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Solar system scope vr

Reading time: 5 minutesIf you're looking into installing solar power, one of the biggest questions will be what the size of your solar panel should be. It is common practice to install enough panels to cover as close to 100 percent of your electricity needs as possible, as this is how you will maximize your savings. But, are there any benefits to the size of your solar panel system to generate more electricity than you currently need? For most people, the answer is no; but, there are certainly situations in which it is a good idea to install a larger system than you need now. Read on to find out why you should and shouldn't oversize your solar panel system. When someone considers an oversized solar panel system, it can mean two different things: Installing more panels than they need to meet their electricity needs Installing a solar panel system that has a higher power rating than the solar inverter it's connected to this article discusses first; For more information on the oversized solar cell relative to the size of its inverter, take a look at our article on solar inverter sizes. Why you shouldn't install more solar panels than you need an oversized solar panel system won't reap big benefits for most people, especially if you don't use the extra electricity your system generates. Here are some of the main reasons why you shouldn't add more panels than you need. Utilities will not pay you extra for the extra electricity Most utilities companies offering clean accounting. With clean accounting, your utility company will credit your bill for any excess electricity generated from your solar power system. While a larger system can mean more net credit accounting in your account, you are not going to realize the benefit of these loans if you use them down the line. If you do not use loans, they will either exist as a current loan to your account or expire after a certain amount of time. The specifics of how long you will keep a clean credit accounting depends on the policies of your utility company. A common misconception is that utilities will pay money for any surplus electricity generated from your solar panel system. However, the vast majority of utility companies will not pay people for net accounting loans. On the rare occasions that your utility will be repurchasing additional net accounting credits, the rate they will pay for them will be significantly lower than what you originally received for a net credit accounting (which is usually the retail price). Ultimately, the additional upfront cost of installing oversized solar panels won't be worth it if you can't take advantage of this extra electricity. The added value will only extend the payback period for going solar. Your solar panel system will cost more upfront. Larger solar panel systems will cost more upfront. This is because larger systems tend to require more panels, potentially more inverter, extra racks, and more labor from your installer. Installer. The added value will depend on how many watts you add to your solar panel system, but it's usually not worth it if you don't use all the electricity generated. Difficult process of joining When you apply to connect your solar panel system to the network, utilities will review your past electricity consumption to see if the system is offered size accordingly. Utilities across the country often refuse to request accession when the proposed system is much larger than your history of use shows. Some utility companies will be stricter on allowing an oversized system than others, and may make an exception if you plan on an oversized for logical reason. Always check with the installer to see if your utility lets the oversized, and if so, to what extent. Additional incentives may not cost extra costs! If you install a larger system and pay more money, you will probably be eligible for higher upfront incentives. Most discounts and tax breaks are either calculated as a percentage of the total cost or depending on the size of your system. That being said, some of these incentives also have a limit on the total amount you can claim. For example, New York has a 25% state tax credit, which is capped at \$5,000. At some point, even if you install more panels and pay a higher cost, you are not going to receive higher amounts of incentives. Even for incentives that are not limited (e.g. 26% federal ITC), the additional cost of installing more panels will not cost an additional amount of incentive. In addition, there are some performance-based incentives (PBIs) where your amount of incentives directly correlates with how much electricity you produce. For example, in states with Solar Renewable Energy Certificates (SRECs), you will earn more in SREC revenue with a larger system because you will generate more kWh and more certificates. At this point the question arises whether the added value of the SREC is greater than the additional initial cost of more panels. For most current SREC markets, the