SNC 1D
Science, Grade 9
Academic

Goals

- to understand the basic concepts in biology, chemistry, earth and space science, and physics
- to develop skills in the processes of scientific inquiry
- to relate science to technology, society, and the environment
- to introduce students to science-related careers

Course Description / UNITS of study

Scientific Investigation Skills

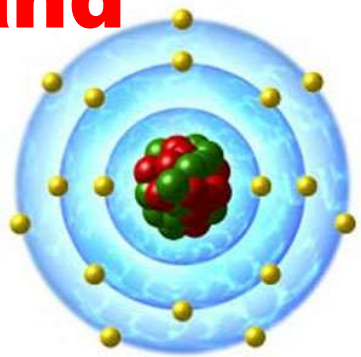
- safety in the lab

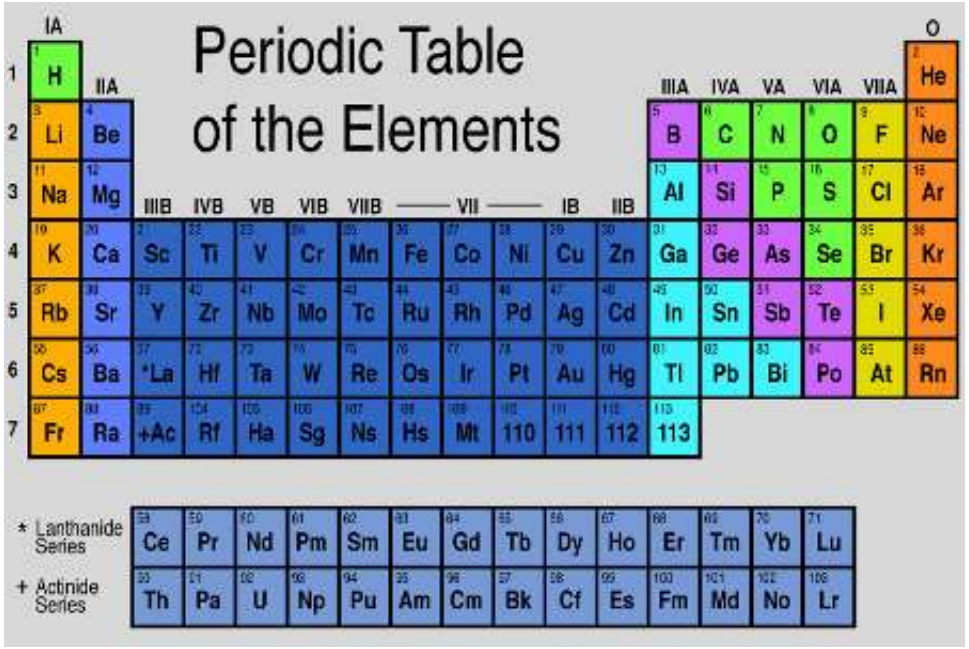
- metric review

- lab skills

Course Description / UNITS of study

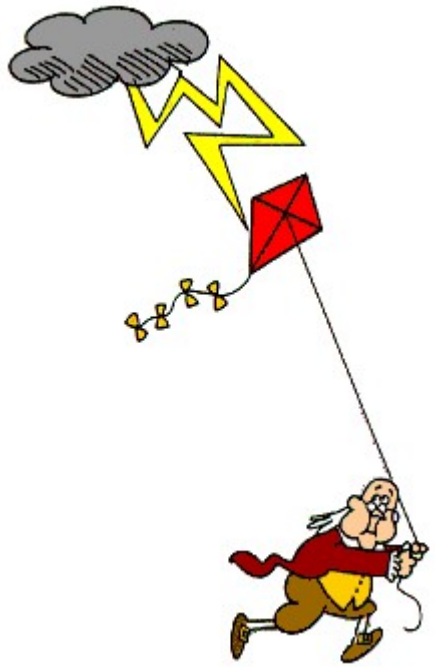
Unit 1: Atoms, Elements and Compounds





Course Description / UNITS of study

Unit 2: The Characteristics of Electricity

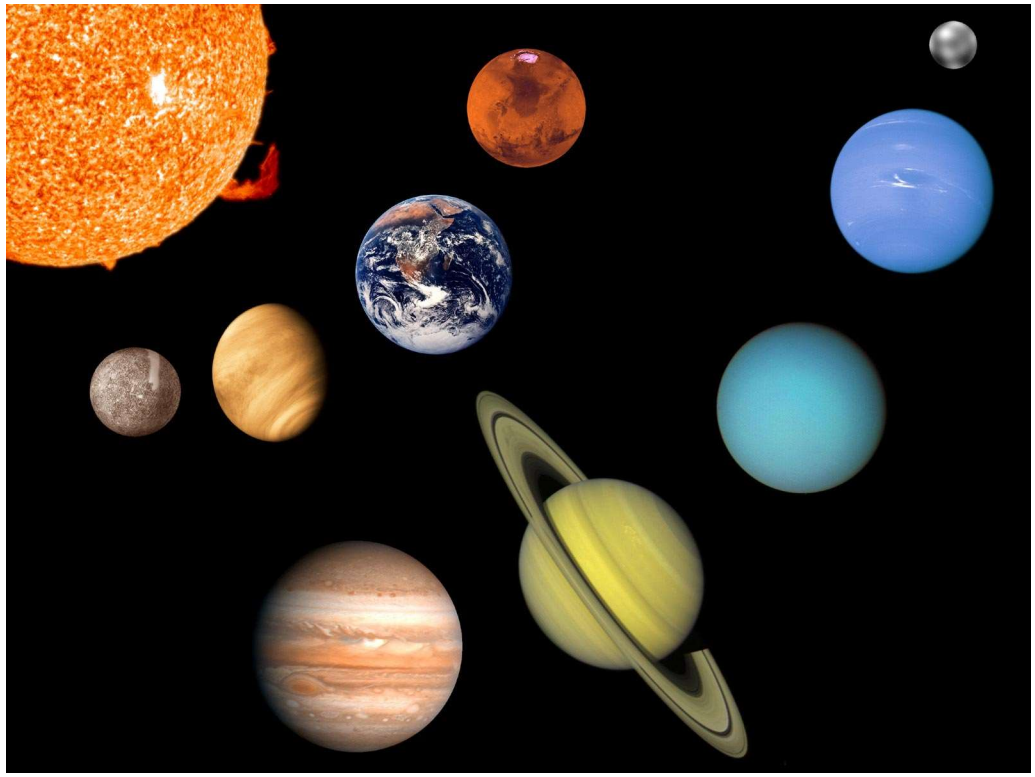


Course Description / UNITS of study

Unit 3: Sustainable Ecosystems

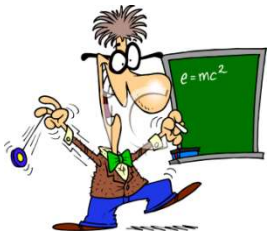
