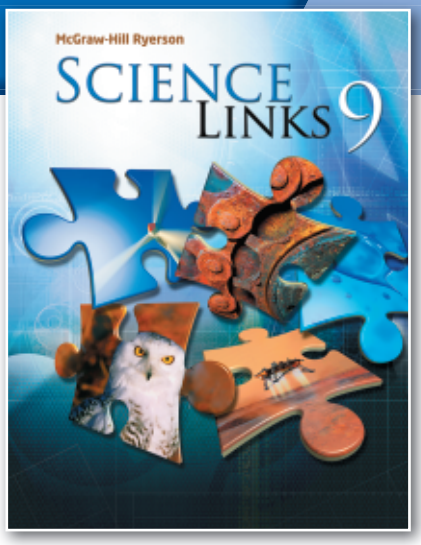


Answer the Questions, Reveal a Quote

In your notebook, answer the questions on these two pages as you explore *Science Links 9*. Use the numbered letters in each answer to find the missing words in the quote.

On September 10th, 2006, 48 Canadian youth organizations banded together to form the Canadian Youth Climate Coalition. The coalition members work in their communities and with students around the world to help change the way humans affect global climate. They use the Internet and gatherings both large and small to achieve their goals.

Our culture, health, security, environment, prosperity, and future are at stake. This is not a dress rehearsal. … We did not create this crisis, but …

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38

—Declaration, Canadian Youth Climate Coalition

The Canadian Youth Climate Coalition combines energy and creativity with scientific knowledge to help solve real world problems. How can you apply this approach to your own life?

Introducing *Science Links 9*

You will study four units in *Science Links 9*. What are they?

Unit 1: Sustainable Ecosystems and ___ (19) ___ (22)

Unit 2: ___ (17) ___ (2)

Unit 3: ___ (31) ___ (6)

Unit 4: ___ (12) ___ (36)

The material at the beginning of each unit helps you prepare for study. The Big Ideas summarize the information in the unit. They are found on the page that begins each unit.

What's the first Big Idea for Unit 4?

Electricity is a form of energy produced from a variety of ___ – ___ (30) ___ (21) ___ (1) sources.

Which feature at the beginning of the unit shows you what the unit is all about in a graphic format?

___ (15) ___ (26) ___ (33)

The information in each unit is organized into topics. Each topic asks a question. What question does Topic 2.3 ask?

What are pure substances and 

?

Doing Science

What piece of safety equipment does this icon represent?

Each investigation features a Skill Check that tells you which science skills will be featured in the investigation. **What are these skills?**

Initiating and 

and Recording

Analyzing and 

Checking Your Learning

What feature gives you a chance to check your understanding as you read through a topic?

At the end of each topic, what are you asked to do?

Review the 

It's important that you understand scientific terms and know how to use the words correctly. **Where would you look in the textbook if you wanted to review a definition?**

The 

Finding Science in Unexpected Places

Each unit features a Canadian working in a career that uses scientific knowledge. **What is this feature called?**

Each unit features Canadians students who are using their scientific knowledge to do something in their community. **What is this feature called?**

Every unit tells you a "Strange Tale" about science. **What is the tale in Unit 3?**

The 

Tools for Success

At the back of this textbook, there are three groups of Toolkits that explain and demonstrate skills that will help you in all your learning, both in and outside of school.

What are these toolkits?

Scientific Inquiry, Numeracy, and

Your teacher has asked you to create a data table. **Where can you find out how to do this?**

Skills Toolkit

Finally, you need to make a graph of your data. **Where can you find out how to do this?**

Skills 

Safety in Your Science Classroom

Become familiar with the following safety rules and procedures. It is up to you to use them and your teacher's instructions to make your activities and investigations in *Science Links* 9 safe and enjoyable. Your teacher will give you specific information about any other special safety rules that need to be used in your school.

1. Working with your teacher …

- Listen carefully to any instructions your teacher gives you.
- Inform your teacher if you have any allergies, medical conditions, or other physical problems that could affect your work in the science classroom. Tell your teacher if you wear contact lenses or a hearing aid.
- Obtain your teacher's approval before beginning any activity you have designed for yourself.
- Know the location and proper use of the nearest fire extinguisher, fire blanket, first-aid kit, and fire alarm.

