

**SICK!**  
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# SUMMER SCIENCE SURVIVAL GUIDE

as seen on



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# A WORD ABOUT THIS ACTIVITY HANDBOOK

Great teachers never miss the opportunity to create a learning experience out of something that kids love – and that’s exactly what this experiment guide is all about; connecting some fun science with summer play. The activities all have that great “gee-whiz” factor, plus they introduce children to cool scientific principles in such a sneaky way that they won’t even know they’re learning! It’s important to read through the brief instructions that accompany each activity to get the “flavor” and story before you begin.

## SAFETY!

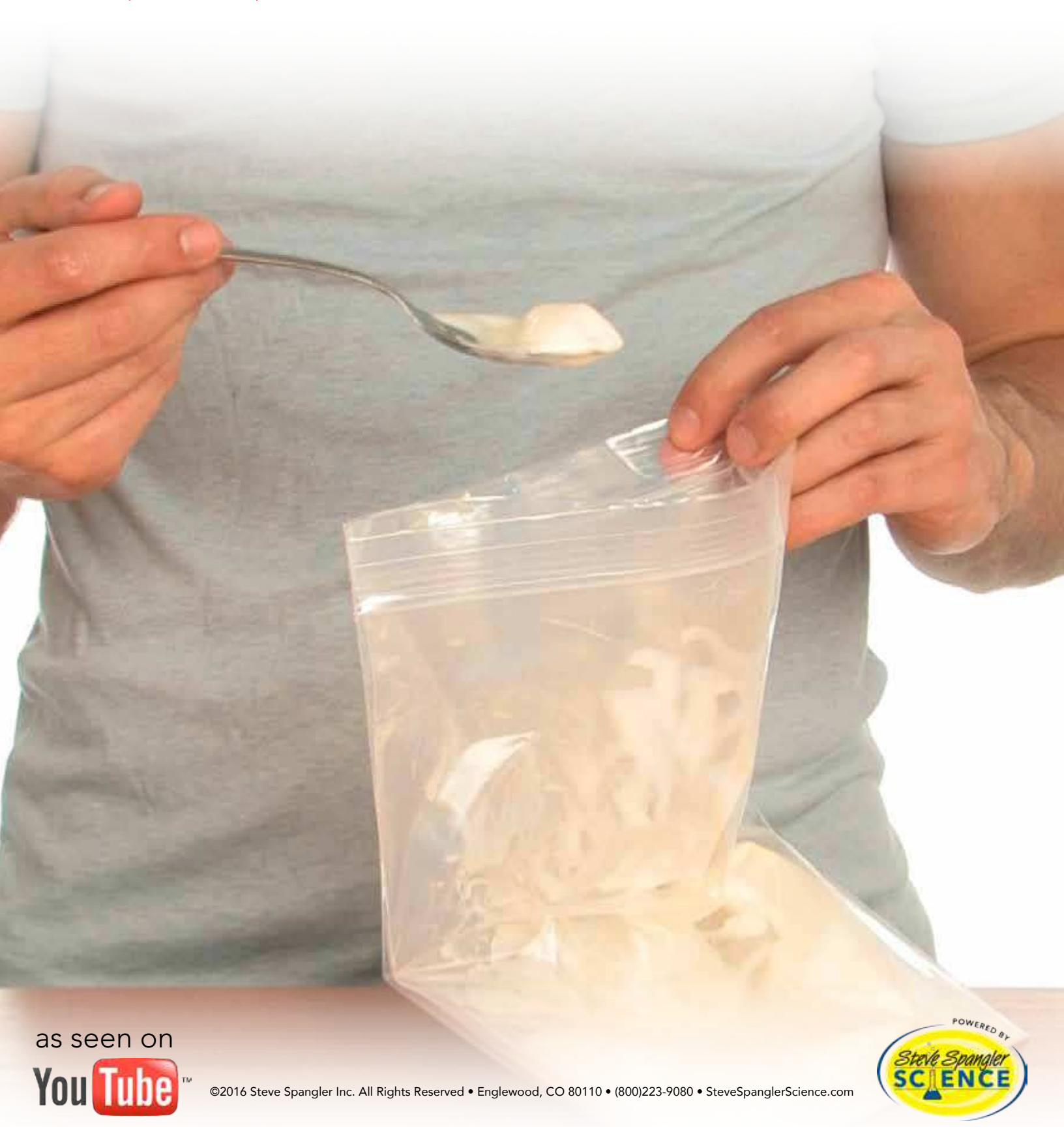
Everything in this handbook has been thoroughly tested and is not considered to be hazardous, if used with adult supervision. That’s right, the activities in this handbook require adult supervision. This handbook is not intended to be tossed at a kid with the instruction, “Have fun.” Instead, you might want to use this opportunity to interact with a few ankle-biters and learn a little science at the same time.

