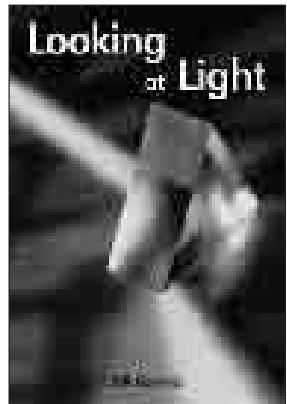


Looking at Light

by Bill Gaynor



Book Summary

This book examines the importance of light, where light comes from, how it travels, and how it provides the source of all colour.

Features of the Book

- Historical and scientific information
- Specialised vocabulary
- Labelled diagrams and tables
- Scientific theme

Purpose

Looking at Light can be used to introduce and reinforce the following skills and understandings:

- using a glossary to explore specialised vocabulary;
- synthesising information from text and visual sources;
- using text features to locate information;
- exploring the properties of light.

Investigation Tools

- Step by Step – The Food Chain, page 5
- Digging Deeper – Night Lights, pages 14–15
- What's the Background? – Worshipping the Sun, page 19
- Weighing Both Sides – Whaling, page 22
- Looking Closer – The Electric Light Bulb, page 24
- Making Connections – Our Own Camera, page 29

The Guided Reading Lesson

- Using a glossary to explore specialised vocabulary
- Synthesising information from text and visual sources

Introducing the text

Ask the students to define light. Discuss different sources of light.

- Where does light come from?
- Which source is the most important?

Encourage them to think about how life depends on the sun.

- Could life survive without the sun? Why/why not?

Distribute the books and ask the students to look at the cover illustration, read the blurb on the back, and make predictions about what questions this book might answer.

Reading and discussing the text

Ask the students to skim the text looking for glossary words.

- *How do you know it's a glossary word? (It's in bold.)*

Ask them to find the first glossary word (nutrients), then turn to the glossary and read its meaning.

- *What could substitute for nutrients? (food)*

- *How is the glossary organised? (alphabetically)*

Encourage the students to use the glossary as they read. Suggest that they use a substitute word (or synonym) to help them remember the definition.

Set the following purpose, then ask the students to read chapter 1:

- *Why is it titled "The First Step"?*

Invite them to explain the first step and why it is so important.

- *What is the most important step in the food chain?*

- *How do the images help you interpret the text?*

The students can turn to a partner and predict a possible food chain that begins with algae, corn, or grass. You could use an enlarged version of the Step by Step investigation tool on page 91 of this guide to chart their responses.

Have the students read chapter 2 to find out what light is made from and why we see colours.

- *Why is "white light" not really white?*
- *How did the experiment on page 9 help you to understand Newton's discovery?*
- *How does a strawberry appear red? Why are there many shades of red?*

Encourage the students to figure out why it's hard to test the speed of light as they read chapter 3.

- *How fast is light?*
- *Why was Ole Roemer's light speed experiment more effective than Galileo's?*
- *Why don't we notice light moving?*

Ask the students to look at the chart on page 17 and explain why light takes longer to get to Pluto than to the Moon.

Discuss what life might have been like before people discovered artificial light.

- *How would life have been harder?*

Ask them to read chapter 4 and find out how people's lives have changed.

- *Why was the sun so important to early people?*

- *How has the way we make light changed?*

- *How has the safety of lighting improved?*

The students can now read chapter 5 to find out how people see.

Read the following steps aloud to the students as they trace the process on the diagram on page 28.

1. Light enters through the pupil.
2. The iris opens or closes to control the amount of light.
3. The light hits the retina.
4. The optic nerve carries electric signals to the brain.

- *How does this diagram help you to interpret the text?*
- *How does it help you to understand how cameras work?*

Revisiting the Text

The activities below can be used immediately after the guided reading lesson, during later reading sessions as mini-lessons, or as independent activities.

S Using text features to locate information

Ask the students to recall a fact from each chapter, then use the features of the text (bold type, chapter titles, headings, contents page, glossary, or diagrams) to locate those facts in the text.

They can use the blackline master on page 76 to list the facts and describe the text feature they used to locate them.

S Exploring the properties of light

Ask the students to think about how sunlight changes objects such as newspaper, coloured papers, plastics, fabrics, and skin. Discuss what happens to living things that are deprived of sunlight for too long.

Ask the students to plan an experiment to test the effects of sunlight on different objects. They can use individual copies of the Step by Step investigation tool on page 91 to describe their experiment.