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K-2	3...2...1...LIFTOFF	NASA	S-167
	This supplement is to introduce early childhood classroom students to the International Space Station and the role rockets play in its construction.		
3-8	200 Goopy, Slippery, Slimy, Weird & Fun Experiments	Janice Van Cleave	S-70
	This book is a collection of science experiments designed to show you that science is more than a list of facts – science is fun! The 200 experiments in the book take science out of the laboratory and put it into your daily life.		
4-8	Acid Rain : Student’s Handbook	EPA	E-1
	This book contains information and activities to provide a better understanding of the acid rain problem and a greater interest in its resolution.		
K-4	Aeronautics	NASA	S-162
	This educator guide explains basic aeronautical concepts, provides a background in the history of aviation, and sets them within the context of the flight environment (atmosphere, airports, and navigation).		
5-8	Air Masses	Michigan State University	E-2
	This unit focuses on the collection and use of data about changes in weather. One set of weather data is provided in this unit or you could use weather from your local newspaper. Prior to this unit, students should have had experience using thermometers for collecting temperature data. They should have learned that wind is moving air and can come from different directions and at different speeds.		
5-8	Amateur Radio in Space	NASA	S-2
	The Space Amateur Radio Experiment (SAREX) is designed to facilitate communication between astronauts in orbit with students on the ground. Through SAREX, astronauts make scheduled and unscheduled amateur radio contacts from the Shuttle Orbiter with schools selected through a proposal process from around the world. These contacts energize the participating students and families about science, technology, and learning.		
K-5	Amphibian Alert		S-152
	This curriculum aims to teach children what amphibians are and why amphibian population declines are important to scientists and communities throughout the world.		
K-5	Astronomy Adventures Ranger Rick’s Nature Scope	National Wildlife Federation	S-73
	Five activities that deal with astronomy can be taught as one unit or taught by itself.		
3-8	Astronomy for Every Kid 101 Easy Experiments That Really Work	Janice Van Cleave	S-98
	This guide contains activities that explore how life is affected by the things on and beyond the earth’s atmosphere as well as how celestial bodies affect each other		

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5-10	Astronomy: Project Earth Science	P. Sean Smith	S-5
	<p><i>Project Earth Science: Astronomy</i> spotlights ways to teach students about everything from why Earth has seasons to what a light year is. For the students, hands-on, teacher-tested activities bring the concepts of astronomy down to Earth. For the teachers, background information, supplementary readings, and suggestions for integrating other disciplines provide a framework to launch a successful introduction to astronomy.</p>		
5-8	Awesome Experiments in Force & Motion	Michael DiSpezio	S-181
	<p>This book provides activities on inertia, Newton's laws of motion, friction, gravitation, and energy</p>		
5-8	Awesome Experiments in Light & Sound	Michael DiSpezio	S-182
	<p>This book provides activities on properties of waves such as reflection, refraction and interference.</p>		
2-4	Bats Incredible	AIMS	S-80
	<p><i>Bats Incredible</i> uses the bat as the focus for an exploration of the concepts of adaptation, interaction, and diversity. This conceptual unit provides a natural integration of life (bats), earth (caves), and physical (aerodynamics and sound) science. Students experience the aerodynamics of flight, investigate the feeding adaptations of bats, investigate echolocation and explore bat habitats. Assessment strategies, curricular correlations and home links are integrated through this book.</p>		
K-8	BIRDS, BIRDS, BIRDS : Ranger Rick's Nature Scope	National Wildlife Federation	E-3
	<p>This guide combines the science activities with language arts, history, creative writing, geography, social studies, math, and art activities to make this booklet as useful as possible. This book can be your major source of background information and activity ideas that you can use over and over again with your students.</p>		
K-8	Bottle Biology	Mrill Ingram	S-6
	<p>Students create complete ecosystems using a soda bottle and film cans. Activities include modeling a rainforest, building a decomposition column, and designing a gardening system. Each chapter contains construction details, background readings and assessment questions adaptable to all ages and skill levels.</p>		
5-8	Bubble*ology	LHS GEMS	S-7
	<p>Need a simple way to explore important concepts in chemistry and physics? This book uses soap bubble activities-making an ideal bubble-blowing instrument, using the Bernoulli principle to keep bubbles aloft, and making bubbles that last for days to make science accessible and fun.</p>		
3-6	The Budding Botanist	AIMS	S-81
	<p>This guide provides hands-on activities that investigate the world of plants. Particular attention is given to (1) seeds: their structure, how they grow, their properties, and how they are dispersed; (2) plants: their structure, how plant parts work, photosynthesis, and development of seeds and fruit. The last section is a short look at the structure of plant cells.</p>		