Course Description / UNITS of study

Unit 4: The Study of the Universe



Format per unit

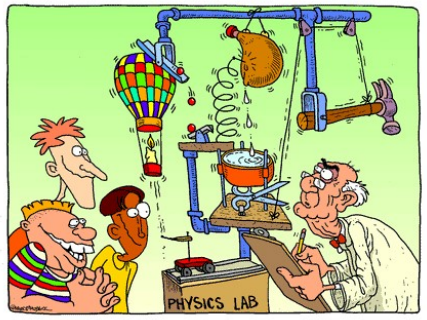
- Lessons



- Labs (2-3) & Reports

- Test

- Unit Task / Assignment



Textbook

- **<u>Nelson Science Perspectives 9</u>**
- Each student receives a textbook.
- Text must be returned at the end of the semester.

Textbook

Nelson Science Perspectives 9

- Your textbook (Student eBook) is also available online. To access the online text, follow the instructions pasted on the first page of your textbook.

Safety Goggles

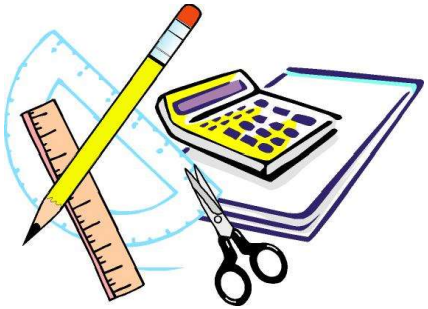
All science students must have chemical splash proof and impact resistant safety goggles in order to perform all laboratory activities.

Each student will be provide with approved safety goggles for the semester.
Safety goggles will be stored in the classroom.

