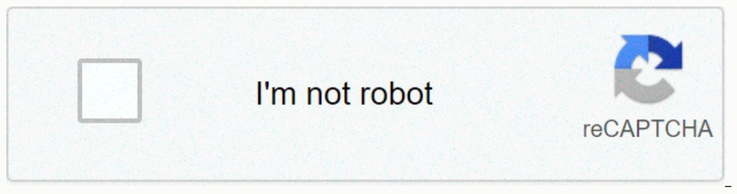

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Solar system review worksheet

Scientific projects for children: the incredible universe takes you into worlds waiting to be discovered. With simple instructions and everyday materials, you will learn more about constellations with children. You can start with stargazing and watching shooting stars -- and then make a planetarium or a star theater to bring what you've learned home. Learn more about planets and the brightness of stars, and make an astrolabe. And these are just some of the scientific projects you can try! Follow the links below to find scientific projects for children: the incredible universe you can do with children:Make a Planetarium PlanetariumUse planetarium to show constellations on a wall in your home. Star GazingStart by finding North Star, and then see more. Umbrella Full of StarsTurn your umbrella into a private star planet. Star TheaterMake constellation punch-outs and then a theater of stars. Scale Down Solar SystemUsing peas, fruits, and nuts in a true scale model of the solar system. Make an AstrolabeTrack position of the stars with a simple tool you do. Shooting StarsFind the right night and get ready for the fun of a meteor shower. Space Explorer MobileExplore space details with a mobile that you make and close. Planetary WalkGet a better feeling of the solar system by taking a planetary walk. Starry Night ObserverA take a closer look at the night sky, and write what you see. On-site PlanetsLearn to find Venus, Jupiter and other wandering stars. Star Brightness DetectorUse this cellophane detector to classify the brightness of stars. Paint Speck ConstellationsTurn paint stains into your own set of constellations. Go to the next page of scientific projects for children: the incredible universe to find out you can make a planetarium for star shows in your home. For more fun scientific projects for children, see: Content Makes a Planetarium, and you can create a representation of the night sky in your home. You will find simple instructions in this science project for children: the incredible universe. ©2007 Publications International, Ltd.Create a planetarium in your room. What you'll need: Shoes Box ScissorsStar chartPen or Pencil Pin Tap Lantern Books Step 1: At one end of a shoebox, 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 the star guide, draw dots on a piece of paper to represent the stars of a constellation and poke through dots with a needle. Do this for several different constellations. Step 4: Put one of the sheets of paper Rectangular hole in the box, and tape it in place. Step 5: Support the flashlight with a stack of cards, and put it in the hole at the other end of the box. Step 6: In a dark room, turn on the flashlight and project the constellation onto a wall. Ask your friends or family to see if they can identify Constellations. Go to the next page of scientific projects for children: the incredible universe for some simple steps to get more from the star's gaze. For more fun science projects for kids, see: Advertising Star looking is an easy way to learn to recognize stars and constellations. Gather a few objects, wait for a clear night, and you'll be ready for this science fiction project for children: the incredible universe. What you'll need: Star chartClear nightFlashlight Piece of red cellophane Step 1: Get a star chart, and learn about the night sky. You can find one in many books at the library. Step 2: On a clear night, go outdoors and see if you can find the 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 the starting point for the stars-looking, usually the North Star, also called Polaris. It's the only star that doesn't move. To find the North Star, find Little Dipper. The last star on the handle is the North Star. Another way to find the North Star is to locate the Big Dipper and track an imaginary line from the two stars in the front edge of the dipper, leading up from the dipper. The North Star is along this line. Step 4: Once you have found the North Star, try to locate the other constellations. Use a flashlight to refer to the star chart. (Cover the flashlight with red cellophane so you can still see the stars when you look back at the sky.) Continue reading on the next page to find out you can fill your umbrella with constellations. For more fun science projects for children, see: Advertising Create your own private planetarium with an umbrella full of constellations. Find them, mark them and save them to look again at another day. Have fun with this science project for children: the incredible universe. ©2007 Publications International, Ltd. Mark constellations inside your umbrella. What you'll need: Clear night, when the moon is invisible or very small Black Umbrella (that is OK to mark with chalk) White chalk Star chart Step 1: Open the umbrella, and hold it over your head. Step 2: Point the top of the umbrella at the North Star. (Use a star chart to find the Northern Star.) Step 3: Look up at the bottom of the umbrella. You might see the stars shining. Step 4: Use white chalk to mark every place you see a star on the umbrella. (This will be easier if someone else holds the umbrella for you.) If you can't see the stars through the umbrella, look up at the sky and mark the stars in the same positions as the ones you see in the sky. Step 5: When you have all the stars you can see, take the