Remember that this is a science handbook and science can be messy. There are liquids, so you will get wet. Stuff falls on the floor, so you will need to clean it up. Don’t put chemicals in your eyes or ears and don’t eat your experiment. Trust us, they don’t taste good and it’s a bad thing to do. The bottom line is that this experiment handbook requires adult supervision and common sense – simple concepts to ensure a fun and safe experience.



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**HOMEMADE  
ICE CREAM**



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## WHAT YOU NEED

1 GALLON CONTAINER  
CRUSHED ICE  
ROCK SALT  
2 ZIPPER LOCK BAGS  
HALF AND HALF  
SUGAR  
VANILLA EXTRACT  
GLOVES  
ADULT SUPERVISION



1



Fill the jar half full with crushed ice and add 6 tablespoons of rock salt.



Mix it up.



The jar will be cold, so use gloves.

2



Mix 1/2 cup half and half, 1 tablespoon of sugar and 1/2 teaspoon of vanilla in one of the zipper lock bags.

3



Seal the bag inside the other bag and put it in the jar.

!



Mix it up for about 20 minutes. Rolling it around is fun too!

4



Remove the bags from the jar and enjoy!

## HOW DOES IT WORK?

This activity demonstrates the same effect that occurs when salt is used on icy roads in the winter. When salt comes in contact with ice, the freezing point of the ice is lowered, causing it to melt. Water will freeze at 32° Fahrenheit (0° C) on its own, but the more salt you add, the lower the freezing point becomes, which means it will require colder temperatures to maintain its frozen state. For example, a 10% salt solution freezes at 20° F (-6.7° C), and a 20% solution freezes at 2° F (-16.7° C). Always remember that heat must be absorbed by the ice for it to melt. The heat that causes the melting comes from the surroundings (the warmer cream mixture). By lowering the temperature at which ice is frozen, you can create an environment in which the cream mixture freezes at a temperature below 32° F (0° C), making it into ice cream!



## ADDITIONAL INFO —

**Did You Know?** In 1846, Nancy Johnson invented the hand-cranked ice cream churn and ice cream surged in popularity. Then, in 1904, ice cream cones were invented at the St. Louis World Exposition. An ice cream vendor ran out of dishes and improvised by rolling up some waffles to make cones.

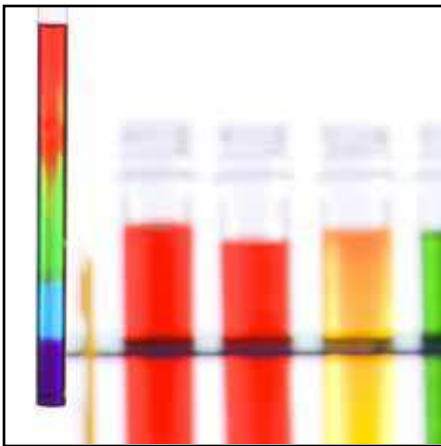
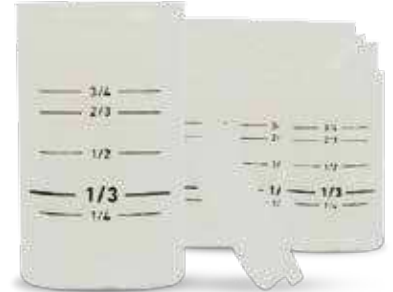
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