

Light Overview

The first act in the creation of our world came with God’s words, “Let there be light”. The light was natural, physical light. Its creation was an instant victory because it dispelled darkness. Light and darkness in the Bible represent good and evil, respectively. Creation began with God’s work, which will conclude one day when there will be no darkness.

Light has many applications in the Bible; physical, spiritual, moral, or figurative. It is symbolic of the Glory of God, His purity, His wisdom, and His guidance. Moses saw the glory of God in the burning bush. Christ is our light—the source of all wisdom; He is referred to as *the Sun of righteousness*. Light frequently signifies instruction, as in the reference to God’s Word as *a lamp unto our feet*. Light also symbolizes testimony; John the Baptist was called *a burning and a shining light*. Saul of Tarsus had a dramatic encounter with the Light of God on the road to Damascus. The disciples were called *the light of the world*. Believers are described as “enlightened by Christ,” the light of the world who calls people *out of darkness into his marvelous light*. Jesus said, *I am the light of the world: “...he that followeth me shall not walk in darkness, but shall have the light of life.”* He also said, *“As long as I am in the world, I am the light of the world.”*

John Garr explains expounds on this metaphor in *God’s Lamp: Man’s Light*:

One of the most significant and repeated metaphors used to describe God in Scripture is light. John declares it simply and directly, “God is Light”(1 John 1-5). The pristine purity of white, transparent light is the most graphic material representation for the ultimately incomprehensible Deity.

Another perhaps more significant metaphor for God is fire. He was the voice in the burning bush. He was the pillar of fire that was light to Israel and darkness to the Egyptian armies at the Red Sea. The smoke from his fire blackened the entire summit of Mount Sinai. Both testaments assert that “our God is a consuming fire.” The Hebrew word for “consuming fire” (*esh akal*), implies a magnificent conflagration--a bonfire as it were that draws everything around it into its flames and releases enormous amounts of energy skyward. In like manner, God is *esh akal* the fire that draws those who approach him into the all-consuming energy stream of the Holy Spirit, where they are filled with the fire of his presence and extend the praises heavenward. The wonder of this experience, however, is that the all-consuming Fire never consumes those who are drawn into his

Light

presence. Like the burning bush in which he dwelt, he lives in them inflaming them with passion and vision so that from them radiate the fiery tongues of his divine Word. (Garr 2001)

Not only does the creation and beauty of light reveal God, but the physical properties of light are a picture of God. We can understand the character of God by observing what light is and what it does. One of the definitions of *light* given by *Websters New International Dictionary* follows:

Light – Physics: The radiant energy which, by its actions upon the organs of vision, enables them to perform their function of sight; – more accurately called luminous energy.

God is radiant or luminous energy which allows us to perform the functions of physical sight and spiritual sight. For light is capable of showing everything for what it really is. Apart from the light of the Word, we cannot see where we are or what we are doing, nor can we serve God effectively. The unconverted can't see or understand the light of the Word of God because they lack the ministry of the Holy Spirit (1 Cor. 2:9-16).

Light is equated with knowledge and wisdom in Scripture. Light illuminates life. God's Word is Light providing

As you learn about the behavior of light (reflection, refraction, waves, etc.) in this unit study, look for more characteristics of God, Christ, God's Word and of Christians (*the light coming out of darkness*).

Before you begin this unit, we suggest you go to these Internet sites.



[BrainPop: Light](http://brainpop.com/science/light/light/index.weml)

Description: Take the interactive quiz at this site. Click the "Play the Quiz" button to find how much you know about light. You'll repeat this quiz at the end of this unit.

<http://brainpop.com/science/light/light/index.weml>



[God is Light.](http://www.interviewwithgod.com/lightmovie.htm)

In this Flash presentation, you can view God's words from Scripture with the beautiful photographs of His masterful creation.

<http://www.interviewwithgod.com/lightmovie.htm>

Blue text refers to Internet link.

Light Objectives

Objectives are listed by lesson. Objectives with an asterisk are intended for grades 9-12. Upon completion of this unit your student should:

All Grades, All Lessons

- Gain a closer relationship with God through the study of His Word.
- Develop an appreciation for the world God has created.
- Develop abilities necessary to do scientific inquiry.
- Have an understanding of scientific inquiry.
- Learn about the scientists and inventors who worked diligently to increase the awareness of light and its capacity.
- Be able to identify ways that other forms of energy can be converted into light.
- Understand that energy is associated with light.
- Understand that the major source of energy for ecosystems is sunlight.
- Understand that sunlight is transferred by producers into chemical energy through photosynthesis.
- Be able to plan and conduct a simple investigation.
- Be able to employ simple equipment and tools to gather data and extend the senses.
- Be able to use data to construct a reasonable explanation.
- Be able to communicate investigations and explanations.
- Be able to present results in a variety of ways, such as orally, in writing, and in other forms—including models, diagrams, and demonstrations.
- Be able to define, label, and demonstrate the Vocabulary Words.
- Be able to set up the parameters of a scientific investigation: Question to be answered, hypotheses, organization, materials/tools, procedures, conclusions, and further investigations.
- Be able to use a laboratory sheet to record protocol.

The Light of the World

- Understand that the Light of the world is Christ sent to overcome darkness (sin) in the world. He is the Light of life and the Light of the world.
- Be able to study the symbolism of light presented in the Bible.
 - Understand that there is a clear distinction between the *children of light* and the *children of darkness*.
- Understand that when we walk in the light, our paths become illuminated and purposeful.
- Understand that Christians are light to the world as reflections of the Light of the world.
- Be able to share their personal Christian testimony with others.
- Be able to use the appropriate Bible verses to give the plan of salvation to another.

♥ Resource in several HOW Units. ● Key Resource

Creation of Light

- Understand that Creation reveals that God is a redeeming God. It records how He brought the cosmos out of chaos, turned darkness into light, made divisions between them, transformed cursing into blessing, and moved from what was evil and darkness to what was holy.
- Understand that God created light on the first and fourth days of a literal six-day Creation week.
- Understand that account of the Creation and of the first calling of the children of God.

History of Artificial Light

- Learn about how the understanding of light has led to technological advances.
- Understand how electricity in circuits can produce light.
- Understand that scientists in different disciplines ask different questions, use different methods of investigation, and accept different types of evidence to support their explanations.*
- Be able to identify new problems or needs and to change and improve current technological designs.*

Thomas Edison's Light Bulb

- Be able to describe situations in which science, technology, and society have influenced each other in the past.
- Recognise Edison lived during the Industrial Revolution era.
- Understand Edison was responsible for three major inventions that affected the technology of our world and that Edison patented over 1,000 inventions.
- Be able to research on the life and difficulties of Thomas Edison.
- Be able to explain the role of Thomas Edison in the field of scientific discovery.

