



## Mixing Matter Lessons

### Websites

#### [Separation of Materials](#)

In this interactive website, students have to choose how to remove different materials that block a car stuck on a roller coaster track. Concepts of separating a mixture with magnets, dissolving, and melting are covered.

([http://www.bbc.co.uk/schools/digger/7\\_9entry/8.shtml](http://www.bbc.co.uk/schools/digger/7_9entry/8.shtml))

#### [Gold Panning and Sluicing](#)

Sutter's account of the first discovery of gold in California.

(<http://www.sfmuseum.org/hist2/gold2.html>)

#### [Materials Recovery Facilities](#)

This web site includes a directory listing of hundreds of Materials Recovery Facilities that belong to the Global Recycling Network, with their contact information. E-mail a facility in your area to find out about educational programs and tours.

(<http://www.grn.com/a/0140.html>)

#### [Salt and Evaporation in the Seas](#)

This web site provides a US Geological Survey publication entitled "Why is the Ocean Salty?" It includes sections that address "How salty is the ocean?" and "The saltiest water."

([http://www.palomar.edu/oceanography/salty\\_ocean.htm](http://www.palomar.edu/oceanography/salty_ocean.htm))

#### [Quicksand](#)

An engaging description of "how quicksand works," including an animation of a man sinking in quicksand (plus directions for how to escape) and an illustration of how quicksand forms.

(<http://science.howstuffworks.com/quicksand.htm>)

#### [It all adds up](#)

This is the online textbook for the Utah State Office of Education's 5th grade "Sci-ber text" curriculum. Children work through the links covering the three phases of matter, as well as chemical and physical changes. There are also opportunities for children to do some explorations on their own.

(<http://utahscience.oremjr.alpine.k12.ut.us/Sciber08/5th/matter/html/intro.htm>)



## Mixing Matter Lessons

### Books

#### Children's Books

##### **Elementary Physics: Gases**

##### **Elementary Physics: Liquids**

##### **Elementary Physics: Solids**

By Ben Morgan. (2003, Blackbirch Press)

Written for elementary-age students, these three reference books offer clear, color photographs and straightforward text. For solids, liquids, and gases, respectively, each book provides a definition and description, different examples, and an explanation of how it changes between states. At the end of each book, there is a very brief introduction to atoms and molecules.

##### **Gold Rush! The Young Prospector's Guide to Striking it Rich**

By James Klein; illustrated by Michael Rohani. (2004, Tricycle Press)

A mother lode of information, this book explains how to find and pan for gold. It also provides historical background, including sections on ancient gold mining; the California gold rush; women in the camps; Native American, Mexican, Hawaiian, Chilean, African-American, and Jewish miners. Use this book as an extension to the lesson about separating solid mixtures.

##### **Matter (Eyewitness Science)**

By Christopher Cooper. (1999, Dorling Kindersley)

With the numerous, detailed photographs that characterize the Eyewitness Science series, this book examines the elements that make up the physical world and the properties and behavior of different kinds of matter. While the first 12 two-page chapters are appropriate for elementary students, the remaining 17 chapters discuss the atoms, molecules, and subatomic particles.



### **Matter: See It, Touch It, Taste It, Smell It**

By Darlene Stille; illustrated by Sheree Boyd. (2004, Picture Window Books)

Full of colorful illustrations, this book does a great job discussing the properties of all matter and matter in its three states. Also available in a Spanish language edition. Also available in a Spanish language edition.

### **Mystery Day**

By Harriet Ziefert; illustrated by Richard Brown. (1988, Little, Brown and Company)

This book is one in a series about fictional Mr. Rose's class, which grew out of the author's experiences as an elementary school teacher. In Mystery Day Mr. Rose's students have to guess the identity of the five mystery powders that Mr. Rose has brought in, and then test their guesses with simple experiments. This book is out of print, but if you can find a copy it may stimulate some students to try solving mixture mysteries at home.

### **The Quicksand Book**

By Tomie de Paola. (1977, Scholastic)

In the storyline of this book, Jungle Girl is sinking in quicksand while Jungle Boy lectures her on the subject. The text is clear, packed with information, and humorous. The final page includes directions for "How to Make Your Own Quicksand." This book is worth searching for in libraries or used bookstores, and reading out loud after students investigate "Whatzit?!" Also available in a Spanish language edition.

## **Books Containing Matter Investigations**

### **Experiments with Solids, Liquids, and Gases**

By Salvatore Tucci. (2002, Children's Press)

Describes the properties of matter and provides simple experiments that illustrate the properties of each. The focus is primarily on liquids. Includes a short bibliography.



### **Hands-On Science: Matter and Materials**

By Peter Mellett; illustrated by David Le Jars. (2001, Kingfisher Publications)

More than forty experiments enable children to further demonstrate and deepen their knowledge of matter and its properties. "What's Happening" sections and descriptions of how topics apply beyond the experiments help explain the science and connect it to the children's world. Includes a helpful Glossary and Index.

### **The Science Book of Hot and Cold**

By Neil Ardley. (1992, Houghton Mifflin)

A visually stimulating book that explores and explains different properties of temperature through simple experiments. This is an excellent resource that uses the information taught in this unit to expand children's understanding of how heat and cold can be manipulated to affect matter in its various states.

### **Shazam! Simple Science Magic**

By Laurence B. White, Jr. and Ray Broekel; illustrated by Meyer Seltzer. (1994, Albert Whitman and Company)

Through a playful approach using magic to hook children's interest, the authors present a series of science-based tricks for children to perform. Each trick is followed by a clear and solid explanation of the science involved. Most tricks deal with matter by using the particle theory, but there is also "magic" dealing with gravity and magnetism. Lots of humor is mixed into the serious science.