



Sample Lesson Plan

The Big Bus Module: Science Puzzles 10 - 11



Science Puzzles

10-11

Title

Using *The Big Bus Science Puzzles 10-11* to reinforce key science facts.

Introduction

Science Puzzles 10-11 addresses many areas of the science curriculum. The module is split into three sections: Life and Living, The State of Matter and Light, Electricity and Forces. Each section is constructed in the same way, with a Wordsearch and Crossword consisting of a selection of twenty key words for each area. Animated clues and definitions are provided for each word, providing encouragement and reinforcement, increasing the children's scientific vocabulary and their understanding of the world around them.

In this lesson

The children are shown how to work with the activity, selecting the area and type of puzzle to be undertaken. Once the interactive skills have been introduced through clear, on screen instructions, the children are able to progress through the whole puzzle as an individual or class activity.

Age Range: 10 – 11 years.

Lesson Plan

Learning objectives

Having completed this activity most children will have developed their understanding of:

- The life processes common to humans and other animals, including nutrition, movement, growth and reproduction
- The life processes common to plants, including growth, nutrition and reproduction
- Changing states and the properties of solids, liquids and gases

- Light, Electricity and Forces.

Technical preparation

Install *The Big Bus* CD-ROM on to the computer, or access the website at www.members.thebigbus.com. After a short opening sequence select the button to take you to **Explorers' World**. Open the notebook index and scroll through the available activities. Select **Science puzzles 10-11**.

Additional resources

- Simple demonstration crossword and word search puzzles to introduce or revise techniques.

Previous experience

This module is designed to reinforce the children's prior knowledge and understanding. Previous experience of completing crosswords and wordsearches will enable them to interact quickly and efficiently with each activity.

Introducing the module

Gather the children around a large computer monitor or interactive whiteboard.

Recap the **key terminology** the children will encounter in the activity. Display and, with the children's input, complete demonstration crossword or wordsearch puzzles. Direct the children's attention to the computer monitor or whiteboard then select "**Start the module**".

Point out the on screen menu in the form of a spiral bound booklet. There are three scientific areas covered in the menu. Demonstrate how rolling the mouse over a menu item highlights the item and that clicking on these starts the linked puzzle.

If demonstrating the **Crossword**, the activity opens on the Help screen with clear instructions. Demonstrate how to complete the answer by selecting from the range of letters at the bottom of the screen, or entering the answer via the keyboard. The list of possible answers can be found by clicking on the Wordlist tab. Clicking on any square highlights it, enabling a new entry or correction to be made.

If demonstrating the **Wordsearch**, the activity opens on the Help screen. Read the instructions with the children, then show them how to click and drag the length of a word they have identified, or select one letter at a time as they spell the word. Use the tabs at the side, to reveal the total word list, which updates to show which words have been completed.

A series of tabs down the side of the text box, enable you to view the entire word list, restart the puzzle, view the last word you completed, or call up the help page.

After the initial demonstration, and if more than one computer is available, the children could now break into working groups and undertake the activity for themselves. If the module is being used to support a specific curriculum area, such as States of Matter, challenge the children to complete both the crossword and wordsearch appropriate to this area.

Allow the children about 20 minutes to complete the activities, and then gather them back together to discuss how they got on. Did they prefer the crossword where they had to work out the answer to a clue, or the more visual problem of identifying the strings in the wordsearch? What new facts have they learnt by taking part in the activity?

Classroom management

A single classroom computer running *The Big Bus*, using a large monitor or interactive whiteboard, is an effective whole class teaching resource. Completing the puzzles on an interactive whiteboard challenges all the children with the use of the onscreen keyboard allowing maximum interaction. Alternatively, the activities can be introduced to the children before they break into groups to work on other computers.

If you have access to a computer suite this activity can be completed as a whole class lesson. If you have access to only one or two computers, pupils will need to complete the activity on a rotational basis.

Duration

Each group of children will require approximately 20 minutes of computer time. The teacher introduction and follow-up time will take approximately 15 minutes and 10 minutes respectively.

Differentiation

- The wordsearch definitions go into greater depth than the crossword clues and can be used as a research source for more able children.

Extending the module

- Create a set of research sheets, challenging the children to extract the facts presented in each topic area.

References

The National Curriculum in England for Science (KS2):

SC2. Life Processes and Living Things.

SC3. Materials and Their Properties

SC4. Physical Processes

The Scotland 5-14 Guidelines for Environmental Studies:

Science – Knowledge & Understanding – Living Things and the Processes of Life: Levels A, B, C, D

Science – Knowledge & Understanding – Earth and Space: Levels A, B, C, D, E.

Science – Knowledge & Understanding – Energy and Forces: Levels B, C, D.

The Northern Ireland Curriculum for Science and Technology:

Knowledge and Understanding of Science and Technology –

Living Things: Ourselves: f. Animals and Plants: a, b, h.

Materials: Properties: d. Change: a, c, d.

Physical Processes: Forces and Energy: d. Electricity: c. Light: a, b, c.

The National Curriculum in Wales for Science:

Sc2: Life Processes, Humans and Other Animals, Green Plants as Organisms

Sc3: Grouping and Classifying Materials, Changing Materials, Separating Mixtures of Materials

Sc4: Electricity, Forces and Motion, Light and Sound, The Earth and Beyond.