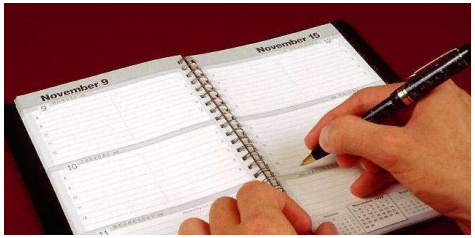
MATERIALS NEEDED

Every student must bring the following to class each day;

- notebook: a binder containing both lined and blank paper

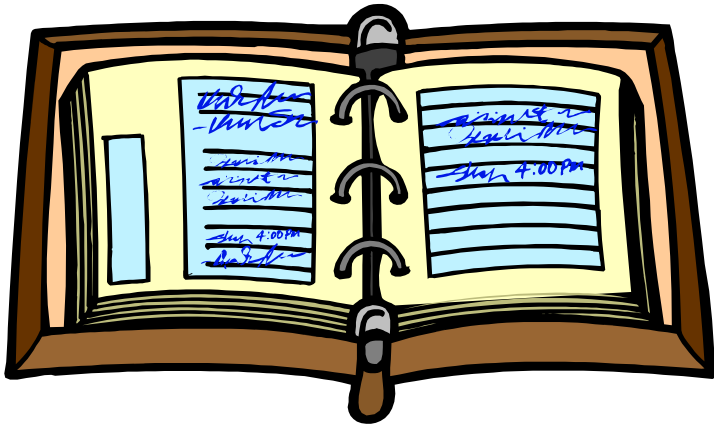


- pen, pencil, eraser, ruler
- scientific calculator
- agenda to keep track of homework and important dates



Expectations - Notes

a) in a binder
b) must be neat, organized, and complete
c) must be dated
d) titles should be underlined
e) diagrams must be on blank paper and occupy at least half the page, have an underlined title, be labelled in pencil in small print, be cross sectional, and have all lines drawn with a ruler.



Expectations - Absences

- Students are responsible for all the work they missed.
- See the website www.tecmath.weebly.com to see what work was missed.

a) If notes were missed, get handouts from your teacher.

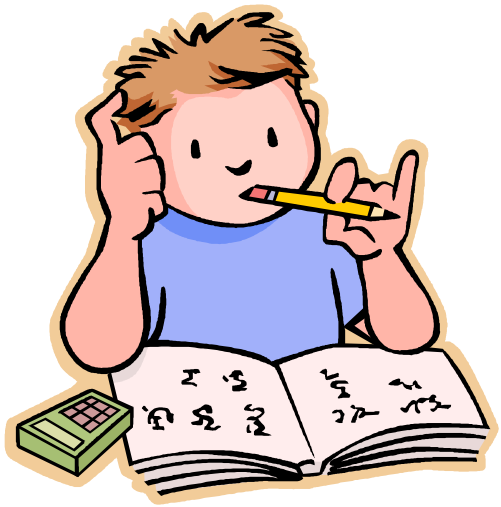
b) If absent the day an assignment was due, the assignment is due the first day back.

c) If a test was missed, see the teacher to make arrangements to write the test.

d) If a lab is missed, see the teacher.

Expectations - Homework

- frequent
- must be completed daily
- do your own work

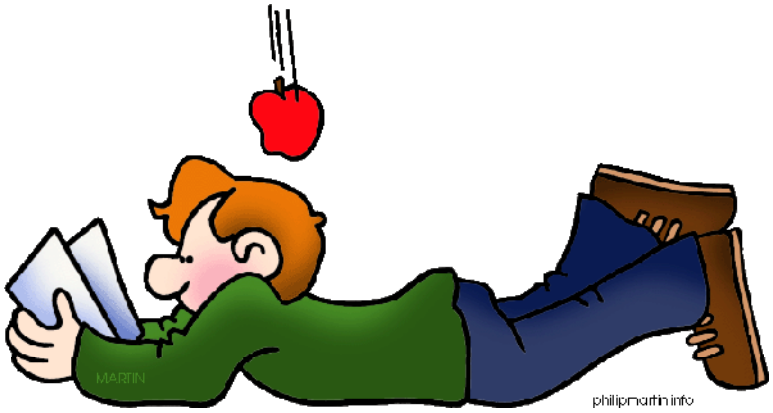


Expectations – Extra Help

- always available
- Lunch (except week A Tuesdays and Thursdays)
- Before school
- After school (by appointments only)