umbrella inside. Compare bookmarks with a stellar chart. What stars and constellations did you score? Step 6: Draw lines that connect constellations and tag them with their names. Go to the next page to find out you can turn on punch-outs in a star theater. For more fun science projects for kids, check out: Advertising You'll be the star when you learn the shapes of constellations and put on a family show with this star theater! ©2007 Publications International, Ltd.Turn constellation punch-outs in a theater of stars. What you'll need: Empty steel boxes (such as soup or coffee cans)ClinksTracing paperBook by constellationsPenScissorsPinmasking tapeHammerThin finishing nailFlashlightBlack cloth (optional)Step 1: Clean boxes, and use pliers to flatten any sharp points. Step 2: Place the end of the box on the tracking paper and draw circles with a pencil. Step 3: Place the tracking paper marked on an image of a constellation in a book and watch a constellation inside each circle, using dots to represent the stars. If a constellation doesn't work in a circle, you can try drawing it with your free hand. Step 4: Cut the circles, and use a needle to poke a hole where each star is marked. Step 5: Turn each circle so that the constellation is backward and tape one at the closed end of the steel box. Step 6: Use a hammer and a thin finishing cui to punch a hole through each pine hole. (Always be careful when using a hammer!) Remove the paper. Step 7: Write the name of each constellation on a piece of masking tape and attach each piece of masking tape to the box it represents. This is so you can remember which constellation is that. Step 8: Shine a flashlight at the open end of the constellation can shine on the ceiling. You can envelop the open end of the can in black cloth to close the excess light when putting on a star show for your family. Have you ever wondered how big the solar system is? Go to the next page of scientific projects for children: the incredible universe to learn by making a scale pattern with peas, fruits and nuts. For more fun science projects for kids, check out: Advertise Scale down the solar system with a scale pattern of peas, fruits, and nuts. You will have a better sense of the vast size of the solar system if you try this scientific project for children: 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 to make the drawings fit on a piece of paper, artists need to bring the planets closer than they really are. In this activity, you will make a small scale model of the solar system. You'll be surprised to see how big some planets are than others, and how far of them are. What you'll need: Ball about 27 cm in diameter (such as a beach) 5 peas 1 orange 1 mandarin 2 nuts Tape measure large open space Step 1: Make your model in a large open space that will represent space. Step 2: Put the beach ball or other sea ball at one end of the space. The ball is the sun. Step 3: Place the other shown in the chart below. (Remember to measure each planet from the sun.) PlanetObject Distance from Sun MercuryPea 1-3/4 inch VenusPea 3-1/4 inch EarthPea 4-1/2 inch MarsPea 7 inch JupiterOrange 2 feet SaturnTangerine 3 feet, 7 inches UranusWalnut 7 feet, 3 inches NeptuneWalnut 11 feet, 4 inches PlutoPea 14 feet, 10 inches Go to the next page to find out you can make an astrolab and measure the position of the stars. For more fun science projects for kids, check out: Advertising Learn to measure the position of stars when you do an astrolabe. You will use a tool that astronomers and navigators have used for centuries when you will do this scientific project for children: the incredible universe. ©2007 Publications International, Ltd. Make an astrolabe to track the stars. When scientists describe a star's position in the sky, they measure its position relative to the horizon. An astrolabe measures how high the star is above the horizon in degrees. What you'll need: String plastic protractor Weight (washing machine, rock, or fishing weight) Pen and paper Step 1: Tie a 12-inch piece of string to the hole in the middle of the crossbar on the protractor. Tie a weight to the other end. Step 2: Hold the protractor so that the curved side is down and the zero-grade mark is closest to you. Step 3: Sit on the ground and look along the flat edge of the protractor with the eye at zero. Point the plane edge at the star whose position you want to measure. Step 4: Once you have the star at the end of the eye, hold the string on the side of the protractor. Step 5: Note what degree the string crosses mark. Write that in your notebook. This number tells you how many degrees above the horizon is your star. Step 6: Get readings for more stars. Step 7: Go back every 30 minutes and do new readings. Notice the pattern in which the stars seem