2. Starting an activity or investigation …

- Before starting an activity or investigation, read all of it. If you do not understand how to do a step, ask your teacher for help.
- Be sure you have checked the safety icons and have read and understood the safety precautions.
- Begin an activity or investigation only after your teacher tells you to start.

3. Wearing protective clothing …

- When you are directed to do so, wear protective clothing, such as a lab apron and safety goggles. Always wear protective clothing when you are using materials that could pose a safety problem, such as unidentified substances, or when you are heating anything.
- Tie back long hair, and avoid wearing scarves, ties, or long necklaces.

4. Acting responsibly …

- Work carefully with a partner and make sure your work area is clear.
- Handle equipment and materials carefully.
- Make sure stools and chairs are resting securely on the floor.
- If other students are doing something that you consider dangerous, report it to your teacher.

5. Handling edible substances …

- Do not chew gum, eat, or drink in your science classroom.
- Do not taste any substances or draw any material into a tube with your mouth.

6. Working in a science classroom …

- Make sure you understand all safety labels on school materials or those you bring from home. Familiarize yourself, as well, with the WHMIS symbols and the special safety symbols used in this book, found on page xv.
- When carrying equipment for an activity or investigation, hold it carefully. Carry only one object or container at a time.
- Be aware of others during activities and investigations. Make room for students who may be carrying equipment to their work stations.

7. Working with sharp objects …

- Always cut away from yourself and others when using a knife or razor blade.
- Always keep the pointed end of scissors or any pointed object facing away from yourself and others if you have to walk with such objects.
- If you notice sharp or jagged edges on any equipment, take special care with it and report it to your teacher.
- Dispose of broken glass as your teacher directs.

8. Working with electrical equipment …

- Make sure your hands are dry when touching electrical cords, plugs, or sockets.
- Pull the plug, not the cord, when unplugging electrical equipment.
- Report damaged equipment or frayed cords to your teacher.
- Place electrical cords where people will not trip over them.

9. Working with heat …

- When heating an item, wear safety goggles and any other safety equipment that the text or your teacher advises.
- Always use heatproof containers.
- Point the open end of a container that is being heated away from yourself and others.
- Do not allow a container to boil dry.
- Handle hot objects carefully. Be especially careful with a hot plate that looks as though it has cooled down.
- If you use a Bunsen burner, make sure you understand fully how to light and use it safely.
- If you do receive a burn, inform you teacher, and apply cold water to the burned area immediately.

10. Working with various chemicals …

- If any part of your body comes in contact with a substance, wash the area immediately and thoroughly with water. If you get anything in your eyes, do not touch them. Wash them immediately and continuously for 15 minutes, and inform your teacher.
- Always handle substances carefully. If you are asked to smell a substance, never smell it directly. Hold the container slightly in front of and beneath your nose, and waft the fumes toward your nostrils.
- Hold containers away from your face when pouring liquids.

11. Working with living things …

On a field trip:

- Try not to disturb the area any more than is absolutely necessary.
- If you move something, do it carefully, and always replace it carefully.
- If you are asked to remove plant material, remove it gently, and take as little as possible.

In the classroom:

