

## Sample Materials

### First Grade Physical Science

#### Audio Tape/CD

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**Sing the Science Standards**

\$30-35

Science Explosion, Inc.

<http://www.scienceexplosion.com>

Join the "Science Explosion" as they sing over 50 songs written to the Science Standards. This is a great way for students in elementary and middle school to review the most important ideas in science. Over 50 songs are included on this double-CD which also includes lyrics and instrumental versions. Bring the Science Standards to life with "Sing the Science Standards with the Science Explosion." Also has another two disc Volume 2 CD. Songbook available for \$27.50.

#### Classroom Books

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**A Drop Around the World**

\$7-8

Amazon.com

<http://www.amazon.com>

ISBN: 1883220726

The Teacher's Guide for this book is available for \$7.95. A drop of rain is a drop of life--a drop of eternity. Barbara Shaw McKinney and illustrator Michael Maydak take us on an "out of sight" journey from Maine to Mumbai, with just one raindrop as it touches plant, animal, and human life all around the world. Traveling with Drop, readers will see the world, inside and out, from solid, liquid, and vaporous viewpoint. Full color.

**Follow a Raindrop: The Water Cycle**

\$8-9

Amazon.com

<http://www.amazon.com>

ISBN0439186226

By Ward, Elsie. Sixteen-page books feature fabulous, eye-popping photos, colorful, detailed illustrations, and informative text on favorite science topics. Each set comes packaged in a reusable storage bag that includes 6 copies of the same Super-Science Reader, an 8-page teaching guide filled with rubrics, and reproducible reading/writing activities; plus science background and easy hands-on activities.

**FOSS Science Stories Single Copy Set (Spanish Grades 1-2)** \$25-30

Delta Education

<http://www.delta-education.com/>

WX-542-1226

Titles: Air and Weather; Balance and Motion; Insects; New Plants; Pebbles, Sand, and Silt; Solids and Liquids. Science Stories for Grades 1-2 use large, colorful photographs and appropriate text to enhance the science learning experience. The stories provide factual information in a clear and concise manner. Other purchasing options: a CLASSROOM SET (56 books, 8 ea. of 6 titles) of all Grade 1-2 Science Stories is \$203.66.

**From Cow to Ice Cream** \$6-7

Amazon.com

[http://www.amazon.com/From-Cow-Ice-Cream-Changes/dp/0516260669/ref=sr\\_1\\_1?ie=UTF8&qid=1311111111](http://www.amazon.com/From-Cow-Ice-Cream-Changes/dp/0516260669/ref=sr_1_1?ie=UTF8&qid=1311111111)

ISBN0516260669

By Knight, Bertram T. A book chock-full of bold, colorful photographs that show the complete process of turning raw materials into an end product near and dear to kids' hearts. The lively narrative and detailed photographs clearly present each step in making ice cream. The large size and brief texts make these books useful for sharing aloud.

**From Sand to Glass (Start to Finish)** \$15-20

Amazon.com

[http://www.amazon.com/Glass-Start-Finish-Lerner-Hardcover/dp/0822509458/ref=sr\\_1\\_1?s=book](http://www.amazon.com/Glass-Start-Finish-Lerner-Hardcover/dp/0822509458/ref=sr_1_1?s=book)

ISBN-10: 0822509458 ISBN-13: 978-0822509455

(Library Binding) By Shannon Zimlicka. Briefly introduces the process by which sand is turned into glass.

**Hot and Cold** \$4-5

Amazon.com

<http://www.amazon.com>

ISBN1403400512

By Bryant-Mole, Karen. Properties of materials can be observed, measured, predicted with the help of this book.

**Let's Try It Out in the Air** \$15-20

Amazon.com

[http://www.amazon.com/Lets-Try-Out-Seymour-Simon-ebook/dp/B007Z5Y504/ref=sr\\_1\\_1?s=book](http://www.amazon.com/Lets-Try-Out-Seymour-Simon-ebook/dp/B007Z5Y504/ref=sr_1_1?s=book)

ISBN0689829183

By Cushman, Doug (illustrator); Fauteux, Nicole; Simon, Seymour. Presents simple activities and experiments--using everyday household items such as paper, balloons, and sponges--that demonstrate the properties of air by observing the presence of air and the pressure it exerts.