God's Lamp: The Menorah

- Understand that the menorah is a furnishing designed by God.
- Understand that God gave Moses the design for the Tabernacle and the Temple.
- Understand that the menorah is symbolic of God and Christ.
- Have an understanding of the Feast of Tabernacles and Feast of Lights.

Light and Shadows

- Be able to distinguish between opaque, transparent, and translucent materials and relate shadow formation to opaque materials.
- Understand how shadows are formed.
- Recognize a shadow is formed when an object blocks the photons that are traveling from a light source.*

Blue text refers to Internet link.

Vision of Light

- Recognize the main parts of the eye.
- Understand that to see an object, light from that object—whether emitted by or scattered from it (must enter the eye).
- Recognize perception and optical illusions.
- Understand something can be “seen” when light waves emitted or reflected by it enter the eye.
- Understand human eyes respond to only a narrow range of wavelengths of electromagnetic radiation - visible light. Difference of wavelength within that range are perceived as differences in color.*

Reflecting Light: Mirrors

- Understand that light travels in a straight line until it strikes an object, and that it can be reflected by a mirror, refracted by a lens, or absorbed by the object.
- Understand the characteristics of images in a plane mirror.
- Recognize that waves can reflect from rough and smooth surfaces.

Bending Light (Refraction)

- Be able to recognize the refraction of light.
- Understand that light interacts with matter by transmission (including refraction), absorption, or scattering (including reflection).
- Recognize that waves are able to bend around barriers.
- Understand that the angle of reflection of a light beam is equal to the angle of incidence.*

Lenses: Making Things Bigger and Better

- Know how simple lenses are used in a magnifying glass, telescope, and microscope.
- Recognize the difference between the effect that concave and convex lenses have on light and the images that they produce.
- Recognize that lenses of different shapes and thicknesses have varying effects on light rays.
- Understand how lenses bend, or *refract*, light.
- Understand that eyeglasses correct vision by bending rays of light.
- Understand that light travels in straight lines except when the medium it travels through changes.
- Be able to describe how a telescope operates using both concave and convex lenses.

Cameras: Devices to Record Light

- Understand the three parts of a camera.
- Understand the basics of photography and the development of the camera.
- Recognize ways in which the principles and subject matter of other disciplines are interrelated with the visual arts.
- Know how simple lenses are used in a camera.

The Electromagnetic Spectrum

- Understand how a spectrum forms when sunlight passes through a prism.
- Infer what happens when sunlight passes through a color filter.
- Be able to predict what will happen when colored objects are viewed using different colors of light.
- Recognize the parts of the electromagnetic spectrum in terms of energy.
- Understand electromagnetic waves include radio waves (the longest wavelength), microwaves, infrared radiation (radiant heat), visible light, ultraviolet radiation, x-rays, and gamma rays. *

Light and Color

- Recognize and identify happy/sad and winter/summer colors from a story.
- Understand how people see colors.
- Realize that color is a component of white light.
- Understand why the sky is blue.
- Understand the electromagnetic spectrum and many different types of light.
- Be able to predict the results when two different colors of light combine.
- Understand that white light is a mixture of many wavelengths (colors), and that retinal cells react differently to different wavelengths.*
- Be able to distinguish between opaque, transparent, and translucent materials, and relate shadow formation to opaque materials.*

Particles, Waves, and Photons

- Understand that light is not visible (that we only see reflected objects, not what actually illuminates them).
- Understand the historical development of the wave theory of light and the many Christian scientists involved in these discoveries.
- Understand that light waves have energy and can transfer energy when they interact with matter. *
- Understand particles, waves, and photons.*
- Understand energy of electromagnetic waves is carried in packets whose magnitude is inversely proportional to the wavelength.*

Blue text refers to Internet link.

Light in Art

- Understand the importance of light and shading in art.
- Understand additive and subtractive color mixing.
- Understand hue, key, and intensity (or *saturation*).
- Understand how color and light contribute to our understanding of mass, volume, and space.

Photosynthesis

- Understand that the sun provides the light and heat necessary to maintain the temperature of the earth.
- Understand the basic chemical reaction of photosynthesis and what must be present for it to occur.
- Understand that the Sun's energy arrives as light with a range of wavelengths.*
- Understand that light waves have energy and can transfer energy when they interact with matter. *
- Be able to describe the location and structure of the chloroplast.*
- Be able to explain how chloroplast structure relates to its function.*

Laser Light

- Be able to describe some of the common types of lasers and their applications.
- Understand why lasers are one color.
- Be able to describe the processes of absorption and emission of light.*
- Understand that lasers control the way in which energized atoms release photons.*

Speed of Light

- Understand that there is nothing that travels faster than light.
- Understand why it is much more difficult to measure the speed of light than to measure the speed of sound.*
- Understand what happens to light when it enters a substance and how the frequency of the light affects what happens.*

Light Vocabulary

See [Vocabulary Instructions](#).

absorption	infrared light	radiation
additive color	laser	radio waves
artificial light	lens	radioactive decay
binoculars	light bends	rainbow
concave	light spectrum	reflection
convex	lightning	refraction
cool colors	luminous	shadow
C reation	magnifying glass	spectrum
electromagnetic radiation	microscope	subtractive color
electromagnetic spectrum	microwaves	sundial
fiber optics	mirror	telescope
fission	neon	thermograph
fluorescent light	northern lights	transparent
fusion	opaque	ultraviolet light
gamma rays	optics	value
hue	photons	visible light
illuminated	photosynthesis	warm colors
image	physics	wave frequency
incandescent light	pigment	wavelength
infrared	polarized light	waves

Blue text refers to Internet link.

Light Time Line

1590	Dutch eyeglass maker, Zacharias Janssen discovered the principle of the compound microscope.
1609	Galileo built his first telescope.
1665	Robert Hooke used his compound microscope to observe the structure of cork. He was the first to observe cells.
1666	Sir Isaac Newton discovered that white light is made up of all colors.
1704	Sir Isaac Newton published treatise, "Opticks" (his collection of papers relating to light, color, and optics).
1784	Benjamin Franklin invented bifocals.
1826	French inventor Joseph Nicephore Niepce produced the world's first photograph.
1830s	French inventor Louis Daguerre, produced the first sharp, detailed photographic image.
1852	Fluorescence was first explained by Sir George G. Stokes, a British physicist.
1860	James Clark-Maxwell developed the electromagnetic theory of light.
1879	Thomas A. Edison invented his incandescent light bulb.
1888	George Eastman introduced the Kodak box camera.
1895	Wilhelm K. Roentgen, a German physicist, discovered X-rays.
1896	Thomas A. Edison improved the fluoroscope so it could be used to view X-ray images.
1900	Planck announced his findings that energy is radiated in very minute and discrete quantized amounts or packets, rather than in a continuous unbroken wave.
1905	Albert Einstein published a paper on the photoelectric effect, presenting the idea that light radiation consists of packets of energy (later called photons).
1906	Charles Barkla polarizes X rays demonstrating that X rays are transverse waves like other electromagnetic radiation, such as light.
1909	Solar power became a reality when William J. Bailey developed the first modern flat-plate collector in California.
1910	Introduction of neon light.
1926	John Logie Baird demonstrated television, based on a mechanical method of scanning an image into lines or dots of light.
1936	Fluorescent lighting was introduced.
1960	The first laser was built by T. H. Maiman in the United States. It contained a specially made ruby rod.
1990	The Hubble Space Telescope was launched into orbit. It is sensitive to both visible and ultraviolet light.