answer is no. Why you should install a larger solar panel system than you currently need For most customers, the added value and complications of the oversized solar panel system will not be worth it. That being said, there are some cases where you want to outsize your system in advance. Buying an electric car If you have plans to purchase an electric car in the near future, it is a good idea to install a large solar panel system so that you can use the power of the sun to charge the commute. The number of solar panels you will need to add to your Will depend on a number of factors, including the type of EV, how the electricity it will use, and how often you will manage it. Going Transition If you're going solar and have old appliances in your home, it's a great time to consider switching to new efficient, electrical appliances and stepping them up with extra solar panels. You can move away from using traditional fuel sources and instead use solar panels to power the new air conditioning system, air source heat pumps, refrigerators, and more. Adding a hot tub or heating pool are other common reasons for needing more electricity down the road. By adding more solar panels in anticipation of these updates, you can avoid adding a solar project in the future. Supplements to your home Another are the reason to install more panels than you currently need if you are planning new additions to your home. This means either adding more people living in your home or expanding the living space with new additions like garage, smoke, or a finished basement. The more your home gets, both in terms of square meters and people, the more electricity you are likely to use. By installing more solar panels upfront, you can be prepared for this increase and use and continue to save as much money as possible on electricity bills. Shop for Solar Energy At EnergySage Why you are looking to outsize your solar panel system or not, you can use The EnergySage Solar Marketplace to get free quotes to install solar on your home or business. If you plan to install more panels than you need, just pay attention to your score along with the reason why you are looking for an oversized of your system, so that installers can offer the best solar solution for your property. Scientific projects for children: the incredible universe will take you to the worlds that are just waiting for its discovery. With simple instructions and everyday materials, you'll learn more about constellations with children. You can start with a star looking and watching such stars - and then make a planetarium or a star theater to bring what you've learned home. Learn more about the planets and the brightness of the star, as well as make astrolabe. And these are just some of the scientific projects that you can try! Follow the links below to find science projects for children: an incredible universe that you can do with children: Make a planetarium Use planetarium to show the constellations on the wall in your home. Star Gazing Start by finding the Northern Star and then seeing more. Umbrella Full Stars Turn your umbrella in a stellar private planetarium. The star of the theater Meik constellations punch-outs, followed by the Star Theater. Scale down the solar systems solo peas, fruits and nuts in a true scale model of the solar system. Make Astrolabe Track the position of the stars using the simple tool you make. Shooting Stars Find Right and get ready for the fun of the meteor shower. Space Explorer Mobile Explore details the space with the mobile you make and hang. Planetary Walk Get it the best feeling of the solar system, taking a planetary walk. The Star-Spiced The Sky Observer has a closer look at the night sky, and record what that See. Find Planets Unity to find Venus, Jupiter and other wandering stars. Star brightness detector S use this cellophane detector to classify the brightness of the stars. Paint Speck Constellations Our specks paint in your own set of constellations. Go to the next page of science projects for kids: An incredible universe to learn how you can make a planetarium for stellar shows in your home. For more interesting scientific projects for kids, check out: Content Make a Planetarium and you can create an idea of the night sky in your home. You will find simple instructions in this scientific project for children: an incredible universe. ©2007 Publications International, Ltd. Create a planetarium in your room. What you need: A Shoe Box Scissors Star chart Pen or a Pencil Pin Tape Lantern Books Step 1: At one end of the shoe box, cut a hole just big enough for a flashlight to fit in. Step 2: Cut a rectangle from the other end of the shoebox. Step 3: Using a star guide, draw dots on a piece of paper to represent the stars of the constellation, and pierce the holes at the points with a pin. Do it for several different constellations. Step 4: Put one of the sheets of paper over the rectangular hole in the box, and tape it in place. Step 5: Support the flashlight with a stack of books, and put