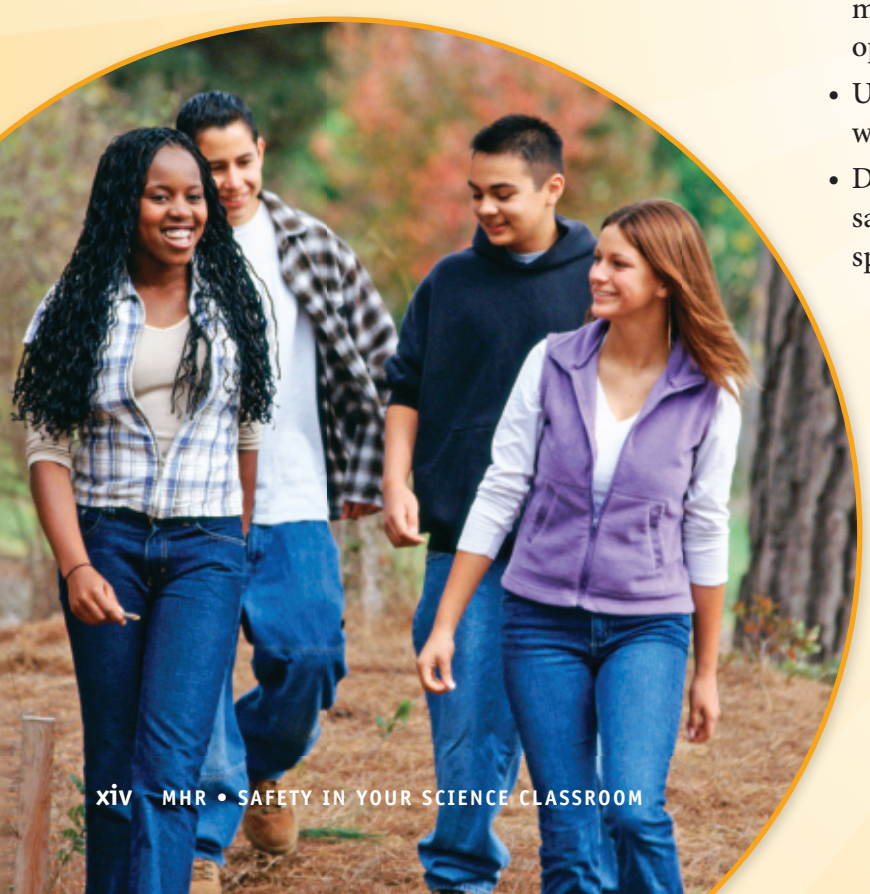
- Make sure that living creatures receive humane treatment while they are in your care.
- If possible, return living creatures to their natural environment when your work is complete.

12. Cleaning up in the science classroom …

- Clean up any spills, according to your teacher's instructions.
- Clean equipment before you put it away.
- Wash your hands thoroughly after doing an activity or an investigation.
- Dispose of materials as directed by your teacher. Never discard materials in the sink unless your teacher requests it.

13. Designing and building …

- Use tools safely to cut, join, and shape objects.
- Handle modelling clay correctly. Wash your hands after using modelling clay.
- Follow proper procedures when using mechanical systems and studying their operations.
- Use special care when observing and working with objects in motion.
- Do not use power equipment such as drills, sanders, saws, and lathes unless you have specialized training in handling such tools.



Safety Symbols

Science Links 9 Safety Symbols

The following safety symbols are used in *Science Links 9* to alert you to possible dangers. Be sure you understand each symbol used in an activity or investigation before you begin.

Disposal Alert
This symbol appears when care must be taken to dispose of materials properly.

Thermal Safety
This symbol appears as a reminder to use caution when handling hot objects.

Sharp Object Safety
This symbol appears when a danger of cuts or punctures caused by the use of sharp objects exists.

Electrical Safety
This symbol appears when care should be taken when using electrical equipment.

Skin Protection Safety
This symbol appears when use of caustic chemicals might irritate the skin or when contact with micro-organisms might transmit infection.

Clothing Protection Safety
A lab apron should be worn when this symbol appears.

Fire Safety
This symbol appears when care should be taken around open flames.

Eye Safety
This symbol appears when a danger to the eyes exists. Safety goggles should be worn when this symbol appears.

Fume Safety
This symbol appears when chemicals or chemical reactions could cause dangerous fumes.

Chemical Safety
This symbol appears when chemicals used can cause burns or are poisonous if absorbed through the skin.

Instant Practice—Safety Symbols

Find four of the *Science Links 9* safety symbols in activities or investigations in this textbook. For each symbol, identify the possible dangers in the activity or investigation that the symbol refers to.

WHMIS Symbols

Look carefully at the WHMIS (Workplace Hazardous Materials Information System) safety symbols shown here. The WHMIS symbols are used throughout Canada to identify dangerous materials. Make certain you understand what these symbols mean. When you see these symbols on containers, use safety precautions.

Compressed Gas

Flammable and Combustible Material

Oxidizing Material

Corrosive Material

Poisonous and Infectious Material Causing Immediate and Serious Toxic Effects

Poisonous and Infectious Material Causing Other Toxic Effects

Biohazardous Infectious Material

Dangerously Reactive Material

Instant Practice—Safety Symbols

Hydrogen gas is stored in containers under pressure. This gas is highly flammable.

1. What two symbols would you expect to see on a label for hydrogen gas?
2. Describe the following.
   a) the risks illustrated by the two symbols
   b) precautions someone would need to take when working with the gas
   c) where it could be safely stored
   d) first aid or emergency treatment
3. If you did not know the answer to part d., where would you find this information?