**Looking at Glass Through the Ages** \$6-7

Amazon.com

[http://www.amazon.com/Looking-at-Glass-Through-Ages/dp/0618507507/ref=sr\\_1\\_4?s=books&ie=UTF8](http://www.amazon.com/Looking-at-Glass-Through-Ages/dp/0618507507/ref=sr_1_4?s=books&ie=UTF8)

ISBN-10: 0618507507 ISBN-13: 978-0618507504

Berkeley Public  
Library

(Hardcover) - by Bruce Koscielniak - book on the history of glassmaking. Starting with faience, developed in Egypt around 2500 B.C., the author's precisely worded, carefully detailed text and watercolor artwork explain the steps for producing various types of glass and glassware. Coverage is chronological from the origins of glassblowing in Syria in 30 B.C. to production of Roman luxury glass, magnifying lenses, engraved Venetian glass, stained-glass windows, glass mirrors, lead crystal, crown glass, plate glass, molded glass, glass-tube neon lighting, and optical fiber. Much information is compacted into the smoothly written narrative. Captioned illustrations are well matched with the text and extend the information value of the book. The map on the endpapers identifies regions of early glass production.

### **Matter**

\$5-6

Amazon.com

[http://www.amazon.com/Hot-Cold-Science-All-Around/dp/1403400512/ref=sr\\_1\\_1?s=books&ie=UTF8](http://www.amazon.com/Hot-Cold-Science-All-Around/dp/1403400512/ref=sr_1_1?s=books&ie=UTF8)  
ISBN1403400539

By Ansary, Mir Tamim. This book helps to describe object's physical properties.

### **My Life With the Wave**

\$7-8

Amazon.com

[http://www.amazon.com/My-Life-Wave-Catherine-Cowan/dp/0060562005/ref=sr\\_1\\_1?s=books&ie=UTF8](http://www.amazon.com/My-Life-Wave-Catherine-Cowan/dp/0060562005/ref=sr_1_1?s=books&ie=UTF8)  
ISBN: 0060562005

By Cowan, Catherine. A boy befriends a wave and brings it back home where they romp together until the onset of winter storms turns it bleak and angry. The wave is returned to the sea in "frozen form" and the boy dreams of a new predicament. The acrylic and oil illustrations complement the story. Fiction, picture book, read-aloud.

### **Mystery Day**

\$10-15

Amazon.com

<http://www.amazon.com>  
ASIN: 0316987697

Out of print. Can buy used on Amazon.com. by Harriet Ziefert; illustrated by Richard Brown. Grades: 1-4. Mystery Day is a school day full of surprises for Mr. Rose's students. They have to guess the identity of five mystery powders. The students test their guesses with simple experiments as they look at the powders, touch them, taste them, and mix them with various liquids to see what happens. Once they are correctly guessed, several powders are mixed together and the investigation process starts all over again.

### **Science Arts: Discovering Science through Art Experiences**

\$10-15

Amazon.com

[http://www.amazon.com/Science-Arts-Discovering-Experiences-Learning/dp/0935607048/ref=sr\\_1\\_1](http://www.amazon.com/Science-Arts-Discovering-Experiences-Learning/dp/0935607048/ref=sr_1_1)  
ISBN 0935607048

by Mary Ann f. Kohl and Jean Potter - Each page of this exploration of science through art features a recipe-style science activity, complete with simple instructions and illustrations, that teaches young readers a scientific concept. All ages

### **Sing A Song of Science**

\$15-20

Amazon.com

[http://www.amazon.com/Sing-Song-Science-Kathleen-Carroll/dp/156976090X/ref=sr\\_1\\_2?s=books&ie=UTF8](http://www.amazon.com/Sing-Song-Science-Kathleen-Carroll/dp/156976090X/ref=sr_1_2?s=books&ie=UTF8)  
ISBN: 156976090X

by Kathleen Carroll. Sing A Song Of Science presents sixteen topics showcased in songs, raps, stories, and visualizations in the format of a 64-page activity manual and a 35-minute audiotape designed for use with elementary school grades K-6. Important subjects as matter and energy, weather, how the human body works, the story of George Washington Carver, tropical rain forests, etc. are presented with an easy-to-read overviews and combines an innovative approach with traditional methods of teaching to reinforce fundamental science facts. Each topic includes two sets of activities enabling students to construct their own understanding with hands-on kinesthetic discover activities. The students further expand their learning with activities to reinforce the vocabulary and concepts learned in the songs.