Light Resources

The resources here are specific to the study of light. The General and Physical Science resources recommended in all physical science units are in other document to avoid duplication. See [General Science Resources](#) and [Physical Science Resources](#). The ♥ symbol indicates a resource is recommended in several Heart of Wisdom Unit Studies. The 📖 symbol indicates a resource appropriate for grades 4-12 or family read aloud. All other books are appropriate for young adults or adults. See resources for younger students (preschool-4th grade) after this section.



[Eyewitness: Light](#) by David Burnie ♥

Explore the amazing story of light—from ancient sun myths to the latest optic discoveries that have revolutionized modern life. Essential to all plant and animal life on Earth, light has always been a source of wonder and mystery. This intriguing book brings to life our exploration of this fundamental energy source. Contains a mention of old earth you can easily overlook.

Some of the oldest oil lamps that have been discovered were made out of rocks and shells. Today, we can collect sunlight through solar panels to make electricity to light and warm our houses. Experimenting with a prism in 1665, Isaac Newton found that daylight contains a spectrum of rainbow colors. Today, fiber optics, lasers, and holograms are familiar items in our high-tech world. With historical scientific apparatus and stunning demonstrations of key experiments and ideas, *Light* is an exciting introduction to the discoveries that have shaped and revolutionized our way of life.

Here is a spectacular, thought-provoking, and highly informative guide to the fascinating story of light. Superb full-color photography of original equipment, intricate scientific instruments, revealing experiments, and 3-D models offers a unique eyewitness view to the incredible discoveries that have transformed our world.

See how light rays bend; why things glow when they are very hot; what creates a color television picture; how microscopes and telescopes were invented; why a leaf looks green. Learn how fiber optics transmit light; why images are reversed in mirrors; how a liquid crystal display works; what makes a hologram. Discover how some animals can make their own light; what creates a mirage; what a polarizing filter does; why we see rainbows; what a quantum is; how X rays penetrate our bodies; and so much more. An innovative series that combines visual

brilliance with scientific discovery. Library Binding - 64 pages (June 1, 2000) DK Publishing; ISBN: 0789467097.



[Gods Lamp, Mans Light - Mysteries of the Menorah](#) by John Garr ♥

God's Lamp, Mans Light is one of Restoration Foundations Living Emblems Series, featuring in-depth analysis of the material objects that contain practical demonstrations of God's plans and purposes for both Jews and Christians. Biblical emblems were designed by God and by his people Israel to emphasize divine truths and to call believers to remembrance of their opportunity and responsibility to worship and honor their Creator. Failure to understand the implications of these important symbols has robbed millions of Christians of vital, spiritually enriching information. Restoring the Hebrew foundations of Christianity is essential for individual Christians to understand the roots of their faith. Recognizing the historical and spiritual truths represented by the symbols of the Hebrew Scriptures is a profound means of underscoring the historical and theological truth of Christianity's Jewish connection.

God's Lamp, Mans Light presents these vivid images of a rich biblically Hebraic tradition. As you read this volume, you'll be enriched by the amazing wealth of understanding manifest in the biblically Hebraic symbols designed by God and by his chosen people Israel. Chapters include: God's Lamp, Mans Light, Divine Design, Pure Gold, One Hammered Work, Clear Consecrated Oil, The Light Motif, Mans Soul-God's Torch, Israel-God's Menorah, You Are the Light of the World, The Tree of Life, A Messianic Portrait, Menorah Mystery Numbers, By My Spirit, Dedication Produces Light, Synagogue, and Church Aflame. Paperback - 160 pages (2001) Restoration Foundation; (678) 615-3568; ISBN: 0967827949. Great read aloud for the family.



[The Usborne Book of Discovery: Inventors/Scientists/Explorers](#)

by Struan Reid, Patricia Fara ♥

Follow Livingstone into the jungles of Africa and join Hillary on the peak of Everest. Read about the men who risked all in the first flying machines, and marvel at the ideas of brilliant scientists such as Aristotle and Einstein. *The Usborne Book of Discovery* looks at the lives and careers of the men and women whose achievements in invention, science, and exploration have changed the world. The material in this book is also available as three separate titles: *Inventors*, *Scientists*, and *Explorers*. Paperback (June 1994) EDC Publications; ISBN: 074601872X. Reading level: Ages 9-12.



[Awesome Experiments in Light & Sound](#) by Michael Anthony DiSpezio, Catherine Leary (Illustrator)

Watch the light of understanding shine as budding scientists produce some good vibrations with these totally awesome, kid-friendly experiments. They all use easy-to-find materials like straws, paper cups, flashlights, and small mirrors. Make cereal dance to the music and watch light bounce off a mirror and hit a bulls-eye. Hear the heart pumping through a funnel and tubing. Create a big boom in your room. Display the visible spectrum of light in a glorious rainbow tray. Whether youngsters want to satisfy their curiosity, be the star of the next science fair, or just have fun, these incredible investigations will change the way they look at and listen to the world. Forty-seven experiments in all. Teacher and author Michael DiSpezio—who has written dozens of textbooks, puzzle books, and articles—really knows how entertain kids...and effectively educate them at the same time. Hardcover - 160 pages (May 1999) Sterling Publications; ISBN: 0806998237. Reading level: Ages 9-12.



[The Camera \(Turning Point Inventions\)](#) by Joseph Wallace, Toby Welles (Illustrator)

Before the camera, there was no easy and quick way to record a memorable scene or a persons likeness. Then, in 1827, Joseph Nicéphore Niepce took the worlds first photograph. Louis Jacques Mandé Daguerre, and William Henry Fox Talbot soon developed their own methods for creating photographs, but a good deal of expertise, time, and money were needed to work with the bulky and awkward materials used in early photography. In 1888, George Eastman invented the first Kodak camera with film already loaded into it, making photography widely available to the public. Eastman soon invented roll film that could be removed from the camera by the photographer and replaced with a fresh roll, much as we do with most cameras today. Digital cameras now use computer technology rather than film to capture images, allowing even the amateur to modify and print photographs, and to e-mail them anywhere in the world in an instant. School & Library Binding - 80 pages (October 2000) Atheneum; ISBN: 0689828136. Reading level: Ages 9-12.



