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Chapter 1 : Natural and Artificial Light | SCIENCE | Pinterest | Science, Science activities and Nature

Natural And Artificial Light. Showing top 8 worksheets in the category - Natural And Artificial Light. Some of the worksheets displayed are Light sources, Grade 4 c2, How bright, Table of contents, Nature of science, Psd, Natural selection teacher handout, Lesson 1 natural resources on earth 9.

Sun is the primary source of natural light, and lightbulbs or lamps are the artificial sources. Light is a form of electromagnetic energy that, in the case of natural light, comes from the sun as the source and, in case of artificial light, illuminates via energy from another source. No matter what the source, light has an impact on life on earth as a whole. Sun is the most powerful source of light. Properties of Natural Light credit: Natural light is self-generated and comes in a spectrum of colors â€" the visible colors of the rays we experience. The color spectrum contains light with shorter wavelengths near the violet on one end and light with higher wavelength near the red. Called ultraviolet and infrared rays respectively, these rays are not visible to us. The complete spectrum of light from the natural source is ideal for plant and animal life on earth. Plants and animals thrive on natural light. The darkness that follows photo activity in organisms helps rejuvenate and repair life forms at the cellular level. Overexposure, on the other hand, has detrimental effects on living organism. The harmful ultraviolet rays can cause conditions such as skin cancer and cataracts while also damaging the texture of the skin. For plants, the need for light and dark periods helps balance the cell activity in terms of growth and repair. Sunlight is also harmful since we cannot alter or control it to suit our condition. Properties of Artificial Light credit: Artificial light is man-made light generated from another energy source. The advantage with this light lies in the fact that we can control it at our own will. We can monitor the intensity, quantity and quality of light to suit each situation. Artificial light does not have as broad a spectrum of colors and wavelengths as natural light; hence, it is not as beneficial. Since the light has comparatively poorer quality, its effect on plant and animal life is also not as beneficial. Plants and animals exposed for prolonged periods to artificial light tend to yield poorer quality of life forms in plants and cause cellular degeneration or death in living beings. Differences Between Natural and Artificial Light credit: Artificial is used to illuminate during darkness. Natural light consists of electromagnetic energy generated from the source; it contains a healthy spectrum of colors and wavelengths well suited for life on earth. Artificial light uses another energy source to generate light that is not as versatile as natural light and has a detrimental effect on plant and animal life when exposed for prolonged periods. Moderate exposure to all aspects of natural light is ideal for most life on earth; the same does not apply to artificial light, which generally serves a purpose of illumination during darkness. Benefits of Natural Light credit: Natural light radiates a perfect blend of colors. An adequate amount of exposure to the invisible rays is also a healthy way for plants and animals to thrive. The intensity and the range of radiation that life forms receive from natural light are hard to mimic in an artificial setting. The alternating cycles of day and night help plant and animals perform cellular rejuvenation and repair which is essential for proper functionality.

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Chapter 2 : Light Sources | Worksheet | calendrierdelascience.com

Natural Light. Showing top 8 worksheets in the category - Natural Light. Some of the worksheets displayed are Lesson 1 natural resources on earth 9, Light sources, Sound energy unit grade 4, Light and sound, Natural or man made, Grade 4 c2, Primary energy infobook activities, Energy all around us light heat and sound.

Natural or Man Made? Worksheet Natural or Man Made? Slideshow Are light sources natural or man made? I want to activate student prior knowledge by reminding the students what they learned in our previous lesson about light, "Light it up! Boys and girls we have learned all about light sources. We know that a light source is a fancy word for where the light is coming from. Can any one share some light sources that you know about? I have my students share light sources light flash light, light bulb, the moon, stars, the sun, etc. I show my students the vocabulary words natural and man made. I tell the children that we will be learning more about light sources but we will have to first learn theses new words. Natural is the word for something that is from nature and man made is something that is made by people. I hold up a photograph of a flower from a garden and a photograph of a drawing of flower. Boys and girls I want to you to observe these two photographs like a scientist would. Look very closely and study the two pictures. Please point to the picture that is natural. I check to see if the children are pointing to the photo with the flower from the garden. Now I want you to point to the photo that is man-made. This will activate prior knowledge and prepare them for the thinking and wondering that will happen throughout the lesson. While they are exploring I will walk around and confer with my young students. I will be recording my observations on my clipboard. Boys and girls, today we are going to answer a question just like scientists. The question we are going to explore is "Are light sources man-made or natural? You will be observing different light sources. You will have to decide if you think this light source is natural or man made. You will have to use your schema, that is what you already know about things that are man made and things that are natural. You will have to use that information to help you decide if the light source is man made or natural. Then you will record your thinking on this recording sheet. Are you ready to answer our question today? Conferring is the process of listening and recording the work the student or students are doing and then compliment the work. As I listen, I research a teaching point and then work to provide clarification through questioning, modeling and re-teaching. The students respond with, "I think the sun is natural because it is a part of nature so I will put an X here. As I hear these comments I may say, "Great! What does a lamp need for it to produce light? Conferring is a great formative assessment tool will help guide the learning in my classroom. During the conferring I will continue to use the vocabulary: Slideshow Interactive Whiteboard Slideshow.

