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Introduction

It's Raining, it's Pouring!

Get your child interested in the science of weather with *Wind and Clouds* and *Heat and Rain*, a part of the parent friendly *Real Science – Real Fun! at Home* series from The Wild Goose Company! Using simple items which can usually be found around your house, you and your child can create all kinds of experiments that demonstrate the wonders of meteorology. Not only will your children have fun working alone and with you to complete activities, they will also learn to understand and maybe even predict the weather. Build a rain gauge, create a thermometer, measure wind speed, learn cloud formations and much more! And as an added bonus, many of these activities come with *More Fun Ideas to Try*. So roll up your sleeves and make a forecast for fun with *Wind and Clouds* and *Heat and Rain*!



About this Series: Information for Parents and Other Helpful Adults

The *Real Science – Real Fun! at Home* series makes science accessible and enjoyable for you and your child. These activity books are great for weekends, summers, science fairs, and home-schooling use.

Children can move through activities at their own pace. Some children will need considerable reinforcement of scientific concepts, while others will catch on quickly. But you will always be prepared to answer questions after each experiment by reviewing the *What's this All About?* section with your child. Through learning simple, fascinating explanations for each activity, your child will be amazed by the science that surrounds us.

You can easily assess how much supervision your child will need during each experiment by looking for the word *adult* in each *Stuff You Need* list. Adults are listed as a *Stuff You Need* item any time an experiment involves using knives, matches, candles, a stove, hot water or cutting anything thicker than a cardboard tube. See Lab Safety on page 6 for more information.

Tropical Connection

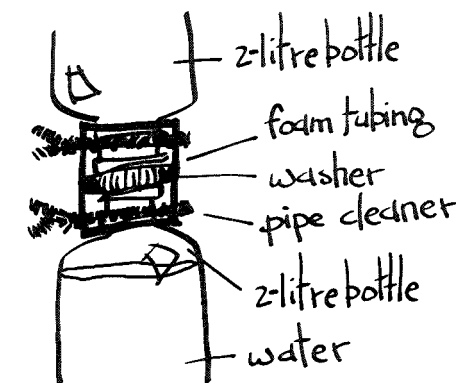
Cyclones can cause lots of damage. But there's something about them that many people find fascinating. See if you can find out what is so fascinating about the formation of cyclones.



Here's What To Do

1. You may want to make this over a sink or tub. Fill one of the 2-litre bottles with water. Add food colouring or glitter, if you happen to have some handy.
2. Slide the foam tube over the top of the bottle with the water in it. Push it down over the plastic lip until it fits tight. Wrap a pipe cleaner around the foam tube to help seal it to the bottle.
3. Insert the metal washer inside the foam tube and push it down as far as it will go. It needs to fit snugly against the top of the 2-litre bottle.
4. Turn the empty 2-litre bottle upside down and put it into the open end of the foam tubing as far as it will go. It should fit snugly against the washer. Use the other pipe cleaner to seal the foam tube to the empty bottle.

Wrap tape around the foam connection to help secure it. You should now have something that looks like the drawing.



Stuff You Need

- pipe cleaners (2)
- foam tubing (pipe insulation)
- food colouring
- soft-drink bottles (2-litre) (2)
- stickytape
- washer (metal)
- water

Scientific method

Be a scientist!

Most of the experiments in this book are planned for you; however, there are other ideas to try and plenty of activities you may think up on your own. Follow these steps when carrying out your own brilliant ideas for experiments.

1. Think of an idea.

When you perform an experiment from the *Real Science – Real Fun! at Home* books, think about what you might learn from it. Or, come up with something else you want to try, and think about what you would like to learn and how you would carry out the experiment.

2. Research your own topic.

You can get some of your research from this book, but don't hesitate to ask Mum or Dad or another obliging adult to help you search the Internet or go to the library to find out more about any of the topics in this book. You may also come up with some things to research on your own. Your ideas are probably great ones!

3. Plan your experiment.

This step means deciding what materials you will need (read *Stuff You Need*), finding a good place to conduct the experiment, asking for help when you need it and writing down the steps you will take to complete the experiment. The steps for the experiments in this book are already written for you, so if you decide to plan your own experiments, you will have examples to follow.

4. Do the experiment.

This is where you have the most fun! Roll up your sleeves and jump right in. If you did all the steps in the Scientific Method before this one, you should have a sound experiment. Just remember, if an experiment doesn't go exactly as planned, look at it as an opportunity to learn something!

5. Collect and record your data and results.

Don't forget to record what is going on. Take notes, jot down questions and think about what is really happening and why – just like a real scientist! Some experiments in this book include an Activity Sheet where you can record information. Always check to see if you need to fill out this sheet during or after each experiment.

6. Come to a conclusion.

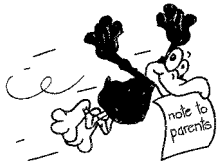
What did you learn from the experiment? Was the conclusion what you expected or something very surprising? Don't forget to think about how you might do the experiment differently next time.

7. Always clean up!

A clean scientist is a good scientist! Make sure your work area is clean when you leave it!

The Round and Round Water Cycle

Did you know that there's always the same amount of water on Earth? In some places it's usually dry, and in other places it's usually wet, but all the water we will ever have is always here on Earth. How does that work?

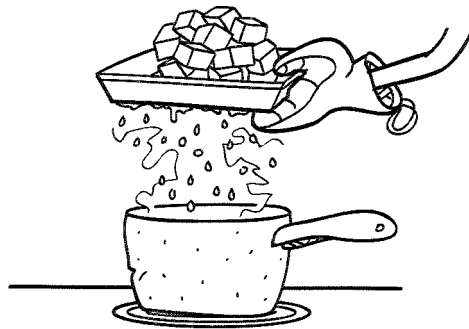


This experiment requires at least a handful of ice cubes, so if you don't have an ice maker, make sure you fill up your ice trays a few hours before you start.



Here's What To Do

1. Strap on your goggles and fill a saucepan half-full with water. Heat the water in the saucepan until it is steaming.
2. Next, place at least a handful of ice cubes on the baking tray. Put on an oven mitt and hold the baking tray over the steam rising from the pan.
3. The water will begin to condense or make droplets on the bottom of the baking tray. These raindrops will begin to form and fall after about 3 minutes.



Stuff You Need

adult
baking tray
goggles
oven mitt
ice cubes
saucepan
stove top
water