



**SCIENCE SCREEN REPORT
2010-11 PROGRAM CATALOGUE**





Science that Inspires

SCIENCE SCREEN REPORT® has been a trusted resource of objective science news reporting for high school science teachers for nearly 40 years.

The award-winning DVD series, produced in cooperation with the Accreditation Board for Engineering & Technology, and its elementary school edition, **SCIENCE SCREEN REPORT FOR KIDS®**, examines the most recent developments and discoveries in science and technology. The programs are designed to help students understand the vital role science plays in our everyday lives and to address critical issues facing society today, as well as being an economic driver that creates well-paying career opportunities.

SCIENCE SCREEN REPORT® and **SCIENCE SCREEN REPORT FOR KIDS®** are provided to schools free of charge through the generosity of local corporations who use the series to complement important community outreach initiatives in their respective corporate and plant locations.

SCIENCE SCREEN REPORT® is endorsed as an exemplary resource by the Smithsonian Institute's Teacher Resource Center, the Eisenhower National Clearinghouse and MIT's prestigious Haystack Laboratory. The Accreditation Board for Engineering and Technology (ABET), has been an academic partner for more than three decades.

SCIENCE SCREEN REPORT® participates in the National Science Foundation's Presidential Awards for Excellence in Mathematics and Science Teaching. The programs are also listed in the U.S. Department of Education and Department of Energy's resource guides.

The **SCIENCE SCREEN REPORT®** Advisory Board oversees all program production to ensure the integrity of the scientific content and its respective correlation to National Education Standards and Benchmarks in Science Literacy for Science instruction.

SCIENCE SCREEN REPORT® and **SCIENCE SCREEN REPORT FOR KIDS®** are produced by Allegro Productions, a former Time Inc. company.

Academic Partners



THE CENTER FOR INTERACTIVE LEARNING AND COLLABORATION

The Center for Interactive Learning and Collaboration (CILC) provides services, including consulting and workshops, to help develop, support and evaluate video distance learning programs and community projects to maximize learning. CILC's website, www.cilc.org, provides access to engaging interactive video-conferencing content and professional development programs, collaboration opportunities, and site directories.



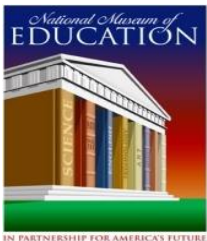
JUNIOR ENGINEERING TECHNICAL SOCIETY

JETS coordinates competitions and develops career resources that help young people overcome these barriers by highlighting the real value and intriguing work of engineers. Through a unique and innovative approach—[Explore, Assess, Experience](#)—students learn about the contribution of engineering in our global society and accurately assess their potential for participation in the profession. WWW.JETS.ORG



ACCREDITATION BOARD FOR ENGINEERING AND TECHNOLOGY (ABET)

ABET provides world leadership in assuring quality and in stimulating innovation in applied science, computing, engineering and technology education. Among the most respected higher education accreditation organizations, ABET accredits almost 3,000 programs at more than 600 colleges and universities worldwide. Founded in 1932, ABET is a federation of 30 professional and technical societies representing these fields. ABET is recognized by the Council for Higher Education (CHEA), state and national licensing and certification boards, and quality assurance organizations around the globe. ABET has been involved with SCIENCE SCREEN REPORT for more than 25 years. www.abet.org



THE NATIONAL MUSEUM OF EDUCATION

The National Museum of Education™ is the natural outgrowth of the National Gallery for America's Young Inventors, which has been in existence since 1996 and is the major program of the former Partnership for America's Future, Inc, established in 1988. This new museum will build on the success of the National Gallery and will include its archives of young scientists and the recognition and archival techniques that have honored America's greatest K-12 young inventors and provide a home for all education. www.NMOE.org.

SCIENCE SCREEN REPORT® and SCIENCE SCREEN REPORT FOR KIDS® Advisory Panel

DR. PATRICIA HEYDET-KIRSCH, Ed.D, DIRECTOR OF ASSESSMENT AND PROGRAM EVALUATION COLLEGE OF EDUCATION, FLORIDA ATLANTIC UNIVERSITY

Former Director of STEM Academy, Boca Raton Community High School, PDD FCAT Trainer. Curriculum Writer: Scope and Sequence 2003 – 2005, Weather Channel Safeside Curriculum booklet, Sharks Benchmark Focus Lesson, “Storm of ‘28” Benchmark Focus Lesson; Testbank Writer: FCAT testing software, Testtools, Inc. Testbank Writer: FCAT Database, Edukids Inc. **Honors:** Winner Governor’s Award for Literary Excellence 2002-2003; 2002 Presidential Award for Excellence in Math and Science Teaching; 2004 and 2005 Presenter NSTA Conference “Presidential Awardees Best Practices”.

NICHOLAS FRANKOVITS, EXECUTIVE DIRECTOR, THE NATIONAL MUSEUM OF EDUCATION

Senior Lecturer in Geology, The University of Akron. Former Earth Science & Environmental Studies Teacher & Science Dept. Chair, Springfield Local Schools, Earth Science Instructor, Cleveland Public Schools, Earth Science & Biology Instructor, Maple Heights School District, Earth Science Instructor, Lakewood High School. Publications: “Educator to Inventor”© Training, 2000, “Science & Math Events: Connecting & Competing”, “Graduate Retention Initiative”, “Camp Invention” Curriculum, “A Simple Foucault Pendulum for Classroom Use”, “When Light and Matter Collide.”

LEILA GAY EVANS, ASSISTANT EXECUTIVE DIRECTOR, THE NATIONAL MUSEUM OF EDUCATION

Former French and English Teacher, Springfield Local Schools, French Instructor, Kent State University, Summer Studies: the Sorbonne, Paris, University of London, The Free University of Berlin, University of Vienna, The Babcock & Wilcox Company, Naval & Commercial Nuclear Department. Publications: “Rubber Band Competition” with The University of Akron, and Akron Global Polymer Academy, “Standing With Hope”, “Future CEO’s”, “Feeding Success”, “Art is Alive and Well”, “Common Dreams”, “Upward Bound”, “Stretched to the Max”.

JOHN MURNAN, ETOWAH HIGH SCHOOL, WOODSTOCK, GA

Biology, anatomy, physiology. Member: Georgia Science Teachers Association, the National Science Teachers Association, National Association for Research in Science Teaching and the National Association of Biology Teachers. Board Certified Teacher in Adolescent/Young Adult Science. Published: “*Effectiveness of an Inquiry Curriculum on Natural Selection*” -- 2008 Georgia Science Teachers Association Conference.

DEBRA MURNAN, Math and science elementary/middle school educator.

Teacher of the Year, North Grade Elementary School, Lake Worth, FL. Nominated for: “Science Night” and peer workshops to teach AIMS.

Science Screen Report® titles may be ordered individually, or in multi-title discounted packages. Complete **Science Screen Report**® volumes featuring various titles (*descriptions begin on page 17*) are available for a package price of \$295 per set. See ordering information on page 26 for details.

