



Iridescent Ice

Materials

Salt

Food coloring, several different colors including red
Ice cubes in a bowl

Directions

1. Place ice cubes in a bowl.
2. Add 1 pinch of salt per ice cube.
3. Add 1 drop of food coloring per ice cube. Use only 1 color per ice cube.
4. Make an observation: What do you notice about the colors on the ice? Did any of the colors develop a shiny, green iridescence?
5. Don't give up if it didn't work the first time. Try again with different amounts of salt, different wait times, or with a different brand of food coloring (try neon colors, too!)

What's happening? Background information for caregivers

Iridescence is a type of coloration. It appears shiny and changes color when you look at it from different angles. Iridescence can be seen in soap bubbles, CDs, peacock feathers, abalone shells, and some butterfly wings (like the blue morpho at right).



Iridescence is caused by light waves reflecting off multiple layers of a thin film on an object's surface. In this activity, the food coloring forms a thin film on the surface of the salt crystals. Light waves reflect off both the top and the bottom layers of the film and will combine differently depending on the distance between the layers. The specific size of the molecules in the red food coloring creates the perfect film thickness for the combination of reflected light to appear as shimmering green. This is a form of constructive interference.