Expectations

Student Attitude: give best effort



LAB EQUIPMENT

Safety Goggles

Electronic
Balance

Scoopula

test tube

test tube rack

test tube brush

graduated cylinder

test tube holder

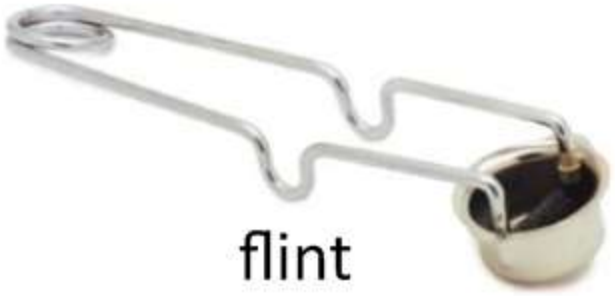
test tube clamp

beaker

beaker tongs

bunsen burner

retort stand



flint

ring clamp

wire gauze

funnel

dropper
bottle

volumetric flask

squirt bottle

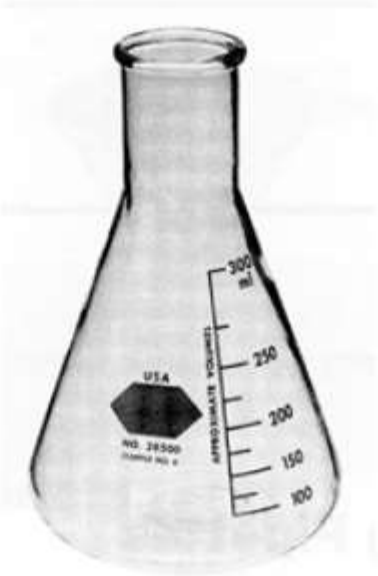
pipette

rubber stopper

thermometer

thermometer clamp

erlenmeyer flask



mortar and pestle


LAB SAFETY
MADE SIMPLE
0:16 / 7:07

LAB SAFETY

Guidelines for a Safe Lab

General Lab Rules

- Maintain quiet behavior during lab activity.
- Never rush. Always be prepared to stop quickly.
- Know the purpose of the experiment before doing the experiment.
- Report all accidents to the teacher immediately, even tiny accidents.
- Be familiar with the location and use of safety equipment.
- Never attempt unauthorized experiments. No lab work is allowed without the teacher's permission.
- Remain standing by the experiment. Do not sit on the lab benches and do not bring chairs to the lab bench.
- Keep your work area clean, dry, and tidy.
- Do not borrow any equipment from other students. See the teacher if additional equipment is needed.
- Report all broken and defective equipment to the teacher immediately.

Eye Safety

- Wear your laboratory safety glasses at all times.
- Know how to use the emergency eyewash system. If chemicals get into your eyes, flush them out with plenty of water and inform your teacher.

Plant Safety

- Use caution when handling plants.
- Do not eat or taste any unfamiliar plant or plant parts.
- If you are allergic to pollen, do not work with plant or plant parts without a gauze face mask.

Glassware Safety

- Check for broken, cracked, or chipped glassware. Report any sharp edges to teacher immediately. It should be disposed of properly.
- Do not force glass tubing into rubber stoppers.
- Clean and air-dry all glassware.

Fire & Heating Safety

- Keep flames away from flammable materials.
- Tie back long hair and secure loose clothing when working near an open flame.
- Do not reach across an open flame.
- Know the location and proper use of fire blankets and extinguishers.

- Never leave a heat source unattended. Turn off heat sources when they are not in use.
- Point test tubes away from yourself and others when heating substances in them.
- Use the proper procedures when lighting a Bunsen burner.
- Check to see if an object is hot before handling it.
- To avoid burns, do not handle heated glassware or materials directly. Use tongs, test-tube holders, or heat resistant gloves.
- Never carry hot equipment through a congestion of students.

Chemical Safety

- Respect all chemicals. Avoid direct contact with any chemical in any way.
- Beware of unknown chemicals or what may look like drops of water. They may be corrosive liquids.
- Do not mix any chemicals unless directed to do so in a procedure or by your teacher.
- Inform your teacher immediately if you spill chemicals or get any on your skin or in your eyes.
- Never taste any chemicals or substances.
- Keep your hands away from your face when working with chemicals.
- When required, wear a laboratory coat or apron. It will help protect your clothing from stains or damage.
- Wash your hands before leaving the lab after an experiment has been completed.