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K-5	Bug Out – On Math and Science This guide provides activities on the characteristics, life cycles and behavior of insects.	Miami-Dade County Public Schools	S-21
4-12	Building Big Engages readers' imaginations and gets them thinking about structures they see every day – bridges, tunnels, skyscrapers, domes and dams. Includes 5 hrs. of video on 5 cassettes.	David MaCaulay	S-116
3-8	Classroom Critters and the Scientific Method Do goldfish hide? Are kittens left-handed or right-handed? Do anolis lizards prefer mealworms or crickets? These and many other questions are answered when students use the 37 animal-friendly, behavioral experiments found in this innovative resource. Each experiment explores the five steps of the scientific method: question, hypothesis, method, result, and conclusion.	Sally Kneidel	S-13
K-8	Classroom GEMS Activities and Resources This project is designed to provide Michigan's citizens of tomorrow with the knowledge and skills to understand, value, protect, and renew our precious groundwater resources.		S-155
4-8	The Complete Science Fair Handbook This book is a systematic guide to the design and development of a successful science fair. It is intended to stimulate higher levels of participation, well-designed and functional projects, an abundance of originality, and your students' deeper appreciation of how they can actively participate in the scientific world. This book is also a convenient ready reference that helps teachers guide their students through the exciting and dynamic world of science.	Anthony D. Fredericks Isaac Asimov	S-14
K-2	Constructing Toys & Concepts This unit is designed to help students construct a clear understanding of how to describe and classify common materials in ways to reveal something about usefulness. It has also been designed to help students learn to structure their experiments, to use comparisons to interpret results of experiments, and to apply those results in other contexts.	Michigan Department of Education	S-15
3-7	Cool Chemistry Believe it or not, there is a chemistry lab waiting for you in your closets and kitchen cupboards! Gather your equipment, check your supplies and get ready to try dozens of the coolest chemistry experiments around.	Steven W. Moje	S-89
K-2	Cosmic Classroom: Living in Space This book contains games and activities that demonstrate what it takes to prepare for and live in outer space.	Space Center Houston	S-134
3-5	Cosmic Classroom : Stars, Planets & Satellites By using the artifacts from the manned space program, and enlarging certain concepts of astronomy and earth science, teachers are able to build on their student's natural interests in stars, planets, extraterrestrials, astronauts, and a universe so vast that it can barely be imagined.	Space Center – Houston	S-19

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K-6	Critters	AIMS	S-82
	<i>Critters</i> contains 30 investigations involving mealworms, snails, goldfish, brine shrimp, earthworms, crickets, moths, and silkworms, as members of the Critter Club. Activities involve classification, camouflage, biomes, food chains, etc.		
1-3	Cycles of Knowing & Growing	AIMS	S-83
	<i>Cycles of Knowing & Growing</i> explores the cyclical changes that are common to living systems. As they observe plant and animal cycles, students will see that living things change over time. They will also be made aware of some predictable patterns in their own daily patterns and patterns in their growth.		
K-4	Dig In! Hands on Soil Investigation	NSTA	E-4
	Give students the dirt on soil with a practical book that brings new meaning to the term "hands-on." Using these 12 activities and two original stories as guides, kids will soon be up to their elbows in the study of soil formation, habitats and land use, animals that depend on soil, plants that grow in soil, soil science, and soil conservation. Each teacher-tested lesson plan offers helpful background, assessment methods, and suggestions for further exploration.		
5-9	Down to Earth	AIMS	S-8
	<i>Down to Earth</i> contains studies in three areas: geology, meteorology, and oceanography. Students explore variables in meteorology by looking at relative humidity using a wet and dry bulb thermometer and take a closer look at heat absorption, the effect of the sun's angle on energy received, and evaporation rates. Other activities include finding the composition of a hill built by students, examining the idea of mapping the ocean floor, and calculating the amount of pollution a car produces in one minute.		
5-8	Earth, Moon, and Stars	Cary I. Sneider	S-115
	This guide focuses on the shape of the Earth and gravity; moon phases and eclipses; and the stars. In activities that involve real-world sky gazing, students observe and record changes in the sky and create models to explain their observations. A challenging questionnaire on the Earth's shape and gravity can be used as a pre- and post-assessment tool.		
4-9	Electrical Connections	AIMS	S-84
	<i>Electrical Connections</i> is designed to clear up some of the mystery and alleviate some of the fear regarding electricity by learning a few basic electrical concepts. Major topics covered include: static electricity, attraction and repulsion of charges, electrical conductors, series and parallel circuits, electrical switches, and connections between magnetism and electricity.		
3-8	Electricity – 32	TOPS Learning Systems	S-199
	Electricity requires no lab equipment or unusual supplies. Just photocopy the 20 activity sheets, gather simple materials (like bulbs, batteries, foil and clothespins), and you're ready to explore TOPS Learning Systems hands-on.		

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K-6	Exploring Environments	AIMS	E-27
	<p><i>Exploring Environments</i> takes students on expeditions to eight different environments. Eight full color scenery posters (17"x 22") are provided. Sample plants and animals along with background information are given so that students can examine the interactions between living things and see how they meet their needs. Teaching tips are given for grade level spans K-2, 3-4, and 5-6. To complete the <i>Exploring Environments</i> activities, both the book and posters are needed.</p> <p>Posters come with book when you check it out</p>		
K-12	Exploring Matter with TOYS	Mickey Sarquis	S-22
	<p>In this book you will find teacher-tested, motivating activities that draw students in with toys, gadgetry, fun-to-do experiments, and observations of scientific phenomena in everyday events. Each activity contains a list of the key science topics covered and process skills used, estimated time length, materials list, safety and disposal procedures, step-by-step instructions, extension suggestions, and reproducible handouts.</p>		
5-12	Exploring Meteorite Mysteries	NASA	S-23
	<p>Teachers and scientists designed this book to engage students in inquiry science with interdisciplinary connections. The study of meteorites provides a unifying theme that links almost every aspect of Earth and planetary science and mathematics, physics, chemistry and even biology. The effects of meteorite impacts have serious implications for social science. Many of the lessons begin with a simple activity and build to more complex ones.</p>		
3-6	Field Detectives	AIMS	E-28
	<p><i>Field Detectives</i> is designed to encourage students to look closely at the diverse habitats in and around their school playground. They become detectives who search for evidence of life and clues to the natural world around them. Activities emphasize the provision of needs within a habitat for food, water, air, shelter, and space. Students investigate relationships found within all habitats regardless of size or location.</p>		
4-8	First Lego League 2001 Team Manual Featuring Arctic Impact	First Lego League	S-158
	<p>A manual explaining the conditions and terms of the First Lego League competition for the year 2001.</p>		
5-9	Floaters & Sinkers	AIMS	S-85
	<p><i>Floaters & Sinkers</i> is an excellent source of hand-on activities for the middle school student that builds the concept of density as the ratio of mass to volume. Through a carefully planned series of experiences, student's measure volume, explore the idea of space between particles whether seen or not, discover the relationship between surface area and cargo capacity of boats, and explore the densities and volumes of different types of spherical objects and irregular shaped objects.</p>		
5-9	From Head to Toe	AIMS	S-86
	<p><i>From Head to Toe</i> includes studies of the human body, its framework, respiratory system, and circulatory system. The activities focus on measurement and provide an excellent vehicle to build self-awareness and establish a basis for a good physical fitness program.</p>		

