversity of the woodland or school site.
- Research the important botanist Carl Linnaeus.
- Arrange a visit to a herbarium to see Box specimens and other specimens.
- Discuss ways of improving the pressing process and experiment with different methods.
- Instruction writing: devise your own guide on how to make an herbarium sample.

Indoors

1D Teacher's Notes

Learning Outcomes

- To gather information about the natural world using a field survey form
- To contribute to local records
- To represent and interpret data on species numbers
- To produce a herbarium and compare different ways of representing data

Curriculum Connections

Science: Plants (yr 3); Classifying living things (yr 4); Classification (yr 6); Working scientifically
History: Local History Study
Mathematics: Representing & interpreting data
Geography: using maps

Preparation / Key Notes (Activities 2-3 lessons)

These activities provide class based follow-up work to learning card 1B & 1C. Store plant samples in the fridge until ready for pressing.

Background Knowledge

Taxonomy is the a the study of the general principles of scientific classification where organisms are classified into groups based on similarities of structure or origin. The taxonomist Carl Linnaeus had 14,000 specimens in his herbarium.

What is an Herbarium? An herbarium is a collection of dried plants pressed and stuck onto paper sheets with labels. For hundreds of years, plant samples have been collected by botanists to store information. Kew Gardens has an Herbarium which has over 350,000 species and over 7 million specimens. It collects 30,000 new samples every year and is key in the research on plant biodiversity.

Local Record Centres collate environmental information and share this information with others. They are organised on a county basis – see weblinks below. Survey data needs to be sent to the Local Record Centre covering the county in which the survey area falls, which may be different to the county in which your school is located.

Web-site links and further resources

Additional information on making herbarium records can be found at:
www.nccpg.com/Conservation-resources/RHS-Guide-to-making-herbarium-specimens.aspx
Carl Linnaeus
www.nhm.ac.uk/nature-online/science-of-natural-history/biographies/linnaeus/
Local records centres. 1. Buckinghamshire schools: Buckinghamshire and Milton Keynes Environmental Record Centre www.buckinghamshirepartnership.gov.uk/environmental-records
2. Oxfordshire and Berkshire schools: Thames Valley Environmental Record Centre www.tverc.org 3. Hertfordshire schools: Herts Environmental Record Centre www.hercinfo.org.uk 4. Bedfordshire schools: Bedfordshire and Luton Biodiversity Recording and Monitoring Centre www.bedscape.org.uk/BRMC/newsite/index.php

heritage lottery fund
LOTTERY FUNDED
The Chilterns Conservation Board
Chilterns Box Woodland Project