Animal Safety

- Handle live animals with care. If you are bitten or scratched by an animal, inform your teacher.
- Do not bring wild animals into the classroom.
- Do not cause pain, discomfort, or injury to an animal. Be sure any animals kept for observations are given the proper food, water, and living space.
- Wear gloves when handling live animals. Always wash your hands after handling any animals.

Electrical Safety

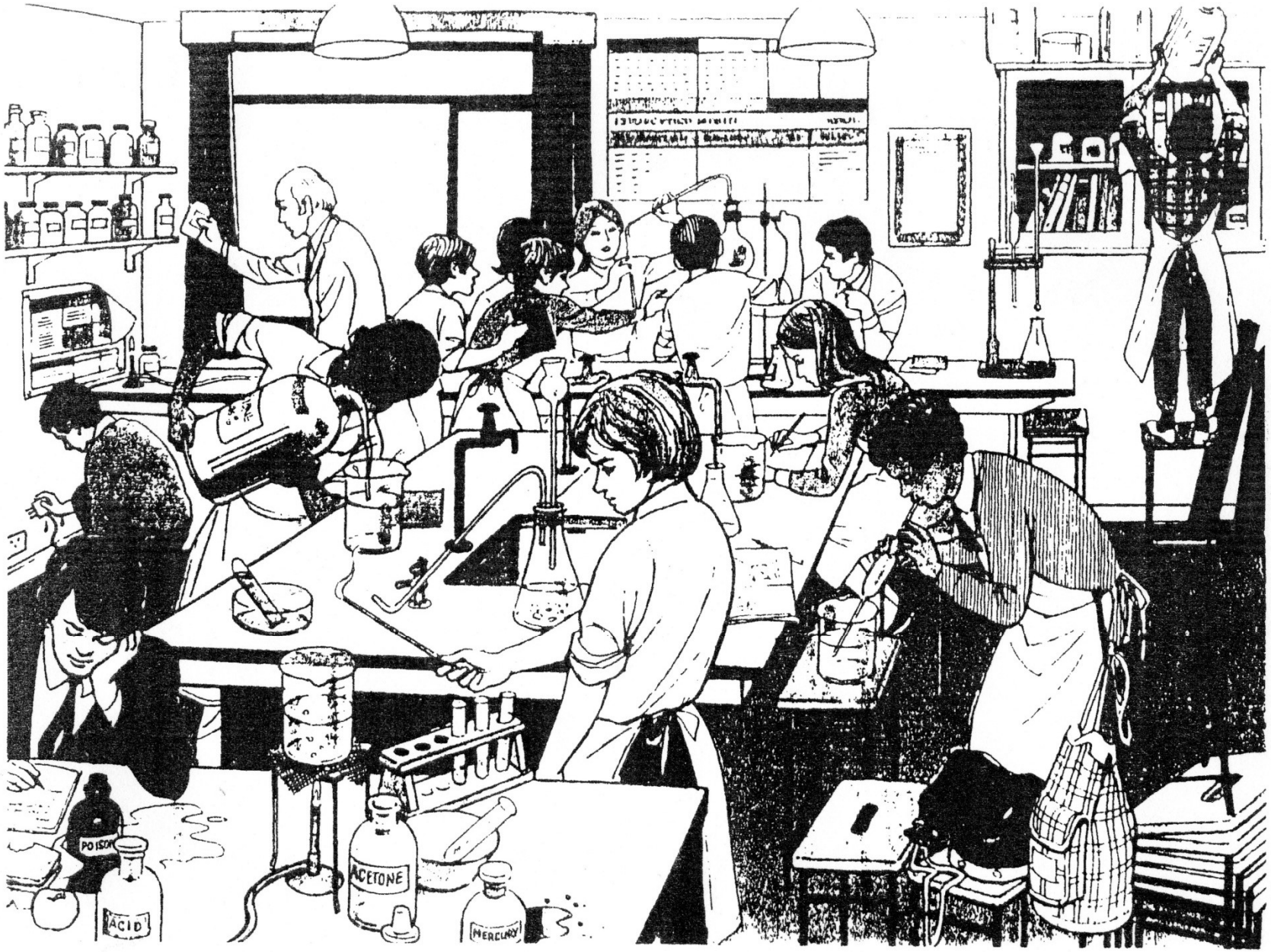
- Use care when using electrical equipment.
- Check all electrical equipment for worn cords or loose plugs before using them.
- Keep your work area dry.
- Do not overload electrical circuits.

