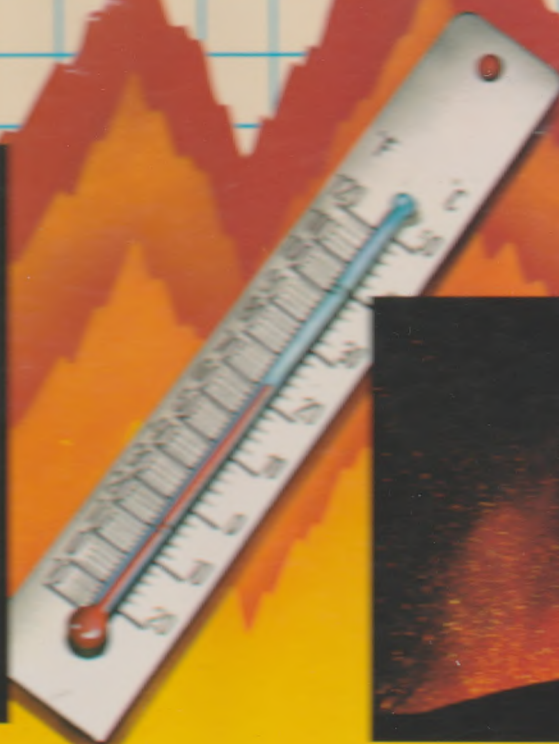
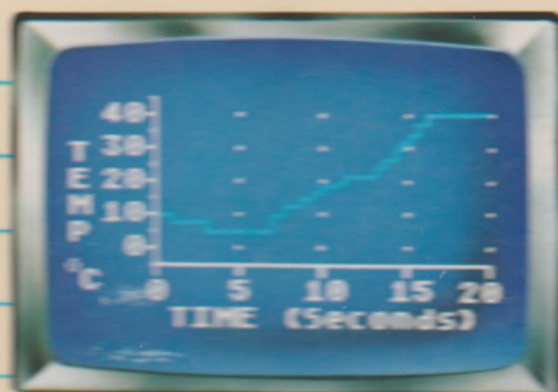
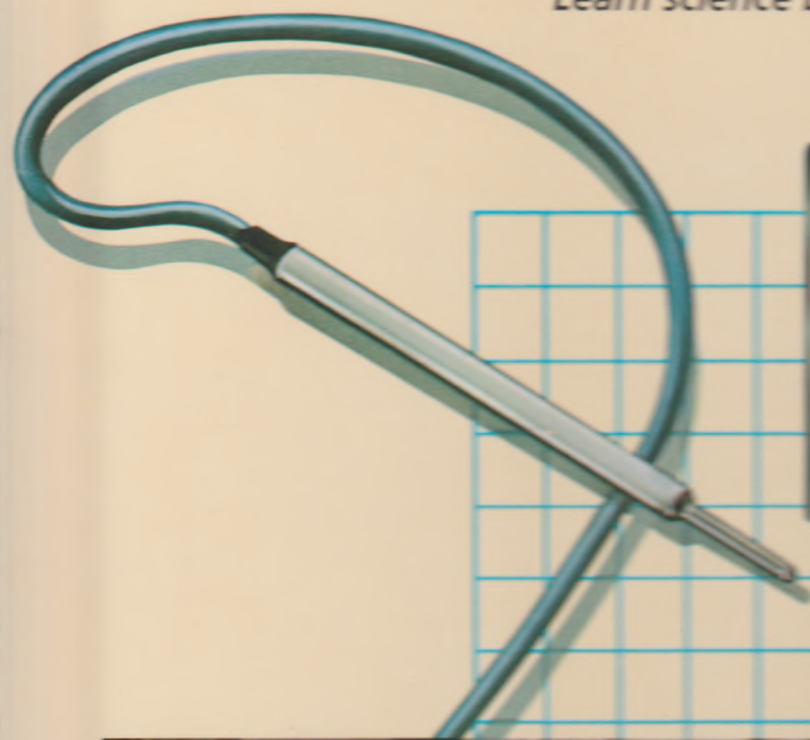


Temperature Lab

Learn science by doing science with your

Commodore
64
Computer

Ages 11 and up



Developed by Creative Technology at Dickinson College
SCIENCE DISCOVERY SERIES™

HAYDEN
SOFTWARE

How long do ice cubes take to cool a glass of soda?

You can use the Temperature Lab to observe how the temperature changes in a glass of soda over time.

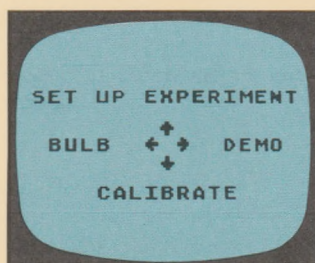
To set up your experiment you need:


- a glass of soda
- 3 or 4 ice cubes
- your computer
- your **Temperature Lab**

To start, load your software diskette into your computer.

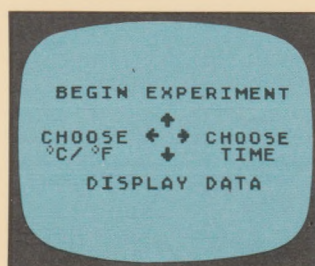
Next, follow the instructions on the screen to connect your *Science Discovery Series*™ Interface and electronic temperature sensor to your computer.