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5-9	Fun With Foods	AIMS	S-87
	<p><i>Fun With Foods</i> contains a series of hands-on investigations utilizing and analyzing common foods. The wonderment and curiosity that is aroused in working with and examining foods is the beginning of many delightful discoveries, some of which include the percent of an orange that is edible, how effective preservatives are in retarding the growth of mold, the presence of sugar in most foods, and mayonnaise as an emulsion.</p>		
K-8	Garbage and Recycling	Sally Morgan Rosie Harlow	S-131
	<p>This guide contains experiments that look at problems of producing too much garbage and explains how recycling can make our environment a cleaner place.</p>		
K-8	Glow in the Dark Constellations A Field Guide for Young Stargazers	C.E. Thompson	S-138
	<p>Inside this handy beginner's guide to stargazing, you will find dazzling glow-in-the-dark illustrations of major constellations visible in each season of the year, step-by-step directions for finding more than 30 stars and star groups, brief retellings of the legends behind the names of the constellations and 8 simple glow-in-the-dark sky maps.</p>		
5-12	Geology: Project Earth Science	Brent A. Ford	S-25
	<p><i>Use Project Earth Science: Geology</i> to introduce your students to plate tectonics and teach them what causes volcanoes and earthquakes. Lead explorations of these and other larger-than-the-classroom geological phenomena with the teacher-tested, standards-based activities. Earth's physical evolution and dynamic processes are carefully explained in language accessible to students and teachers. Supplemental readings provide educators with the background information to answer student questions and concerns.</p>		
5-12	Gravity Rules!	AIMS	S-88
	<p><i>Gravity Rules!</i> is an activity book and video package using the high-energy sport of skydiving to teach students basic force and motion concepts. The one-hour video features actual in-the-air scenes of skydivers performing basic and advanced flight maneuvers. In the classroom students make simple paper models and explore how the forces acting on the models allow them to duplicate the motions of real skydivers. Students also collect, record, and analyze data taken directly from instruments seen in the video. To complete the <i>Gravity Rules!</i> activities, both the book and video are needed.</p>		
K-8	The Great Lakes in my World Activities Workbook	Lake Michigan Federation Great Lakes Commission	S-157
	<p>This activity guide focuses on the human impact on the natural processes and pollution issues concerning the Great Lakes.</p>		
K-12	Great Lakes Watershed Education Resource Kit		S-170
	<p>This kit contains teacher resources, children literature and posters to enhance teaching units on Great Lakes watersheds and environmental stewardship.</p>		
3-8	Guide to the Best SCIENCE FAIR PROJECTS	Janice VanCleave	S-27
	<p>This guide will help students develop a prize winning topic and determine the best way to create, assemble, and present it (with special tips about successful displays). Try our favorite experiments on topics from astronomy and biology to chemistry, math, and engineering.</p>		

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3-8	Guide to MORE of the Best SCIENCE FAIR PROJECTS A second complete guide to winning science fair projects. (See: <u>Guide to the Best SCIENCE FAIR PROJECTS</u>)	Janice VanCleave	S-28
K-8	HANDS ON - Earth Science Activities More than 160 inquiry activities covering air, water, Earth, ecology, meteorology, and astronomy. Each activity encourages students to analyze, synthesize, and infer based on their own hands-on experiences. Includes integration possibilities for other disciplines, step-by-step procedures, and teacher information.	Marvin N. Tolman	S-29
K-8	HANDS ON – Life Science Activities More than 150 discovery experiences covering plants and seeds, animal life cycles, adaptation, body structure, the senses, health, nutrition, and more. Each activity encourages students to analyze and synthesize information based on their own hands on experiences. Includes integration possibilities for other disciplines, step-by-step procedures, and teacher information.	Marvin N. Tolman	S-30
K-6	Hands-On Nature Information and activities for exploring the environment with children, by asking meaningful questions, making careful observations, testing new ideas, and sharing thoughts and observations.	Jenepher Lingelbach Lisa Purcell	S-117
1-12	Hands On – Save Our Streams This guide will help you learn how to monitor and find out if a stream is healthy. It begins with an explanation of watersheds and how water flows through the soil, waterways and atmosphere. Instructions for monitoring streams and steps to plan a science project are included.	Izaak Walton League of America	E-10
5-6	Hard as Ice This unit is designed to help students construct a clear understanding of the solid and liquid states of matter and what happens when solids melt into liquids or liquids freeze into solids. It has also been designed to help students learn to pose questions, search for solutions to problems, work together with others, and value the need for evidence in making decisions.	Michigan Department of Education	S-31
K-3	High/Scope Curriculum Series: Science This curriculum guide uses the elements of scientific method in simple and straightforward activities for primary-level children.	Frank Blackwell Charles Hohmann	S-202
K-5	How to...Teach Measurements in Elementary School Science This guide focuses on the importance of measurements in the communication information. Hands-on activities help teachers guide students to a solid understanding of measurements, the metric system, and standardized units.	Neal J. Holmes Joseph J. Snoble	S-115

