

Science and Technology Activities Resource

Safety Rules for Grade 4


Students are expected to have:

- the knowledge to use the materials, tools, and procedures involved in science and technology safely;
- the knowledge concerning the care of living things that are brought into the classroom; and
- the skills needed to perform tasks efficiently and safely.

The Ontario Curriculum Grades 1-8: Science and Technology, 2007 (Revised)

The *Science and Technology Activities Resource* calls for an active, experimental approach to learning, with all students participating regularly in hands-on activities. These hands-on activities can reinforce the learning of science concepts and promote the development of the skills of scientific investigation and technological problem solving.

Teachers, students and parents all share in the goal to **ensure safe hands-on activities** and an outcome of **students becoming self-directed learners responsible for their own and others' safety**. The following guideline highlights a listing of do's and don'ts for all elementary science and technology students.

<p>Planning</p> 	<p><u>Students should:</u></p> <ul style="list-style-type: none"> • consider safety when planning and designing an activity. • keep the floor and aisles clean at all times. • in general, have a teacher or an adult supervise the activity. • be careful not to spill water on the floor and mop up any spills immediately. • wear protective gloves and carefully dispose of broken glassware in clearly marked containers. • always wash their hands thoroughly with soap after the classroom/lab cleanup. 	<p><u>Teachers/Adults should:</u></p> <ul style="list-style-type: none"> • consider safety when planning and designing an activity. • remind the students not to look directly at the sun. Permanent eye damage can happen. • ensure that the students use plastic instead of glassware such as plastic mirror whenever possible. • use alcohol-filled thermometers, not mercury. • in general, be present to supervise the activity. • never bring food or drink into the lab.
<p>Safety Gear</p> 	<p>When working in the science and technology classroom/lab, <u>students should:</u></p> <ul style="list-style-type: none"> • wear safety goggles. • use protective gloves. • wear footwear at all times. • tie back long hair. 	<p>When working in the science and technology classroom/lab, <u>teachers/adults should:</u></p> <ul style="list-style-type: none"> • sanitize shared equipment such as goggles after use.
<p>Testing</p> 	<p><u>Students should:</u></p> <ul style="list-style-type: none"> • keep a safe distance away from stretched materials that might snap and cause injury. • keep hands away from the chain and gears when examining a bicycle. • limit the size and weight of testing objects. • not taste anything in the lab, unless instructed by the teacher. 	<p><u>Teachers/Adults should:</u></p> <ul style="list-style-type: none"> • review the testing procedures and ensure the tests do not put students at risk. • ensure structures, especially when required to support heavy loads, are designed and built to support the weight. In drop tests, soft materials should be used under the testing load.
<p>Tools</p> 	<p><u>Students should:</u></p> <ul style="list-style-type: none"> • be careful when handling sharp objects. • use tools only for the purpose for which they were designed and use them safely and correctly as instructed by the teacher. • use utility knives and cutting boards or mats when cutting. In the case of nailing, the nail should be measured for correct fit before hammering into the project. • use a hole punch or paper drill when making holes in paper. • be careful when using a glue gun which can get very hot. 	<p><u>Teachers/Adults should:</u></p> <ul style="list-style-type: none"> • sharpen cutting tools to reduce the need for excessive force when cutting, which may be dangerous. • ensure that students use a hand drill under supervision when making holes in wood and plastic. • keep tools below waist level. • be careful of loud sounds which may damage their hearing.

Heating



Students should:

- be extremely careful when using hot water.
- ensure all heating activities and use of chemicals are conducted in well-ventilated areas.
- use candle holders and place them on sand trays when candles are used.
- stand when heating things in order to move quickly away in case of accident. Flames should never be left unattended.

Teachers/Adults should:

- supervise all activities in which hot water is used.
- ensure a Type 2A-10BC fire extinguisher is available whenever an open flame is used and there is a risk of fire. A bucket containing dry sand is also recommended as an addition to the usual fire fighting equipment.

Plants and Animals



Students should:

- handle all living things with care and return animals taken from their natural habitat after the activity as soon as possible.
- be aware that some animals can bite or sting. When in doubt, the teachers should be consulted.
- wear protective clothing in outdoor activities.

Teachers/Adults should:

- be mindful of students with allergies to certain plants and animals.
- avoid touching the eyes when handling soils, plants and animals.
- always wash their hands after handling soils, plants and animals.

Science and Technology Activities Resource — Safety Considerations for Grade 4

At the beginning of each Investigation

- Ensure that the students:
- read the *Safety Rules* on this card.

Habitats and Communities

- INVESTIGATIONS** 2, 3,4
- Ensure that the students:
- wash their hands thoroughly with soap after handling the snails.
 - are careful when handling sharp objects.
 - use tools safely and correctly as instructed by the teacher.

- INVESTIGATIONS** 7
- are aware that some animals, such as spiders and centipedes, can bite.

Pulleys and Gears

- INVESTIGATIONS**
- Many investigations require the use of tools. Students should always wear protective gear and use these tools safely and correctly as instructed by the teacher.

- INVESTIGATIONS** 5,9
- Ensure that the students:
- wear protective gloves and keep their hands away from the moving chain and turning wheels when examining the bicycle.

Light and Sound Energy

- INVESTIGATIONS** 1, 2,4
- Ensure that the students:
- never look directly at the sun.
 - handle any glass and ceramic objects carefully. Protective gloves should be worn and broken glassware or chinaware should be carefully disposed of in clearly marked containers.

- INVESTIGATIONS** 5, 6-8
- never look directly at the sun.
 - limit the sound produced in any of the sound activities to an acceptable level.
 - do not expose themselves to extremely loud sounds.

Rocks, Minerals, and Erosion

- INVESTIGATIONS**
- Students should always wear protective gear when collecting rock samples and use tools safely and correctly as instructed by the teacher.

- INVESTIGATIONS** 5
- Ensure that the students:
- report to the teacher/adult any known allergy they may have to latex rubber products.