### **Solids, Liquids and Gases (Starting With Science)**

\$8-9

Amazon.com

[http://www.amazon.com/Solids-Liquids-Gases-Starting-Science/dp/1550744011/ref=sr\\_1\\_1?ie=UTF8](http://www.amazon.com/Solids-Liquids-Gases-Starting-Science/dp/1550744011/ref=sr_1_1?ie=UTF8)  
ISBN 1550744011

Solids, Liquids and Gases has 13 experiments carefully chosen by the Ontario Science Centre. With minimal supervision, children can explore the three states of matter, what makes each state unique and how matter changes from a solid to a liquid to a gas through evaporation, condensation, melting and freezing. Filled with bright photographs, the Starting with Science series provides valuable lessons about basic science for five to eight year olds.

### **The Dead Sea: The Saltiest Sea**

\$15-20

Amazon.com

[http://www.amazon.com/Dead-Sea-Saltiest-Record-Breakers/dp/0823956377/ref=sr\\_1\\_1?s=books](http://www.amazon.com/Dead-Sea-Saltiest-Record-Breakers/dp/0823956377/ref=sr_1_1?s=books)  
ISBN: 0823956377

by Aileen Weintraub. Discusses the Dead Sea, describing the features that make it unique as well as the scrolls that were discovered in nearby caves.

### **The Magic School Bus at the Waterworks**

\$4-5

Amazon.com

<http://www.amazon.com>  
ISBN: 0590403605

by Joanna Cole; illustrated by Bruce Degen. Grades: K-6. Ms. Frizzle, the "strangest teacher in school," takes her class on a field trip to the waterworks. First, they journey to the clouds where the class rains, each kid inside his own raindrop. Then they end up experiencing the water purification system from the inside, traveling through the mixing basin, settling basin, filter, and through the pipes to emerge from a faucet. Evaporation, the water cycle, and filtration are just a few of the concepts explored.

Berkeley Public  
Libraries: 628 C675m.  
Alameda County  
Public Libraries:  
J628.16 COLE.

### **The Snowy Day**

\$6-7

Amazon.com

[http://www.amazon.com/Snowy-Day-Ezra-Jack-Keats/dp/0140501827/ref=sr\\_1\\_1?s=books&ie=UTF8](http://www.amazon.com/Snowy-Day-Ezra-Jack-Keats/dp/0140501827/ref=sr_1_1?s=books&ie=UTF8)  
ISBN: 0670867330

By Ezra Jack Keats. Find out about the three states of water by doing an activity of melting snowballs (crushed ice from the supermarket). The Snowy Day, a 1963 Caldecott Medal winner, is the simple tale of a boy waking up to discover that snow has fallen during the night. Keats's illustrations, using cut-outs, watercolors, and collage, are strikingly beautiful in their understated color and composition. The tranquil story mirrors the calm presence of the paintings, and both exude the silence of a freshly snow-covered landscape. The little boy celebrates the snow-draped city with a day of humble adventures--experimenting with footprints, knocking snow from a tree, creating snow angels, and trying to save a snowball for the next day.

The book, sound  
recording and video  
are available at the  
Alameda County  
Public Libraries.

## **The Tamarindo Puppy: And Other Poems**

Alameda County Public Libraries

<http://www.aclibrary.org>

J811.5 POMERANTZ

by Charlotte Pomerantz, Byron Barton (Illustrator) . A book that speaks two languages! These 13 joyous poems slip effortlessly back and forth between English and Spanish, much the way many people talk. Each poem describes something familiar--a puppy, a mirror, and a cat, for example--with zippy, natural humor and bouncy, lively rhythm.