CATEGORY/TITLE	VOL	Page	CATEGORY/TITLE	VOL	Page
ASTROPHYSICS/ASTRONOMY/SPACE			LIFE SCIENCES		
Asteroid: The Threat/Jupiter: The King Planet	36	6	Agriculture: Feeding A Hungry Planet	39	12
Astronomy, Discovery: History of/Night Sky: Navigating Constellations	37	6	Aquaculture: Advances In Fish Farming	39	12
Behind the Big Bang Theory	33	6	Ants: Our Tiny Neighbors	32	12
Black Holes, The Search for	32	7	Arachnids: The Tarantula Story	38	12
Colonizing Space	35	6	Bacterial Diseases, Defending Against	35	13
Earth: Home Planet/Orbit: Earth from Space	36	6	Bizarre Creatures Discovered	35	12
Inside Track: Mercury/Venus: Hostile Planet	36	6	Desert: Land Of Extremes	34	13
Moon: Partner in Space/Eclipses and Aurorae	36	7	Desert Sands: Dust from Africa	39	13
Pluto: Farthest Planet/Comets: Visitors from Space	38	7	Dinosaurs, End Of	34	13
Red Planet: Mars/Quest: Search for ... Life	36	7	Evolution of Plants, The	32	13
Saturn, Lord of the Rings/Outer Gas Giants, Uranus and Neptune	36	7	Face, Functions of the	33	14
Space Stations/Manned Flight, High Hopes	37	6	Human Body, Pushing the Limits of	35	14
Sun: Powerhouse of Solar System/Galaxy: Milky Way	36	8	Immune System at Work, The	33	14
Sun, A Scientific Look at the	34	8	Meteorology, the Mystery of Clouds	39	14
Universe: Measuring the; Infinity: End of Universe	38	7	New Optics: Bringing the World into Focus	33	14
Zero to Zillions: Theory of Big Bang and Black Holes	38	8	Red Crab of Christmas Island	39	12
ENERGY			Sharks: Rulers of The Deep	33	14
Electric Powerhouse	33	9	Shoreline Habitats	33	15
Energy for Life	32	9	Spine: Command Central	32	15
Free Energy, The Quest for	35	9	Storm Prediction	37	15
Gas Turbines: Energy Powerhouses	38	9	Touch, Forgotten Sense of	34	13
Wind Power: A Renewable Energy Source	39	9	Volcanic Prediction	35	15
ENGINEERING			Viruses: Investigating Viral Epidemics	37	15
Digital Archaeology	37	10	Watery Creatures: Life in the Sea	34	15
Glass: A Window On The Future	38	10	PHYSICS		
Robotics: Advances In Engineering	38	10	Elements of Nature	32	16
Skyscraper: Reaching New Heights	38	10	Fuels And Gases (<i>also energy</i>)	32	16
ENVIRONMENT			Light Machines: Photonic Devices	35	16
Banded Stilt: A Wetland Survivor	39	11	Nature of Fire, The	34	16
Fresh Water Spring in Salt Water, A	37	11	Plasma: Unlimited Energy	37	16
Protecting Earth's Atmosphere	34	11	Propulsion: Technological Advances	39	16
			SSR COMPLETE VOLUMES: Pages 17 - 25		

ASTEROIDS: THE THREAT and JUPITER: THE KING PLANET *20 mins*

Impacts by extraterrestrial bodies are a common experience for all planets in the Solar System. The inner planets are most at risk of impact from bodies in the asteroid belt between Mars and Jupiter and in this program, students will see how we are preparing our planet for a possible impact. Beyond the Asteroid Belt lies the largest planet in the Solar System, Jupiter. Students will learn that with over 60 moons, Jupiter has its own mini solar system.

Catalogue #: *SSR36-6*

BEHIND THE BIG BANG THEORY *16 mins*

This program examines the Big Bang theory and why some scientists believe it explains the formation of the planets, the galaxies and the universe. It explains the theory, and presents a variety of scientific findings that support it. Included are illustrations of outer space, the Doppler Effect or red shift, and how the Hubble Space Telescope and other ground-based optical telescopes and radio telescopes have collected supporting data.

Catalogue #: *SSR33-3*

COLONIZING SPACE *17 mins*

This program describes how humans have begun to colonize space. Just a few decades after we sent the first humans into space, we have the first human station in space and plans are in the works for sending a manned mission to Mars. Our attempts to colonize another planet will require the development of equipment and materials only before imagined by science fiction writers.

Catalogue #: *SSR35-3*

EARTH: HOME PLANET and ORBIT: EARTH FROM SPACE *20 mins*

The Earth occupies a special place in our Solar System: it is the right size, distance from the Sun and has a composition that makes it ideal to support life. The spectacular view from space shows vast oceans, huge weather systems and some seasonal changes.

Catalogue #: *SSR36-1*

INSIDE TRACK: MERCURY and VENUS: HOSTILE PLANET *20 mins*

The inner planets, Mercury and Venus are rocky worlds with fascinating histories. Mercury has double sunrises and a day twice as long as its year. There may even be ice in the deepest craters at the poles, deposited by comets and permanently shadowed from the Sun. At one time, Venus might have been Earth's twin, but scientists speculate that a maturing Sun doomed Venus. Its environment is brutally hot and constantly being covered by molten lava oozing from thousands of volcanoes.

Catalogue #: *SSR36-4*

HIGH HOPES: SPACE STATIONS AND MANNED SPACEFLIGHT *20 mins*

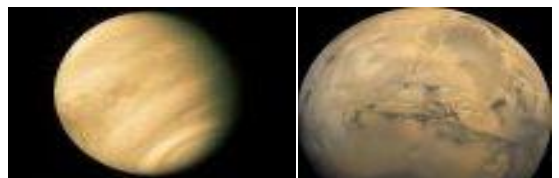
Construction of the International Space Station (ISS) began in 1998 and is currently the largest assembled structure in Earth's orbit. This program reviews the history of this international under-taking and our long history of attempting to escape Earth's gravity. From the first fireworks rockets invented by the Chinese to manned spaceflight to the Moon and Mars, projected for 2030 according to the European Space Agency and NASA proposal.

Catalogue #: *SSR37-7*

DISCOVERY: A HISTORY OF ASTRONOMY and NIGHT SKY: NAVIGATING THE CONSTELLATIONS *20 mins*

Discovery is a brief history of astronomy from ancient Babylon to Edwin Hubble, 20th century inventor of the classification system for galaxies and more. *Night Sky* is a beginner's guide to finding 88 constellations and key navigational stars. Polaris, the northern hemisphere guide, is virtually stationary, at least for the next 4,000 years. The Southern Cross serves as a guide in the southern hemisphere.

Catalogue #: *SSR37-6*



FAR OUT: MEASURING THE UNIVERSE and YONDER TO INFINITY, END OF THE UNIVERSE
20 mins

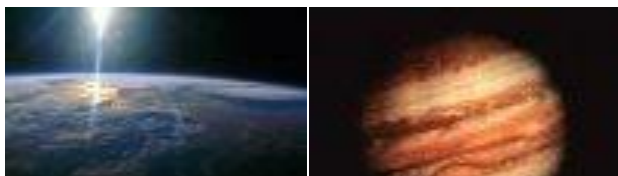
Distances in the universe are so vast they are described in light years; nearby stars are measured by trigonometry. Farther out, astronomers use so-called “standard candles”, the ‘Type 1a supernovae’ is the standard candle basis. Beyond that the electromagnetic “redshift” of galaxies reveals their distances. Part two of this program discusses the concept of the expanding Universe which, according to calculations by astrophysicists, seems to be speeding up. The 50-billion galaxies thought to comprise our Universe are moving farther apart. As our Sun’s energy diminishes, scientists are working to understand “mysterious dark energy and dark matter”, believed to comprise 96 percent of the Universe. *Catalogue #: SSR38-7*

MOON and JAW DROP: ECLIPSES AND AURORAE
20 mins

The formation of the Moon was a cataclysmic event in the history of the Earth. In this program students will see that it was probably a giant impact on Earth that caused the Moon to break away from the Earth. Students will see how the Moon affects many phenomena on Earth including our tides and our climate. *Catalogue #: SSR36-2*

PLUTO, FARTHEST PLANET and COMETS, VISITORS FROM SPACE
20 mins

Since its discovery in 1930, astronomers have been debating the status of the tiny world at the farthest reaches of our solar system, Pluto. In this program, students are given a firsthand look at the scientific process that initially classified Pluto as a planet and then reclassified it in 2006 as a Dwarf Planet. Also comets, objects that formed from the earliest galactic activity. *Catalogue #: SSR38-6*


TERRESTRIAL LIFE
20 mins

Mars has some features that would be considered comparable to Earth’s. A 24½ hour day and daytime temperatures just above freezing. It has planet-wide dust storms, the largest volcano in the Solar System and the biggest geologic fault. Mars once had water flowing on its surface and was capable of supporting life. To date, scientists have not found evidence of that, but there are other places in the Solar System such as Jupiter’s moon, Europa, which might be capable. But, the question remains: Is Earth the only place in the Solar System where life exists?