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Chapter 3 : Natural And Artificial Sources Of Light Worksheets - Lesson Worksheets

Natural And Artificial Sources Of Light. Showing top 8 worksheets in the category - Natural And Artificial Sources Of Light. Some of the worksheets displayed are Light sources, Light sources, 4 weeks overview in this unit students will recognize, Psd, Grade 4 c2, Name subject year 3 science date unit look at the, Lesson 1 natural resources on earth 9, How bright.

Thank you for your input. How does the incadescent light bulb work? Why does it produce heat? Plants grow through a process called photosynthesis. This requires sunlight to take place. The chlorophyll located in the chloroplast of the plant cells grabs sunlight and starts the reactions such as sugar that are needed to make the plant grow. Water is also needed in the growth equation, because like humans and animals, plants need moisture to quench their thirst. While it is somewhat debatable as to who invented the light bulb, it has become common knowledge that we associate the light bulb with Thomas Edison. He created an incadescent light bulb that outsmarted his fellow inventors because it was fully integrated with an effective incadescent material, a higher vacuum than others, and a high resistance which made powering up the lightbulb with electricity economical. First we will pot the beans. Use your finger and make a small hole about 2 inches deep into the soil of each of the 2 pots. Put a bean into each hole and cover it up with soil. Give it a pat. Label each pot with the type of light it will receive- sunlight or light bulb light. Take one pot and put it under a light bulb and turn it on. Set it on timer so that it can mimic the time the sun rises and sets daily. Take the other pot and put it in a place with lots of bright sunlight. Give the plants their first taste of water. Just give them a little water. Do not overwater them with too much! You will water them the same amount at least daily or when they are dry. You can test if they are getting too much water by just sticking your finger to the side of the bean and into the soil. The soil should be a nice dampness or dry. The beans should germinate in days, depending on location and conditions. After this, you should start monitoring their daily growth for 2 weeks and measure how tall the sprout is for each sample. Which one is growing at a faster rate? Is there any difference? Any other things you see like a difference in plant healthiness? After 2 weeks, analyze your results. Incadescent light bulb; filament; plant growth; heat; sunlight; photosynthesis References:

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Chapter 4 : Natural And Artificial Sources Of Light Worksheets - Printable Worksheets

Natural Vs Artificial Light Displaying top 8 worksheets found for - Natural Vs Artificial Light. Some of the worksheets for this concept are Grade 4 c2, Natural or man made, Background radiation natural versus man made, Nature of science, Natural selection teacher handout, 4 weeks overview in this unit students will recognize, Lesson 1 natural.

What is the size of the shadow when the source of light and the object is moved away from each other? How shadow is formed? Explain in your own words. What is lateral inversion? What do you understand by translucent material? Explain with an activity that light travels in straight line. Why light is important role in our life. Light and Shadow - Practice Page 1 Light and Shadow Light is form of energy and is very important in all aspects of our lives. In the absence of light plants would not able to grow as they require sunlight to prepare their food and in absence of plants, animal and human would have nothing to eat. We see with our eyes but we cannot see anything when there is no light. We have noticed that in complete darkness no object is visible to us. Sources of light Light travels from a light source. Natural light Sun is the main source of natural light. Other forms of natural light are other stars and moon. Star provides very less amount of light at night because they are very far from earth compared to sun. Moon, especially full moon provides little light at night but light from the moon is just light reflected from the sun. Some animal also emit their own lights such as glow-worms, fireflies and some fish. Artificial light Source of artificial light are burning wood, candles, earthen lamps. Candle are made of wax, oil and wick are used in lamp to burn. Now days we use electric bulb, tube and lamp as source of light. Luminous bodies are those which emit light of their own such as sun, stars and bulb. Non luminous bodies are those which do not have their own light such as moon, book etc. Non luminous object are visible to us when light from luminous object falls on them. It travels very fast at the speed of , km in a second! Light does not bend, it can only be blocked. Light continue to travel in straight line until it hits something else. It is evident from shadow formation that light travels in straight line. Activity1 Place an opaque object in the path of light. What do you observe? We see dark area on other side because opaque object has blocked the light from reaching to the other side. The dark area formed is the shadow. Activity2 Take 4 square card of same size with hole punched in the center of the cards. Place all 4 cards vertically on a table with the help of modeling clay at an equal distance from each other such that holes of all 4 cards are in alignment. Now turn off the light in the room and place flashlight at one end of the row of square cards placed on the table. We observe that the holes are in alignment and the light travels in a straight line. Light covers a large area when the source of light is far off. Similarly sun shines high up in the sky and spreads its light all over. Light reflects when it hits a surface When light rays hits on any surface, it bounces back it reflect back. We are able to see objects because light rays enter our eyes after bouncing off rough surface. A rough surface reflects or bounces off light in all directions whereas smooth and polished surface bounces off light in one direction. Therefore, mirrors are good reflectors. Transparency of materials Material that allows light to pass through them in straight lines is called transparent material. Object on other side of transparent material is clearly visible. Material that allows some light to pass through them is called translucent material. Object on other side of translucent material is not clearly visible. Tissue paper, frosted glass, colored glass, butter paper, colored plastic. Material that does not allow any light to pass through them is called opaque material. Shadow Shadow is formed when light is not able to pass through an opaque object. When an opaque object come in the path of the light, the light falling on that object cannot reach the other side, therefore, that particular region becomes dark. The rest of the area is lit as there is nothing to stop the light from passing through. The object must be opaque or translucent to make a shadow. Opaque objects make dark shadows and translucent objects make faint shadows. A transparent object will not make any shadow, as all light will pass through it. If we bring an object closer to the light source, the shadow becomes bigger as it blocks more of the light rays and if we take an object away from light source, the shadow becomes smaller as it blocks less amount of light. The Sun casts long shadows in the morning and evening as the Sun is lowest in

