Science Projects Book Collection

Mid-Valley
STEM-CTE HUB

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Science Projects Book Collection

The Science Projects Book Collection invites young scientists to explore the wonders of the natural world through hands-on experiments and fascinating historical discoveries.

From creating miniature clouds and slime in mason jars to understanding groundbreaking scientific advancements like the Large Hadron Collider, these books make complex scientific principles fun, accessible, and interactive. Students will actively engage with chemistry, biology, physics, and earth science using everyday household items. The kit encourages curiosity, critical thinking, and creativity while helping students connect their experiments to major moments in scientific history.

Perfect for classrooms, STEM programs, and after-school activities, this collection turns science into an exciting, student-led adventure.

Grade Level	1 - 9
Reading Level	Beginner - Intermediate

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Contents of Kit

- **Potentially Catastrophic Science by Sean Connolly -** This book stands out from the crowd of guides to science experiments that can be performed at home. Whereas many such works present a hodgepodge of standard experiments, Connolly builds this one around the theme of major scientific and technological breakthroughs that have occurred over the past 2-plus million years of human history—arranged from the first stone tools crafted by Homo erectus to the Large Hadron Collider now being used to accelerate particles to speeds approaching that of light.

- **Mason Jar Science by Jonathan Adolph -** Heatproof, transparent, and durable, the mason jar is a science lab just waiting to be discovered. Unlock its potential with 40 dynamic experiments for budding scientists ages 8 and up. Using just a jar and a few ordinary household items, children learn to create miniature clouds, tiny tornadoes, small stalactites, and, of course, great goo and super slime! With a little ingenuity, the jar can be converted into a lava lamp, a water prism, a balloon barometer, and a compass. Each fun-packed project offers small-scale ways to illustrate the big-picture principles of chemistry, botany, biology, physics, and more.

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Learning Extensions

STEAM Connections: Engineering - Math - Science

Learning Objectives:

- Students will explore fundamental concepts in chemistry, physics, biology, and earth science through hands-on experiments.
- Students will investigate historical scientific breakthroughs and their impact on modern technology and understanding.
- Students will develop problem-solving and critical thinking skills by conducting experiments using common materials.
- Students will foster creativity and curiosity through self-directed, small-scale science projects.

Career Connections:

- **Chemist –** Through experiments involving chemical reactions, slime, and goo.
- **Physicist –** Connected through studies of force, motion, tornadoes, and the history of particle acceleration.
- **Biologist/Botanist –** Introduced through growing crystals, studying plants, and observing natural processes.
- **Meteorologist –** Engaged through experiments like creating miniature clouds, tornadoes, and barometers.

Essential Employability Skills:

- Problem Solving
- Critical Thinking
- Creativity and Innovation
- Adaptability

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Resources and Accessibility

Safety Guidelines

- **Avoid Food and Drinks Near Books -** Encourage clean, dry reading areas to prevent spills, stains, or water damage.
- **Handle Books Gently -** Model how to turn pages carefully, avoid bending spines, and store books upright or flat.
- **Use Clean Hands -** Have students wash or sanitize hands before handling shared books to keep materials in good condition.
- **Designate a Safe Storage Spot -** Store books in a sturdy, dry, and clearly labeled bin or tote to protect them from wear and tear between uses.

Accessibility

- **Use Book Stands or Holders -** Provide angled book holders or clipboards to support independent reading for students with mobility or motor challenges.
- **Pair Audio with Print -** Use audiobooks or teacher-read recordings when available to support students with reading disabilities or visual impairments.
- **Incorporate Read-Alouds and Peer Reading -** Offer opportunities for shared or buddy reading to help students who benefit from auditory learning or support with decoding.
- **Offer Visual Aids and Discussion Prompts -** Supplement books with images, models, or key vocabulary cards to reinforce understanding and engagement.

Library Catalog

Library Resources

Feedback

QR to feedback survey