Catalogue #: SSR36-5
SATURN, LORD OF THE RINGS and OUTER GAS GIANTS: URANUS AND NEPTUNE
20 mins

Saturn, second largest of the gas giants, rules a dazzling domain. The rings of Saturn are billions of moonlets, from grains of dust to rocks the size of trucks. The planet is so light that it would float on water. Titan, Saturn’s greatest moon, is bigger than the planet mercury. Students will see detailed images of the outer gas giants, Uranus and Neptune. Imagery from the Voyager spacecraft and the Hubble space telescope show students fascinating details about these two mysterious planets. They will also see Neptune’s large moon Triton, the coldest place in the Solar System. *Catalogue #: SSR36-7*

THE SEARCH FOR BLACK HOLES
26 mins

Black holes are one of the frontiers of physics. Their existence was only confirmed recently, and scientists are speculating about their properties and what black holes will teach us about the origin of the universe. This issue examines the history of physics, including the development of Newton’s Laws of Gravity and Einstein’s general theory of relativity which led to theories about black holes. The program also illustrates the equipment scientists used to uncover them and explores theories suggesting that black holes are portals to other universes or shortcuts in space-time travel. *Catalogue #: SSR32-7*

A SCIENTIFIC LOOK AT THE SUN 19 mins

Day after day the Sun shines in the sky, one of the constants in our lives. But, we know that the Sun has a life of its own and someday, like a living organism, it will die as well. Scientists can predict what the end of the Sun's life will be like billions of years into the future when it finally dies.

Catalogue #: SSR34-6

SUN AND GALAXY: OUR MILKY WAY

20 mins

The Sun is a nuclear reactor, releasing energy that drives the entire Solar System. The reactions drive a Solar wind containing the entire spectrum of electromagnetic radiation. The Sun creates enormous magnetic fields that regularly twist and trigger mass ejections that turn the solar wind into a storm. **Catalogue #: SSR36-3**

ZERO TO ZILLIONS, THEORY OF THE BIG BANG and BLACK HOLES, COSMIC VANISHING ACTS 20 mins

A scientific speculation about how the Universe grew from an infinitesimal speck to create matter, radiation, time and space. In the first trillion-trillion-trillionth of a second, the cosmos grew a hundred million times to less than the size of an atom. Then, in another instant, the Universe was the size of a galaxy. Now, billions of years later and strung along vast filaments, our Universe has some 50-billion galaxies that continue to expand as stars within them are born, live and die. In the second half of this program, the creation and disappearance of black holes is explored. These occur when a massive star dies. As the star's outer layers cascade into space, the core collapses to beyond the visible and becomes a voracious gravitational trap from which nothing, not even light, escapes. **Catalogue #: SSR38-8**



- **Up to 4 titles: \$198** (unit price: \$49.50) plus shipping
- **Up to 8 titles: \$325** (unit price: \$40.62) plus shipping
- **Up to 12 titles: \$432** (unit price: \$36.00) plus shipping
- **Up to 20 titles: \$640** (unit price: \$32.00) plus shipping

ELECTRIC POWERHOUSE *18 mins*

A look at how hydroelectricity is created in power plants, distributed along massive power lines, and how transformers move the electricity and convert it to the appropriate voltage. Animations explain ohms, voltage, and amperage, and the differences between alternating current and direct current as well as the differences between neon and filament bulbs, and how electricity powers automobiles and mass transportation. *Catalogue #: SSR33-4*

ENERGY FOR LIFE *14 mins*

This program explains how the circulatory system transports oxygen and glucose to all living tissues, and how the combination of oxygen and glucose in our bloodstream produces energy to keep us going. Students will learn how scientists study the amount of oxygen and glucose the body needs under different conditions and how this information can be used to adjust the amount or type of food intake for different activities. They will also learn how this information can help to maximize an athlete's performance. *Catalogue #: SSR32-4*

THE QUEST FOR "FREE" ENERGY *24 mins*

Can we get energy out of nothing? This is a highly debated topic. However, there is a curiosity that has reactivated scientists, artists, and many others to explore the idea of a perpetual motion machine, a device that would work in continuous operation as an isolated mechanical device or other closed system without a sustaining energy source. If the premise is to produce excess energy that can be used to power another source, it is referred to as a "free energy" machine. *Catalogue #: SSR35-7*

GAS TURBINES: ENERGY POWERHOUSES

16 mins

In a gas turbine, the linear motion of gas causes rotors to spin, ultimately creating electricity. The forward rotating blades pump air under high pressure into the combustion chamber where natural gas ignites on contact with the air. This program shows the precision required to build a turbine, how it works and how it's used.

Catalogue #: SSR38-5

WIND POWER: A RENEWABLE ENERGY

SOURCE *15 mins*

Fossil fuels have long been the world's energy source, but it wasn't always that way. Ancient Near Eastern cultures developed the first known wind mills for drawing water and grinding grains into flour. The modern three-blade, computer-controlled wind turbine harnesses the energy from the earth's constant flow of air. This program explores wind power alternative energy production, how it works and the environmental factors that scientists are researching. *Catalogue #: SSR39-4*

- **Up to 4 titles: \$198** (unit price: \$49.50) plus shipping
- **Up to 8 titles: \$325** (unit price: \$40.62) plus shipping
- **Up to 12 titles: \$432** (unit price: \$36.00) plus shipping
- **Up to 20 titles: \$640** (unit price: \$32.00) plus shipping

DIGITAL ARCHAEOLOGY *16 mins*

Advanced digital technology (i.e. 3D-terrain maps, laser pantographs, digital photographs, satellite data) is increasing our understanding of the architectural structures of antiquity. The multi-faceted world of digital technology aids archaeologists by supporting data management and by making visual presentations more realistic. The ancient city of Troy is re-discovered in this fascinating program. **Catalogue #: SSR37-4**

GLASS: A WINDOW ON THE FUTURE

16 mins

This issue looks at some of the new glass-based technologies used by a variety of industries. Such uses include extremely thin glass that is both durable and scratch resistant; semiconductors, optical fibers, and multiplexing for telecommunications and space exploration.

Catalogue #: SSR38-1

ROBOTICS: ADVANCES IN ENGINEERING

17 mins

Almost fifty years ago the first industrial robot was “employed” in an automobile assembly plant. Today, robots are routinely used for hazardous, super-heavy and difficult tasks in manufacturing, agriculture, entertainment, medicine and space exploration. Welding robots with touch sensing and seam tracking abilities increase assembly plant efficiency, while robotic surgery results in less pain, quicker recovery and shorter hospital stays.

Catalogue #: SSR38-3



SKYSCRAPER: REACHING NEW HEIGHTS

15 mins

Architects and construction engineers are building taller, larger and smarter buildings by inventing new materials that are lightweight, robust and sturdy. The 21st century skyscraper is being tailored to the demands of location-specific environments and ecosystems and to anticipate extreme weather. This issue centers on the construction of the Burj Dubai, the tallest man-made structure in the world. **Catalogue #: SSR38-4**

- **Up to 4 titles: \$198** (unit price: \$49.50) plus shipping
- **Up to 8 titles: \$325** (unit price: \$40.62) plus shipping
- **Up to 12 titles: \$432** (unit price: \$36.00) plus shipping
- **Up to 20 titles: \$640** (unit price: \$32.00) plus shipping

THE BANDED STILT: A WETLAND SURVIVOR

15 mins

When conditions in the Australian outback are right, a distant shoreline visitor, the Banded Stilt arrives by the thousands to breed. The mystery behind this behavior was finally documented when Cyclone Bobby started a chain reaction by flooding a dry salt lake in the outback. The saturated lake supports a variety of algae, bacteria, and the all important brine shrimp. In this issue, students see how animal life, microscopic organisms and the ecosystem are interconnected for the survival of all three. **Catalogue #: SSR39-3**

A FRESH WATER SPRING IN SALT WATER

17 mins

Though 70% of Earth's surface is water, only approximately 2.5% is fresh water. The need to ensure drinking water for the planet is vital. In an endeavor to help replenish fresh water for the planet, scientists on the Minibex research vessel are creating a way to capture and deliver to the surface this precious sub-marine commodity without depleting or damaging the ecosystem from which it is drawn. Their research source is the salty Mediterranean Sea. **Catalogue #: SSR37-3**

PROTECTING EARTH'S ATMOSPHERE *18 mins*

Earth is the only planet known to support life. The primary reason is a mixture of different gases known as the atmosphere. These gases, along with the sun, warm our planet to an average temperature of 15 degrees Celsius. This delicate process is known as the Greenhouse Effect. Without it, the Sun's energy would escape back into space leaving the Earth frozen.