to move in the sky as the earth returns. Have you ever seen a shooting star? Go to the next page of scientific projects for children: the incredible universe to find out you can. For more fun scientific projects for children, see: Advertising Nothing is as unexpected and amazing as shooting stars, or meteorites. Find out when and where you can scan the sky for meteor showers in this science fiction project for children: the incredible universe.©2007 Publications International, Ltd.Track shooting stars, or meteors, in the sky. Space is full of small planet-like spheres, known as asteroids. I mean, they're small by space standards; A very small asteroid could fit in your home. Millions of asteroid fragments can fall into the Earth's atmosphere. When one of these fragments approaches and burns, makes a trace of light that can be seen in the night sky. This stripe is called a meteorite or shooting star. Most of these fragments burn completely into the atmosphere. But once in a while while one lands on Earth. When that happens, it's called a meteorite. Sky-watchers have learned that there are certain moments and places where a lot of meteors can be seen. These events are called meteor showers, and it's worth staying up late for. What you'll need: A clear night sky - and maybe an afternoon turnip away from the city lightsStar mapStep 1: Check 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 is after midnight.) Step 4: Be very still, look at the sky and see what happens. WhenWhere It Can Be Seen in the Sky January 1-3 Eastern Sky, between Bootes and Draco. This is called the quadratrid meteor shower, and it's the flashiest meteor shower of the year! April 20-22 northeast sky between Vega and Hercules. May 4-6 eastern sky, southwest of Pegasus Square. August 10-13 Northeast Sky, around Perseus. Called perseids, this is the most famous meteor shower and is the second largest in terms of number of meteors. October 20-23 Eastern sky, between Orion and Gemini. November 3-10 North-East Sky, between Taurus, Auriga and Perseus. December 10-12 Eastern Skies in Gemini. Go to the next page to see you can be a space explorer with a mobile that you make. For more fun science projects for children, see: Advertising Imagine it would be to float among planets, stars and comets! If you hang a mobile space explorer in your room, you can look up and imagine you're there. It's easy with this science project for children: the incredible universe. ©2007 Publications International, Ltd.Travel through planets with a mobile. What you'll need: Glassboard or heavy paperDecorations (paint, aluminum foil, or glitter) PinThread or nylon line2 dibl rods or sticks Step 1: Cutting and color shapes to make planets, stars, spaceships, and other objects found in outer space. Use interesting materials, such as glow-in-darkness paint, aluminum foil, and glitter. Also, use your imagination, and include everything you think could be found in space: alien monsters? Huge dough? It's your universe! Step 2: Use a needle to make a small hole in each shape you have made. Step 3: Tie a piece of wire or nylon line through each hole. Step 4: Cross one rod on top of the other at a right angle. Step 5: Tie the dowels together, then tie the shapes to the dowels. Tie different shapes at different elevations. Step 6: Tie a strong thread or a piece of nylon line around the dowels to hang your mobile phone. You stuck your head in. - star hotel! Get a better sense of the size of the solar system by taking a planetary ride. Find out on the next page of science projects for children: the incredible universe. For more fun science projects for kids, check out: Advertising Advertising A walk through the solar system in just over 1,000 steps on this planetary walk! Have you ever wondered how far away the planets are? This science project for children in the incredible universe will show you how much space there is in the solar system. What you'll need: Ball about 8 cm in diameter 2 pins with small round heads 1 pin with very small round head 2 peppercorns 1 small walnut 1 acorn 2 peanuts Index glue cards or strip light markers Yardstick large park or school grounds Step 1: Use the ball for the sun. Step 2: Glue or tape planets to individual index cards, and use bright markers to label them after follows: Larger pinheads are Mercury and the smaller MarteCap is Pluto. Pepper beans are Venus and Earth. The walnut is Jupiter. Acorn is Saturn.The peanuts are Neptune and Uranus. Step 3: Use your own step as a unit of measure. With a yardstick, the practice of taking action of a long yard. Each step will be 3.6 million miles! Step 4: Set the sun on the edge of a large park or on the sidewalk of a long, straight street. Step 5: Take 10 steps from the sun and put the mercury book. Does it look like it's far away? Proportional is in the right place. Mercury is about 36 million miles from the sun. Step 6: Take nine more steps and set Venus. Step 7: Take seven steps and tear down the Earth. Step 8: Take 14 steps and leave Mars. You've already done 40 steps of the sun. Earth and Mars seem so far from the sun and other planets. However, this is how they are in space. Step 9: From Mars, take 95 steps and set Jupiter. From Jupiter, it's 112 steps to Saturn. Only 249 more steps takes you to Uranus. You're halfway through the solar system! Step 10: Next is Neptune, which is 281 steps from Uranus. Step 11: From Neptune, take 242 steps, and put down the last book, Pluto. You walked 1019 steps, or just over half a mile. The sun probably looks like a speck of dust, if you can see it at all. If you were standing on Pluto's surface, the sun would look 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're not. Keep reading on the next page to find out you can become a starry night watcher. For more fun science projects for children, see: Advertising Stars may look the same, but if you become a starry night observatory, you'll see they're not. Do all stars have the same color and brightness? No. Try this science project for children on the incredible universe, and you'll see. Each star has dozens of