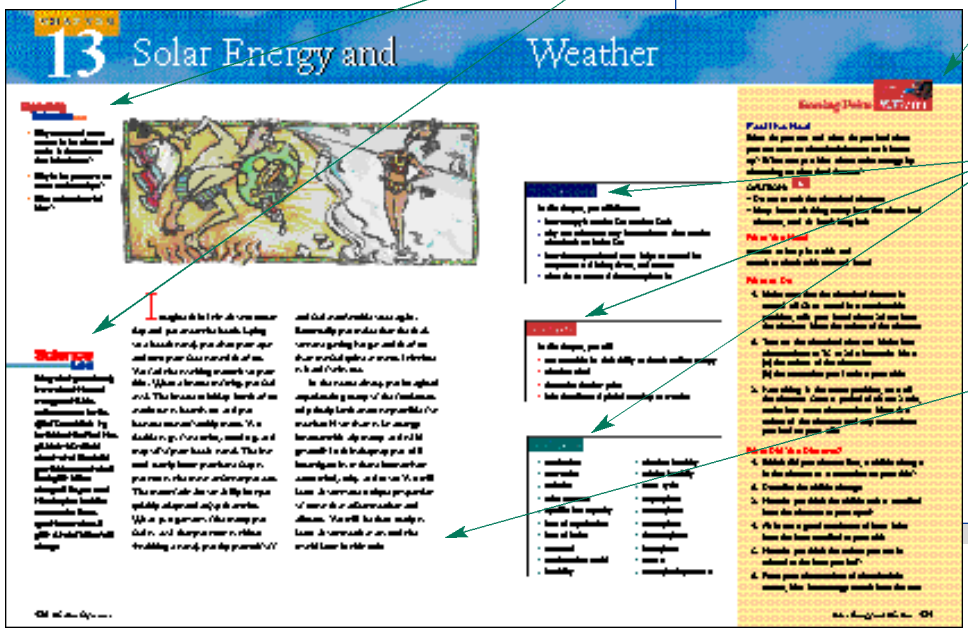
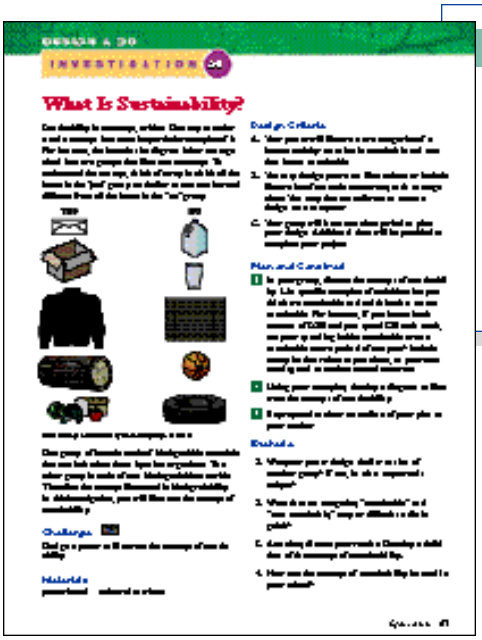
UNIT OPENER

- Provides students, teachers and parents with a clear overview of the content to be addressed.
- Stimulates students' interest in the topic by suggesting a problem to think about; presenting science concepts to consider; outlining an STSE situation to explore.

CHAPTER OPENER

- Provides both students and teachers with 4 different "entry points" into the unit to accommodate different learning and teaching styles:
- **Opening Ideas** and **Science Log**—supports a "constructivist approach" by encouraging students to record their current beliefs about the phenomenon to be studied.
- **Starting Point Activities** — short simple activities prompting students to think about the concepts and make predictions.
- **Key Concepts, Key Skills & Key Terms** — provides students, teachers, and parents with a clear, concise overview of the Ontario Curriculum expectations addressed in the chapter.
- **Introductory Paragraph**— introduces key concepts and terminology through meaningful contexts.