Catalogue #: SSR34-3

- **Up to 4 titles: \$198** (unit price: \$49.50) plus shipping
- **Up to 8 titles: \$325** (unit price: \$40.62) plus shipping
- **Up to 12 titles: \$432** (unit price: \$36.00) plus shipping
- **Up to 20 titles: \$640** (unit price: \$32.00) plus shipping

AQUACULTURE: ADVANCES IN FISH FARMING *15 mins*

Aquaculture is one of the newest industries on the planet and is making a big splash in the state of Florida. There are over 210 farmed aquatic plant and animal species reported world-wide. Florida's warm waters encourage faster growth of certain species such as mollusks and cobia fish. This new industry is also responsible for job growth needed for the development of specialized equipment, ongoing research and aquaculture farms.

Catalogue #: *SSR39-1*

AGRICULTURE: FEEDING A HUNGRY PLANET *15 mins*

Scientists throughout the world are researching and implementing sustainable food production systems. Key concepts that underline this vital research are ecosystem preservation and natural resource conservation. Food production systems touch nearly every aspect of life – from farms and industrial processing plants to markets, grocery stores and the dinner table. Students will learn about the future sustainable 'food cycle'.

Catalogue #: *SSR39-7*

THE AMAZING RED CRAB OF CHRISTMAS ISLAND *12 mins*

Christmas Island, discovered December 25, 1643, is just a speck of land in the Indian Ocean. The annual red crab migration at the beginning of the rainy season, however, is so massive it can be seen from the air. It has been named a wonder of the natural world. This program follows this terrestrial arthropod from its rainforest burrow, across dangerous landscape to the ocean to mate.

Catalogue #: *SSR39-5*

ANTS: OUR TINY NEIGHBORS *13 mins*

Ants have developed intricate behaviors and survival mechanisms that allow them to live in large, cooperative societies. This issue shows close-ups of ants at work, how they adapt to the needs of their environment, and how the collective instinct can be used to accomplish large tasks. Students will also learn how scientists are trying to help farmers eliminate crop pests and disease by studying ants.

Catalogue #: *SSR32-2*

ARACHNIDS: THE TARANTULA STORY *32 mins*

This program crawls right into the complex world of the tarantula and our fascination with the king of spiders. Tarantulas have a combination of five unique characteristics. They are hairy, have dense hair pads with retractable claws, and long spinnerets shaped like fingers. Hundreds of black studs surround the mouthparts and they have no fewer than eight eyes, yet remain almost blind.

Catalogue #: *SSR38-2*

BIZARRE CREATURES DISCOVERED *24 mins*

We may know more about the moon than we know about the deepest abysses of the oceans. We are still discovering creatures at these extreme depths and learning about their unusual living conditions. It is amazing that some of these ocean creatures are able to withstand the lack of light and locate prey at the same time. Creatures of these deep waters are sometimes very unusual because of their adaptive characteristics. There are also plenty of weird creatures in the shallows.

Catalogue #: *SSR35-6*



DEFENDING AGAINST BACTERIAL DISEASES

14 mins

There is a battle that has been going on for decades and taking place right under our noses now. The enemy is microscopic bugs and bacteria. On the front line are our hospitals, and antibiotics are our weapons. Bugs are changing and becoming resistant to many antibiotics. Scientists explain why this is happening and what solutions the future might hold. *Catalogue #: SSR35-2*

DESERT: LAND OF EXTREMES 19 mins

Seventy percent of the Earth is covered with water, while 30 percent is land. Surprisingly, deserts cover nearly 20 percent of the Earth's land surface. When we think of deserts we tend to think picture vast areas of dry land with temperatures so high that only a cactus or a camel can tolerate the heat. However, deserts can be found all over the world, in tropical regions and on the backsides of mountains. Each desert is unique, but all are dry, windy, arid lands with little annual rainfall. *Catalogue #: SSR34-5*

DESERT SANDS: DUST FROM AFRICA 15 mins

Sand particles from the Sahara desert have long been known to travel across the Atlantic Ocean in accumulations called 'dust carpets'. Water molecules adhere to the sand particles to form droplets that accumulate into clouds. The mineral-enriched water falls to earth in a downpour thereby nourishing the flora below. Mongolian desert dust carpets present problems for ecosystems upon which it falls. This issue explores the science behind the storms and their impact on global climate. *Catalogue #: SSR39-6*



END OF THE DINOSAURS 21 mins

Dinosaurs were the dominant land vertebrates for 140 million years. They filled many niches and competed with other organisms, such as mammals, for space in ecosystems. Some Scientists have declared that dinosaurs became extinct as a result of an extraterrestrial impact from a comet, a theory widely debated in scientific circles.

Catalogue #: SSR34-2

THE EVOLUTION OF PLANTS 14 mins

This edition explores how plants evolved after moving from the sea millions of years ago. Students see how fern-like plants living on damp coasts in pre-historic times evolved into trees that are 300 feet tall. The program demonstrates the different ways plants evolved to obtain nutrients, as well as the variety of ways that plants propagate. Students will also come to understand the unique capabilities of some plants to withstand damage in fires and to ward off predators, and how scientists hope to use this knowledge to improve modern technologies. *Catalogue #: SSR32-6*

FORGOTTEN SENSE OF TOUCH 15 mins

At some point in our lives we might meet a person who has lost one of their senses. Most often it will be one who has lost sight or hearing. Science and technology have been able to assist people with their loss of sight or hearing through corrective surgery or the use of an aid. But what is available for those who lose their sense of touch? Each day our sense of touch is put to the test. Whether it is testing water for a bath, holding a coffee mug, caressing a loved one or greeting someone with a handshake, we rely on touch.

Catalogue #: SSR34-1

FUNCTIONS OF THE FACE *26 mins*

This program explores how the mouth functions. It explains how the mouth and nose work together to identify food, the process of chewing and swallowing, and the functions of the taste buds and saliva. It illustrates the anatomy of the teeth, tongue and jaws, and how the mouth enables us to speak. The program also discusses how muscles in the face communicate expressions and emotions, and explores some universal beliefs about attractiveness linked to facial symmetry. A segment also illustrates facial recognition computer software.

Catalogue #: *SSR33-7*

THE IMMUNE SYSTEM AT WORK *16 mins*

An investigation of the immune system's ability to protect us from bacteria and micro-organisms. It discusses the body's initial defenses in our skin, eyes, nose, and stomach to ward off bacteria, and how white blood cells fight back when the body is infected. It also discusses the differences between bacteria and viruses, why allergies occur, and the role of vaccines in keeping people well.

Catalogue #: *SSR33-2*

METEOROLOGY, THE MYSTERY OF CLOUDS

15 mins

Meteorologists studying clouds in Europe tell us that by learning about the microphysical processes that occur naturally in clouds, researchers gain new fundamental knowledge that can help improve weather and climate forecast models. This issue explores known, speculated and unknown information about cloud structures and mechanisms. **Catalogue #:** *SSR39-2*



NEW OPTICS: BRINGING THE WORLD INTO FOCUS *16 mins*

An understanding of visual perception and how the eye interprets colors, shapes, and the dimensions of objects by processing reflected light. It explains the functions of the lens, cornea, retina, and the optic nerve, as well as some complications and conditions that interfere with eyesight, and provides information on corrective procedures and scientific breakthroughs in vision research that are restoring sight for some people. **Catalogue #:** *SSR33-6*

PUSHING THE LIMITS OF THE HUMAN BODY *17 mins*

Human technological developments have allowed us to test the limits of our bodies. In this program, we look at some examples of humans pushing the limits. When those limits are exceeded, trained health professionals must be prepared to treat any resulting injuries. **Catalogue #:** *SSR35-4*

SHARKS: RULERS OF THE DEEP *14 mins*

Sharks are the largest predatory fish in the ocean and are different from other fish. This issue offers a perspective on the history of sharks, their unique physiological characteristics, including sensory organs that detect electric fields, their variety of head shapes, and other characteristics that have helped sharks survive since the age of the dinosaurs.