it in a hole at the other end of the box. Step 6: In a darkened room, turn on the flashlight and project the constellation onto the wall. Quiz your friends or family to see if they can identify different constellations. Go to the next page of scientific projects for kids: an incredible universe for some simple steps to get more out of your star-gazing. For more interesting scientific projects for kids, check out: Advertising Star Looking is an easy way to teach yourself how to recognize stars and constellations. Collect a few items, wait for clear night, and you'll be ready for this science project for kids: an incredible universe. What you need: Star chart Clear night Flashlight piece of red cellophane Step 1: Get a stellar graph, and learn about the night sky. You can find one of the many books in the library. Step 2: On a clear night, go outside and see if you can find constellations in the sky. The stars move throughout the year, so you will see different constellations at different times of the year. Step 3: Look for a starting point for a stellar look, usually the Northern Star, also called Polaris. It's the only star that doesn't move. To find the Northern Star, find the Little Dipper. The last star on his handle is the Northern Star. Another way to find the Northern Star is to find the Big Dipper and trace the imaginary line from the two stars at the front of the bear leading up from the bear. Northern Star along this line. Step 4: Once you have found the Northern Star, try to find other constellations. Use a flashlight to mark your star chart. (The cover with red cellophane, so you can still see the stars when you look back at the sky.) Keep reading on our page to find out how you can fill an umbrella with constellations. For more interesting scientific projects for kids, check out: Advertising Create your own private planetarium with an umbrella full of constellations. Find them, tag them, and save them to look for another day. Have fun with this children's science project: an incredible universe. ©2007 Publications International, Ltd. Mark the constellation inside your umbrella. What you need: A clear night when the moon is invisible or a very small black umbrella (which is ok to mark in chalk) White Chalk Star Chart Step 1: Open the umbrella, and hold it over your head. Step 2: Get the tip of the umbrella on the North Star. (Use a star chart to find the North Star.) Step 3: Look at the bottom of the umbrella. You can see the stars shining to the end. Step 4: Use white chalk to mark on the umbrella every place where you see the star. (It will be easier if someone else holds an umbrella for you.) If you can't see stars through an umbrella, just look into the sky and tag the stars in the same position as you see them in the sky. Step 5: When you've tagged all the stars you can see, take an umbrella inside. Compare your marks with the star chart. Which stars and constellations do you mention? Step 6: Draw lines connecting constellations and label them by their names. Go to the next page to find out how you can turn a constellation of punch-outs into a star theater. For more interesting scientific projects for kids, check out: Advertising You Will Be a Star When You Learn the Shapes of Some Constellations and Put on a Show for Family With This Star Theater! ©2007 Publications International, Ltd. Turn Constellations Kick-outs into the star theater. What you need: Empty steel jars (such as soup or coffee cans) Pliers Tracing paper Book constellations Pen Scissors Pin Masking tape Hammer Thin trim nails Flashlight Black fabric (optional) Step 1: Clean the cans, and use pliers to smooth out any sharp points. Step 2: Put the end can on the paper to track, and draw circles with pencil. Step 3: Put a marked trail on the picture of the constellation in the book and trace the constellation within each circle, using the dots to represent the stars. If the constellation does not fit in a circle, you can try to draw it with a free hand. Step 4: Cut out the circles, and use a pin to poke the hole where each star is marked. Step 5: Turn each circle so that the constellation is back, and glue one to the closed end of the steel side. Step 6: Use a hammer and a thin finishing nail to punch the hole through each pin hole. (Always be careful when using a hammer!) Remove the paper. Step 7: Write the name of each constellation on a piece of camouflage tape and attach each piece of camouflage tape to the can it represents. This is so that you can remember which constellation is which. Step 8: Glitter the flashlight at the open end shine a constellation on the ceiling. You can envelop the open end in black fabric to close close light when you put on a star show for your family. Have you ever wondered how big the solar system is? Go to the next page of children's science projects: an incredible universe to learn by making a large-scale model of the solar system. For more interesting scientific projects for kids, check out: Advertising Scale Down the Solar System with a scale