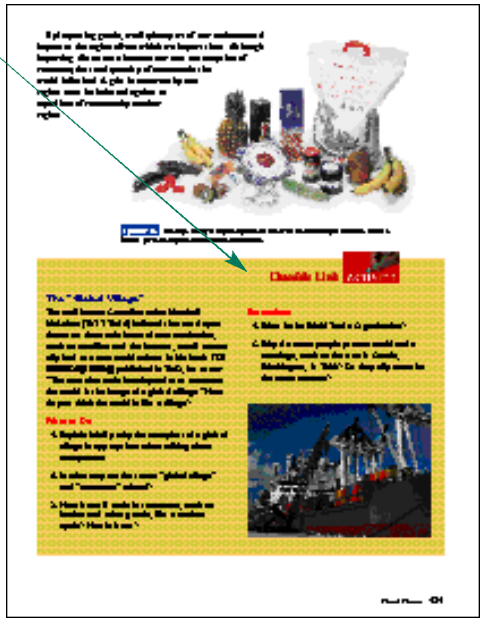


DESIGN & DO INVESTIGATION

- 1-2 page investigations encouraging students to seek answers or "solutions" to practical problems.
- Provides reliable hands-on activities for teaching design skills and integrating science and technology throughout the curriculum.
- Group-work nature of activity helps develop team collaboration skills.
- Clearly specified materials and design criteria facilitate evaluation, while giving students flexibility in their own planning and construction.

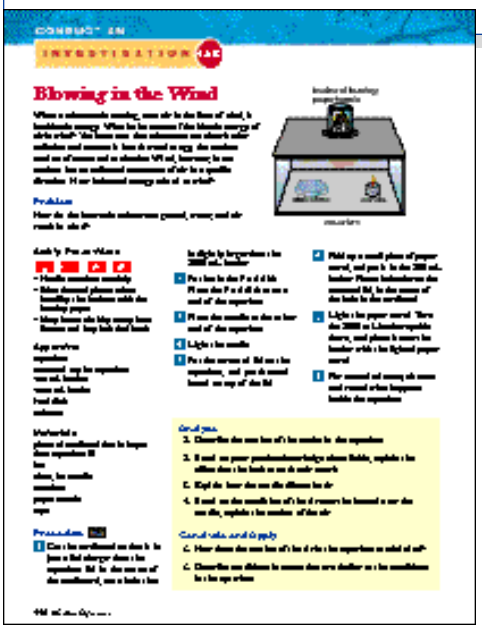
OUTSIDE LINK ACTIVITY

- A short informal inquiry activity that students can do outside of class.
- Activities involve simple materials and equipment.



CONDUCT AN INVESTIGATION

- 1-6 page "formal" labs providing students with the opportunity to develop inquiry skills using concrete materials.
- Photos showing major steps of the investigation help ensure the active participation of ESL students and weaker readers.
- Safety Precautions: Symbols and tips assist students and teachers with maintaining a safe environment.
- Through review and testing ensures that these investigations are both concept appropriate and manageable.

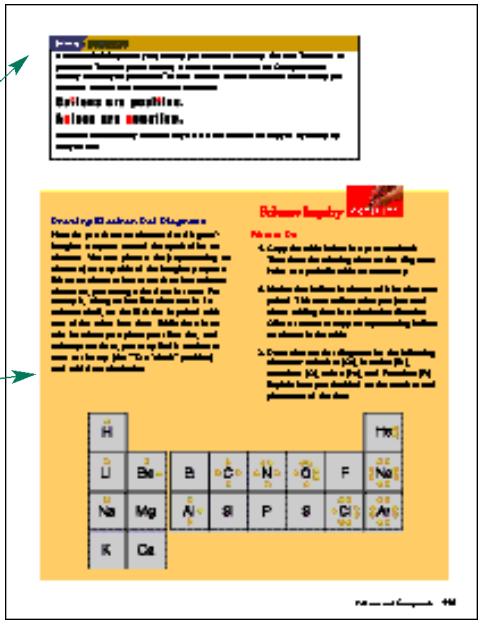


WordCONNECT

- Word origins and a variety of language activities provide teachers with ideas for links to language arts.

