

umbrella.



SCIENCE MMM

is why snowflakes are six sided. molecules form is a hexagon, and this The shape of the crystal that water



is why ice expands when frozen. structure, they have to spread out. This perfectly matched. To make this lattice bositive and negative sides are nb in a crystal structure so that their When water freezes, the molecules line

> "UƏZOJJ, UƏYM SONAGXE

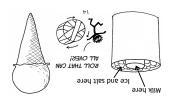
1. Frost Wedging

Materials:

- Water
- · Plaster of Paris • Oil or avpsum
- 2 identical
 - Balloons
 - containers Freezer

Method:

- a) Fill one balloon with water and one balloon with oil (optional).
- b) Prepare containers for plaster, for example, by cutting a small cardboard container in half.
- c) Place balloons in containers.
- d) Mix plaster & water according to directions and pour it in the containers around the balloons
- e) Let dry and then freeze. Remove containers and observe.

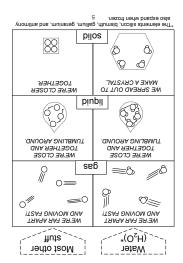


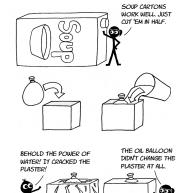
minutes. (Optional) small can in the freezer for 20 a) Scrape down sides and set the them another 10 minutes. f) Seal the cans again and roll Refresh the ice and salt. water from the large can. forming on the sides. Drain the and scrape down the ice cream e) Carefully remove the small can for 10 minutes.

and roll the can across the floor d) Seal a lid onto the large can

SCIENCE MOM'S Guide to WATER, Part 4







*YOU CAN SUBSTITUTE ANY ICE CREAM RECIPE, AND IF YOU DON'T HAVE CANS YOU CAN USE PLASTIC BAGS INSTEAD.

can with ice and the salt. c) Lill the space around the small place it in the large can. b) Seal the small can well and in the small can.

roderner and place the mixture

a) Mix ingredients for ice cream

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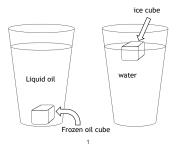
- Dnct tape
- · 2 metal cans of different sizes • 1/2 c rock salt and ice
 - 1 to 2 Tpsb cocos bowder • 7 to 10 fresh pitted dates
 - J can life cocount milk

Materials:*

4. Ice Cream in a Can

Ice floats in liquid water, but the OPPOSITE happens for most other substances!

To see the "regular" way solids behave, place a frozen cube of oil into a cup of liquid oil. It will sink straight to the bottom.



WHAT IF ICE DIDN'T FLOAT?* /

IF ICE SANK, ALL THE OCEANS AND LAKES WOULD FREEZE FROM THE BOTTOM UP! THEN THAT FROZEN WATER WOULD REFLECT RADIATION FROM THE SUN, MAKING THE PLANET TOO COLD FOR

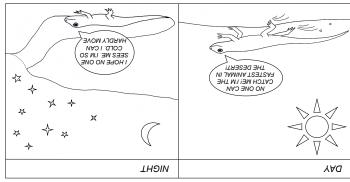


IF ICE SANK, WE WOULD LOSE THE REFLECTIVE FLOATING SEA ICE AT THE POLES! THEN THE PLANET WOULD HEAT UP SO MUCH THAT NEW ICE WOULDN'T HAVE A CHANCE TO FORM AT ALL.



*Scientists don't agree on what would happen

Turn down the temperature, and you turn down the speed. MOLECULES BEHAVE THE SAME WAY.



reptiles: They move tast when they're warm, and are sluggish and slow when cold. To understand how liquids turn into solids, it helps to remember something about

2. Magic Slushy

Materials:

- Bottles of carbonated soda
- Freezer
- · Cup and spoon

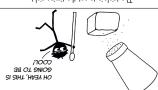
Method:

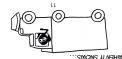
- a) Place the bottle of soda in the freezer for 3 hours. (YOU MAY WANT TO PLACE SEVERAL IN THE FREEZER AND TAKE THEM OUT THE PREEZER AND TAKE THEM OUT AT 30 MINUTE INTERVALS ONCE THEY'VE BEEN IN THE FREEZER FOR AN HOUR. THE CORRECT TIME TO REACH THE "SUPER COOLED" STATE WILL VARY BY FREEZER.)
- b) Remove soda and be careful not to bump or jar it too hard. Open lid slowly and pour soda into an ice-cold cup. If it is super-cooled, it will freeze into a slushy as it is poured.





then it won't work. if you try to pick up the ice too early or too late, The trick is to get the timing right:





SALT CHANGES THE FREEZING POINT OF WATER,

a) riii ine icei c) Wait for about 15 seconds.

p) Shrinkle with salt.

place it on top of the ice cube. s) Get the yarn or wood wet and

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- · Matches, toothpicks, or yarn
 - 1185 •
 - · ice cnpes
 - Water

Materials:

3. Lift Ice with Salt

\mathbf{B}	A	A	X
B	C		D
F	E	E	D
E	G	Ð	X