

Title: Color Writing

Curriculum : Science / Art
Grade Level Span: 4th grade

Purpose

Use chromatography to observe things not easily seen. Use new discovery to create an art project.

Description

Students will use paper chromatography to reveal pigments in watercolor inks. Students will create an art project using chromatography.

Preparation

- Gather 5 sets of 8 Crayola watercolor pen sets, water basins, rubberbands, paper clips, plain white paper towels (other paper materials may be experimented with), construction paper, and student record sheet
- Cut coffee filter strips 12cm long by 2.5 cm wide
- Teacher produces one example of a chromatography art project (See web site under **Tools and Resources**)
- Digital video camera to be used for I Movie
- Plan for two days
- Four students to a group. Assign group members each a task. Getter 1: gets the supplies needed, Recorder: records information, Getter 2: replaces supplies, Starter: makes sure everyone has a turn or opportunity to participate.

Activities

| | Curriculum Standards | NETS for Students |
|---|---|-------------------|
| 1. Start with the following story: Once upon a time a scientist was writing a letter to a friend when a curious thing happened. While he was out of the room for a few minutes, a gust of wind from the open window blew his unfinished letter across his desk and a corner of the letter dipped into his cup of tea. When the unlucky scientist returned to finish his letter, he was amazed by what he saw. His letter was unreadable, but he made an important discovery. We can repeat his experience to find out what he discovered. | Living and Nonliving Systems Part A, 5 and B, 2 | |
| 2. Demonstrate pretend piece of the scientist's letter. Take a purple marker and write a | | |

| | | |
|--|--|------|
| <p>word 2cm from one end of a coffee filter strip. Stretch a rubber band across the basin. Fill basin with 1 to 1.5 cm deep with water. Use a paperclip to attach strip to the rubber band. Adjust the strip so it just touches the water on the end where the word is written. Ask students to observe the results (band of pigments used to make the color purple). Get camera ready to video students during experimentation.</p> | | |
| <p>3. Send "Getters" to gather materials: Basin with water, 8 coffee filter strips, 4 rubber bands, 4 paper clips, and a set of markers. Have students draw a horizontal line across each strip about 2cm from one end using the eight different colors. Now they are ready to hang the strips in to the water. Students continue making all eight chromatograms and place on paper towels to dry.</p> | | |
| <p>4. While waiting for the chromatograms to dry, discuss students' observations. Introduce vocabulary. Chromatography uses water to carry pigments from one place to another. The product is a chromatogram. A color chemical is a pigment. Watercolor pens have pigments.</p> | | |
| <p>5. Students place dried chromatograms on record sheets. Have students report the colors of the pigments they found in the various inks. End of Day 1.</p> | | |
| <p>6. Students discuss how an art project could be created using chromatography.</p> | | |
| <p>7. Teacher introduces one example of a chromatography art project.</p> | | |
| <p>8. Students create individual art projects. On a paper towel students will draw a simple design or picture (ex: Flower, tree, bird, insect) with a pencil. From the center of the design the student will draw lines in a circular pattern using markers of choice.</p> | | |
| <p>9. Once this is completed students place their artwork over a water basin. Place two drops of water over the center of the design. As the water is drawn into the sheets of the towel it will be drawn through the lines made with the colored pen. The lines will start separating as the water is drawn through. The different colors, which make up the original color drawn, will start to appear at this time. If more water is needed allow them to place one more drop at a time in the center of their design. Allow projects to dry and place them on construction paper background.</p> | | |
| <p>10. Teacher demonstrates how to use the digital video camera. Students will videotape each other's art projects.</p> | | 5, 8 |
| | | |
| | | |

| | | |
|--|--|--|
| | | |
|--|--|--|

Tools and Resources

(List all Web sites, specific software and hardware needs)

<http://classroomteacher.com/chromatography/>

Assessment

(How will you assess the students' learning? If you have a rubric, record it here. Be as specific as possible)

Rubric:

Scoring

- + Shows great initiative and thoughtfulness in creating project.
- s Shows some initiative and thoughtfulness.
- Puts little effort into project.

Authors (including contact information)

(Record the names and email addresses, if possible, of those who contributed to the development of this lesson sequence)

smokros@mooselake.k12.mn.us

tjohnson@mooselake.k12.mn.us

dalseth@isd381.k12.mn.us

Personal Account

(Have you taught this lesson sequence before? What are the great learning/experiences you had?)

*Used with permission of the International Society for Technology in Education (ISTE) National Educational Technology Standards (NETS) Project
(<http://www.iste.org> or <http://cnets.iste.org>) Contact: Lajeane Thomas, Louisiana Tech University, P.O. Box 3161, Ruston, LA 71272; Voice: 318
257-3923 Email: lthomas@latech.edu*