FREE

811 P771tr at  
Berkeley Public  
Library

## **Titanic : a nonfiction companion to Tonight on the Titanic**

Alameda County Public Libraries

<http://alam1.aclibrary.org/search~S30?/aosborne%2C+will/aosborne+will/1%2C2%2C14%2CB/fra>

ISBN: 0375813578

by Will Osborne and Mary Pope Osborne. Explores the history of the steamship Titanic, from Thomas Andrews' plans for "the safest ship on the ocean" to the lingering questions concerning its disastrous maiden voyage in 1912. 144 pages

FREE

Can borrow from the  
Fremont library:  
J910.91634  
OSBORNE.

## **Two Bad Ants**

Amazon.com

[http://www.amazon.com/Two-Bad-Ants-Chris-Allsburg/dp/0395486688/ref=sr\\_1\\_1?s=books&ie=UTF8](http://www.amazon.com/Two-Bad-Ants-Chris-Allsburg/dp/0395486688/ref=sr_1_1?s=books&ie=UTF8)

ISBN: 0395486688

by Chris Van Allsburg. Grades preschool-4. This beautifully illustrated abook about two ants in search of sugar provides opportunities to further discuss a liquid as something that flows, and to see that some substances, such as sugar, which also flow or pour, are in fact made up of tiny crystal solids. In this brief tale of the adventures of two runaway ants, Van Allsburg once again gives children a visual puzzle to solve in this case identifying common household appliances from an ant's point of view. When a troop of ants are sent to retrieve sugar crystals from a kitchen, two ants stay behind to feast and go to sleep in the sugar bowl. When morning comes they are successively stirred into a cup of coffee, almost swallowed, toasted with an english muffin, whirled through a garbage disposal, and stunned senseless in an electrical outlet. While some children will enjoy identifying the highly magnified objects, others will wonder how the ants have managed to survive any one of these disasters. The truanats return home in one piece, and the last few lines supply a pallid and oddly moralistic conclusion to the story.

\$10-15

Berkeley Public  
Libraries: P Van  
Allsburg, C. Alameda  
County Public  
Libraries: J Fiction  
VAN.

## **What Is the World Made Of? All About Solids, Liquids, and Gases**

Amazon.com

[http://www.amazon.com/Solids-Liquids-Lets-Read---Find-Out-Science/dp/0064451631/ref=sr\\_1\\_1](http://www.amazon.com/Solids-Liquids-Lets-Read---Find-Out-Science/dp/0064451631/ref=sr_1_1)

by Kathleen Weidner Zoehfeld. Let's-Read-and-Find-Out-about Science series takes on a really difficult concept and dramatizes it with hands-on examples from everyday life. This time, the concept is the three states of matter: solid, liquid, and gas. The explanations are clear with a simple, informal text for the new reader, and the lively line-and-watercolor pictures bring in humor and commonsense ("Did you ever drink a glass of blocks?"). Water is the central example of how some things change from solid to

\$4-5

## **You Are Stardust**

Owlkids Books

<http://www.owlkidsbooks.com/YouAreStardust.aspx>

\$10-15

Website has an app for ipad and lesson plans. You Are Stardust begins by introducing the idea that every tiny atom in our bodies came from a star that exploded long before we were born. From its opening pages, the book suggests that we are intimately connected to the natural world; it compares the way we learn to speak to the way baby birds learn to sing, and the growth of human bodies to the growth of forests. Award-winning author Elin Kelsey — along with a number of concerned parents and educators around the world — believes children are losing touch with nature.

## Kits & Modules

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### **DSM II Investigating Water Complete Kit**

\$350-400

Delta Education

<http://www.delta-education.com/>

WW738-6006

Challenge your class to find out as much about water as possible, and give them the tools for the task. After using their senses to determine some of water's properties, students pour, mix, filter, and freeze water. They watch water climb, bubble, condense, and take different shapes. They learn how to use pipets and wire wands, vials and funnels, becoming familiar with scientific procedures and equipment. Experimental setups and trials help your water detectives operationally define such scientific vocabulary as sink, float, dissolve, and evaporate. They also compare water to other liquids and experiment with filtering muddy water. Kit includes materials for 32 students plus comprehensive step-by-step teacher guide with student activity sheets and 3-part assessment feature.