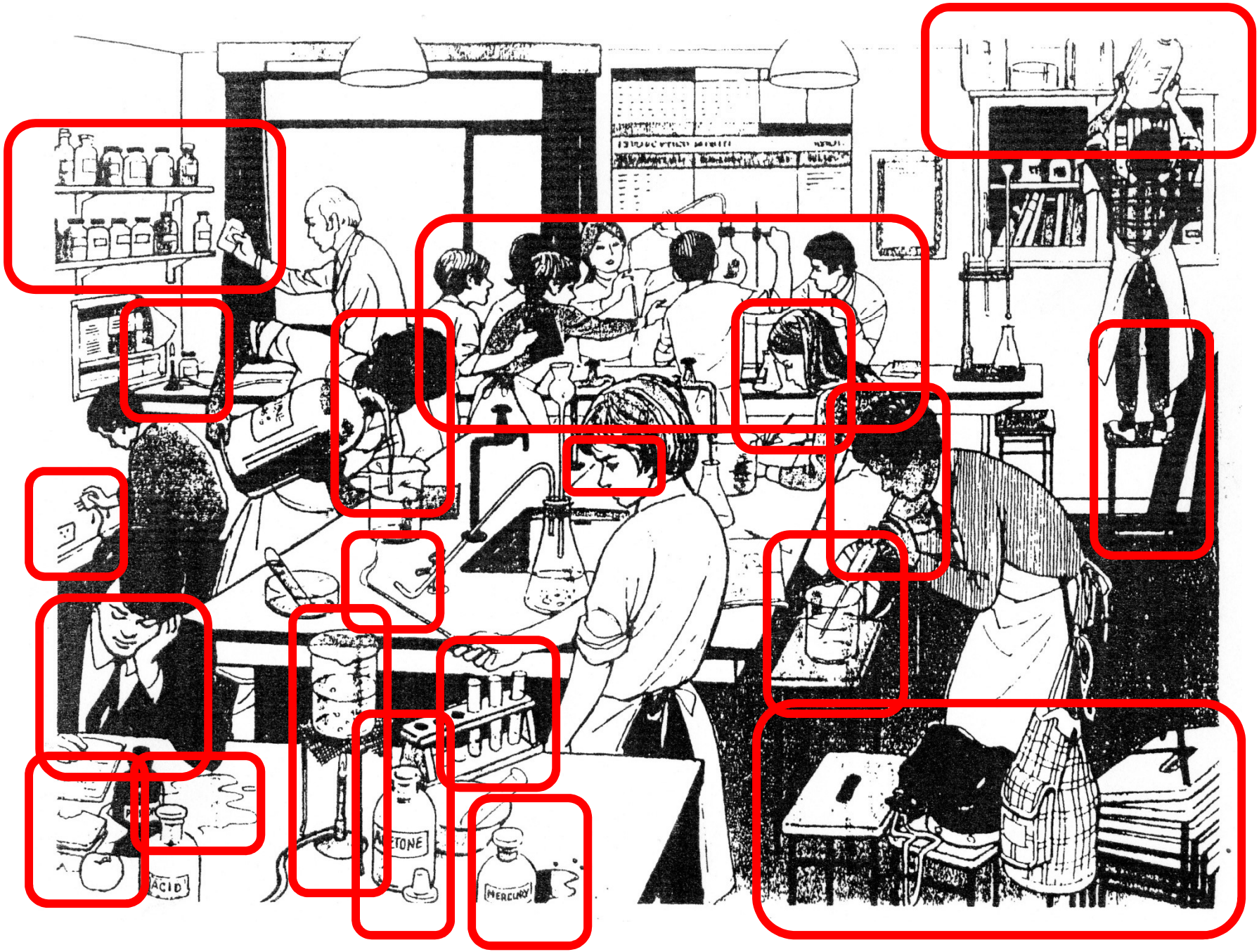
In general, if you are not sure of something, ask the teacher before proceeding!

SAFETY IN THE LAB

Observe the diagram on the next slide and identify as many safety errors/concerns as possible.

Circle the safety concern and number it. Then describe the safety concern.


POISON
ACID
ACETONE
MERCURY


ACID
ACETONE
MERCURY


mr
Bean
0:02 / 2:02