

21 SUPER SIMPLE Astronomy EXPERIMENTS



Rebecca W. Keller, PhD



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Illustrations: Rebecca W. Keller, PhD

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21 Super Simple Astronomy Experiments

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What are Super Simple Science Experiments?

Super Simple Science Experiments are experiments that focus on one aspect of scientific investigation. Doing science requires the development of different types of skills. These skills include the ability to make good observations, turning observations into questions and/or hypotheses, building and using models, analyzing data, using controls, and using different science tools including computers.

Super Simple Science Experiments break down the steps of scientific investigation so that you can focus on one aspect of scientific inquiry. The experiments are simple and easy to do, yet they are *real* science experiments that help you develop the skills needed for *real* scientific investigations.

Each experiment is one page and lists a short objective, the materials needed, a brief outline of the experiment, and includes any graphics or illustrations needed for the experiment. The skill being explored is listed in the upper right hand corner of each page. Any additional pages required are included at the back of the book.

The recommended companion book, *Super Simple Science Experiments Laboratory Notebook*, is a great place to record all the results of your experiments. It contains blank pages, lined pages, graph pages, and boxes for drawings.

Getting Started

Below is a list of the materials for all the astronomy experiments in this book. You can collect all the materials ahead of time and place them in a storage bin or drawer.

Materials at a Glance	
Super Simple Science Experiments Laboratory Notebook balloons cardboard compass flashlight glue marker pencil ping-pong ball popsicle sticks protractor scissors softball tape toothpicks	water-based craft paint in the following colors: white gray yellow red orange blue green Styrofoam balls with the following dimensions: 2.5 cm (1 inch) 3.75 cm (1.5 inches) 5 cm (2 inches), 3 balls 10 cm (4 inches), 2 balls 15 cm (6 inches) 20 cm (8 inches) 30 cm (12 inches)

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1. Finding the North Star

observation

Objective

To locate the North Star (Polaris) using a compass. (Visible for locations in the Northern Hemisphere.)

Materials

compass

pencil

Super Simple Science Experiments Laboratory Notebook

Experiment

- ❶ On a clear dark night go outside, and using your compass, find "north." North is where the needle of your compass points. Orient your body so that you are facing north.
- ❷ Look up at the sky and find a lone star with no bright stars nearby. This is Polaris, also called the North Star or the Pole Star. For the continental United States, it can be found about 45 degrees from the horizon.
- ❸ Observe this star for one week. Does the star move? Record your observations.

Results and Conclusions

Polaris is important because it is almost exactly above the North Pole of Earth. You can think of the North Pole extending up to Polaris, thus making a pole in the sky. Because Polaris is at the end of this pole in the sky, it is the only star that does not appear to move. In other words, the Earth rotates around this pole, and so the North Star remains practically in the same place in the sky each night.