[The Fire within the Eye: A Historical Essay on the Nature and Meaning of Light](#) by David Allen Park

This book explains the earliest theories of Aristotle (light is an accident) to the most recent hypotheses (light is like both a wave and a particle) in prose that is highly readable. Light, like the air we breathe, is one of those invisible qualities that most of us only think about when the power goes off and there are no batteries in the flashlight. But ask yourself just what it is, and suddenly light becomes a puzzle indeed. Is light a thing?

Is it, as Aristotle claimed, an accident? Physicist David Park covers all the bases in *The Fire within the Eye*, his fascinating exploration of the history of light. All the heavy-hitters show up here—Aristotle, Galileo, Archimedes, and Max Planck—but there are also plenty of names the average reader might not recognize, such as the 10th-century Iraqi Abu Ali al-Hasan, who suggested that the objects we see are tiny reproductions of the real thing imprinted on the lenses of our eyes. Hardcover - 550 pages (July 1997) Princeton Univ Pr; ISBN: 0691043329. Reading level: High school-adult.



[The Handy Physics Answer Book](#) by P. Erik Gundersen

What do Sir Isaac Newton, Albert Einstein, and a typical kindergartner have in common? Aside from playing with their food and bad hair, they demonstrate a unique ability to ask deceptively simple questions: Why is the sky blue? Why do monkeys have tails? Why do objects fall? What makes a building a skyscraper? What is the lowest possible temperature? No chalkboards...we promise. Until now, the problem with understanding physics has always been in the answers. Fortunately, you don't need to be genius (or a parent) to gain a fundamental understanding of physics, thanks to *The Handy Physics Answer Book*. Here you'll find more than 800 deceptively simple questions accompanied by a similar number of relatively simple answers. (Okay, keep your pocket protector in place—there's plenty here to challenge even the most avid amateur physicist.) Gravity... magnetism... matter... light—the whole shebang—its a piece of cosmic cake with *The Handy Physics Answer Book*. Paperback - 415 pages (October 1998) Visible Ink Pr; ISBN: 1578590582. Reading level: Grades 8-12.





[Janice VanCleave's Physics for Every Kid: 101 Easy Experiments in Motion, Heat, Light, Machines, and Sound](#) by Janice Pratt


VanCleave



This is a physics experiment book designed for children in grades 4 to 6; however, one homeschool mother told me that the only physics she taught her daughter was from this book, and the girl received a college scholarship. Students will be able to complete these experiments with adult supervision and can easily follow the step-by-step instructions with little or no assistance. Contains 101 fully tested experiments, in each case complete with a discussion of the experiments purpose, a list of materials, illustrated instructions, a clue to expected results, and a scientific explanation in understandable terms. Most of the materials required are available around the house, and all experiments are safe. Designed to make the learning of physics a rewarding and fun experience and to encourage kids to seek more knowledge about science. Paperback - 256 pages (1991) John Wiley &

Sons; ISBN: 0471525057. Reading level: Ages 9-12.

 [Light \(Fascinating Science Projects\)](#) by Bobbi Searle, Sally Hewitt
A look at light features activities, questions, and quotes that encourage young readers to think about the hows and whys of the natural world. Paperback - 48 pages (2002) Copper Beech Books; ISBN: 0761317368.

 [Light and Color in the Outdoors](#) by M. G. J. Minnaert, Len Seymour (Translator)
From the intriguing shapes of apples beneath a tree on a sunny day, to rainbows, mirages, and halos, to the colors of liquids, ice, and the sky, to the appearance of the sun, moon, and stars—Minnaert clearly describes and explains them all to the general reader. Abundantly illustrated with diagrams and beautiful color plates. This volume includes eighty new photographs, over half in color, illustrating many of the phenomena—ordinary and exotic—discussed in the book. 417 pages (July 1993) Springer Verlag; ISBN: 0387979352.

 [Light and Optics \(Science Experiments\)](#) by John Farndon
The effects of light and shadow have fascinated scientists and artists for ages. In many ways, some elements of light appear almost magical in nature. What child or adult has not looked at the odd bending effect of light on objects partially submerged in water without wondering what makes that happen? This experiential science text helps children better understand the way in which light is generated, how it affects color, what lenses do, and a host of other subjects related to optics. Combining a carefully written narration with hands-on experiments, this book will entertain and teach kids at the same time. Elementary scientists will be given an easy-to-follow road map to better understand basic concepts about light and to create real-life applications of their knowledge. The experiments include making a pinhole camera, building a telescope, creating a magnifying glass, and developing a shadow theater. This useful book should find a place in the library of any child interested in science. From Children's Literature. Library Binding - 32 pages (October 30, 2000) Benchmark Books; ISBN: 0761410902.

  [The Lightbulb \(Turning Point Inventions\)](#) by Joseph Wallace, Toby Welles (Illustrator)
When Thomas Alva Edison was a boy, he couldn't just flick a switch to turn on the light if he wanted to finish reading a book after the sun had set. He grew up in a world where there was no dependable, safe, and inexpensive source of artificial light. Then, in 1879, he invented the light-

bulb, in houses, shops, factories, schools, streets, ballparks—every place you could think of, indoors and out—could at last be easily illuminated after dark. By turning night into day, the lightbulb changed the world. *Turning Point Inventions* is the first series of books to focus on the important inventions we often take for granted and how they have affected our lives. In lively text and fascinating pictures, these books explore the world before the invention; the life of the inventor and how he or she came upon the discovery; how the world was changed by the invention; and how the invention may influence our future. A special full-color fold-out in each book shows in detail how the invention works. School & Library Binding - 80 pages (September 1999) Atheneum; ISBN: 0689828160. Reading level: Ages 9-12.



[Light FUNDamentals](#) by Robert W. Wood, Steve Hoefft
(Illustrator),

Kris Kozak (Illustrator)

Solid science content and easy experiments use everyday household items to teach kids about light. Paperback - 140 pages (1996) McGraw-Hill Trade; ISBN: 0070718091. Reading level: Ages 9-12.



[Science Book of Light](#) by Neil Ardley

These sixteen volumes of fun-packed science projects and experiments introduce readers to basic science principles. Full-color photographs and easy-to-follow text guide children through creative experiments using common materials, while practical examples relate each experiment to the world around us. The handsome design and illustration of the series make it an inviting choice for library collections.

–Booklist. Clear, well-spaced photographs, good instructions, and appropriate warning typify this series of experiment books for middle graders.

–The Horn Book. School & Library Binding - 29 pages (May 1991)

Harcourt; ISBN: 0152005773. Reading level: Ages 9-12.



