Online Science Adventure

Chemistry | Pre-Visit Resources

THIS SESSION, OFFERED VIRTUALLY, WILL HAVE STUDENTS THINKING LIKE A SCIENTIST. LEARNERS WILL EXPLORE CHEMISTRY THROUGH A SERIES OF DEMONSTRATIONS AND HANDS-ON ACTIVITIES.

At least 1 week prior:

- Ensuring classroom is properly configured and equipment will be available for students (see below). Science World staff are available to test set up if needed, please contact schools@scienceworld.ca to schedule this.

Class configuration:

- In-class learners: only one computer (preferably the teacher's computer) will connect to the online learning platform. This computer should be connected to the classroom projector and to an audio system in the room, so students can hear and see the facilitator (if permitted: the camera should also be facing the students, so the facilitator can also see the students).
- Distance learners (students at another location) will need to be connected to the learning platform.
- Science World will not record this session.

During the session:

- logging in to online learning platform *10 minutes prior* to workshop start time
- providing updated participant count to the facilitator
- providing moderation between students and facilitator (making sure students are on task and communicating with facilitator as needed throughout).

60 minute session ONLY: Cabbage Juice Indicator Chem-Along

If you have chosen a 60 minute session, we will lead you and your students through a hands-on activity. This will happen about halfway through your session. Preview the activity (video and instructions) at this link: https://www.scienceworld.ca/resource/cabbage-juice-indicator/

Before the presentation, your role will be to prepare the materials for your class (see link above and on next page). During the presentation, your role will be to pass out material and to ensure that students follow your classroom safety rules and the instructions of your presenter. Students can work in pairs or small groups.

SCIENCE WORLD

Cabbage Juice Indicator Chem-Along

The day before your session, make cabbage juice indicator. The recipe below makes enough indicator for 12 groups.

You'll need:

- About 250mL (1 cup) of chopped red cabbage
- 1.5L (6 cups) Boiling water
- heatproof bowl or pot
- strainer
- pitcher or bottle

Do this:

1. Heat about 1.5 L of water to a boil.
2. In a heatproof bowl or pot, add boiling water to chopped cabbage. Use caution with boiling water!
3. Allow cabbage to soak in the water until the water is cool.
4. Strain the "juice" into a pitcher or bottle. The cabbage juice should be purple.

During your session, each group of students will need:

- A clear, colourless plastic cup containing about 125 mL (1/2 cup) of cabbage juice indicator.
- Clear, colourless plastic cups each containing a small amount of a common household substance. Use 15-30 mL (1-2 Tbsp) of a liquid or 5 mL (1 tsp) of a powder.
  Here are some choices that work well. Pick 2 acids and 2 bases:

    - Lemon juice (citric acid)
    - Soda water (carbonic acid)
    - Cream of tartar (potassium bitartrate, an acid)
    - Vinegar (acetic acid)
    - Baking soda (sodium bicarbonate, a base)
    - Washing soda (sodium carbonate, a base)
    - Antacids (various bases)
    - Ivory soap (not detergent, a base)

During the activity part of your session, the presenter will ask students to pour a bit of cabbage juice indicator into each of the household substances, one at a time. They will observe colour changes – red for an acid, blue or green for a base.