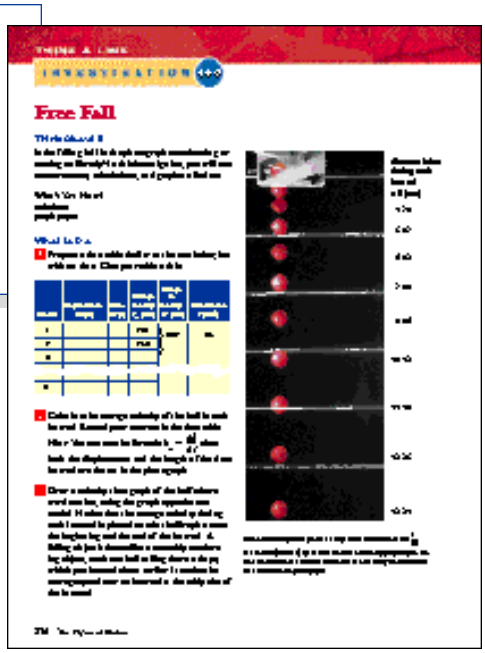
SCIENCE INQUIRY ACTIVITY

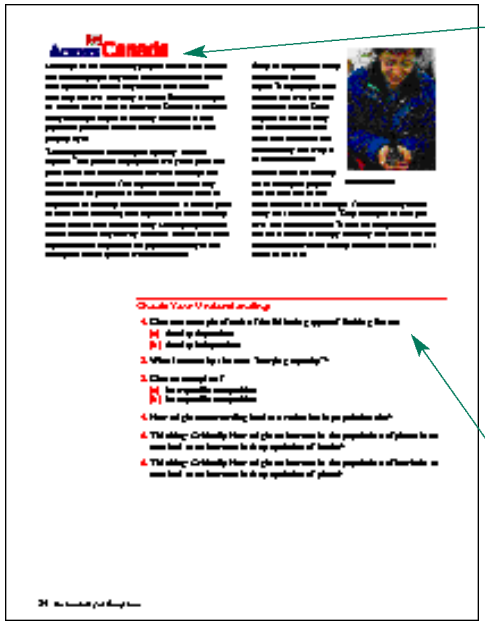
- A short informal inquiry activity, readily completed in classes where time tabling leads to shorter "blocks".
- Ideal for classrooms with little equipment.



THINK & LINK INVESTIGATION

- 1-6 page “thought” or “paper-based” investigations enabling students to explore concepts or ideas which may be impractical and/or dangerous in the lab.
- Emphasizes a variety of skills including: data analysis, analyzing a diagram or flow chart, issue analysis, and formulating ideas, opinions or recommendations based on a case study.





ACROSS CANADA

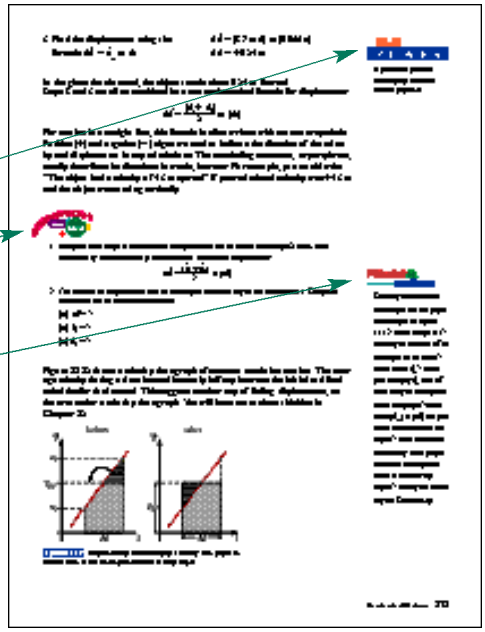
- Information on Canadian scientists involved in important research and discoveries.
- Increases students’ awareness and appreciation of the work of Canadian scientists as well as providing “role models” for students interested in careers or further study in science.