[Science Experiments with Light \(Science Experiments\)](#)

by Sally Nankivell-Aston

Explores the properties of light, through experiments using materials that are readily available in both homes and schools. School & Library Binding - 32 pages (March 2000) Franklin Watts, Incorporated; ISBN: 0531145778. Reading level: Ages 9-12.



[Shadowy Science: No Sweat Projects \(No Sweat Science Projects\)](#)

by Jess Brallier, Bob Staake (Illustrator)

Full-color, funny, and kid-friendly, yet absolutely scientifically sound, this affordable book gives a scientific overview of the subject, pictures to

photocopy and use, as well as truly original and easy experiments. Shadows—what are they? how do they control heat? where do they go at night? Why are they sometimes so big, sometimes so tiny, and sometimes not there at all? Reading level: Ages 9-12.



[Sound and Light \(Kingfisher\)](#) by Jack Challoner, David Le Jars

This book of conceptual diagrams, facts, and experiments introduces students to sound and light. Realistic illustrations accompany short explanations of thunder and lightning, sound waves, vibrations and frequency of waves, how musical instruments make sound, sound traveling through various mediums, echoes, how the ear works, light waves, shadows, mirrors, refraction, lenses, how the eye works, and the visible light spectrum. Step-by-step instructions and labeled illustrations guide students in the use of household items to make a sound amplifier, musical instruments, a periscope, a simple magnifier, and rainbows. Other activities involve students in simple demonstrations of sound waves traveling through air and along a string, the reflection of sound waves, light traveling in straight lines, and refraction of light. Paperback - 40 pages (April 2001) Larousse Kingfisher Chambers; ISBN: 0753453479. Reading level: Ages 9-12.



[Teaching Physics With Toys: Activities for Grades K-9](#)

by Beverley A.P. Taylor

This book is a teachers resource that provides complete instructions and techniques for teaching basic physics principles through simple activities that use popular children's toys like Legos, Tomy push-n-go fire engine, magnet cars, balloons, and bouncing balls. The activities are grouped by appropriate grades, i.e., K-3, 4-6, and 7-9. Each activity provides the teacher with a list of key science topics. Paperback - 296 pages (April 1995) Tab Books; ISBN: 0070647216.


Literature for This Unit




[Keepers of the Light](#) by A. Boeshaar, C.M. Hake, S. Laity, & D. Mills



Four radiant tales guaranteed to light up your heart. Fiona, a lighthouse keeper's daughter, and Ian, a fisherman, team up when a northeaster hits; Amandas light guides a sea captain to safety; Jules tends the lighthouse while praying for the safe return of her seagoing fiancé; and Eden becomes light keeper after her husband's death. Paperback - 352 pages (2000) Barbour; ISBN: **1885904096**.



Resources for Younger Students

This unit study is appropriate for grades 4-12, but many families are adapting it to use with the entire family, so we have included this special resource section for children ages 4-9 (preschool-third or fourth grade). Many of these resources can be found in public libraries. Note that several of the books in the previous section with the  symbol can be used with younger children when read aloud.

  [Exploring Light and Color: A Hands-On Approach to Learning](#) by Heidi Gold-Dworkin, K. Almadigen (Illustrator), Robert K. Ullman (Illustrator)

Dr. Heidi Gold-Dworkin, a Nobel-Prize-winning biochemist, makes science fun as she introduces children ages 5-8 to the exciting world of science and helps them to develop specific scientific skills like how to think, observe, classify, hypothesize, and solve problems through this fun science activity book based on her acclaimed Little Scientists educational franchise. This book explores light and color, uses a simple narrative to help children make connections to the world around them, and presents dozens of safe and easy experiments that illustrate the science. The book also includes a glossary and suggested reading list. With the help of Dr. Heidi and her team of early education specialists, science activities become mind-opening opportunities to turn kids on to science. Paperback 58 pages (January 2000) McGraw-Hill; ISBN: 0071348212. Reading level: Ages 5-8.

  [Flicker Flash: Poems](#) by Joan Bransfield Graham, Nancy Davis Light can be dynamic, exciting, dramatic, comforting, fascinating, and welcoming. Turn on the light and open this book to see and feel the energy, emotion, and surprise of light in its many forms. *Flicker Flash* is a poetic exploration of a mutable yet omnipresent part of the world around us. From the flicker of birthday candles to a flash of lightning, from the bold bright sun to the calm full moon, from the steady beams that pulse from a lighthouse to the glow of a lamp that illuminates the pages of a book lovingly held by a child, all forms of light are given shape in this remarkable collection of poetry. Young readers eyes will be opened to an amazing new way of perceiving poetry in everyday life. Hardcover - 32 pages (1999) Houghton Mifflin Co; ISBN: 039590501X. Reading level: Ages 5-8.

  [Guess Whose Shadow?](#) by Stephen R. Swinburne Teaches young children about how shadows are created, describing night as a shadow on the earth, and giving children tangible reasons for why shadows vary in size, shape, and location. Invites readers to

guess the origins of the shadows in vivid full-color photographs; subsequent pages provide the answers to the mysteries. Library Binding - 32 pages (1999) Boyds Mills Pr; ISBN: 1563977249. Reading level: Ages 4-8.



[Light and Color \(Science for Fun\)](#) by Gary Gibson

Simple text and full-color pictures provide a step-by-step format that furnishes hours of fun as children learn the basics of photosynthesis, splitting light into the spectrum, and much more. Library Binding - 32 pages (1995) Copper Beech Books; ISBN: 1562946161. Reading level: Ages 4-8.



[The Magic School Bus Gets a Bright Idea: A Book about Light](#)

Strange things start happening to Ms. Frizzles class when they go to see a light show. Right after the show, Arnold and his cousin Janet disappear. Then all the lights in the theater go out. Could the theater be haunted by ghosts, like Janet said? The next thing the kids see is a spooky image above the stage—and it looks like the ghost of Arnold. Keesha is sure its all a trick, but how is it done? Luckily, the Friz arrives with the Magic School Bus to help shed some light on the mystery. Paperback - 32 pages, Scholastic Trade; ISBN: 0-439-10274-X. Reading level: Ages 4-8.



[The Magic School Bus Makes A Rainbow: A Book about Color](#)

The class finds Ms. Frizzle inside her closet—playing pinball. But this is no ordinary pinball machine—its played with light pulses, not steel balls. The Friz has to light up the six colors of the rainbow to win the game, and the kids want to help her. So they take the Magic School Bus inside the pinball machine. Buckle up for this enlightening adventure and learn the secrets of color. Paperback - 32 pages, Scholastic Trade; ISBN: 0-590-92251-3. Reading level: Ages 4-8.



[The Magic School Bus Plants Seeds: A Book about How Living Things Grow](#)

Ms. Frizzles class is growing a beautiful garden. But, Phoebe's plot is empty. Her flowers are back at her old school. So, the class climbs aboard the Magic School Bus. And, of course, the kids don't only go back to Phoebe's school, but they go inside one of Phoebe's flowers. Follow the kids adventure and learn how living things grow. Paperback - 32 pages, Scholastic Trade; ISBN: 0-590-22296-1. Reading level: Ages 4-8.



