

## LET'S DO CHEMISTRY

# Chemistry is Colorful Facilitator Guide

### ACTIVITY LEARNING GOALS

Learners will develop positive attitudes toward learning about chemistry:

- Learners will increase their feelings of **interest** in chemistry through hands-on interaction and observation of phenomena, and by exploring chemistry concepts and making connections to everyday life.
- Learners will increase their understanding of the **relevance** of chemistry by exploring the applications of chemistry.
- Learners will increase their sense of **self-efficacy** related to chemistry through hands-on interaction, experimenting with variables, by successfully doing and understanding the activity.

Learners will explore chemistry concepts, tools, and practices:

- Chemists study how different materials behave and change, and how materials interact with each other.
- Chemistry can help us understand our world and solve challenges.

### FACILITATION STRATEGIES

- Encourage **interest** and **self-efficacy** through hands-on interaction and observation of real phenomena. Ask participants questions about what they notice happening to the ink. Which colors travel more quickly and further out? Which are slower? Are they surprised to see all the colors that make up the black marker ink?
- Throughout the interaction, encourage participants to make connections (**relevance**) to some of the real-world applications of chromatography. For example, have participants ever seen the leaves change color in the fall? That's chemistry in action! And we can learn more about that process by using chromatography. Just like the mystery participants solve with the marker brands, chemists also use chromatography to solve problems.

## MATERIALS

- Filter paper disks (2 per participant)
- Primary and secondary colored Vis-a-Vis brand markers
- Three different brands of black water-soluble markers (Crayola, Mr Sketch, and Vis-à-vis)
- 2-ounce dropper bottles (2–3, filled with water)
- 3 small white lids (to hold the paper off the table)
- Hole punch
- Colorful yarn or string cut into 6-inch lengths
- Scissors
- Mystery Chromatograms graphic
- Tape (for the premade mystery chromatograms)
- Dry-erase maker (for the mystery chromatograms graphic)

## SAFETY

Always follow and model prudent practices when doing chemistry activities.

Think about:

- What **hazards** exist and what associated risks may arise from these hazards?
- How to **minimize** risks through protocols we have designed into the activities and training materials.
- How **safe practices and protocols** should best be communicated with facilitators, participants, and others

There are no hazardous materials in this activity. However, your institution may have special rules or protocols for chemistry related activities, so check with your facilities staff, safety committee, and/or others. Learn more about safe practices in the *Let's Do Chemistry: Safety Guide* included in the physical kit and with the online digital kit resources.

## ADVANCE PREPARATION

Pre-make separate chromatograms for each brand of black marker. Let them dry for a few hours. Write the three marker brand names onto the “Mystery Chromatograms” graphic with a dry-erase marker. Tape the corresponding chromatogram over each brand name. Fill dropper bottles with water and pre-cut lengths of yarn.

## FACILITATION NOTES

To make the bookmark tassel, fold the yarn in half, slide the loop through the hole, and then slip the tails of the yarn through the loop and pull gently to tighten.

**An activity training video** is available at [vimeo.com/channels/nisenet](https://vimeo.com/channels/nisenet).

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