CHECK YOUR UNDERSTANDING

- Provides students with opportunities for ongoing self-assessment.
- “Apply” and “Thinking Critically” questions challenge more able students.
- At the end of each numbered section

Skill POWER

- Skill development tips refers students to the *Science Skills Guide* at the back of the textbook.
- These tips provide specific skill development strategies and activities as they are needed. Topics include using the microscope and scientific drawing.



STRETCH YOUR MIND

- Brain teasers which are typically mathematics related offer a challenge to more able students

PAUSE & REFLECT

- Opportunities to reflect are located at critical points throughout the text.
- Encourages students to “construct” their own learning on an ongoing basis.

Did You Know?

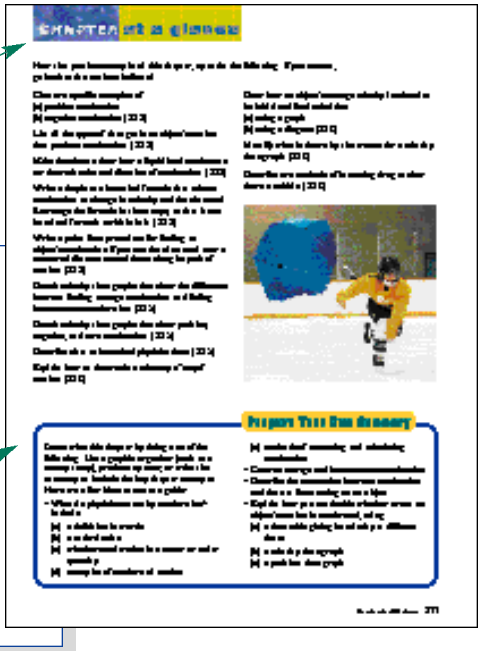
- Interesting science “facts” generate interest among a variety of learners.

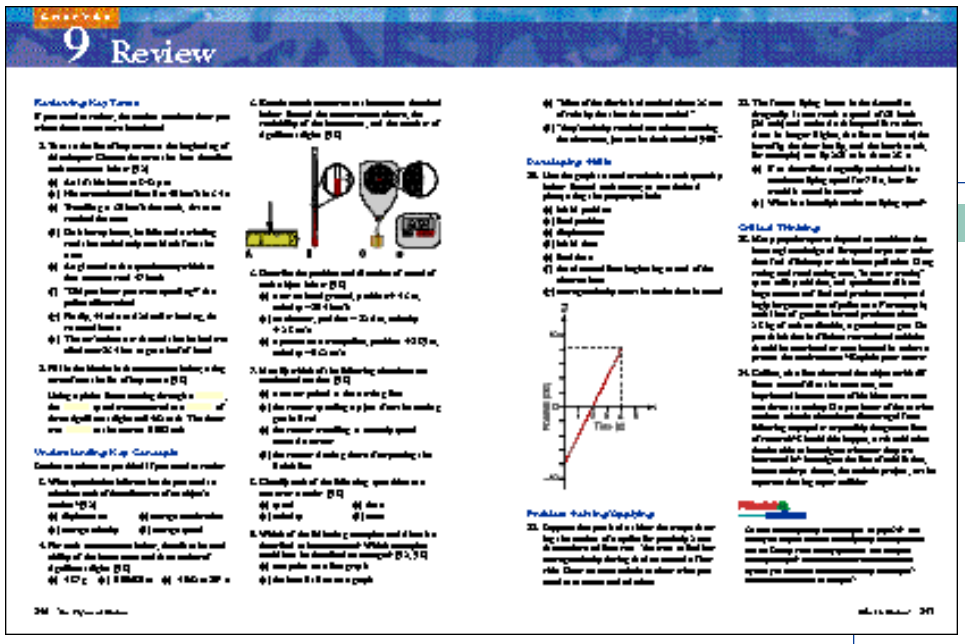
InternetCONNECT

- Encourages productive student use of the Internet by offering content appropriate sites.
- Web site suggestions from field test teachers, authors, and reviewers, combined with reviews by McGraw-Hill Ryerson save students and teachers time in locating sites for student research.