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5-10	<p>How to...Teach with Topographic Maps</p> <p>This "How To" guide is divided into two sections. The first section provides an overview and background information on topographic maps. The second section is a series of classroom activities to help teach topographic map skills. The guide includes a topographic map produced by the United States Geological Survey.</p>	<p>Dana Van Burgh Elizabeth N. Lyons Marcy Boyington</p>	S-34
K-8	<p>INCREDIBLE INSECTS : Ranger Rick's Nature Scope</p> <p>This guide combines science activities in <i>Incredible Insects</i> with language arts, history, creative writing, physical education, social studies, math, and art activities to make this guide as useful as possible.</p>	<p>National Wildlife Federation</p>	E-11
5-8	<p>Investigating Solids, Liquids & Gases with TOYS</p> <p>In this book you will find teacher-tested, motivating activities that draw students in with toys, gadgetry, fun-to-do experiments, and observations of scientific phenomena in everyday events. Each activity contains a list of the key science topics covered and process skills used, estimated time length, materials list, safety and disposal procedures, step-by-step instructions, extension suggestions, and reproducible handouts.</p>	<p>Jerry Sarquis Lynn Hogue Mickey Sarquis Linda Woodward</p>	S-38
K-12	<p>In Touch With Girls and Science</p> <p>This manual provides activities that are designed for use with girls in school, community, and home settings, such as school science and mathematics programs, scouting and church-based programs, and college science and engineering student societies. They can be used with the guidance of adult leaders, teachers, parents, or young-adult mentors. Special emphasis is placed on having girls come in contact with female role models and mentors. The activities in this manual were selected because they foster problem-solving skills through the use of data collection and analysis.</p>	<p>AAAS</p>	S-36
K-5	<p>Interdisciplinary Science Modules</p> <p>Scientific investigation is the focal point for these materials. The format for each module consists of 4-5 learning stations which set the stage for hands-on, minds-on, cooperative learning to take place. Activities include; Animal Crackers, Body in Motion, Should We Care About Cormorants, Water Pollution & Solutions, Water the Reusable Resource and You Are What You Eat.</p>	<p>Northwoods Math Science Center</p>	S-159
3-5	<p>Jaw Breakers & Heart Thumpers</p> <p><i>Jaw Breakers & Heart Thumpers</i> combines the study of nutrition and the human body. Activities help students answer such questions as: Why do you need breakfast? How does the amount of fat in foods compare? How does exercise affect your heartbeat? How do our fingerprints compare?</p>	<p>AIMS</p>	S-90

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2-12	Keeping a Nature Journal	Clare Walker Leslie Charles Roth	S-120
	Learn to observe and connect with the world around you through drawings and descriptive writing.		
K-8	Lake Effects – Lake Superior Curriculum Guide	Great Lakes Aquarium	E-12
	There are four sections of lessons in the <i>Lake Superior Curriculum Guide</i> The Physical Lake Superior: lessons that focus mostly on the physical evolution and dynamics of Lake Superior. The Living Lake Superior: activities that teach about the plants and animals for the basin, from arctic disjuncts to zooplankton. The Cultural Lake Superior: lessons about human dimension, including history, human geography and environmental issues. Synthesis: lessons and activities that just couldn't be categorized: truly interdisciplinary programs that go beyond the classroom walls.		
K-5	Lake Erie: A Day in the Life of a Fish	Ohio Sea Grant	E-13
	Have you ever really taken time to look at a goldfish carefully? This book is the chance to do so. It will show students what to look for and what questions to ask when watching a fish. Are the gills moving? Where are the fish swimming? What is the temperature of the water? This guide will take you through the entire life of a fish.		
K-12	Let's Reduce and Recycle: Curriculum for Solid Waste Awareness	EPA	S-119
	Designed to increase solid waste awareness and promote recycling participation by children.		
5-7	The Lives of Plants	Michigan Department of Education	S-39
	This unit is designed to help grade students construct a clear understanding of the way plants perform the unique and critical energy transformation of photosynthesis. It has been designed to help students learn to pose questions, search for solutions to problems, work together with others, and value the need for evidence in making decisions.		
1-3	Living In Space	NASA Sheila Briskin Andrews Audrey Kirschenbaum	S-40
	In June 1984 President Reagan announced a new NASA education program, "Operation Liftoff": "For more than 25 years NASA has pioneered on the cutting edge of science and technology and has stimulated our young people to strive for excellence in all they do." This program is designed to encourage pupils in the nation's elementary schools to take a greater interest in mathematics and science.		
5-9	Machine Shop	AIMS	S-92
	<i>Machine Shop</i> allows students to join the characters "Fantastic Force" and "Mucky Mass" in their adventures as they discover the utility of simple machines. Hands-on activities help students develop an understanding of the physics involved. Students are challenged to apply their understanding to weigh each other using a seesaw, to have tug-of-wars with pulleys, to determine how bicycle gears work, and to construct catapults and racing machines. The pervasive concepts of conservation of energy, forces, and power are developed through each of these intriguing activities.		
3-8	Magnetism – 33	TOPS Learning Systems	S-198
	Magnetism is filled with wonderful inventions that run on simple materials. This unit uses small, rectangular, ceramic magnets about as wide as postage stamps.		

