

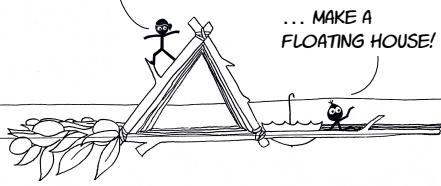
SCIENCE MOM

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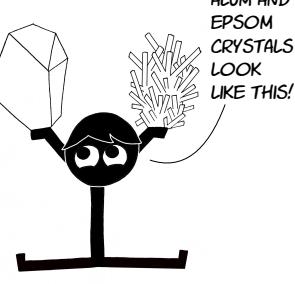
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SCIENCE MOM'S Guide to WATER, Part 6

WHEN LIFE GIVES
YOU DRIFTWOOD...... MAKE A
FLOATING HOUSE!

When water freezes, it forms a crystal. But water's not the only thing that can make crystals. Most minerals and salts can form crystals, especially if they are in a solution with water and the water evaporates.

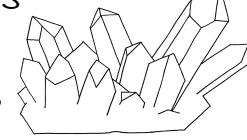
TABLE SALT
MAKES
CRYSTALS
THAT LOOK
LIKE BLOCKS.ALUM AND
EPSOM
CRYSTALS
LOOK
LIKE THIS!

1

WHAT IS THIS

CRYSTAL

MADE OF?



Name Chemical Formula

Table Salt	Sodium Chloride (NaCl)
Alum	Hydrated potassium aluminum sulfate ($KAl(SO_4)_2 \cdot 12H_2O$)
Borax	Sodium tetraborate ($Na_2B_4O_7 \cdot 10H_2O$)
Sugar	Sucrose ($C_{12}H_{22}O_{11}$)
Epsom Salt	Magnesium sulfate ($MgSO_4$)
Quartz	Silicon dioxide (SiO_2)
Diamond	Carbon (C)

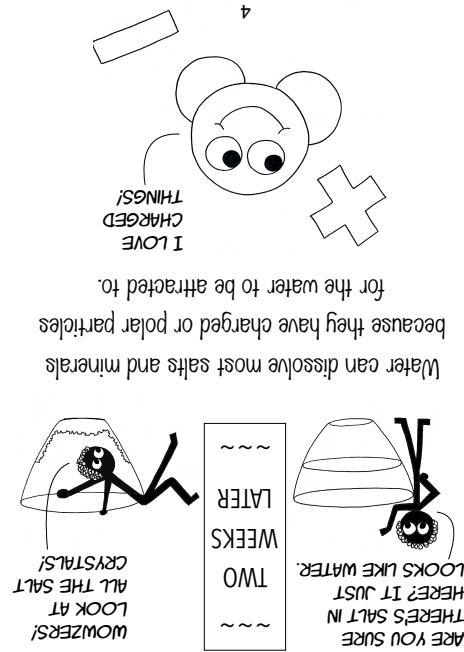
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- HALOCLINE: layers of salt water having different amounts of salt.
- Type: Make sure the salt water and plain water are the same temperature and then pour the water onto a spoon held by the side of the cup just above the salt water—don't pour it directly into the salt water.
- Method:
- Tap water
 - 3 jars or cups
 - Salt water
 - Eggs
- Materials:
- a) Prepare salt water and let it cool to room temperature.
- b) Fill 3 jars or cups. One with plain water, one with salt water, and then lay a layer with salt water, and then lay another by carefully filling it half full.
- c) Place the eggs in the jars and observe if they sink or float.
- d) Fill the water tap and then lay a layer with salt water, and then lay another by carefully filling it half full.
- e) Place the eggs in the jars and observe if they sink or float.
- f) Make sure the salt water and plain water are the same temperature and then pour the water onto a spoon held by the side of the cup just above the salt water—don't pour it directly into the salt water.

2. Halocline plus Eggs



1. Reapparing Salt

- a) Heat 1 cup of water and stir in 3 tablespoons of salt. Stir until dissolved. Let cool and carefully transfer to jar or cup.
- b) Stir until dissolved. Let cool and carefully transfer to jar or cup.
- c) Wait several days. Observe.
- The salt that forms on the bottom of the jar makes excellent seed crystals for growing larger salt crystals.
- But this is quite tricky, so a lot of patience is required.

3. Eggshell Geodes

Materials:

- Water
- Alum
- Eggshell
- Jars or cups
- Food coloring
- White glue

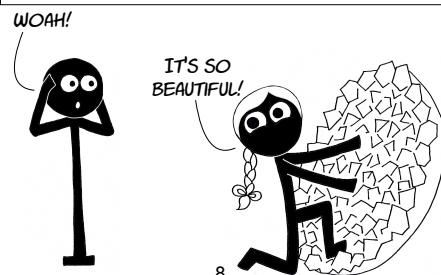
Method:

- a) Heat 2 2/3 cups of water and add 1/2 tsp food coloring and 1 1/3 cup of alum powder.
- b) Stir until dissolved, and then carefully transfer the solution to two heat proof jars. Hotter water makes larger the crystals. Cooler water makes smaller sized crystals.
- c) Optional: Seed the inside of the eggshell with glue and sprinkle alum powder over surface.
- d) Place eggshell in alum solution and let sit for 12-24 hours.