CHAPTER AT A GLANCE

- Located at the end of each chapter.
- Provides students with self-assessment opportunities relating to Ontario curriculum concept and skills expectations.
- Provides a tool for parents/guardians to work with their students.
- Prepare Your Own Summary encourages students to summarize their understanding in a variety of ways – diagrams, flow charts, concept maps, as well as writing. These alternative strategies not only offer a challenge for more able students but also provides ESL students with alternative means of demonstrating their understanding.





CHAPTER REVIEW

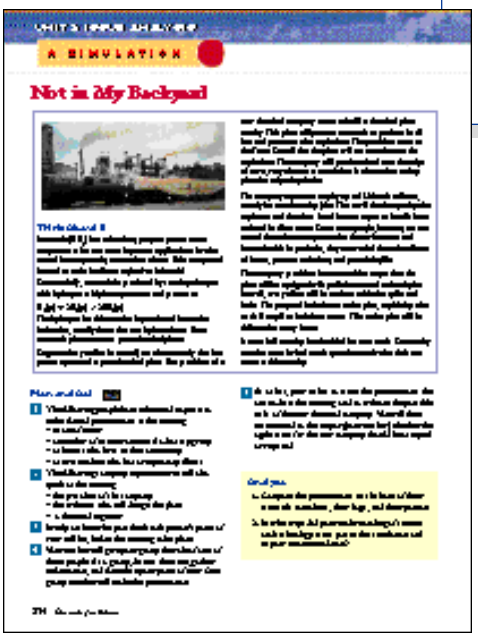
- Located at the end of each chapter.
- Reviews all of the specific expectations for:
  - Basic concepts
  - Skills of inquiry and communication
  - Relating science to technology, society, and the environment.
- Helps ensure complete coverage of the Ontario curriculum.
- Provides information for completing report cards.

ASK AN EXPERT

- Actual interviews with Canadian scientists or technologists working in an area relevant to the unit topic.
- "Exploring Further" provides students with an opportunity to apply what they have learned to related real-world problems or situations.
- These experts have a range of educational backgrounds thus providing students with a variety of role models.

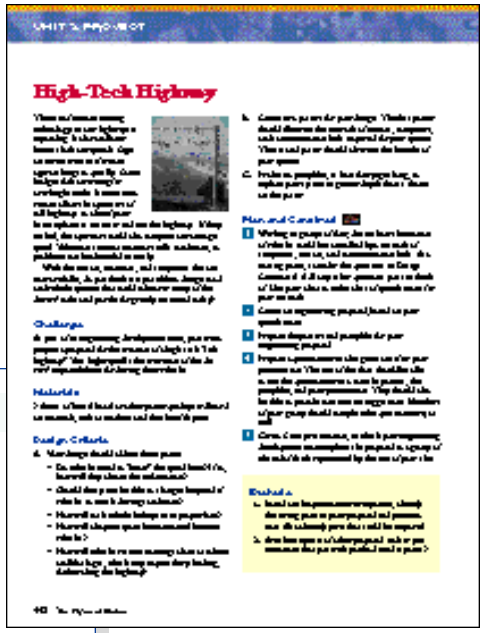
UNIT ISSUE ANALYSIS

- Focusing on responsible decision-making, these activities encourage students to respect the opinions of others and consider different points of view.
- The Unit Issue Analysis takes the form of a simulation or a debate.



