



Living with Scientific Reasoning



This is an integrated instructional module designed specifically to operate within a modular environment or as stand-alone. It is ideal for use with our ScanTEK Modular Science Program. The complete module includes a 16-assignment exploratory curriculum split into four topic areas: Measurement, Inventions, Materials and Problem Solving. The module is also available in two 8-assignment parts, identified as Part 1 and Part 2.

This module provides students with the ability to use scientific instruments in a problem-solving context through hands-on experiments and software based investigations.

Students participate in a varied range of activities that help them develop their scientific reasoning skills. Both manual and computer based measurement techniques are used to measure physical properties such as distance, weight, time and temperature.

The assignments in this module also encourage and develop critical thinking, and student co-operation.

All on-screen and paper-based curriculum materials are provided in both English and Spanish.

Through the use of the Computer Aided Instruction containing high quality graphics, animations and full audio support, students are guided through their assignment.

During the assignments students are asked to complete their worksheet and answer questions designed to track and assess their performance.

Worksheets typically involve completing tables of results, adding labels to diagrams, completing sentences and plotting graphs. Assignments in the Part 1 module are targeted at younger students. All assignments include a worksheet reader utility that enables students with reading difficulties to complete their work.

Assessment questions have been designed to address the performance standards identified in the appropriate National Science Standards.



Scientific Reasoning Assignments

	Part 1	Part 2	Complete
Measurement			
▪ Light Levels	✓		✓
▪ Measuring Distance	✓		✓
▪ Temperature		✓	✓
▪ Pendulum		✓	✓
Inventions			
▪ Alternative Energy	✓		✓
▪ Electromagnets	✓		✓
▪ Flight		✓	✓
▪ Sending Signals		✓	✓
Materials			
▪ Elasticity	✓		✓
▪ Natural Materials	✓		✓
▪ Changes		✓	✓
▪ Density		✓	✓
Problem Solving			
▪ Balance	✓		✓
▪ Crawler	✓		✓
▪ Lifting Machines		✓	✓
▪ Bridges		✓	✓

The items supplied with the complete module include:

- Computer data logger
 - Temperature, light and motion sensors
 - Rulers
 - Weight set
 - Construction set
 - Electromagnet
 - Solar panel
 - Walkie-talkie set
 - Flashlight
 - Weighing scales
 - Density experiment samples
 - Elasticity experiment samples
 - Bridge construction apparatus
 - Gears set
 - Crawler experiment accessories
 - Class set of worksheets
 - Teacher's Guide
 - Computer Aided Instruction software
- Additional items required:**
- Computer
 - Access to hot and cold water

Order as:

- ST23-C Scientific Reasoning Complete
- ST23-01 Scientific Reasoning Part 1
- ST23-02 Scientific Reasoning Part 2

Module Summary (Complete)	No.	Average time
Assignments	16	45 minutes
Extension Activities	11	15 minutes
Total		14¾ hours

Part 1 & 2 modules are approx 7½ hours each.