The first software menu screen invites you to use the arrow keys on your computer to:




Let's choose  to Set up the Experiment.

The next screen gives you several options for setting up your experiment. Here's what you can do:




Press  to choose either Celsius or Farenheit temperature scales.

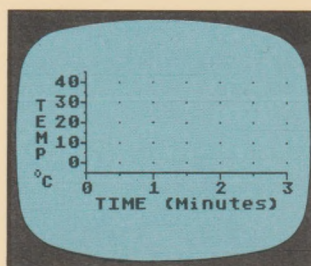
Let's try Celsius

Press  to choose the time period for your experiment and then follow the instructions on the screen.

Let's try 3 minutes

Press  to Begin your Experiment.


A three minute graph will appear on the screen.

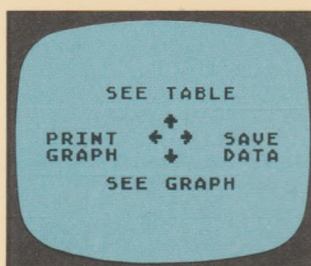


Now, insert your Temperature Lab Sensor into the glass of soda.


Next, drop the ice cubes in the soda and at the same time press any key to begin recording temperatures.

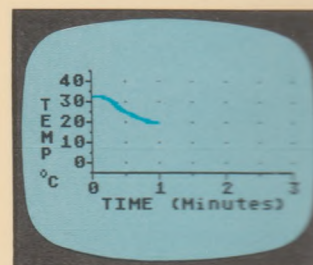
At the end of three minutes press **ESC** to return to the menu.

Let's choose  to See the Display Data options.

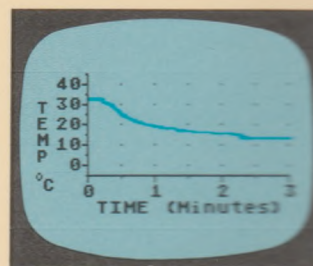


This menu screen gives you several options for displaying the data from your temperature experiments. You can **See a Table** of the temperatures and the times at which they were recorded, **See a Graph** that shows how temperature changes over time, **Save your Data** on a disk for later analysis, or **Print the Graph**.

Let's choose  to See the Graph.



After 1 Minute



After 3 Minutes

By looking at the graphs above, you can see that after about 10 seconds the soda begins to show some cooling. After about 2 minutes it reaches its lowest value at 14°C.

This experiment is just a beginning! What happens if you add more ice cubes? Start with warmer soda? Try to cool salad oil? Use a different container?

TempoLab

Learn science by doing science

COMMODORE 64 33530

JOYSTICK
REQUIRED

ISBN
0-87330-166-3

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SCIENCE DISCOVERY SERIES™

Temperature Lab

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33530

LEFT

RIGHT



PADDLE



PTRIG



CONTROL



POWER



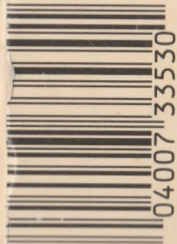
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Curiosity about the natural world. That's what science is all about. Scientists are always wondering....asking questions about how and why things work the way they do. If you are curious, become a scientist and explore the mysteries of the universe.

What causes dew on cool mornings? Why is salt sprinkled on icy roads?

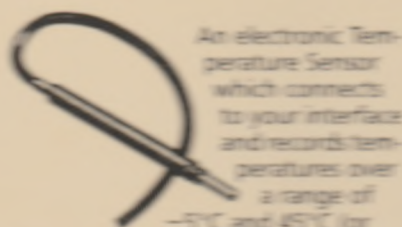
With Temperature Lab, you can find the answers to the questions above and to many other fascinating questions about the world in which we live. Temperature Lab is the first in a series of Science Discovery Labs designed to help you be a scientist by actually doing experiments with household materials.

With Hayden's Temperature Lab you can turn your home or classroom into an inexpensive science laboratory. Here you can learn science by observing, measuring, and analyzing your environment.

Featuring:

Tools for discovery

Science Discovery Series™ Interface which connects the sensors to your home computer. Use it as you experiment with heat and temperature and all other science labs in the series.



An electronic Temperature Sensor which connects to your interface and records temperatures over a range of -5°C and 45°C (or between 23°F and 113°F). By adding an optional second sensor, you can record two temperatures at one time. An alcohol bulb thermometer is included to compare directly measured temperatures with your electronic sensor readings.

Software which gives you the option to choose $^{\circ}\text{C}$ or $^{\circ}\text{F}$, the length of time for each experiment, and display data in graph or table form. You can readily compare Fahrenheit and Celsius temperatures in the same screen.



Data can be stored on disk for future use and printed when needed.



A comprehensive Experimenter's Guide containing step-by-step instructions on how to perform dozens of exciting experiments plus suggestions for many more. Each experiment is tied to scientific concepts explained in the guide.

This all adds up to hours of fun learning science by doing science. By designing your own experiments, you can help unlock the secrets of nature. The labs in the series are ideal for science fair projects.

Look for Hayden's Light Lab. Experiment with the illuminating world of visible light. Learn about why sunsets are red, what a foot-candle is, and how a solar eclipse progresses.

THIS PRODUCT IS NOT RECOMMENDED FOR CHILDREN UNDER AGE 11.

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All other parts made in U.S.A.