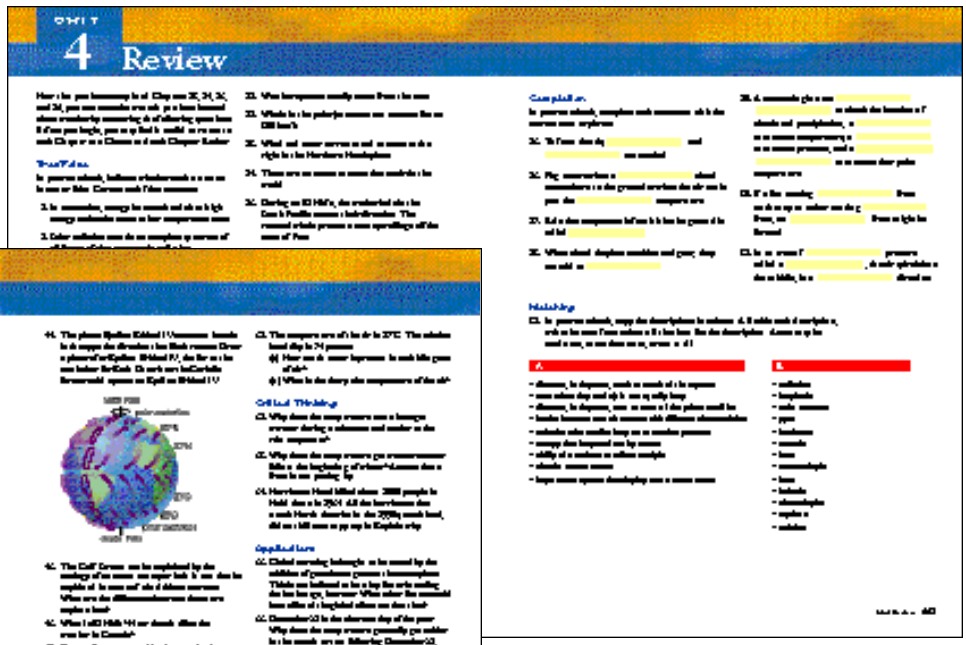
UNIT PROJECT

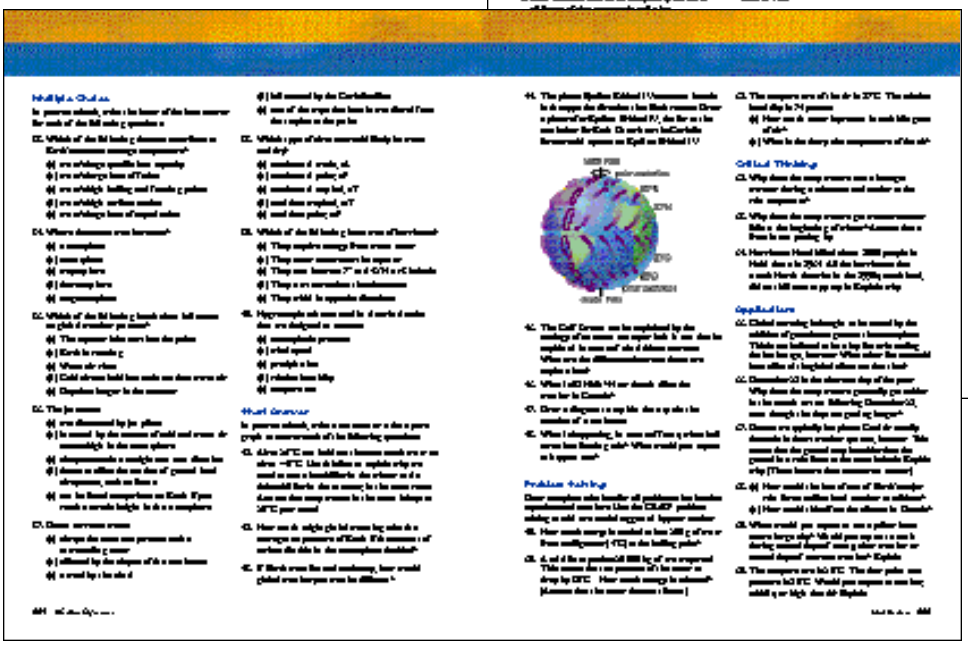
- Appearing at the end of each unit, these projects reflect either inquiry, technological problem-solving, or decision-making skills and may be used as performance assessment tasks.
- Projects challenge students to synthesize and apply their understanding of the concepts developed in the unit.
- While a specific project is outlined, alternative projects are also suggested.



