

CHANGES IN MATTER DEMOS & ACTIVITIES

I. **RAINBOW IN A JAR** (could be used as an assessment after a unit of chemical reactions)

Materials:

Use a graduated cylinder, glass tumbler, or any large, clear container.
Glass and plastic work equally well.

Universal Indicator Solution

Vinegar

Baking soda

Water

Dry ice

Eyedroppers

Spoon

Questioning:

After each step, do not provide an explanation. Instead, ask the students for their observations and explanations. Do not say if they are correct or not, just keep asking “why?”

Put a chunk of dry ice in the container. Ask for observations, explanations, predictions: what is happening? What is causing this to happen?

Ask for predictions if water is added to the dry ice.
Add a little water to the dry ice.

Add a few drops of Universal Indicator Solution. Ask for observations and explanations.

Slowly add a few 2 – 3 drops of vinegar. Observe & explain.

Add a few more drops. Observe & explain.

Add a few more drops. Observe & explain.

THIS WILL BE MESSY - DO OVER A SINK OR PIE PAN –

Add ½ spoon of baking soda. Observe & explain.

Add a few drops of vinegar. Observe & explain.

Topics for final discussion:

- Physical change
- Chemical change
- Reaction
- Sublimation
- Phases of matter
- Acid
- Base
- Neutral
- pH
- indicator