model of peas, fruits and nuts. You'll have a better sense of the vast size of the solar system if you try this science project for kids: the incredible universe. ©2007 Publications International, Ltd. Make your own scale model of the solar system. You've probably seen a lot of drawings and diagrams of the solar system. But for the drawings to fit on a piece of paper, artists must bring the planets closer than they really are. In this activity you will make a large-scale model of the solar system. You'd be surprised to see how much more some planets are than others, and how far apart some of them are. What you need: Ball about 27 inches in diameter (like a beach ball) 5 peas 1 orange 1 tangerine 2 walnut tape measure Large open space Step 1: Make your model in a large open space that will represent space. Step 2: Put a beach ball or other big ball at one end of the space. The ball is the sun. Step 3: Place other objects, as shown in the chart below. (Remember to measure each planet from the sun.) Planet Object Distance from the Sun Mercury Pea 1 3/4 inch Venus Pea 3 1/4 inch Earth Pea 4 1/2 inch Mars Pea 7 inches Jupiter Orange 2 feet Saturn Tangerin 3 feet, 7 inches Uranus Walnut 7 feet, 3 inches Neptune Walnut 11 feet, 4 inches Pluto Pea 14 feet, 10 inches Go to the next page to learn how you can make astrolabe and measure the position of the stars. For more interesting scientific projects for kids, check out: Advertising Learn how to measure the position of stars when you do astrolabes. You will use a tool that astronomers and sailors have used for centuries when you are doing this scientific project for children: the incredible universe. ©2007 Publications International, Ltd. Make astrolabe to track stars. When scientists describe a star's position in the sky, they measure its position relative to the horizon. Astrolabe measures how high above the horizon the star is in degrees. What you need: String Plastic protractor weight (puck, rock, or fishing weight) Pen and paper Step 1: Tie a 12-inch piece of string into a hole in the middle of the crossbar on the protractor. Tie the weight to the other end. Step 2: Keep the protractor so that the curved part is down and the zero degree sign is closest to you. Step 3: Sit on the ground and look along the flat edge of the protractor with your eye at zero. Put a flat edge on the star, the position you want to measure. Step 4: If you have a star at the end of your look, hold a line against the side Step 5: Notice the extent to which the sign is a string of crosses. Write it down in a notebook. That's the number you how many degrees above the horizon is your star. Step 6: Take readings for multiple stars. Step 7: Go back every 30 minutes and read new readings. Notice the picture in which the stars seem to move across the sky as the earth turns. Have you ever seen a soft star? Go to the next page of scientific projects for children: the incredible universe to learn as much as you can. For more interesting scientific projects for children, check out: Advertising Nothing is not as unexpected and breathtaking as the softs of stars, or meteors. Find out when and where you can scan the sky for meteor showers in this scientific project for kids: The Incredible Universe. ©2007 Publications International, Ltd. Track shooting stars, or meteors, across the sky. The cosmos is full of tiny planetary spheres known as asteroids. That is, they are tiny by cosmic standards; A very small asteroid can fit inside your home. Millions of asteroid fragments can enter the Earth's atmosphere. When one of these fragments approaches the Earth and burns, it makes a band of light that can be seen in the night sky. This band is called a meteorite or a soft star. Most of these fragments are completely burned in the atmosphere. But from time to time a man lands on Earth. When this happens, it's called a meteorite. Sky-watchers have learned that there are certain times and places when many meteors can be seen. These events are called meteor showers, and they should be late. What you need: Clear night sky - and perhaps the afternoon napa place from the city lights Star map Step 1: Check out the chart below to find the next time of year when you can see meteor showers. Step 2: Use a star map to find the listed places. Step 3: Find a place away from the city lights on a very clear night. (The best time to see meteors after midnight.) Step 4: Be very still, look at the sky, and see what happens. When where it can be seen in the sky January 1-3 East Skies, between Bootes and Draco. It's called the quadrantid meteor shower, and it's the flashiest one of the year! April 20-22 Northeast skies, between Vega and Hercules. May 4-6 East Skies, southwest of Pegasus Square. August 10-13 northeast skies, around Perseus. Called the Perseids, it is the most famous meteor shower and is only quadrantids by the number of meteors. October 20-23 Eastern Sky, between Orion and Gemini. November 3-10 northeast skies, between Taurus, Auriga and Perseus. December 10-12 Eastern