Hands on Chemistry Activity 4

Topic: Dissolving
Learning Objective: Students will observe and learn how polar substances (like sucrose, or sugar) dissolve in polar water. Students will observe how M&M color coatings dissolve and how pigments interact in water.

Alignment with NGSS Grades 3-5
Crosscutting Concepts and Connections to Engineering, Technology, and Applications of Science
Patterns

- Patterns can be used to support an explanation

Energy and Matter: Flows, Cycles, and Conservation

- Matter is made of particles.

Structure and Function

- Different materials have different substructures, which can sometimes be observed.

Materials:

- M&Ms
- 10 plastic or foam plates
- Room-temperature water
- Crayons
- Colored pencils
- Large bowl

Detailed Description

- Activity
    - Check in
        - Ask students question of the day and recap last week
    - Dissolve an M&M
        - Students will observe the properties of an M&M (size, color, shape, texture, etc). Students will make a prediction then place an M&M on a plate with water and observe it as it dissolves, drawing and recording observations. Have students walk around to compare their results.
    - Water polarity mini lesson
        - What caused the M&M to dissolve? Elicit ideas from students. Build upon student ideas and explain that water and sucrose are polar molecules (diagramming on board).

- Dissolve two M&Ms
    - Students will now dissolve 2 M&Ms and observe how the colors interact once they have dissolved. Have students predict, observe, and discuss their results. Discuss what students could do next.
- Students explore
    - Allow each student 5 M&Ms and 10 minutes to test different number and color combinations of M&Ms. Encourage students to discuss what they observe.
- Clean up & sum up
    - Review what we observed and our hypotheses, including a recap about the polarity of water. If time, have students fill out instructor feedback form

What science process skills will this lesson exercise?

Observing, inferring, predicting, experimenting

Safety precautions

Possible student allergies to M&Ms