Catalogue #: *SSR33-5*

THE SPINE: COMMAND CENTRAL *13 mins*

A comprehensive look at the central nervous system, detailed graphics demonstrates its components and how they work together to allow us to move. Students will also see how damage to the central nervous system can cause paralysis, and what scientists are doing to advance medical treatments in order to correct spinal cord injuries and cure paralysis. **Catalogue #:** *SSR32-1*

STORM PREDICTION *16 mins*

Violent weather touches thousands of lives, homes and businesses around the world every year and billions of dollars are spent on clean up and reconstruction. Climatologists and meteorologists at places like the Storm Prediction Center (SPC) in Oklahoma and NOAA (National Oceanic and Atmospheric Administration) are inventing new technologies in an attempt to predict nature's fury. **Catalogue #: SSR37-1**

VOLCANIC PREDICTION *16 mins*

Volcanoes are some of Mother Nature's most fascinating phenomena, threatening with volcanic ash and the intense heat of spewing lava. Volcanoes can be unpredictable. For hundreds of years, some have remained dormant, in absolute calm, only to erupt quite suddenly, threatening all surrounding life. In the past, studying volcanic activity was extremely dangerous for scientists. Now, they have access to tools such as global positioning systems and seismometers to help predict volcanic activity. **Catalogue #: SSR35-1**

VIRUSES: CELL PIRATES -- INVESTIGATING

VIRAL EPIDEMICS *16 mins*

These pirates of the microbial world are fierce opponents for medical scientists. This program examines the scientific battles being fought in laboratories against new diseases and evolving old ones. Big questions continue to *plague* scientists: "How can viral epidemics erupt suddenly worldwide?" and "If we can't 'catch' a virus like we do a bacterial infection, then how do we get a virus?" **Catalogue #: SSR37-2**

WATERY CREATURES: LIFE IN THE SEA

22 mins

Oceans cover nearly seventy-five percent of the Earth's surface, with depths greater than land's highest mountains. Flowing with salts, minerals and dissolved gases, these waters allow sea life to thrive. Oceanographers have journeyed into the ocean to learn more about the survival of many species. **Catalogue #: SSR34-7**

SHORELINE HABITATS *17 mins*

This issue explores how the needs of wildlife and humans can be balanced to preserve ecosystems in wetland areas. It illustrates how the combined efforts of scientists, engineers, farmers, and fisherman resulted in a return of endangered plants, mammals, and birds, and improved yields in cockleshell harvesting while reducing seabed damage. It also demonstrates how biologists track, rescue and rehabilitate animal populations.

Catalogue #: SSR33-1

- **Up to 4 titles: \$198** (unit price: \$49.50) plus shipping
- **Up to 8 titles: \$325** (unit price: \$40.62) plus shipping
- **Up to 12 titles: \$432** (unit price: \$36.00) plus shipping
- **Up to 20 titles: \$640** (unit price: \$32.00) plus shipping

ELEMENTS OF NATURE *16 mins*

Elements are the simplest form of organized matter. In this issue are demonstrations of the effects of some elements on the world around us, and how elements can be combined to serve our needs. The program also illustrates how early humans came to understand elemental properties and used them to make tools and fire. Included is animation of the atomic structure of some elements, along with information about how the atom was first conceived by Democritus, and the equipment scientists use today to “see” and manipulate atoms.

Catalogue #: SSR32-3

FUELS AND GASES *15 mins*

This issue looks at the composition and properties of gases and fuels. It demonstrates how our use of different gases relates to their weight, combustibility, and the degree to which they can be compressed or liquefied. The program discusses use of gas and other fossil fuels from ancient times to the present, and explains how gases such as hydrogen may provide fuel for the future. **Catalogue #: SSR32-5**

LIGHT MACHINES: PHOTONIC DEVICES OF THE FUTURE *16 mins*

This program explores the development of photonic devices. They are being developed to replace electronics in devices such as microprocessors. Light is much faster than electrons, and hardware that can control photons will lead to products that are thousands of times faster than current electronics.

Catalogue #: SSR35-5

THE NATURE OF FIRE *22 mins*

This program explores the elements that create fire; a triangle of heat, fuel and oxygen. Firefighters demonstrate how to put out different types of fires, with a particularly dramatic example of why you should never put water on an oil fire. Thermal imaging helps to identify the source of a fire. A gel containing water filled bubbles is shown protecting houses from burning. **Catalogue #: SSR34-4**

PLASMA: UNLIMITED ENERGY SOURCE *15 mins*

In nature, the fourth phase or state of Matter is plasma. Scientists can artificially generate it to make useful products such as computer and plasma TV screens. This program investigates a variety of applications of plasma technology, particularly for energy fusion, and the allied industries making and using it. **Catalogue #: SSR 37-5**

PROPULSION: TECHNOLOGICAL ADVANCES

15 mins

The concept of propulsive thrust to move objects over large distances is ancient. Yet, the technology to move an automobile forward or a rocket into space was invented less than two centuries ago. The invention of the solid fuel propulsion system combined with Newton’s Third Law is the simplistic basis for modern rocketry. This program reviews the history of propulsion and explores its use as a viable energy source of the future. **Catalogue #: SSR39-8**

- **Up to 4 titles: \$198** (unit price: \$49.50) plus shipping
- **Up to 8 titles: \$325** (unit price: \$40.62) plus shipping
- **Up to 12 titles: \$432** (unit price: \$36.00) plus shipping
- **Up to 20 titles: \$640** (unit price: \$32.00) plus shipping

THE SPINE: COMMAND CENTRAL 13 mins

A comprehensive look at the central nervous system, detailed graphics demonstrates its components and how they work together to allow us to move. Students will also see how damage to the central nervous system can cause paralysis, and what scientists are doing to advance medical treatments in order to correct spinal cord injuries and cure paralysis.

ANTS: OUR TINY NEIGHBORS 13 mins

Ants have developed intricate behaviors and survival mechanisms that allow them to live in large, cooperative societies. This issue shows close-ups of ants at work, how they adapt to the needs of their environment, and how the collective instinct can be used to accomplish large tasks. Students will also learn how scientists are trying to help farmers eliminate crop pests and disease by studying ants.

ELEMENTS OF NATURE 16 mins

Elements are the simplest form of organized matter. In this issue are demonstrations of the effects of some elements on the world around us, and how elements can be combined to serve our needs. The program also illustrates how early humans came to understand elemental properties and used them to make tools and fire. Included is animation of the atomic structure of some elements, along with information about how the atom was first conceived by Democritus, and the equipment scientists use today to “see” and manipulate atoms.

ENERGY FOR LIFE 14 mins

This program explains how the circulatory system transports oxygen and glucose to all living tissues, and how the combination of oxygen and glucose in our bloodstream produces energy to keep us going. Students will learn how scientists study the amount of oxygen and glucose the body needs under different conditions and how this information can be used to adjust the amount or type of food intake for different activities. They will also learn how this information can help to maximize an athlete's performance.

FUELS AND GASES 15 mins

This report looks at the composition and properties of gases and fuels. It demonstrates how our use of different gases relates to their weight, combustibility, and the degree to which they can be compressed or liquefied. The program discusses use of gas and other fossil fuels from ancient times to the present, and explains how scientists have made it possible for gases such as hydrogen to provide fuel for the future.

THE EVOLUTION OF PLANTS 14 mins

This edition explores how plants evolved after moving from the sea millions of years ago. Students see how fern-like plants living on damp coasts in pre-historic times evolved into trees that are 300 feet tall. The program demonstrates the different ways plants evolved to obtain nutrients, as well as the variety of ways that plants propagate. Students will also come to understand the unique capabilities of some plants to withstand damage in fires and to ward off predators, and how scientists hope to use this knowledge to improve modern technologies.