### **FOSS Solids and Liquids - Complete Module**

\$700-800

Delta Education

<http://www.delta-education.com/>

WX742-5016

The solids and liquids module provides experiences that heighten students' awareness of the physical world. Matter with which we interact exists in three fundamental states: solids, liquid, and gas. In this module first and second graders have introductory experiences with two of these states of matter, solid and liquid

### **Solids and Liquids - Complete Module**

\$600-700

Delta Education

<http://www.delta-education.com/>

742-7210

The Solids and Liquids Module (4 activities) introduces students to characteristics of two states of matter. After describing properties of solid objects, students use them in construction projects. They investigate the properties of particulate solids (cornmeal, beans, rice) and liquids (water, corn syrup, oil) and compare their behaviors. After observing solid/liquid and liquid/liquid interactions, students investigate toothpaste to determine if it is solid or liquid. Complete Module includes all the materials for the activities, the teacher guide, one 8-pack of Science Stories, and the Teacher Prep Video. Spanish supported in Spanish Science Stories for the unit can be bought separately.

OUSD teachers only  
can borrow FOSS kits  
from the SMART  
Center.

## Teacher Guide/Reference/Curriculum

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## **Exploring Matter with Toys**

\$20-25

Amazon.com

[http://www.amazon.com/Exploring-Matter-TOYS-Understanding-Senses/dp/1883822327/ref=sr\\_1\\_1](http://www.amazon.com/Exploring-Matter-TOYS-Understanding-Senses/dp/1883822327/ref=sr_1_1)  
ISBN: 978-1883822323

Good for learning that solids, liquids and gases have different properties. This teacher resource for primary grades teaches students how to use their five senses to explore the particle nature of matter through recording, classifying, presenting and explaining, their observations. Tested in hundreds of classrooms through the National Science Foundation--funded Teaching with TOYS program--and meeting the requirements of the new national science education standards--this innovative resource includes over 20 activities, such as Feely Balloons for the sense of touch; M&M Classification for sight; Big Ben for hearing; Scratch-and-Sniff Challenge for smell; Jumbled-up Jell-O for taste, and I Can ``Sense" You Like Popcorn for combining the senses. Three sections covering pedagogy, content, and activities feature dozens of reproducible work sheets, handouts, and suggestions for incorporating toy-based activities into lessons. Each activity includes grade level, key science topics, and science process skills, a materials list, and more.

## **GEMS Involving Dissolving**

\$10-15

Lawrence Hall of Science

[lawrencehallofscience.org](http://lawrencehallofscience.org)

0-912511-50-8

By Leigh Agler. Young children have their own ideas about the "disappearance" of solid into liquid (say, sugar into tea) that's just magic, right? Make it reappear, and that's BIG magic. But dissolving isn't really disappearing--and that may be the best magic of all. Young students learn to look beyond the obvious in this series of highly involving activities on dissolving, evaporation, and crystallization. Using familiar substances, students create homemade "Gel-o," colorful disks, and crystals that emerge

## **GEMS Liquid Explorations**

\$10-15

Lawrence Hall of Science

[lawrencehallofscience.org](http://lawrencehallofscience.org)

0-912511-51-6

By Leigh Agler. This unit introduces younger students to the properties of matter. Young students explore the ubiquity and properties of liquids using introductory language and simple concepts. They play a classification game, observe how food coloring moves through different liquids, and create secret salad-dressing recipes and an "Ocean in a Bottle." The Raindrops and Oil Drops activity can prompt discussion of environmental issues such as oil slicks, and was used in many Alaska schools to educate student

## **Integrating Mathematics, Science, and Language (Paso Partners): B**

\$25-30

SEDL

<http://www.sedl.org>

TRNG-11

Authors: B. J. Mace Matluck, Norma G. Hernandez. Paso Partners applies the best emerging strategies and materials for teaching and integrating mathematics, science and language development. Volume 2 Topics: Oceans, Weather, Sun and Stars, Matter, Sound, Simple Machines. Lessons in English and Spanish available to download online at <http://www.sedl.org/scimath/pasopartners>

**Sing the Science Standards Songbook** \$25-30  
Science Explosion, Inc.  
<http://www.scienceexplosion.com>

Join the "Science Explosion" as they sing over 50 songs written to the Science Standards. This is a great way for students in elementary and middle school to review the most important ideas in science. Songbook includes lyrics for the over 50 songs on the double-CD. Bring the Science Standards to life with "Sing the Science Standards with the Science Explosion."