Sky, in Gemini. Go to the next page to see how you can be a space explorer with the mobile you make yourself. For more interesting scientific projects for children, check out: Advertising Imagine what it would be like to swim among planets, stars and comets! If you hang a mobile space explorer in your room, you can look and imagine that you are there. It's easy with this scientific project Children: An incredible universe. ©2007 Publications International, Ltd. Travel through the planets with a mobile phone. What you'll need: or heavy paper Decorations (paint, aluminum foil, or glitter) Pin Thread or nylon line 2 dowel rods or sticks Step 1: Cut and color shapes to make planets, stars, spaceships and other objects found in outer space. Use interesting materials such as glowing dark paint, aluminum foil, and glitter. Also use your imagination, and include anything you think can be found in space: Alien Monsters? Giant dough nuts? It's your universe! Step 2: Use a pin to make a small hole in every shape you've made. Step 3: Tie a piece of thread or nylon line through each hole. Step 4: Cross one dowel rod over another at right angles. Step 5: Tie the dowels together and then tie your pieces to the dowels. Tie different shapes at different heights. Step 6: Tie a strong thread or a piece of nylon line around the dowels to hang your mobile phone. You've got a head in the stars! Get a better idea of the size of the solar system by taking a planetary walk. Find out how the next page of children's science projects: the incredible universe. For more interesting scientific projects for kids, check out: Advertise Walk through the Solar System in just over 1000 steps on this planetary walk! Have you got a head in the stars? Get a better idea of the size of the solar system by taking a planetary walk. Find out how the next page of children's science projects: the incredible universe. What you need: Ball about 8 inches in diameter 2 pins with small round heads 1 pin with a very small round head 2 peppers 1 small walnut 1 acorn 2 peanut index of Glue cards or ribbon Bright markers Yardstick Big Park or school grounds Step 1: Ball Use for the sun. Step 2: Glue or tape the planet on individual index maps, and use bright markers to label them as follows: Big pinheads Mercury and Mars The smaller contact head of Pluto. Pepper Venus and Earth. Walnut is Jupiter. Acorn Saturn. Peanuts Neptune and Uranus. Step 3: Use your own step as a unit of measurement. With the criterion, the practice of taking action is one yard long. Each step will represent 3.6 million miles! Step 4: Set your sun on the edge of a large park or on the sidewalk of a long, straight street. Step 5: Take 10 steps one yard from the sun and place a map of Mercury. Does that seem far away? Proportionately, he's in the right place. Mercury is about 36 million miles from the Sun. Step 6: Take nine more steps and install Venus. Step 7: Take seven steps and lay down the Earth. Step 8: Take 14 steps and put Mars down. You've already taken 40 steps from the sun. Earth and Mars look so lonely from the Sun and other planets. However, this is how they are in space. Step 9: From Mars, take 95 steps and install Jupiter. From Jupiter, it's 112 steps to Saturn. Another 249 steps will take you to Uranus. You're halfway through the solar system! Step 10: goes Neptune, which is 281 pace from Uranus. Step 11: From Neptune, take 242 steps, and put your latest map, Pluto. You've walked 1,019 steps, steps, just over half a mile. The sun probably looks like a speck if you can see it at all. If you were standing on the surface of Pluto, the sun would look about as bright as the other stars around it. Pluto is, on average, 3.66 trillion miles from the Sun! Stars may look the same, but they don't. Keep reading on the next page to find out how you can become a star night observer. For more interesting scientific projects for kids, check out: Advertising Stars may look the same, but if you become a stellar night observer, you'll see that they aren't. Are all stars of the same color and brightness? Of course not. Try this science project for children on an incredible universe and you will see. Each star has dozens of distinctive qualities and characteristics depending on age, distance and light pollution. What you need: A clear night Notebook Pencil or pen Step 1: A time to explore the stary night, and write down notes of the different colors and brightness levels you see. Step 2: See if you can find out why some stars seem bigger, brighter or more colorful than others. Step 3: Hit the library or your family encyclopedia to find out if all the lights in the sky are actually stars at all. This bright star in the morning sky may not be a star at all, but a planet Venus. Go to the next page of scientific projects for children: the incredible universe to learn how to detect planets in the sky. For more interesting scientific projects for children, check out: Can you spot the planets in the night sky? This science project for children: an incredible