distinctive qualities and characteristics based on age, distance and light pollution. What you'll need:O clear nightNotebook Pencil or penStep 1: Make your to study the starry night and note the notes of the different colors and brightness levels that you see. Step 2: See You can find out why some stars seem bigger, brighter, or more colorful than others. Step 3: Hit your family's library or encyclopedia to find out if all the lights in the sky are actually stars at all. That bright star in the morning sky may not be a star at all, but the planet Venus. Go to the next page of scientific projects for children: the incredible universe to learn to spot the planets in the sky. For more fun science projects for kids, check out: Can you spot the planets in the night sky? This science project for children: the incredible universe can certainly help. Did you know that of the nine planets in our solar system, five (apart from 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: Sky Night ClearBinocularsTelescope, where star wants the chart People from ancient times called wandering star planets, because these bright objects seemed to change position while other stars seemed to remain in place. Try to spot the wandering stars yourself. You just need the eye, but a pair of binoculars or a telescope gives a better look. Step 1: Go out with the binoculars and look at the sky. It starts with Venus, the easiest planet to find. Look in the west sky as soon as the sun goes down. You can also spot in the early morning sky just before sunrise. Step 2: Don't research where to locate the rest of the planets that are harder to find. You can consult an almanac or a planetary mass to track their movements. Or you can watch your local newspaper or an astronomy magazine for information about the planets that are visible. Step 3: Use a star chart to locate the constellation where the planet will be. Planets seem to move through constellations associated with the zodiac, so as to become familiar with these constellations. Step 4: Once you spot a bright object that does not appear to belong to the constellation, try to observe it through binoculars or a telescope. With most telescopes at home, you can see the red dot on Jupiter and Saturn's rings. Go to the next page to find out you can make a star brightness detector. For more fun science projects for children, see: Some stars seem 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. The superimposed cellophane bands are the key to this scientific project for children: the incredible universe. ©2007 Publications International, Ltd. Use cellophane bands to detect the brightness of stars. What will you Need: Clear Sky Night Scissors Cardboard Colored Ruler Cellophane TapE Step 1: Cut four rectangles 1-3/4 inch side by side on a piece of cardboard. Step 2: Tape a sheet of cellophane over all four rectangles. Step 3: Tape a sheet superimposed cellophane over the last three rectangles. Step 4: Tape Tape cellophane over the last two rectangles, and finally a last sheet superimposed by cellophane on the last rectangle only. Step 5: View the night sky with the brightness detector. Notice 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 two sheets. Call it a star. Step 7: Find a star that you can see with two sheets, but not three. Call it two stars. Step 8: Find a star that you can see with three sheets, but not four, and we call it a star of three. Step 9: Call any star you can see through all four sheets is a star of four. 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 the star extinguishes and how far it is from Earth. Continue reading on the next page to find out you can get creative with your own constellations of paint. For more fun scientific projects for children, see: Make your own starry sky studded with constellations of paint stains. You will have the chance to be creative with this scientific project for children: incredible universe.©2007 Publications International, Ltd.Create your own constellations of paint stains. Constellations are groups of stars in the sky. They are often given names based on their form. Thousands of years ago, people observed clusters of stars and gave them names based on the shapes they seemed to form. Pegasus The Horse, Orion the Hunter and Ursa Minor the Little Bear were given their name in this way. Often, different cultures givegroups their own names. What we call Big Dipper, the Vikings call the Wagon, the Chinese called the Emperor's Chariot, and the English called the Plug. What you'll need: White Paper Paint Brush Pencil Step 1: Spread some newspaper on the floor or on a table. Place a sheet of white paper in the middle of the newspaper. Step 2: Dip a brush into paint. Step 3: Hold the brush over the paper and touch the hand so that the small paint stains fall on the paper. Step 4: Think of them as stars and examine them for patterns or shapes that you recognize could be constellations. Step 5: When the paint has dried, connect the paint stains with a pencil to form shapes that you can recognize. Step 6: Then paint more detailed images of the image. Write names for your constellations. For more fun science projects for children, check out:ABOUT DESIGNERSPlanetary Walk by Maria Birmingham, Karen E. Bledsoe, and Kelly Milner HallsStarry Night Observer by Maria Birmingham, Karen E. Bledsoe, and Kelly Milner HallsSpot planets by Maria Birmingham, Karen E. Bledsoe, Kelly Milner Halls Halls Halls