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K-12	Mammal Tracks Life Size Tracking Guide	Heartwood Press	S-213
	<p>This life size tracking key will help you determine which species made the footprints you are observing. It is in a three-part key...movement pattern, group, or species. This is a great tool when checking out the Wolf Box, for Making Tracks Kit from our equipment list.</p>		
5-12	Meteorology: Project Earth Science	P. Sean Smith Brent A. Ford	S-42
	<p>Integrated activities cover the origin and composition of the atmosphere, as well as the variables that influence weather and affect the movement of air masses. From studying the hydrologic cycle to reading weather maps and tracking hurricanes, your students will become skilled weather watchers.</p>		
K-12	Michigan WISE Project	DNR	E-14
	<p>The Great Lake WISE (Waste Information Series for Education) Project is a K-12 science-based curriculum created by the Michigan Departments of Natural Resources and Education to allow teachers to integrate solid waste and related environmental issues into existing curricula. By encouraging students to think critically about our trash dilemma and propose solutions, students learn the importance of individual action and develop lifelong habits of caring for the environment.</p>		
5-12	Microgravity	NASA	S-44
	<p>This curriculum guide defines, explains, and shows how microgravity can help us learn about the phenomena of our world. The front section of the guide is designed to provide teachers of science, mathematics, and technology at many levels with a foundation in microgravity science and applications.</p>		
4-8	Microscopic Explorations	LHS GEMS	S-45
	<p>This guide features 10 learning stations designed to enliven student curiosity in a number of scientific fields. Using hand lenses and microscopes, students observe, record, and investigate water droplets, fingerprint ridges, dollar bills, insects, and much more.</p>		
K-8	Mining for Music	National Energy Foundation	S-74
	<p>This guide is a multi-disciplinary unit of instruction which can be successfully integrated into curricula in history, earth science, general science, math, social studies, geography, language arts, art, photography, and technology.</p>		
K-12	Monarch Butterfly	Royal Mail	S-46
	<p>This manual contains ideas that you can further develop with your creativity and experience. It is our hope that by carrying out the activities in this manual, the Monarch Butterfly can be protected during its journey through the cities that participate in the project. The activities were designed to be used during migration in the months of September, October and November.</p>		
2-8	Mostly Magnets	AIMS	S-101
	<p><i>Mostly Magnets</i> provides students with fascinating and enjoyable activities that help them learn about the varied behavior of magnets and related science concepts.</p>		
5-8	NASA's Student Glovebox	NASA	S-165
	<p>This unit is designed to help you build and understand what a Glovebox is and what the astronauts use it for in space. A poster of the Glovebox parts accompanies this unit.</p>		

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K-5	Nurturing Inquiry – Real Science for the Elementary	Charles R. Pearce	S-48
	Inquiring minds want to know plenty of hands-on ways to transform younger students from passive listeners into an active, engaged community of budding scientists.		
K-4	Our Mission to Planet Earth A Guide to Teaching Earth System Science	NASA	S-49
	With NASA's development of <i>Our Mission to Planet Earth: A Guide to Teaching Earth System Science</i> , the children in your classrooms today could become the scientists of tomorrow who will analyze the data streaming back to Earth via satellite communications. Children will become familiar with the concept of cycles, defined as a process that repeats itself in the same order, and to learn that some human activities can cause changes in their environment.		
5-9	Our Wonderful World	AIMS	E-29
	<i>Our Wonderful World</i> is an environmental studies book which explores how we relate to our surroundings. Most of the activities are appropriately implemented out-of-doors and include these topic areas: air, water, transpiration, soil, plants, animals, and insects. Students build a water still to extract water from the air through condensation in one activity and study the reaction of insects to temperature changes in another.		
4-8	Out of This World	AIMS	S-102
	<i>Out of This World</i> deals with the solar system and astronomy. It concentrates on studies involving the planets and moon by using simulations, fact sheets, and investigations.		
3-6	Overhead & Underfoot	AIMS	S-103
	<i>Overhead & Underfoot</i> is filled with investigations that focus on weather and our natural environment. Students take a closer look at relative humidity by building a simple hygrometer, air pressure by building a barometer, and wind speed and direction by building an anemometer and a wind vane. Students will also examine soil composition, pollution, insect travel, and peanut butter and jelly geology.		
4-9	Pendulums – 34	TOPS Learning Systems	S-200
	Task cards in this book run on little more than thread, paper clips, pennies and masking tape. Now you can teach science on less than a shoestring and your students will love it		
5-12	Oceanography: Project Earth Science	P. Sean Smith Brent A. Ford	S-53
	Immerse your students in Earth's most abundant resource-water. Embark on a voyage of discovery as you steer your students through activities designed to teach them about currents, waves, and tides. From an understanding of the properties that make water unique, your students will get a global view of the marine environment, including the impact of human activities on the oceans.		
5-6	Phases of the Moon	MSU	S-52
	The goal of this unit is to get students to explain where the moon is in its orbit when we see it as a crescent, and when it is full, and why the moon shows these phases at different places in orbit.		