[Usborne Science Activities: Light, Water & Magnets](#)

This bright, exciting book responds to the growing emphasis on scientific exploration for young children. Its appealing scientific activities are cleverly designed to help children investigate the intriguing proper-

ties of water, light, mirrors and magnets. Readers can find out, for example, how to make a magnet float in mid-air, how to use mirrors to see around corners, and how to produce their own rainbow. All the activities are safe and easy to do, using ordinary household equipment. The text and illustrations are simple and clear so children can carry out the experiments by themselves and understand the results. Extra notes give fuller scientific explanations for adults who wish to work with their children. Hardcover, EDC (Usborne) (1992) 74 pages, ISBN: 0746006985. Ages: 6 - 9.



[Usborne Science With Light & Mirrors](#)

This colorful book is packed with exciting scientific activities designed to help young children explore the intriguing properties of light. All the experiments and tricks are safe and easy to carry out, using ordinary household equipment. Real examples show how people exploit the way light behaves for driving mirrors, periscopes, lenses and so on. *Usborne Science Activities* is an innovative series which responds to the growing emphasis on scientific exploration for children. The text and illustrations are clear and simple, so children can enjoy using the books by themselves. Further notes give more detailed explanations for adults who wish to work with their children. EDC (Usborne) 24 pages, ISBN: 0-7460-0696-9. Ages: 6 - 9

The Light of the World

Step 1: Excite

Gather color markers and unlined paper for this step. Draw a mind map with the word *light* inside the center circle. Decorate the circle so it looks as if it is shining. Extend a number of branches from the central circle. Write a single word or draw a picture on each branch to express an aspect of your main idea. Brainstorm for at least ten minutes writing down words relating to light. Start from the center of the page and work out. Use arrows, icons, or other visual aids to show links between different elements. Put ideas down as they occur, wherever they fit. Don't hold back. Draw more branches extending from the first row of branches on your mind map. Again, write single words or draw pictures on each branch to expand your ideas. Focus on key ideas, then look for connections between the ideas. Keep adding branches, words, and pictures as your ideas grow. Consider using bright colored markers and making a different color for each branch. You'll be adding to this mind map throughout this unit.

What did Jesus mean when He said in John 8:12 *“I am the light of the world: he that followeth me shall not walk in darkness, but shall have the light of life?”*

Make a second mind map with the words “Light of the World” inside the center circle. Add branches, words, and pictures as you learn about the Light of the world in this lesson.

Step 2: Examine

God commanded the male Jews to go to the Temple three times each year: During the Feast of Unleavened Bread, the Feast of Weeks, and the Feast of Tabernacles (Deuteronomy 16:16). During the Feast of Tabernacles (Sukkot) there was a great ceremony called the “Illumination of the Temple,” which involved the ritual lighting of four golden oil-fed lamps in the Court of Women. These lamps were huge candelabras (seventy-five feet high) lighted in the Temple at night to remind the people of the pillar of fire that had guided Israel in their wilderness journey. All night long the light shone their brilliance, it is said, illuminating the entire city. In celebration and anticipation, the holiest of Israel's men danced and sang psalms of joy and praise, before the Lord. This festival was a reminder that God had promised to send a light, the Light, to a sin-darkened world. God promised to send the Messiah to renew Israel's glory, release them from bondage, and restore their joy. Imagine that you are in ancient Jerusalem during the Feast of

Blue text refers to Internet link.

Tabernacles. Visualize seeing these massive menorahs giving a tremendous amount of light. Now imagine the impact of the words said by Jesus in the Temple courtyard when he announced, “*I am the Light of the world.*”

Jesus is the Light, the source of illumination to bring the lost out of darkness (which is a symbol of evil, sin, and ignorance). Jesus was speaking of salvation. Wherever the light shines, it reveals mans wickedness (Eph. 5:8-14). Jesus, the Sun of Righteousness (Mal. 4:2) shines the way of liberty to the captives (Isa. 8-13), and love and hope to the discouraged (Isa. 49:14-50:3).

When Israel was in the wilderness, God provided a pillar of fire for protection and guidance. Just as the children of Israel had followed the Light to receive protection and guidance, we follow the Light provided by God—Jesus, His Son. To follow the Lord Jesus means to believe on Him, to trust Him.

*The sun shall be no more thy light by day;
neither for brightness shall the moon give light unto thee:
but the LORD shall be unto thee an everlasting light,
and thy God thy glory. (Isa. 60:19)*

Jewish literature uses the title Light of the world, applying it to Israel, Jerusalem, the patriarchs, the Messiah, God, famous rabbis, and the Law. But Jesus is the true light; all others are shadows of His reflection.

Just before Jesus announced that He was the Light of the world, Jesus had shone upon the conscience of those who accused the adulteress. Read the story in John Chapter 8.

John also records Jesus healing a blind man (9:1-12) at about the same time (8:12 and 9:5) that Jesus declared himself to be the Light of the world. It is not clear from the text when this incident happened, but it was some time between the Feast of Tabernacles and the Feast of Dedication (Hanukkah); both of these celebrations focused on light. Can you imagine the change in the blind mans life? He was blind from birth and suddenly able to see. Our experience from spiritual darkness to light should be just as dramatic.

In John 5:35, Jesus calls John the Baptist the burning and shining light of his day. In Matthew 5:14, Jesus calls his followers the *light of the world* Christ, the Light of the world, reflects His light through us. Our light must shine, doing such good works for others illuminating God’s ways. It is by our visible goodness that we will bring glory to God.

Light

When we walk in the light, our paths become illuminated and purposeful, and there is a glow of warmth and love in our lives that makes us want to care for the needs of others. This life of love is not merely a soft sentimental feeling, but rather a life of action (Osbeck 1990). Matthew 5:15 likens believers to a candle which is placed on a lampstand, giving light to all who are in the house. If someone were describing you, would they say you were a light to them?

When Paul talked of spiritual warfare in Ephesians 6:12, he said, *“For we wrestle not against flesh and blood, but against against principalities, against powers, against the rulers of the darkness of this world.”* You have the power of the Light within you to overcome the powers of darkness. Ye are of God little children, and have overcome them: because greater is he that is in you, than he that is in the world (John 4:4).

To follow Christ is to imitate His life and habits; only then can we be truly enlightened and free from all blindness of heart. Our main goal here on earth should be to study the life of Jesus Christ so we can reflect His glory.

Below are resources to learn more about The Light of the world.