universe can definitely help. Did you know that of the nine planets in our solar system, five (except the Earth) can be seen with the naked eye? ©2007 Publications International, Ltd. Find Venus and other planets in the night sky. What you'll need: Clear night sky Binoculars Telescope, if desired Star Charts People in ancient times called planets wandering stars because these bright objects seem to change position while other stars seemed to remain in place. Try to discover the errant stars yourself. You only need eyes, but binoculars or a telescope offers the best view. Step 1: Go outside with binoculars and look at the sky. Start with Venus, the easiest planet to find. Look in the western sky just after sunset. You can also spot it in the early morning sky just before sunrise. Step 2: Do research on where to find the rest of the planets that are harder to find. You can consult an almanac or a planetary table to track their movements. Or you can see a local newspaper or astronomy magazine for information on which planets are visible. Step 3: Use a star chart to find the constellation where the planet will be. The planets seem to move through the constellations associated with the zodiac, so familiarize yourself with Constellations. Step 4: Once you notice a bright object that doesn't seem to belong to a constellation, try observing it through binoculars or a telescope. With most homes at home You can see the red spot on Jupiter and the rings of Saturn. Go to the next page to find out how you can make a star brightness detector. For more interesting scientific projects for children, check out: Some stars seem to be brighter than others, but how bright are they? This simple star brightness detector will give you a way to measure and classify the brightness of stars. Overlapping cellophane strips are the key to this scientific project for children: an incredible universe. ©2007 Publications International, Ltd. Using cellophane stripes to detect star brightness. What you need: Clear Night Sky Scissors Cardboard Ruler Colored Cellophane Ribbon Step 1: Cut four 1-3/4 inch rectangles next to each other on a piece of cardboard. Step 2: Tape one sheet of cellophane over all four rectangles. Step 3: Tape an overlapping sheet of cellophane over the last three rectangles. Step 4: Tape more cellophane in the last two rectangles, and finally the last overlapping sheet of cellophane on the last rectangle only. Step 5: View the night sky with a brightness detector. Note that you can see more stars when you look through fewer cellophane sheets. Only light from the brightest stars is able to penetrate all four sheets. Step 6: Try to find a star that you can see with one sheet, but not with two sheets. Call it one star. Step 7: Find a star you can see with two sheets, but not three. Call it two stars. Step 8: Find a star can be seen with three sheets, but not four, and call it three stars. Step 9: Call any star you can see through all four sheets of four stars. Step 10: Write down the number of each type of star you see. What type can you find most often? The brightness of a star on Earth depends on the amount of light a star pours out and how far away it is from Earth. Keep reading on the next page to find out how you can get creative with your own paint speck constellations. For more interesting scientific projects for children, check out: Make your own stary sky dotted with paint speck constellations. You'll be able to be creative with this scientific project for kids: The Incredible Universe. ©2007 Publications International, Ltd. Create your own paint speck constellations. Constellations are groups of stars in the sky. They are often given names depending on their shape. Thousands of years ago, people noticed groups of stars and gave them names based on the forms they seemed to form. Pegasus Horse, Orion Hunter, and Ursula the Little Little Bear all got their names this way. Often different cultures gave groups their names. What we call the Big Dipper, the Vikings called wagon, the Chinese called the Emperor's Chariot, and the British called the plough. What You Need: Newspaper White Paper Paintbrush Pencil Step 1: Spreading Some Newspapers floor or above the table. Place a sheet of white paper in the middle of the newspaper. Step 2: Put the brush in the paint. Step 3: Hold the brush over the paper, and press your hand so little paint speck spots ON paper. Step 4: Think of them as stars, and explore them for patterns or shapes you recognize that can be constellations. Step 5: When the paint is dried, combine the paint specks with the pencil to form the molds you can learn. Step 6: Then draw more detailed photos of the image. Write names for your constellations. For more interesting scientific projects for children, check out: About DESIGNERS Planet Walk by Maria Birmingham, Karen E. Bledsoe, and Kelly Milner halls Stary Night Watch Maria Birmingham, Karen E. Bledsoe, and Kelly Milner Halls Spot of the planets of Maria Birmingham, Karen E. Bledsoe, and Kelly Milner Halls