the sky. The Sun casts the shortest shadows at midday, when the Sun is highest in the sky. Lateral Inversion Lateral inversion is the reversal of image when placed against plain mirror. This implies that object on the right side appears on the left side in the mirror.

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Chapter 5 : Shining Light on What Natural Light Does For Your Body - Sustainability

Students identify natural and artificial light sources and differentiate between reflectors and producers. They sort index cards listing light sources into categories and add their own examples to the lists.

However, a lamp must satisfy a number of necessary criteria in order to claim these properties. Full spectrum light bulbs are designed to emit light corresponding mainly to the visible portion of the solar spectrum. In order to have a more accurate reproduction of the sunlight spectrum, these lamps need to produce infrared and ultraviolet light as well. In practice, however, no lamp can accurately reproduce the sunlight spectrum. Neither the continuous wavelength spectrum, nor the intensity of each wavelength, can be matched exactly. However, the artificial light of some bulbs can resemble the natural balanced light and have the same beneficial effect on humans. This ability is measured with an index rating ranging from 0 to , where the value corresponds to the color rendering of sunlight. A bulb with a minimum of 90 CRI is thought to reproduce sunlight quite satisfactorily. The Color Temperature is another quantitative measure indicating the type of spectrum. However, there are available commercial bulbs that approximate this spectrum to a very satisfactory degree. Although incandescent light provides us with a smooth and continuous spectrum, a Watt standard incandescent bulb has a color temperature of only K with a high proportion of yellow and red color. A type of incandescent bulb coated with neodymium is marketed as sunshine lamp, although the color temperature is far less than the limit of K. However, it is important to note that the visual spectrum of the human eye does not fit the solar spectrum. So, these lamps may actually be beneficial, although not matching the sunlight. They are available in a wide range of temperatures reaching the values of and K as well. Fluorescent lamps display continuous spectra combined with discrete lines or spikes. The availability of such a wide range of CFLs is due to the mix of phosphors inside the tube. Other types of lamps, such as the Mercury-Vapor lamps and High Intensity Discharge lamps HID , may have good color temperature but their light spectrum appears fractured. The use of full spectrum lightning has a range of benefits, as claimed by the manufactures and possibly other supporters of this technology. The degree of these benefits depends on the manufacturing quality and the matching degree to the solar spectrum: People that suffer from SAD or Seasonal Affective Disorder, find overcast days and low intensity light extremely depressive. These people are in need of light therapy in order to help them feel more energetic and vigorous. Sunlight lamps are thought to improve a condition like this. It is used in museums, art galleries and similar places where color discrepancies are very important in enhancing the aesthetic effect of the art works being displayed. When choosing full spectrum bulbs, their specifications should be thoroughly examined. First of all, the lighting design engineer or the consumer must pay attention to the spectrum graph of the lamp. The spectrum must be as continuous as possible, without any discontinuities or spikes on the line of the spectrum graph. These lamps also emit infrared and ultraviolet wavelengths, which should be blocked by protective filters, in order to be safe for commercial use. Finally, the inexpensive and very popular "cool white" bulbs have low values of CRI and color temperature. They are not true full spectrum light bulbs and can cause eyestrain problems.

Chapter 6 : The Difference Between Natural & Artificial Light | Home Guides | SF Gate

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Chapter 7 : Light Sort | Science | Pinterest | Science, First grade science and Teaching science

Who We Are. Primary Leap was founded in and is run by a small team of highly qualified teachers and online

professionals. We aim to provide teachers and parents with a wide variety of subjects and topics that make learning fun for kids.

Chapter 8 : Do Plants Grow Better in Sunlight or Artificial Light? | Science project | calendrierdelascience.c

Have your students match the images to whether the light source is natural or artificial-simple but effective classroom activity! Other versions? This resource is available in Standard and Super Eco Black and White.

Chapter 9 : What Consumer Grade Light Bulbs are most like the Sunlight Spectrum?

Students will learn that natural light sources are animals, the sun and the northern lights while man made light sources are things like flashlights, light bulbs and electronic screens. Students will record their observations and evidence in their scientific journals.