Book



[God's Lamp, Man's Light - Mysteries of the Menorah](#) ♥

Read: “Mans Soul - God’s Torch,” “Israel - God’s Menorah,” “You Are the Light of the World,” “The Tree of Life,” “A Messianic Portrait,” “Menorah Mystery Numbers,” and “By My Spirit.” See the description of this book in Resources section.


Internet Resources




[Just Enough Light](#)

Description: An article by Stormie Omartian. She explains that Christ is the Light of the world; He provides more than enough illumination for any circumstance. But often, He simply chooses to illuminate one step at a time to gauge our obedience. He asks us to take individual steps of faith so He can lead us to greater levels of responsibility and blessings.

http://www.intouch.org/gen_content/index_627258_36081849.html



 [Living as Salt and Light in the World](#)
Description: Bible study on Matthew 5:13-16.
<http://www.joyfulheart.com/manifesto/lesson2-e.htm>



 [The Light of the World](#)
Description: Bible study on John 8:12-20 explaining how Jesus Christ was given by God to lead lost sinners from darkness into the knowledge of God.
<http://www.byronbible.org/study/john/john8.12.html>

 [I Am the Light of the World](#)
Description: Bible study on John 8:12-20 from AbideinCrhist.com.
<http://www.abideinchrist.com/messages/jn8v12b.html>

Step 3: Expand

Choose and complete one of the following activities:

  Activity 1: Copy Passages
Copy each of the following verses in your best handwriting and add them to your portfolio. Proverbs 6:23; Psalm 36:9; Matthew 5:14-16; John 1:4-9; John 8:12; Romans 12:10; 2 Corinthians 4:6.

  Activity 2: Copy and Sing a Song
Copy the chorus from the song This Little Light of Mine by Harry Dixon Loes. Discuss what the words mean. Sing the song (teach it to your sibling or a friend). If you play a musical instrument, learn to play the tune.

This little light of mine,
I'm gonna to let it shine.
This little light of mine,
I'm gonna to let it shine.
This little light of mine,
I'm gonna to let it shine,
Ev'ry day, every day,
Ev'ry day, every day,
Gonna let my little light shine.



Activity 3: Contrast and Compare

In this lesson you learned how Jesus is the Light of the world. John also made references to Jesus as water (John 4:13,14; 7:37-39). There is a grand traditional water ceremony during the Feast of Tabernacles. Most scholars believe that it was during this time Jesus cried, saying, “*If any man thirst, let him come unto me and drink.*” Do research about the water ceremony during this feast. What does it reveal about Jesus?



Activity 4: Write a Personal Essay

Write a personal essay titled *Light in the Darkness*, explaining your life before and after you experienced salvation through Christ. Include specific ideas of how your light can shine before men so that others, impressed by your godly life, might come to ask you about the source of your joy. Refer to “Writing the Personal Essay” in *Writers INC* or to [Writing Essays](#). Option for younger children—dictate your conversion experience to your parent.




Activity 5: Research and Record

Continue studying light in the Bible. Read through the verses listed below. Write (or dictate or narrate) a one- or two- sentence summary for each way the Bible uses the term *light*.

- Light as God’s garment (Ps. 104:2).
- God’s countenance is light (Ps. 4:6).
- God is said to be the light of His servants (Rev. 22:5).
- God is implored to provide light (Ps. 43:3; Isa. 42:16).
- The Law of God is described as *a lamp to my feet and a light to my path* (Ps. 119:105).
- The day of the Lord is expected to be light (Zech. 14:7; 5:18,20).
- The contrast between light and darkness (1 John 1:5-7).
- Light is both literal (Mat. 17:2) and symbolic (Mat. 4:16, quoting Isa. 9:2).
- The light is the gospel of the glory of Christ (2 Cor. 4:4).
- Believers are described as enlightened (Heb. 6:4; 10:32).
- John the Baptist, who was *a burning and a shining light* (John 5:35).
- The disciples are called *the light of the world* (Mat. 5:14).
- Christ is the Light of the world (John 8:12; cf. 1:4-5,9), He is the emissary of God, who is light (1 John 1:5).
- A personal response to light reveals our lost condition (John 3: 19-21).

 Activity 6: Write a Short Story

In the Gospel of John, the words *light* and *darkness* are often moral terms. Light represents moral purity, holiness, righteousness, and good. *Darkness* as a moral term represents evil. Write a short story using the terms *light* and *darkness* symbolically.

 Activity 7: Make a Chart

A *metaphor* is a figurative comparison between two rather unlikely things. It is a word or group of words used to relate a concept to a known object. Using a metaphor helps one to visualize an emotion or an idea. A *simile*, on the other hand, is a comparison of two unrelated things that uses the words *like*, *as*, *than*, *appears*, or *seems*. Light is often used as a simile or a metaphor in cultures as a symbol of God, godliness, or supernatural illumination. Make a chart comparing metaphors and similes. In one column list at least three light metaphors. In the other column list three similes using light.

 Activity 8: Complete a Bible Word Study (Advanced)

1. Begin your word study by using a Bible dictionary to look up the word *light*. A good Bible dictionary gives the origin and root meaning of the word, and explores how a word is used, often in detail, explaining and expounding the underlying concepts. Some dictionaries give how the word was used by the secular culture of the day. Dictionaries vary in details; for example:
 - *Easton's Bible Dictionary* gives a good one-paragraph (eight-line) description of *light* with Bible references. (Available online through Crosswalk.com.)
 - *Harper's Bible Dictionary* gives a four-paragraph description of *light* with Bible references. (Available online through Crosswalk.com.)
 - *Bakers Evangelical Dictionary of Biblical Theology* gives a nine-paragraph description of *light* with Bible references.
 - *Vines Expository Dictionary of Old and New Testament Words* gives five detailed meanings for the word *light*, categorized by noun, verb, and adjective forms. Examples: *light* - noun and verb (bring to, give), *lighten*, *light* (to light upon), *light*, *lighten* (as to weight), *light of* (make), lightly.
 - *The Theological Dictionary of the New Testament* (considered by many to be the best New Testament dictionary ever compiled) gives the history of the moral and religious sense of the words in the Greek and Hellenistic world as well as in Judaism. It gives detailed descriptions of the following words

Light

for *light*: *photos* [light], *photi•zo* [to shine, make known], *photismo•s* [shining, illumination], *photeino•s* [light, clear], *phospho•ros* [bearing light, morning star], *phoste•r* [gleam], *epiphau•sko* [to shine forth], *epipho•sko* [to shine forth], *la•mpo* [to shine, light up], *ekla•mpo* [to shine out, blaze up], *perila•mpo* [to shine around], *lampa•s* [torch, lamp], *lampro•s* [bright, shining], *pho•s* [light].

