

Fizzy Ice Chalk

Summer is the perfect time for some frosty science fun. Keep your students cool while exploring solubility, changes in state, emulsions and fizzy, foamy and frothy chemical reactions.

It's easy to make your own sidewalk chalk and a great way to explore suspensions. Throwing in some baking soda and food colouring and then freezing it allows you to explore changes in state and chemical reactions as well.



You will need: Cornstarch, baking soda, food colouring, water, a measuring cup, Ice cube tray, squirt bottles (optional), spray bottle with vinegar (optional)

What to do:

1. Mix $\frac{1}{4}$ cup of baking soda, $\frac{1}{4}$ cup of cornstarch, $\frac{1}{4}$ cup of water and food colouring in a small measuring cup with a spout. Stir thoroughly to mix.
2. At this point, you can transfer the mixture to squirt bottles and students can use it to create colourful masterpieces on the sidewalk or pavement.
3. To make Ice Chalk, pour the mixture into the ice cube tray and freeze until solid.
4. Once solid, remove from the trays and have students use the chalk to create sidewalk masterpieces. This is a good time to explore the melting and evaporation process.
5. Once their sidewalk picture dries, arm students with a squirt or spray bottle filled with vinegar and have them spritz their picture for some fizzy fun.

What's happening?

Baking soda dissolves in water but cornstarch is not soluble and will remain suspended in the water. As the ice melts water will begin to flow, depositing the baking soda/cornstarch mixture onto the pavement. Depending on the temperature, the water should evaporate fairly quickly, leaving behind the coloured solids. Have students explore the texture of their dried picture with their fingers. Adding a spray or squirt bottle of vinegar adds to the fun. Once spritzed, the baking soda will react with the vinegar to produce carbon dioxide gas. If the vinegar is tinted with food colouring, students can extend their art/science project to include colour mixing.