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2-6	The Pillbug Project: A Guide to Investigation	Robin Burnett	S-54
	Help children see for themselves what science is all about with the perfect classroom critter, the docile pillbug. Organized around 10 days of activities, this innovative book helps students explore organisms' life cycles and environments, understand scientific inquiry, and have fun. You'll like the practical lesson plans, assessments, and reproducibles; kids will love the whimsical illustrations and the adventures of Patricia Pillbug.		
5-12	Planetary Geology	NASA	S-163
	This guide provides activities on geologic processes, impact craters, planetary atmosphere, planetary surfaces and geologic mapping.		
Pre K-1	Playtime is Science	Educational Equity Concepts, Inc.	S-191
	This equity-based parent/child science program was created to give all children regardless of gender, race, national origin, disability or level of family income access to inquiry-based science from the beginning of their education. The program stresses process and builds on children's natural curiosity about the physical world.		
3-5	Popping with Power	AIMS	S-104
	<i>Popping with Power</i> contains activities that deal with energy sources and conservation. Students become machinists, engineers, and electricians as they investigate questions such as: How do machines make life easier? How long can you keep an ice cube from melting? How can you throw a very heavy ball over a tall wall? Student's natural curiosity and enthusiasm about energy encourages them to get involved in these problem solving math/science activities.		
K-3	Primarily Earth	AIMS	S-105
	<i>Primarily Earth</i> explores Earth, air, and water. This introduction to earth science offers a series of hands-on activities which encourage primary students to use their senses to observe the world around them. The book includes a look at the features of the Earth, rocks, soil, water, clouds, wind, and air.		
K-3	Primarily Physics	AIMS	S-106
	<i>Primarily Physics</i> consists of 32 activities investigating sound, light, and heat energy. Each of the three sections begin with fact sheets that provide essential background information.		
K-3	Primarily Plants	AIMS	S-107
	<i>Primarily Plants</i> contains 22 investigations that cover such concepts as: most plants grow in soil; all plants need water, effects of temperature; green plants need light; flowers produce seeds that grow into new plants; ferns and mosses are simple green plants; and many kinds of plants have roots, stems, leaves, and flowers. The book also has four science information sections: <i>Plant Growth; Seeds, Spores, and More; Plants Needs; and Plant Parts.</i>		
K-8	Project Learning Tree	American Forest Foundation	E-15
	Through hands-on, interdisciplinary activities, PLT provides students with opportunities to investigate environmental issues and encourages them to make informed, responsible decisions.		

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K-12	Project Wet	Project Wet	E-17
	The goal of <i>Project WET</i> is to facilitate and promote awareness, appreciation, knowledge, and stewardship of water resources through the development and dissemination of classroom-ready teaching units.		
K-12	Project WILD	Western Regional Environmental Education Council	S-122
	Interdisciplinary activities on wildlife appreciation, diversity, ecology, and conservation.		
K-12	Project WILD-Aquatic	Western Regional Environmental Education Council	S-123
	Interdisciplinary curriculum/activity guide that teaches about wildlife and water.		
4-8	Ray's Reflections	AIMS	S-108
	<i>Ray's Reflections</i> takes the students on an exciting integrated math/science journey as they explore the reflection of light from plane mirrors in "The Pharaoh's Charmers," through U-shaped and S-shaped tunnels, and play "pool" with light rays, among other things. Discover how the science vocabulary used to describe the behavior of light and its reflection "mirrors" is the same as the mathematical vocabulary used to describe geometric points and lines.		
4-12	Rockets	NASA	S-57
	This guide begins with background information on history of rocketry, scientific principles, and practical rocketry. The sections on scientific principles and practical rocketry focus on Sir Isaac Newton's Three Laws of Motion. These laws explain why rockets work and how to make them more efficient. Following the background sections are a series of activities that demonstrate the basic science of rocketry while offering challenging tasks in design.		
3-4	Running on Plants	Michigan Department of Education	S-58
	This unit is designed to help students construct a clear understanding of the world of plants and its relationship to peoples' food supply. It has also been designed to help students learn to pose questions, search for solutions to problems, work together with others, and begin to value the need for evidence in making decisions.		
2-4	Scholastic Science Art	Deborah Schecter	S-59
	Observe, classify, predict and investigate! Elementary students learn basic science concepts and process skills through these fun and creative art projects. Design leaf-print book covers and mix colors to make rainbow light-catchers; teach your students about energy with wind-up whirligigs; and lead them in imaginative projects about animal adaptations, magnetism, chemistry, and much more. Incorporating the National Science Education Standards, this resource includes easy-to-follow directions, background information, literature links, and reproducible science journal pages.		
3-6	Schoolyard Ecology	LHS GEMS	E-18
	Turn your elementary students into ecologists: help them learn key ecological and biological concepts as they investigate the immediate environment. This guide discusses biological sampling and mapping, while also developing mathematical capabilities. Students complete journals to promote a language arts connection.		

