



Changing States Lessons

Websites

States of Matter

[Changing the State of Matter](#)

Children investigate what happens when they cool and heat water on this interactive website (http://www.bbc.co.uk/schools/ks2bitesize/science/materials/changing_state/play.shtml)

[Solids and Liquids](#)

Children can find the boiling and freezing points of different liquids on this interactive website. (http://www.bbc.co.uk/schools/ks2bitesize/science/materials/solids_liquids/play.shtml)

[States of Matter – Kids Science Videos, Games and Lessons that Make Learning Fun and Easy](#)

A website that offers pictures, videos, games and lessons to make learning about matter fun! (<http://www.neok12.com/States-of-Matter.htm>)

[Phases of Matter](#)

This site includes a description of each state of matter and a diagram of water shows its phases at various temperatures and pressures.

(<http://www.enchantedlearning.com/physics/Phasesofmatter.shtml>)

[What is Matter? How does it change form?](#)

Specifically designed for fourth grade students, this site has links to several chapters on matter. Includes some pictures.

(<http://teacher.scholastic.com/dirt/matter/whatmat.htm>)

[States of Matter Crossword Puzzle](#)

This is a crossword puzzle for older kids to test their knowledge of states of matter. Includes answers.

(<http://www.edhelper.com/Matter353.htm>)

[States of Matter](#)

Students watch different types of molecules form a solid, liquid, or gas. They can add or remove heat and watch the phase change.

(<http://phet.colorado.edu/en/simulation/states-of-matter>)



[Solids, Liquids & Gases – Science Games & Activities for Kids](#)

Students learn about solids, liquids and gases as they experiment with the conditions that change them from one form to another in this fun, interactive science activity.
(<http://www.sciencekids.co.nz/gamesactivities/gases.html>)

[What is Matter?](#)

Very simple text and descriptions of the three states of matter. Geared towards fourth grade.
(<http://www.nyu.edu/pages/mathmol/textbook/statesofmatter.html>)

[States of Matter](#)

This site takes children on a tour of matter, starting with the phases of matter, working through solids, liquids, gases, and plasmas. It continues with a discussion of mixtures and solutions. This site is geared towards older students, but might give advanced or curious fourth grade children valuable early exposure to the subject.
(http://www.chem4kids.com/files/matter_states.html)

[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>)



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Books

Children's Books

Down Comes the Rain (Let's-Read-and-Find-Out Science, Stage 2)

By Franklyn M. Branley; illustrated by James Graham Hale. (1997, Collins)

This easy-to-read text provides a concise look at the water cycle. It explains evaporation, condensation, and precipitation by describing how the sun dries puddles, clouds form, and rain and hail occur.

A Drop of Water: A Book of Science and Wonder.

By Walter Wick; illustrated with photographs by the author. (1997, Scholastic)

According to the author's afterword, 'Even the simplest experiments appeared as if improbable or impossible things were happening. Intrigued, I recreated some of the experiments and photographed them with my camera. The results seemed magical, but not because of any photographic trick; it was only the forces of nature at work.' For the Matter Unit, the most relevant sections focus on ice, water vapor, condensation and evaporation, clouds, and dew. Selected by National Science Teachers Association as an Outstanding Trade Book for Children in 1998.

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.



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.

What is the World Made Of? All About Solids, Liquids, and Gases (Let's-Read-and-Find-Out Science, Stage 2)

By Kathleen Wiedner Zoehfeld; illustrated by Paul Meisel. (1998, Collins)

This beginning reader introduces children to the differences between solids, liquids, and gases with examples from everyday life.

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.

Solids, Liquids and Gases (Starting with Science)

By The Ontario Science Centre; photographs by Ray Boudreau. (1998, Kids Can Press)

Thirteen demonstrations help students explore the properties of the three common states of matter. A "What's Happening" section explains the science underlying each investigation. A section for parents and teachers extends the activities described in the book.