THE SEARCH FOR BLACK HOLES 25 mins

Black holes are one of the frontiers of physics. Their existence was only confirmed recently, and scientists are speculating about their properties and what black holes will teach us about the origin of the universe. This issue examines the history of physics, including the development of Newton's Laws of Gravity and Einstein's general theory of relativity which led to theories about black holes. The program also illustrates the equipment scientists used to uncover them and explores theories suggesting that black holes are portals to other universes or shortcuts in space-time travel.

**\$295 FOR COMPLETE SET
PER TITLES LISTED**
Catalogue #: SSR32

SHORELINE HABITATS *17 mins*

This issue explores how the needs of wildlife and humans can be balanced to preserve ecosystems in wetland areas. It illustrates how the combined efforts of scientists, engineers, farmers, and fisherman resulted in a return of endangered plants, mammals, and birds, and improved yields in cockleshell harvesting while reducing seabed damage. It also demonstrates how biologists track, rescue and rehabilitate animal populations.

THE IMMUNE SYSTEM AT WORK *16 mins*

An investigation of the immune system's ability to protect us from bacteria and micro-organisms. It discusses the body's initial defenses in our skin, eyes, nose, and stomach to ward off bacteria, and how white blood cells fight back when the body is infected. It also discusses the differences between bacteria and viruses, why allergies occur, and the role of vaccines in keeping people well.

BEHIND THE BIG BANG THEORY *16 mins*

This program examines the Big Bang theory and why some scientists believe it explains the formation of the planets, the galaxies and the universe. It explains the theory, and presents a variety of scientific findings that support it. Included are illustrations of outer space, the Doppler Effect or red shift, and how the Hubble Space Telescope and other ground based optical telescopes and radio telescopes have collected supporting data.

ELECTRIC POWERHOUSE *18 mins*

A look at how hydroelectricity is created in power plants, distributed along massive power lines, and how transformers move the electricity and convert it to the appropriate voltage. Animations explain ohms, voltage, and amperage, and the differences between alternating current and direct current. The video also explains the differences between neon and filament bulbs, and how electricity powers automobiles and mass transportation.

SHARKS: RULERS OF THE DEEP *14 mins*

Sharks are the largest predatory fish in the ocean and are different from other fish. This issue offers a perspective on sharks, their unique physiological characteristics, including sensory organs that detect electric fields, their variety of head shapes, and other characteristics that have helped sharks survive since the age of the dinosaurs.

NEW OPTICS: BRINGING THE WORLD INTO FOCUS *16 mins*

This program provides an understanding of visual perception and how the eye interprets colors, shapes, and the dimensions of objects by processing reflected light. It explains the functions of the lens, cornea, retina, and the optic nerve, discussing some complications and conditions that interfere with eyesight, and provides information on corrective procedures and scientific breakthroughs in vision research that are restoring sight for some people.

FUNCTIONS OF THE FACE *25 mins*

This program explores how the organs of the mouth function. It explains how the mouth and nose work together to identify food, the process of chewing and swallowing, and the functions of the taste buds and saliva. It illustrates the anatomy of the teeth, tongue and jaws, and how the mouth enables us to speak. The program also discusses how muscles in the face communicate expressions and emotions, and explores some universal beliefs about attractiveness linked to facial symmetry. A segment also illustrates facial recognition computer software.

**\$295 FOR COMPLETE SET
PER TITLES LISTED
Catalogue #: SSR33**

FORGOTTEN SENSE OF TOUCH *15 mins*

At some point in our lives we might meet a person who has lost one of their senses. Most often it will be one who has lost sight or hearing. Science and technology have been able to assist people with their loss of sight or hearing through corrective surgery or the use of an aid. But what is available for those who lose their sense of touch? Each day our sense of touch is put to the test. Whether it is testing water for a bath, holding a coffee mug, caressing a loved one or greeting someone with a handshake, we rely on touch.

END OF THE DINOSAURS *21 mins*

Dinosaurs were the dominant land vertebrates for 140 million years. They filled many niches and competed with other organisms, such as mammals, for space in ecosystems. Some Scientists have declared that dinosaurs became extinct as a result of an extraterrestrial impact from a comet. However this theory has been widely debated in scientific circles.

PROTECTING EARTH'S ATMOSPHERE*19 mins*

Earth is the only planet known to support life. The primary reason is a mixture of different gases known as the atmosphere. These gases, along with the sun, warm our planet to an average temperature of 15 degrees Celsius. This delicate process is known as the Greenhouse Effect. Without it, the sun's energy would escape back into space leaving the Earth frozen.

THE NATURE OF FIRE *22 mins*

An exploration of the elements that create fire; a triangle of heat, fuel and oxygen. Fire-fighters demonstrate how to put out different types of fires, with a particularly dramatic example of why you should never put water on an oil fire. Thermal imaging helps to identify the source of a fire. A gel containing water filled bubbles is shown protecting houses from burning.

DESERT: LAND OF EXTREMES *19 mins*

Seventy percent of the Earth is covered with water, while 30 percent is land. Surprisingly, deserts cover nearly 20 percent of the Earth's land surface. When we think of deserts we tend to think picture vast areas of dry land with temperatures so high that only a cactus or a camel can tolerate the heat. However, deserts can be found all over the world, in tropical regions and on the backsides of mountains. Each desert is unique, but all share commonalities - they are dry, windy, arid lands with little annual rainfall.

A SCIENTIFIC LOOK AT THE SUN *19 mins*

Day after day the Sun shines in the sky, one of the constants in our lives. But, we know that the Sun has a life of its own and someday, like a living organism, it will die as well. Scientists can predict what the end of the Sun's life will be like billions of years into the future when it finally dies.

WATERY CREATURES: LIFE IN THE SEA*22 mins*

Oceans cover nearly seventy-five percent of the Earth's surface, with depths greater than land's highest mountains. Flowing with salts, minerals and dissolved gases, these waters allow sea life to thrive. Oceanographers have journeyed into the ocean to learn more about the survival of many species.

**\$295 FOR COMPLETE SET
PER TITLES LISTED**
Catalogue #: SSR34

VOLCANIC PREDICTION *16 mins*

Volcanoes are some of Mother Nature's most fascinating phenomena, threatening with volcanic ash and the intense heat of spewing lava. Volcanoes can be unpredictable. For hundreds of years, some have remained dormant, in absolute calm, only to erupt quite suddenly, threatening all surrounding life. Studying volcanic activity is extremely dangerous for scientists, but now they have access to such technologies as global positioning systems and seismometers to help predict volcanic activity.

DEFENDING AGAINST BACTERIAL DISEASES*14 mins*

There is a battle that has been going on for decades and taking place right under our noses now. The enemy is microscopic bugs and bacteria. On the front line are our hospitals, and antibiotics are our weapons. Bugs are changing and becoming resistant to many antibiotics. Scientists explain why this is happening and what solutions the future might hold.

COLONIZING SPACE *17 mins*

This program describes how humans have begun to colonize space. Just a few decades after we sent the first humans into space, we have the first human station in space and plans are in the works for sending a manned mission to Mars. Our attempts to colonize another planet will require the development of equipment and materials that may have only been imagined by science fiction writers.

PUSHING THE LIMITS OF THE HUMAN BODY*17 mins*

Human technological developments have allowed us to test the limits of our bodies. In this program, we look at some examples of humans pushing the limits. When those limits are exceeded, trained health professionals must be prepared to treat any resulting injuries.

LIGHT MACHINES: PHOTONIC DEVICES OF THE FUTURE *16 mins*

This program explores the development of photonic devices. They are being developed to replace electronics in devices such as microprocessors. Light is much faster than electrons, and hardware that can control photons will lead to products that are thousands of times faster than current electronics.