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4-6	Science & Stories Integrating Science and Literature	Hilarie N. Staton Tara McCarthy	S-185
	Bring science to life through popular literature. Grade-level appropriate science correlate with easily available books and pay careful attention to reading strategies, oral language skills and writing skills.		
K-3	Science & Stories Integrating Science and Literature	Hilarie N. Staton Tara McCarthy	S-186
	Bring science to life through popular literature. Grade-level appropriate science correlate with easily available books and pay careful attention to reading strategies, oral language skills and writing skills.		
K-3	Science Book of Water	Neil Ardley	S-128
	Contains variety of water experiments to explore the properties of water.		
K-12	Science Demonstration Projects in Drinking Water	EPA	S-60
	This pamphlet includes a brief selection of science demonstration projects related to drinking water for K-12 students. The general areas covered by the demonstration projects include the chemical/physical aspects of water, contamination and treatment of drinking water, distribution and supply of drinking water, and water conservation.		
4-9	Science Equals Success	U.S. Department of Education	S-61
	This book is a hands-on, discovery science activity that center around four EQUALS processes -problem solving, cooperative learning, spatial skills and career awareness. Activities are designed to increase students' interest and motivation in math, improve confidence and competence in doing math.		
K-12	Science Experiments by the Hundreds	Julie H. Cothron Ronald N. Giese Richard J. Rezba	S-62
	This two-book set teaches students experimental design, ways to explore project ideas, how to write safe procedures, methods of analyzing data, and how to write an experimental report. There is a student book and a teacher's guide.		
4-8	Science Experiments with Sound & Music	Shar Levine Leslie Johnstone	S-183
	These cool science projects will give you good vibrations! They're all about sound – where it comes from, and how it works and affects us. You'll find out some very interesting and unusual things. Open up your mind (and your ears) to solve some of the weird and wonderful mysteries of sound!		
EL	SCIENCE: Through Children's Literature	Carol M. Botzow John W. Butzow	S-65
	From Mike Mulligan to the crew on the Magic School Bus, children's books are full of lively characters who can bring science to life. Revised and updated, this popular resource shows how to use 33 works of fiction to teach life, Earth and space, and physical science. This book's first section, which covers methods of teaching science and children's development stages. Each instructional unit includes a summary of the featured book, related science concepts, vocabulary, activities and a bibliography.		

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K-3	More Science Through Children's Literature	Carol M. Botzow John W. Butzow	S-203
	The authors have created more fascinating thematic units of instruction to help make science understandable and enjoyable to young learners. This exciting approach allows you to build on the appeal of stories, connecting them to real-life experiences to build skills and understanding in students.		
K-1	Sense-able Science	AIMS	S-109
	<i>Sense-able Science</i> is a collection of student-centered activities in which primary students explore and discover each of their five senses. While learning important basic math concepts, students will recognize the functions and uses of their five senses, and learn to protect and appreciate the value of these senses. Meaningful background information for teachers is provided along with suggestions for student-made books, models, and literature correlations.		
4-8	Show Me How To...Write An Experimental Science Fair Paper	Judy Fisher Shubkagel	S-66
	Fill-in-the-blank pages to guide students through every detail of their own projects - including selecting a topic, writing the abstract, reporting results, presenting data, writing a bibliography, and creating a display		
5-9	The Sky's the Limit	AIMS	S-110
	<i>The Sky's the Limit</i> invites students to explore every aspect of the science of aerodynamics through simple and inexpensive materials. "Flying" is magic for children of all ages! This book attempts to clarify some of the reasons why the magic works while preserving its sense of mystery. Students enjoy constructing kites, paper airplanes, balloon rockets, super tubes, and much more.		
4-9	Soap Films & Bubbles	AIMS	S-111
	<i>Soap Films & Bubbles</i> provides extensive explorations into the behavior of soap films. Valuable insights will be acquired through activities that are sure to intrigue students.		
5-8	Solar System Puzzle Kit	NASA	S-168
	An activity kit that provides a 3-D picture of the solar system.		
5-8	Space Based Astronomy	NASA	S-67
	This curriculum guide uses hands-on activities to help students and teachers understand the physical science concepts that make space based astronomy possible. (Astronomical observations made from outer space).		
K-8	Space Food and Nutrition	NASA	S-169
	This unit explores the meals that were available from the Mercury Project to the International Space Station and how it has changed and developed to meet the needs of the astronauts.		
5-12	Spills and Ripples	AIMS	S-112
	<i>Spills and Ripples</i> is an innovative, exciting, and wet set of investigations designed to arouse curiosity about fluid dynamics. Students improve their understanding of density, pressure, and surface tension by learning to control boundaries between fluids, to manipulate Cartesian divers and to construct low cost instruments, like a hydrometer and manometer.		

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K-12	The Stars	H.A. Rey	S-129
	This guide provides information about constellations and their position in the celestial sphere throughout the year.		
3-8	Stop Faking It – Energy	William C. Robertson, Ph. D.	S-192
	If you fear the study of energy is beyond you, this entertaining book will do more than introduce you to the topic. It will help you actually understand it. There are explanations of energy basics- work, kinetic energy, potential energy, and the transformation of energy and energy as it relates to simple machines, heat energy, temperature and heat transfer.		
3-8	Stop Faking It – Force and Motion	William C. Robertson, Ph. D.	S-193
	Intimidated by inertia? Frightened by forces? Mystified by Newton's laws of motion? You're not alone, and help is at hand. This is a jargon-free way to learn the background for teaching middle school physical science with confidence.		
5-12	Suited for Spacewalking	NASA	S-164
	This unit discusses the space environment, the history of spacewalking and NASA's current spacesuit. It also challenges students to design and build a spacesuit prototype and to understand important topics in spacesuit design.		
5-8	Taking Charge – An Introduction to Electricity	Larry E. Schafer	S-195
	This guide is designed to help teachers bring the intimidating subject of electricity to students in the middle grades. Students explore static electricity in the first module before seeing that static electricity can move as current electricity, investigated in the second module.		
K-12	Targeting Students' Science Misconceptions	Joseph Stepan, Ph. D.	S-197
	This book provides activities to correct student misconception of physical science concepts.		
K-9	Teaching Chemistry with TOYS	Jerry Sarquis Micky Sarquis John Williams	S-71
	Innovative activities use everyday toys to demonstrate the principles of chemistry in ways children easily understand. Each activity contains a list of the key science topics covered and process skills used, estimated time length, materials list, safety and disposal procedures, step-by-step instructions, extension suggestions, and reproducible handouts.		
1-4	Teaching Physical Science through Children's Literature	Susan E. Gertz Dwight J. Portman Mickey Sarquis	S-184
	This book offers 20 complete lessons for teaching hands-on, discovery oriented physical science in the elementary classroom using children's fiction and nonfiction books as an integral part of that instruction. These lessons are intended to complement and enrich your own curriculum.		