2. Next, find the meaning of the [Greek](#) and [Hebrew](#) words for *light*. Don't be overwhelmed; Greek and Hebrew study tools make studying the original languages of the Bible simple, even for someone who has no prior knowledge of the languages. Begin by looking up the Greek and Hebrew words using Bible study tools such as a lexicon or [Strong's Concordance](#) (a concordance is an alphabetical list of all the words in the Bible. Strong's combines the text of the King James Bible with the power of the Greek and Hebrew lexicons by assigning numbers to words). Translation from English to Greek or Hebrew is not as easy as those today going from Hebrew or Greek to English. When you look up an English word like *light* you will find several meanings. The word *light* appears in *Enhanced Strong's Lexicon* forty-five times (twenty-eight times in Hebrew and seventeen times in Greek).
 - Learn where the word is used in the Bible.
 - How often does it occur?
 - In which books is it found?
 - In which book is it used most?
 - Where does the word first appear?
 - Which writers used the word?
3. Write a summary of your findings.

Step 4: Excel

The only way to reach people who are captive is through the divine work of God who is not willing that any should perish but that all should come to repentance (2 Peter 3:9). We are His light, reflecting His power. Are you prepared to share the Gospel with someone?

Blue text refers to Internet link.

Copy and memorize the *Romans Road* salvation plan.

- Romans 3:23 - For all have sinned and fall short of the glory of God.
- Romans 6:23a - The wages of sin is death...
- Romans 6:23b - But the gift of God is eternal life through Jesus Christ our Lord.
- Romans 5:8 - God demonstrates His own love for us, in that while we were yet sinners Christ died for us!
- Romans 10:13 - Whoever will call on the name of the Lord will be saved!
- Romans 10:9,10 - That if thou shalt confess with thy mouth the Lord Jesus, and shalt believe in thine heart that God hath raised him from the dead, thou shalt be saved. For with the heart man believeth unto righteousness; and with the mouth confession is made unto salvation.
- Revelation 3:20a - Jesus said, *Behold I stand at the door and knock, if anyone hears My voice and opens the door, I will come in to him...*

Practice, with your parents, explaining how Christ died on the cross for our sins, was buried, and rose again from the dead. (You should be able to go to each verse in the Bible to back up your words.) You cannot convict someone of their sinful state or convince them of God's eternal judgment, but God can. Be available to let His love manifest through you.

Correct written work to demonstrate correct punctuation and spelling, and effective use of grammar. Add corrected written work or illustrations to your portfolio.

Creation of Light

Step 1: Excite

On which day of Creation was light created? If you're not sure, look it up in Genesis 1. Once you have found the answer, think about it. Discuss why God would have created light in the specific order that He did. Read the entire story of Creation and discuss.

Step 2: Examine

Sound and light are both forms of energy. Many scientists now believe that all matter was created from sound waves.¹ Think of it, the first act in Creation of our world came the sound of God's words, *Let there be light*. The light was natural, physical light.

In the beginning God created the heaven and the earth. The earth was unformed and void, and darkness was upon the surface of the depths; the Presence of God hovered above the surface of the water. God said, Let there be light and there was light. (Genesis 1:1-3)

Light is a form of energy and may be produced in many different ways, not just by the sun and stars. The light that strikes the eye is known only through the energy it releases—which is translated into a physical image—that appears to be composed of light. But that light is a composition of the mind; we never see the light itself. God did not create the sun on the first day of creation. The first light may have been a reflection of God Himself.

On the fourth day of Creation, God caused the light of the Sun to rule (govern) the day and the light of the moon and the stars to rule the night. Psalms 19:1 says *The heavens declare the glory of God; the skies proclaim the work of His hands*. God's lights in the skies unquestionably declare God's glory. The study of light helps us to understand and appreciate the world God has created.

God said, Let there be lights in the expanse of heaven to separate between the day and the night. And God made two great lights, the greater light for dominion in the day, and the lesser light for dominion at night, as well as the stars. (Genesis 1:14-16)

¹Blue text refers to Internet link.

The opening lines of Genesis 1 stand in stark contrast to most ancient religions in rejecting any religious status to the sun, moon, and stars. In Genesis the heavenly bodies are not divine; they are merely “light-bearers,” placed in the sky to serve God’s purposes, the way a woman hangs a lantern to light the porch. (Pearcey, N. 1994).

Look up the following verses about the creation of light: [Genesis 1:3-5](#); [Psalms 74:16](#); [Isaiah 45:7](#); [II Corinthians 4:6](#). Research the creation of light . Use any resource (an encyclopedia, a non-fiction book, or the Internet). We recommend the following:

Book



[God’s Lamp, Man’s Light - Mysteries of the Menorah](#) ♥

Read: “The Light Motif” (59-63). See the description of this book in the [Resources section](#).

Internet Sources



[Day Four: 24 hours?](#)

Description: An answer to the question: Was the fourth day of creation twenty-four hours long? from ChristianAnswers.net.
<http://christiananswers.net/q-eden/edn-c020.html>



[How Long was a Day in Genesis 1?](#)

Description: Answer the question
http://www.creationevidence.org/cemframes.html?http%3A//www.creationevidence.org/fa_questions/let.html



[The Big Picture](#)

Description: Article by Ken Ham explaining the importance of understanding and believing in six days of creation.
http://answersingenesis.org/home/area/magazines/docs/v23n2_big_picture.asp



[In The Beginning - A Look at Genesis 1:1-3](#)

Description: Word study on Genesis 1:1-3.
http://www.eomtc.com/aibi/gen1_3.htm



[Turning on the Light - Genesis 1:1-4](#)

Description: Sermon on Genesis 1:1-4.
http://www.nccmalcolm.org/Sermon_Archive/Genesis/Genesis1_1-4.html

♥ Resource in several HOW Units. ◉ Key Resource

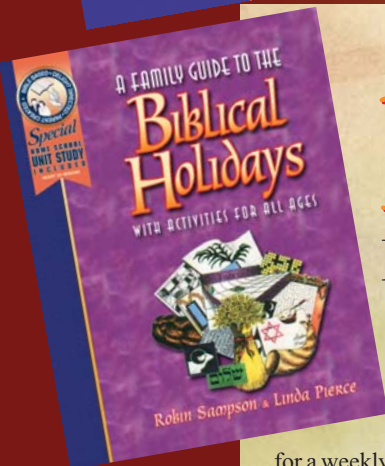
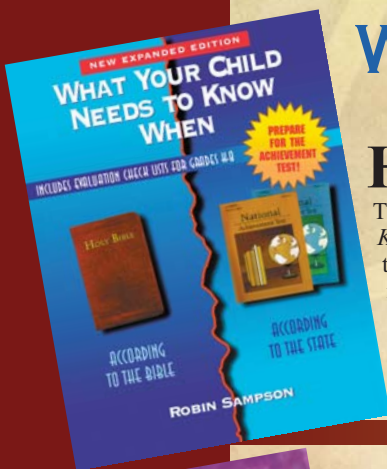
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