BIZARRE CREATURES DISCOVERED *24 mins*

We may know more about the moon than we know about the deepest abysses of the oceans. We are still discovering creatures at these extreme depths and learning about their unusual living conditions. It is amazing that some of these ocean creatures are able to withstand the lack of light and locate prey at the same time. Creatures of these deep waters are sometimes very unusual because of their adaptive characteristics. There are also plenty of weird creatures in the shallows.

THE QUEST FOR "FREE" ENERGY *24 mins*

Can we get energy out of nothing? This is a highly debated topic. However, there is a curiosity that has reactivated scientists, artists, and many others to explore the idea of a perpetual motion machine, a device that would work in continuous operation as an isolated mechanical device or other closed system without a sustaining energy source. Sometimes, if the premise is to produce excess energy that can be used to power another source, it is referred to as a "free energy" machine.

**\$295 FOR COMPLETE SET
PER TITLES LISTED**
Catalogue #: SSR35

EARTH: HOME PLANET and ORBIT: EARTH FROM SPACE *20 mins*

The Earth occupies a special place in our Solar System: it is the right size, distance from the Sun and has a composition that makes it ideal to support life. The spectacular view from space shows vast oceans, huge weather systems and some seasonal changes.

MOON, OUR PARTNER IN SPACE and JAW DROP: ECLIPSES AND AURORAE *20 mins*

The formation of the Moon was a cataclysmic event in the history of the Earth. In this program students will see that it was probably a giant impact on Earth that caused the Moon to break away from the Earth. Students will see how the Moon affects many phenomena on Earth including our tides and our climate.

SUN: POWERHOUSE OF THE SOLAR SYSTEM/ GALAXY: OUR MILKY WAY *20 mins*

The Sun is a nuclear reactor, releasing energy that drives the entire Solar System. The reactions drive a Solar wind containing the entire spectrum of electromagnetic radiation. The Sun creates enormous magnetic fields that regularly twist and trigger mass ejections that turn the solar wind into a storm.

INSIDE TRACK: MERCURY and VENUS: HOSTILE PLANET *20 mins*

The inner planets, Mercury and Venus are rocky worlds with fascinating histories. Mercury has double sunrises and a day twice as long as it's year. There may even be ice in the deepest craters at the poles, deposited by comets: they are permanently shadowed from the sun. At one time, Venus might have been Earth's twin, but scientists speculate that a maturing Sun doomed Venus. Its environment is brutally hot and constantly being covered by molten lava oozing from thousands of volcanoes.

THE RED PLANET: MARS and QUEST: THE SEARCH FOR EXTRATERRESTRIAL LIFE *20 mins*

Mars has a 24½ hour day and daytime temperatures just above freezing. It has planet-wide dust storms, the largest volcano in the Solar System and the biggest geologic fault. Mars once had water flowing on its surface and may have once been capable of supporting life. To date, scientists have not found evidence of life, but there are other places in the Solar System such as Jupiter's moon, Europa, which might be capable. But, the question remains: Is Earth the only place in the Solar System where life exists?

ASTEROID: THE THREAT and JUPITER: THE KING PLANET *20 mins*

An impact with extraterrestrial bodies is a common experience for all planets in the Solar System. The inner planets are most at risk of impact from bodies in the asteroid belt between Mars and Jupiter. In this program, students will see how we are preparing our planet for a possible impact and how we are learning more about the asteroids. Beyond the Asteroid Belt lies the largest planet in the Solar System, Jupiter. Students will learn that with over 60 moons, Jupiter has its own mini solar system.

SATURN, LORD OF THE RINGS and OUTER GAS GIANTS: URANUS AND NEPTUNE *20 mins*

Saturn, second largest of the gas giants, rules a dazzling domain. The rings of Saturn are billions of moonlets - from grains of dust to rocks the size of trucks. The planet is so light that it would float on water. Titan, Saturn's greatest moon, is bigger than the planet mercury. Students will see detailed images of the outer gas giants, Uranus and Neptune. Imagery from the Voyager spacecraft and the Hubble space telescope show students fascinating details about these two mysterious planets. They will also see Neptune's large moon Triton, the coldest place in the Solar System.

**\$295 FOR COMPLETE SET
PER TITLES LISTED
Catalogue #: SSR36**

STORM PREDICTION *16 mins*

Violent weather touches thousands of lives, homes and businesses around the world every year and billions of dollars are spent on clean up and reconstruction. Climatologists and meteorologists at places like the Storm Prediction Center (SPC) in Oklahoma and NOAA (National Oceanic and Atmospheric Administration) are inventing new technologies in an attempt to predict nature's fury.

VIRUSES: CELL PIRATES, INVESTIGATING VIRAL EPIDEMICS *16 mins*

These pirates of the microbial world are fierce opponents for medical scientists. This program examines the scientific battles being fought in laboratories against new diseases and evolving old ones. Big questions continue to plague scientists—"How can viral epidemics erupt suddenly worldwide?" and "If we can't 'catch' a virus like we do a bacterial infection, then how do we get a virus?"

A FRESH WATER SPRING IN SALT WATER*17 mins*

Though 70% of Earth's surface is water, only approximately 2.5% is fresh water. The need to ensure drinking water for the planet is vital. In an endeavor to help replenish fresh water for the planet, scientists on the Minibex research vessel are creating a way to capture and deliver to the surface this precious sub-marine commodity without depleting or damaging the ecosystem from which it is drawn. Their research source is the salty Mediterranean Sea.

DIGITAL ARCHAEOLOGY *16 mins*

Advanced digital technology (i.e. 3D-terrain maps, laser pantographs, digital photographs, satellite data) is increasing our understanding of the architectural structures of antiquity. The multi-faceted world of digital technology aids archaeologists by supporting data management and by making visual presentations more realistic. The ancient city of Troy is re-discovered in this fascinating program.

PLASMA: AN UNLIMITED ENERGY SOURCE*15 mins*

In nature, the fourth phase or state of Matter is plasma. Scientists can artificially generate it to make useful products such as computer and plasma TV screens. This program investigates a variety of applications of plasma technology, particularly for energy fusion, and the allied industries making and using it.

DISCOVERY: A HISTORY OF ASTRONOMY and NIGHT SKY: NAVIGATING THE CONSTELLATIONS *20 mins*

A brief history of astronomy from ancient Babylon to 20th century Edwin Hubble, inventor of the classification system for galaxies and more. *Night Sky* is a beginner's guide to finding 88 constellations and key navigational stars. Polaris, the Northern hemisphere guide, is virtually stationary, at least for the next 4,000 years. The Southern Cross serves as a guide in the Southern hemisphere.

HIGH HOPES: SPACE STATIONS and MANNED SPACEFLIGHT *20 mins*

Construction of the International Space Station (ISS) began in 1998. It is currently the largest structure assembled in Earth's orbit. This program reviews the history of this tremendous international undertaking. Also discussed is our long history of attempting to escape Earth's gravity: from the first fireworks rockets invented by the Chinese to manned spaceflight to the Moon and to Mars (projected for 2030 according the European Space Agency and NASA proposal.)

**\$295 FOR COMPLETE SET
PER TITLES LISTED**
Catalogue #: SSR37

GLASS: A WINDOW ON THE FUTURE *15 mins*

This issue looks at some of the new glass-based technologies used by a variety of industries. Such uses include extremely thin glass that is both durable and scratch resistant; semiconductors, optical fibers, and multiplexing for telecommunications and space exploration.

ARACHNIDS: THE TARANTULA STORY *31 mins*

This program crawls right into the complex world of the tarantula and our fascination with the king of spiders. Tarantulas have a combination of five unique characteristics. They are hairy, have dense hair pads with retractable claws, and long spinnerets shaped like fingers. Hundreds of black studs surround the mouthparts and they have no fewer than eight eyes, yet remain almost blind.

ROBOTICS: ADVANCES IN ENGINEERING *17 mins*

Almost fifty years ago the first industrial robot was “employed” in an automobile assembly plant. Today, robots are routinely used for hazardous, super-heavy and difficult tasks in manufacturing, agriculture, entertainment, medicine, and space exploration. Welding robots with touch sensing and seam tracking abilities increase assembly plant efficiency, while robotic surgery results in less pain, quicker recovery and shorter hospital stays.