**Teaching Physical Science Through Children's Lit.** \$15-20  
Amazon.com

[http://www.amazon.com/Teaching-Physical-Science-Childrens-Literature/dp/1883822343/ref=sr\\_1](http://www.amazon.com/Teaching-Physical-Science-Childrens-Literature/dp/1883822343/ref=sr_1)  
ISBN: 978-1883822347  
Teaching Physical Science Through Children's Literature: 20 Complete Lessons for Elementary Grades. Activities like "Glitter Fish," etc.

**The Science Explorer Out and About** \$10-15  
Amazon.com

[http://www.amazon.com/Science-Explorer-Out-about-Experiments/dp/0805045376/ref=sr\\_1\\_1?s=](http://www.amazon.com/Science-Explorer-Out-about-Experiments/dp/0805045376/ref=sr_1_1?s=)  
ISBN: 978-0805045376  
By Pat Murphy, Ellen Klages, Linda Shore, and the Exploratorium. You'll find more science fun and exploration for families in this second science-at-home book, but this time each chapter includes ideas for family field trips so you can see science outside. Entertaining activities that use simple ingredients are accompanied by helpful information for explaining underlying scientific concepts. Great for scout troops and other informal learning environments.

**Woods, Stones, and other Solids** \$15-20  
Amazon.com

<http://www.amazon.com/DISCOVERY-SCIENCE-STONES-OTHER-SOLIDS/dp/0201496682/ref=>  
ISBN: 978-0201496680  
by Robert A. Williams (Editor), David A. Winnett. Engage students in classification and experimentation activities, which include making solids and finding density. This guide was made for Grade 2 but is appropriate for grades pre-K to grade 2.

## Tools/Equipment

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**Equal Arm Balance** \$8-9  
Delta Education

<http://www.delta-education.com/>  
WW-020-0529  
Affordably priced for your budget, the rugged plastic , parts of this colorful balance stand-up well over time. Can be used to learn the characteristics and properties of matter.

**Safety Goggles Rainbow Pack - Set of 6** \$15-20  
Lakeshore Learning Store

<http://www.lakeshorelearning.com>  
FS383

These flexible plastic goggles are perfect for kids with ventilation holes on top and bottom, plus a stretchy strap in back that adjusts for a perfect fit. You get 6 pairs in 3 colors; each is 6".  
FS383

### **Student Safety Goggles - set of 12**

\$25-30

Lakeshore Learning Store

<http://www.lakeshorelearning.com>

LA216

Our flexible plastic goggles adjust to give students a perfect fit.

## Video

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### **Backyard Safari: Water**

\$35-40

GPN Educational Media

<http://shopgpn.com/>

686.012

30 min. Why is water so important to life? After this video your students will understand: How animals and plants obtain and use water. How water is made and the different forms of water. What types of animals live in water. Backyard Safari is an engaging series of 13 half-hour programs that introduce four-to seven-year olds to topics in science and natural history. The primary goal of the series is to excite children, particularly those in under-served audiences, such as girls and children of color, to investigate the natural world and develop positive connections with scientific practice. A complementary goal is to help empower all children to see themselves as "scientists" who can turn off the television, step outside, and learn directly from the world around them.

### **Bill Nye: Chemical Reactions DVD**

\$45-50

Disney Education Products

<http://www.edustation.disney.com>

77A07VL00

You'll have a blast watching the explosive examples Bill Nye uses to explain that everything is made of chemicals. Guest star Candace Cameron shares the lab with Bill and shows that fire is actually a chemical reaction. In addition to the complete 26-minute episode of "Chemical Reactions," this disk is loaded with incredible DVD features like:

\*Fully indexed "chapters" correlated to National Science Standards.

\*Interactive glossaries and quizzes.

\*Bonus footage of never-before-seen segments, interviews, a

Some titles available at public libraries. Berkeley school teachers can borrow from the Central Media