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ONE DAY LATER...



WOW!

IT'S SO
BEAUTIFUL!

4. Borax Snowflakes

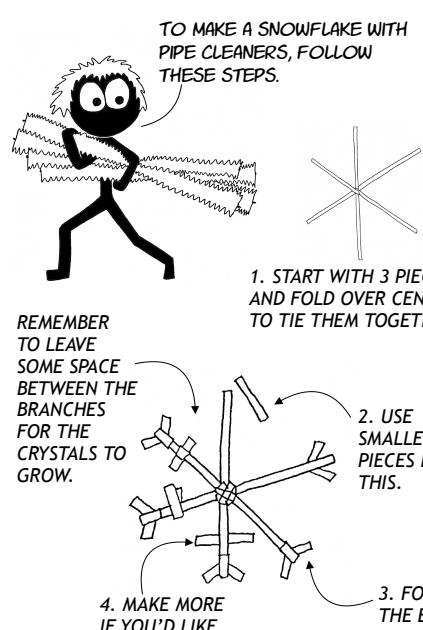
Materials:

- Water
- String
- Jars or cups
- Pipe cleaner
- Borax powder
- Food coloring
- Pencil or piece of cardboard

Method:

- a) Heat 4 cups of water and add 1 cup Borax. Stir well.
- b) Take three pipe cleaners and fold into a snowflake shape.
- c) Suspend the snowflake in the borax solution using the string and cardboard or pencil.
- d) Wait 12 to 24 hours and then remove from solution. To preserve the crystal, coat it with clear nail polish.

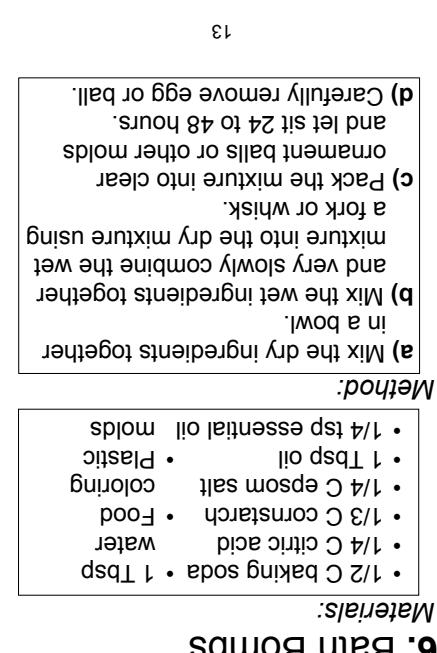
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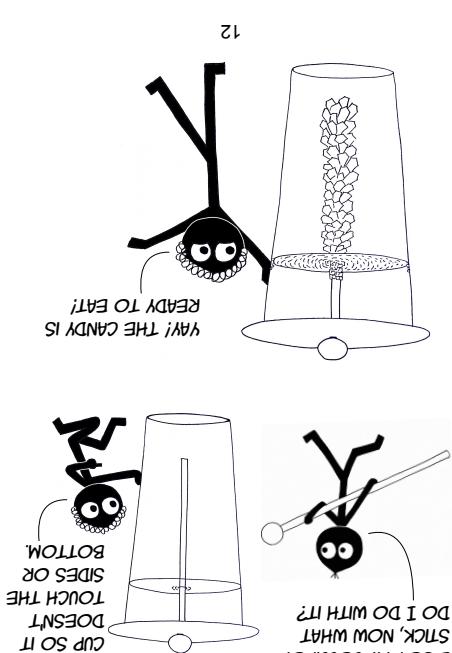
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- Method:
- 1/2 C baking soda
 - 1 Tbsp cornstarch
 - 1/4 C citric acid
 - 1/3 C cornstarch
 - Food coloring
 - 1/4 C epsom salt
 - 1 Tbsp oil
 - 1/4 tsp essential oil
 - 1 Tbsp oil
- Materials:
- a) Mix the dry ingredients together in a bowl.
- b) Mix the wet ingredients together in a bowl.
- c) Mix the wet and dry ingredients together using a fork or whisk.
- d) Carefully remove egg or ball and let sit 24 to 48 hours.



6. Bath Bombs



5. Rock Candy

- Method:
- Water
 - Sugar
 - Wood popsicle
 - Cardboard
 - Jar or cup
 - Cake pop stick
- Materials:
- a) Heat 1 cup of water to boiling and mix in 3 1/2 cups of white sugar. Bring it to a boil.
- b) Dip the sticks into the syrup and then roll them in sugar. Let dry.
- c) After the sugar solution has cooled, pour it into cups and suspend the sticks inside.
- d) Remove the sticks when the candy is the desired size.
- Type: You can add lemon juice or other extracts for flavoring.

11



B

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A

X

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C

C

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E

D

E

G

G

X