SKYSCRAPER: REACHING NEW HEIGHTS *15 mins*

Architects and construction engineers are building taller, larger and smarter buildings by inventing new materials that are lightweight, robust and sturdy. The 21st century skyscraper is being tailored to the demands of location-specific environments and ecosystems and to anticipate extreme weather. This issue centers on the construction of the Burj Dubai, the tallest man-made structure in the world.

GAS TURBINES: ENERGY POWERHOUSES *16 mins*

In a gas turbine, the linear motion of gas causes rotors to spin, ultimately creating electricity. The forward rotating blades pump air under high pressure into the combustion chamber where natural gas ignites on contact with the air. This program shows the extreme precision required to build a turbine and how it works and how it’s used.

PLUTO, FARTHEST PLANET and COMETS, VISITORS FROM SPACE *20 mins*

Since its discovery in 1930, astronomers have been debating the status of Pluto, the tiny world at the farthest reaches of our solar system. In this program, students are given a firsthand look at the scientific process that initially classified Pluto as a planet and then reclassified it in 2006 as a Dwarf Planet. Students also learn about comets, objects that formed from the earliest galactic activity.

FAR OUT: MEASURING THE UNIVERSE and YONDER TO INFINITY, END OF THE UNIVERSE *20 mins*

Distances in the universe are so vast they are described in light years; nearby stars are measured by trigonometry – the technique of parallax. Farther out, astronomers use so-called “standard candles”, the ‘Type Ia supernovae’ is the standard candle basis. Beyond that the electromagnetic “redshift” of galaxies reveals their distances. Part two of this program discusses the concept of the expanding Universe which according to calculations by astrophysicists seems to be speeding up. The 50-billion galaxies thought to comprise our Universe are rapidly moving farther apart. As our Sun’s energy diminishes, scientists are working to understand the nature of space called “mysterious dark energy and dark matter” believed to comprise 96 percent of the Universe.

ZERO TO ZILLIONS, THEORY OF THE BIG BANG and BLACK HOLES, COSMIC VANISHING ACTS *20 mins*

A scientific speculation about how the Universe grew from an infinitesimal speck to create matter, radiation, time and space. In the first trillion-trillion-trillionth of a second, the cosmos grew a hundred million times to less than the size of an atom. Then, in another instant, the Universe was the size of a galaxy. Now, billions of years later and strung along vast filaments, our Universe has some 50-billion galaxies that continue to expand as stars within them are born, live and die. In the second half of this program, the creation and disappearance of black holes is explored. These occur when a massive star dies. As the star’s outer layers cascade into space, the core collapses to beyond the visible and becomes a voracious gravitational trap from which nothing, not even light, escapes.

**\$295 FOR COMPLETE SET
PER TITLES LISTED
Catalogue #: SSR38**

AQUACULTURE : ADVANCES IN FISH FARMING
15 mins

Aquaculture is one of the newest industries on the planet and is making a big splash in the state of Florida. There are over 210 farmed aquatic plant and animal species reported world-wide. Florida's warm waters encourage faster growth of certain species such as mollusks and cobia fish. This new industry is also responsible for job growth needed for the development of specialized equipment, ongoing research and aquaculture farms.

METEOROLOGY, THE MYSTERY OF CLOUDS
15 mins

Meteorologists studying clouds in Europe tell us that by learning about the microphysical processes that occur naturally in clouds, researchers gain new fundamental knowledge that can help improve weather and climate forecast models. This issue explores known, and speculated information about cloud structures and mechanisms. The newest technology and how it works is also presented.

THE BANDED STILT: A WETLAND SURVIVOR
15 mins

When conditions in the Australian outback are right, a distant shoreline visitor, the Banded Stilt arrives by the thousands to breed. The mystery behind this behavior was finally documented when Cyclone Bobby started a chain reaction by flooding a dry salt lake in the outback. The saturated lake supports a variety of algae, bacteria, and the all important brine shrimp. In this issue, students see how animal life, microscopic organisms and the ecosystem are interconnected to ensure survival.

WIND POWER: A RENEWABLE ENERGY SOURCE
15 mins

Fossil fuels have long been the world's energy source, but it wasn't always that way. Ancient Near Eastern cultures developed the first known wind mills for drawing water and grinding grains into flour. The modern three-blade, computer-controlled Wind Turbine does what all wind turbines have always done – harness the energy from the earth's constant flow of air. This program explores wind power alternative energy production, how it works and the environmental factors that scientists are researching.

THE AMAZING RED CRAB OF CHRISTMAS ISLAND
12 mins

Christmas Island, discovered December 25, 1643, is just a speck of land in the Indian Ocean. The annual red crab migration at the beginning of the rainy season, however, is so massive it can be seen from the air. It has been named a wonder of the natural world. This program follows this terrestrial arthropod from its rainforest burrow, across dangerous landscape to the ocean to mate.

DESERT SANDS, DUST FROM AFRICA 15 mins

Sand particles from the Sahara desert have long been known to travel across the Atlantic Ocean and southward to the Amazon rain forest in accumulations called 'dust carpets'. Water molecules adhere to the sand particles to form droplets that accumulate into clouds. The mineral-enriched water falls to earth in a downpour thereby nourishing the flora below. This issue explores the science behind the storms and their impact on global climate.

AGRICULTURE: FEEDING A HUNGRY PLANET
15 mins

Scientists throughout the world are researching and implementing sustainable food production systems. Key concepts that underline this vital research are ecosystem preservation and natural resource conservation. Food production systems touch nearly every aspect of life, from farms and industrial processing plants to markets, grocery stores and the dinner table. Students will learn about the future sustainable 'food cycle'.

PROPULSION: TECHNOLOGICAL ADVANCES
15 mins

The concept of 'propulsive thrust to move objects over large distances' is ancient. Yet, the technology to move an automobile forward or a rocket into space was invented less than two centuries ago. The invention of the solid fuel propulsion system combined with Newton's Third Law is the simplistic basis for modern rocketry. This program reviews the history of propulsion and explores its use as a viable energy source of the future.

**\$295 FOR COMPLETE SET
PER TITLES LISTED
Catalogue #: SSR39**

SCIENCE SCREEN REPORT®

Ordering Information

SCIENCE SCREEN REPORT® programs are suitable for grades 7 – 12. All titles are released on DVD, however VHS is available upon request, as are duplication rights. Please call 1-800-232-2133 ext 201 for details and pricing.

All programs are accompanied by comprehensive teacher guides and can be purchased individually, in multi-title packages or by volume. All titles listed are in stock and will be shipped within 10 business days of receiving your completed order and payment information.

You may pay by company/school check or U.S. Postal Service money order. Official purchase orders issued under the name of your school or school district are also accepted. Orders accompanied by personal checks will be held until funds have been cleared.

PRICING:

SCIENCE SCREEN REPORT® titles can be purchased individually, in multi-title packages or by volume, and are accompanied by a comprehensive teacher guide:

- Up to 4 titles: \$198 (Unit price: \$49.50)
- Up to 8 titles: \$325 (Unit price: \$40.62)
- Up to 12 titles: \$432 (Unit price: \$36.00)
- Up to 20 titles: \$640 (Unit price: \$32.00)

SCIENCE SCREEN REPORT® by Volume: \$295 for complete set (per titles listed)

Seven or eight titles per volume; topics and running times vary. See program descriptions by volume.

Sales Tax:

To orders shipped within the state of Florida NOT accompanied by an IRS issued tax exempt certificate or number please add applicable county sales tax to the order (before shipping).

Shipping:

All items in this catalogue are currently available. DVDs will be shipped within 10 business days of your order and payment being received. All orders are shipped via UPS Ground unless otherwise requested and include shipping and handling. **For multi-title orders, we will compile up to 8 titles per DVD depending on running time.**

- 1 DVD per shipment: \$10
- 2 - 4 DVDs per shipment: \$12
- 5 - 10 DVDs per shipment: \$17
- 11 - 30 DVDs per shipment: \$28
- 31- 50 DVDs per shipment: \$39

Shipping to Alaska and Hawaii is via two-day air. Please call for rates.