UNIT REVIEW

- Appearing at the end of each unit, the 4-page Unit Review provides students with the basis to check their understanding of the major concepts and skills developed throughout the unit.


UNIT 4 Review



FEATURES TO MOTIVATE A VARIETY OF LEARNERS:

Math CONNECT

- Reviews necessary math skills as they are needed or used.
- Allows teachers to integrate math lessons into the science curriculum.

Career CONNECT

- Highlights opportunities where using spreadsheet or database applications are particularly helpful and meaningful.

Computer CONNECT

- Portrays people with various levels of education making practical "use" of science concepts.

Off the Wall

- These features present intriguing situations, discrepant events, and weird facts.
- Ideas for connecting science with other curriculum area are often included.

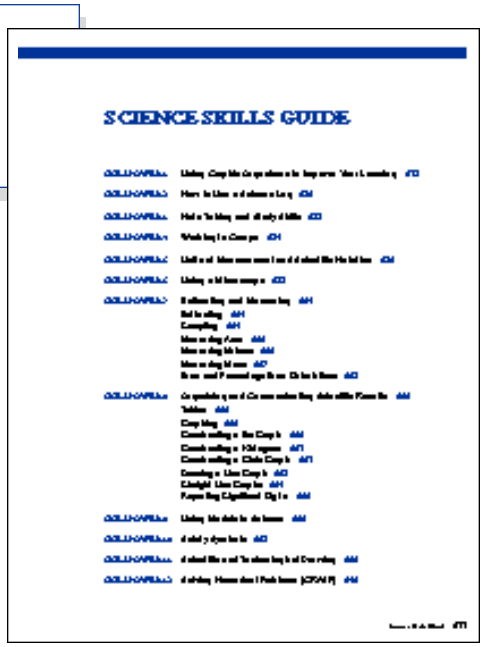
Design Your Own

- Opportunities are given in investigations, activities, Pause & Reflect features, Check Your Understanding sections, and *Chapter Reviews* for students to plan, design, and conduct their own experimental investigations.

Tools of Science

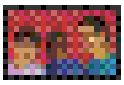
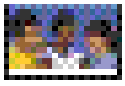
- Interesting technologies relating to the topic create a motivational "hook" for students.
- Often utilized in variety of occupations and situations.

At the back of SCIENCEPOWER 10, there are additional features to assist students. The Science *Skills Guide* will help student review and/or develop their skills. A Glossary provides all the key vocabulary for the whole course. A comprehensive Index is also provided.


SCIENCE SKILLS GUIDE

SPECIAL ICONS

The co-operative group work icon alerts students to opportunities to work within a group. The safety icons alert student to any safety precautions. Other safety icons are shown at the back of the student text.

APPENDICES

Appendix A – Classifying Living Things
- Incorporates recent advances in classifying organisms into three main groups or domains
- Introduces students to cladistics, the methodology used to establish relationships among organisms, which forms the basis for classification
- The idea that classification is based on closeness of ancestry rather than on similarities

Appendix B – Using Resources and the Internet Effectively
- Contains more detailed help for using the Internet to support research
- Includes sections on basic and advanced features of search engines

NEW!

Appendix E – Weather Map Symbols
- New appendix of symbols commonly used in weather maps, supporting Unit 4 text, and activities