

*Practical
Science*

Earth and Beyond

for 8-10 year olds

- Practical hands-on science activities
- Contains comprehensive teachers' notes and lesson ideas



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This book contains a package of photocopiable worksheets designed to be used to cover the Science learning area of “**Earth and Beyond**” with 8-10 year old students.

At this level the students’ focus is on the wider world and how physical processes impact upon their local environment. Skills developed in this book include the drawing of diagrams and collecting and presenting data.

Specific activities include examining how the sun, moon and the earth interact, collecting and analysing weather phenomena, constructing weather recording devices, and understanding the sun’s path.

Each lesson has the potential to:

- extend into more than one lesson by having separate parts to the lesson sheet. Some sections of a lesson may need planning on other paper before final copies are transferred to the lesson sheet. Some lessons may be too long for one lesson and could be completed at another time.
- expand into other curriculum areas using a similar theme. There are ideas for cross-curricular integration with other learning areas. Sometimes a whole day’s work could be planned around one lesson sheet.

Science Materials and Equipment

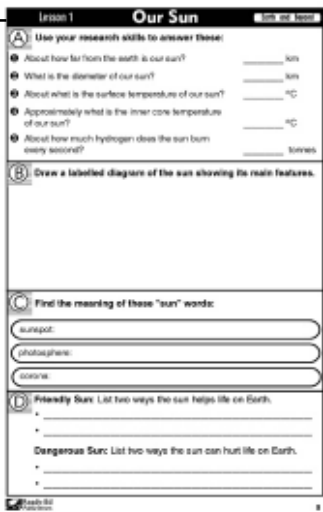
The equipment needed has been kept to a minimum to facilitate ease of planning. It is readily available in schools or is easily acquired.

All lesson sheets are outcome linked to the various curriculum documents (see page 6). Answers are provided where necessary (see page 27).

Other books in the Practical Science series:

- *Energy and Change*
- *Life and Living*
- *Natural and Processed Materials*
- *Working Scientifically*

Lesson Sheets Layout



The diagram shows a student lesson sheet titled 'Our Sun'. It includes sections for research questions, a drawing of the sun, and a list of 'sun' words. Numbered callouts indicate: 1. Lesson title, 2. Student learning activities.

STUDENT LESSON SHEET

- 1 Lesson title
- 2 Student learning activities



The diagram shows a teachers' notes page titled 'Our Sun'. It includes sections for Learning Outcomes, Materials, Lesson Ideas, and Integration Ideas. Numbered callouts indicate: 1. Learning Outcomes, 2. Materials, 3. Lesson Ideas, 4. Integration Ideas.

TEACHERS' NOTES INCLUDE:

(FOR EACH LESSON)

- 1 Outcome links;
- 2 Required materials;
- 3 Lesson plan ideas including extension ideas and teaching tips;
- 4 Cross-curricular/integration ideas.

Our Sun

Learning Outcome:

- Illustrates patterns of change observable on Earth caused by the relationship between the sun, Earth and the moon.

Materials:

- *research materials (e.g. library books, Internet)*
- *model or poster of the sun (optional)*
- *large art paper*
- *magazines for cut-outs and drawing resources*

Lesson Ideas:

- Discuss the sun and how it affects our life.
- Children research the answers to the questions on the worksheet using the library and/or Internet resources. Some online starting points could be:
 - ▶ seds.lpl.arizona.edu/nineplanets/nineplanets/sol.html
 - ▶ www.nineplanets.org/sol.html
 - ▶ www.uwgb.edu/dutchs/planets/sun.htm
- Children can prepare a project on the sun using information from the worksheet and any other information they wish to use. Internet print-outs, magazine cut-outs and drawn pictures with labels can be used to illustrate their work.

Integration Ideas:

English (Writing): Make a list of “sun” words for word study activities.

English (Speaking and Listening): Students present talks on the sun using the projects and notes as a guide.

Health: Have a “Sun Safe” lesson.

The Arts: Craft – Make models of the sun using papier-mâché.

A**Use your research skills to answer these:**

- ① About how far from Earth is our sun? _____ km
- ② What is the diameter of our sun? _____ km
- ③ About what is the surface temperature of our sun? _____ °C
- ④ Approximately what is the inner core temperature of our sun? _____ °C
- ⑤ About how much hydrogen does the sun burn every second? _____ tonnes

B**Draw a labelled diagram of the sun showing its main features.****C****Find the meaning of these “sun” words:**

sunspot:

photosphere:

corona:

D**Friendly Sun:** List two ways the sun helps life on Earth.

- _____
- _____

Dangerous Sun: List two ways the sun can hurt life on Earth.

- _____
- _____