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K-9	<p>Teaching Physics with TOYS</p> <p>In this book you will find teacher-tested, motivating activities that draw students in with toys, gadgetry, fun-to-do experiments, and observations of scientific phenomena in everyday events. Each activity contains a list of the key science topics covered and process skills used, estimated time length, materials list, safety and disposal procedures, step-by-step instructions, extension suggestions, and reproducible handouts.</p>	<p>Beverley Taylor James Poth Dwight Portman</p>	S-72
5-12	<p>Teaching Soil and Water Conservation</p> <p>Provides hands-on soil science and soil water activities covering topics such as: organic matter, soil water holding capacity, erosion, fertilizers, bird and insects forest soils.</p>	<p>The USDA Soil Conservation Service</p>	S-135
K-12	<p>A Thousand Friends of Frogs</p> <p>This activity guide encourages an understanding of frogs, their habitat, and their roles as bio-indicators.</p>	<p>The Center for Global Environmental Education</p>	S-130
K-8	<p>Trees Are Terrific! : Ranger Rick's Nature Scope</p> <p>In this book we've got a lot of tree teaching ideas for you – ideas that you can use throughout the year. We've also provided some ways you and your group can "show your gratitude" to trees, such as by planting trees.</p>	<p>National Energy Foundation</p>	E-19
K-12	<p>The Universe at Your Fingertips Astronomy Activities & Resources</p> <p><i>The Universe at Your Fingertips</i> is a key product of Project ASTRO containing exemplary classroom activities selected by a team of teachers and astronomers, comprehensive resource lists and bibliographies, brief background material on astronomical topical, and teaching ideas from experienced astronomy educators.</p>	<p>Project Astro</p>	S-76
K-12	<p>More Universe at Your Fingertips Astronomy Activities & Resources</p> <p><i>More Universe at Your Fingertips</i> is the second compilation of astronomy activities and teaching resources from Project ASTRO at the Astronomical Society of the Pacific. This book is designed to stand on its own apart from <i>The Universe at Your Fingertips</i>. and does not require access to the other book for effective use.</p>	<p>Project Astro</p>	S-77
K-5	<p>Using Art To Teach Science</p> <p>The creative skills involved in the process of artistic expression translate very well into the problem-solving world of technology. Even in the elementary level it can help build confidence, as well as develop abstract thinking skills.</p>	<p>NASA</p>	S-79
4-8	<p>ViewFinders</p> <p><i>ViewFinders</i> is a universally applicable curriculum emphasizing the connections between the environment, community and aesthetics. <i>ViewFinders</i> was developed to raise awareness of the importance of the visual environment and how it affects our communities and quality of life.</p>	<p>The Dunn Foundation</p>	E-27

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K-8 **Walk Around the Block** **Ginny Graves, Hon. AIA** **S-142**
Center for Understanding the Built Environment

A guide that increases understanding of the architectural design, city planning and human processes which influence how our cities work.

3-8 **Water Matters:** **NSTA Press**
Vol. 1 Wetlands, Water Use and Wastewater Treatment **E-20**
Vol. 2 Navigation, Groundwater and Water Quality **E-21**
Vol. 3 Oceans, Watersheds, and Hazardous Waste **E-22**

Each *Water Matters* volume comes with six posters (three with text geared for elementary students and three for middle level) that can be displayed separately or linked together into a huge, nine-poster mural! The teacher's guides have activities that directly tie into the poster scenes, depicting wetlands, water use, wastewater treatment, navigation, groundwater, water quality, oceans, watersheds, and hazardous waste.

2-6 **Water Precious Water** **AIMS** **S-113**

Water Precious Water contains investigations that relate to water awareness, water cycle, evaporation, conservation, treatment, quality, absorption and erosion, distribution and water properties

K-2 **Winter Wonders** **AIMS** **S-114**

Winter Wonders is a collection of activities that focuses on process skills. Students will hone their observational skills in order to better sort and classify, gather and record data, analyze data, and draw conclusions. Included are activities that are especially appropriate for use during the winter season.

4-6 **A World in Motion** **SAE International** **S-160**

This guide is a fully integrated print and video program that emphasizes hands-on discovery of science principles through engineering activities.

K-12 **WOW!: The Wonders of Wetlands** **Environmental Concern Inc.** **E-26**

Classroom teachers that will find useful background material and stimulation activities to fit their programs. The first part of *WOW!* is filled with background material for teachers preparing wetland study units. The rest of the guide is brimming with proven wetland activities.