

Sweet Science

ROCK CANDY

Explore the chemistry of crystals by making beautiful, and edible, rock candy!

MATERIALS:

- 2 CUPS SUGAR
- MEASURING CUP
- FUNNEL
- TALL GLASS CONTAINER
- CLOTHESPIN
- SKEWER
- MAGNIFYING GLASS
- FOOD COLORING OR FLAVORING (OPTIONAL)

Start with the SOLUTION

BE SURE TO GET PERMISSION TO USE THE STOVE!

- 1** BRING A CUP OF WATER TO A BOIL IN A SMALL SAUCEPAN.



- 2** STIR IN 2 CUPS OF SUGAR, 1/2 CUP AT A TIME. STIR UNTIL DISSOLVED BEFORE ADDING MORE SUGAR.

TURN UP THE HEAT IF THE SUGAR IS NOT DISSOLVING.

- 3** WHEN ALL THE SUGAR IS DISSOLVED, TAKE THE PAN OFF THE HEAT.

- 4** ADD THE COLORING OR FLAVORING. STIR THOROUGHLY.



- 5** LET THE SUGAR SOLUTION COOL FOR 15-20 MINUTES.

STICK to It

- 6** CAREFULLY POUR THE SUGAR SOLUTION INTO THE TALL GLASS JAR. DO NOT OVERFILL.



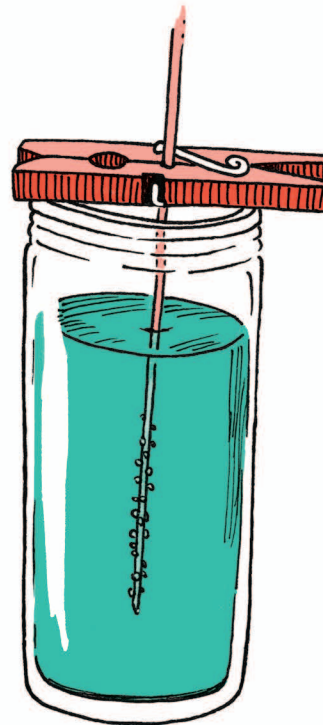
- 7** WET THE SKEWER WITH WATER AND ROLL IT IN GRANULATED SUGAR.

ALLOW THE SKEWER TO DRY COMPLETELY.



- 8** PUT THE SKEWER IN THE JAR AND HOLD IT IN PLACE WITH THE CLOTHESPIN.

DON'T LET THE SKEWER TOUCH THE INSIDE OF THE JAR.

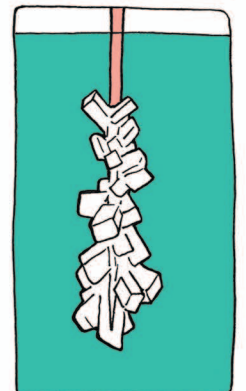


- 9** COVER LOOSELY WITH A PAPER TOWEL AND PLACE IN A SPOT WHERE THE JAR WON'T BE DISTURBED.



FOR LARGEST CRYSTALS, STORE THE JAR IN A COOL, DARK PLACE.

YOU SHOULD SEE CRYSTALS START TO DEVELOP IN A FEW HOURS, BUT THEY WILL GET BIGGER WITH TIME.



WHAT'S HAPPENING?

HEATING THE WATER IN THE FIRST STEP ALLOWS YOU TO DISSOLVE MORE SUGAR IN THE WATER THAN CAN STAY IN THAT SOLUTION IN LIQUID FORM.

THIS IS A...



AS THE SOLUTION COOLS THE SUGAR COMES OUT OF THE SOLUTION, FORMING... **CRYSTALS**

...as time passes...

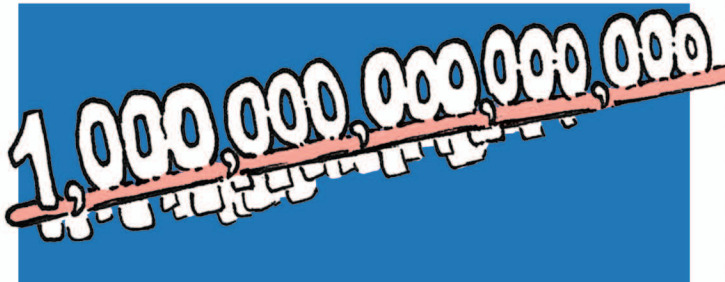
THE WATER WILL **EVAPORATE** SLOWLY FROM THE SOLUTION LEAVING IT MORE **SATURATED**.



SUGAR **MOLECULES** WILL SLOWLY COME OUT OF THE SOLUTION AND COLLECT ON THE SEED CRYSTALS ON THE SKEWER.

IF A CRUST FORMS ON THE SURFACE, GENTLY BREAK THROUGH AROUND THE EDGES.

THE ROCK CANDY CRYSTALS GROW MOLECULE BY MOLECULE. YOUR FINISHED ROCK CANDY WILL BE MADE UP OF ABOUT A **QUADRILLION...**



...MOLECULES ATTACHED TO THE SKEWER.

CRYSTALS

CRYSTALS ARE MATERIALS IN WHICH THE ATOMS ARE ARRANGED IN A RIGID **GEOMETRICAL STRUCTURE**.

LOOK AT SUGAR UNDER A MAGNIFYING GLASS TO SEE THE CRYSTALS FOR YOURSELF.



ROCK CANDY

IS JUST LARGE SUGAR CRYSTALS WITH COLORING AND FLAVORING ADDED.

