

Astronomy Project

The following project is worth 130 points. 50 points worth of lab work, 40 points worth of homework and 40 points worth of test credit. Any extra credit will be distributed evenly.

You may choose one and only one activity for each row. With each set of projects, turn in a “Cover Letter” that describes everyone’s contributions, and any important reflections you would like to include. Also, grade yourselves as a group and provide an agreed upon grade for each individual within the group, based on whatever criteria you deem appropriate. For your fact finding missions, you must include at least 2 sources (no wikis, etc), and they must be cited.

<p>The Space Scale</p>	<p>Develop a Cosmic Calendar. Take the entire Universe’s timeline and compress into one calendar year. Assume that the Universe began with some sort of large Bang at 12:00 AM, January 1st and that this April 10th, 2010 is the moment before the year ends on December 31st. Therefore, I want you to mark important points on the calendar year, as accurately as you can. Tell me the week that the first galaxies formed, the day the solar system was created, the time that Earth began, first life arose, the first air-breathing life began, dinosaurs lived, humans lived... and yes, the events of a few days into the future. Bonus points for being able to determine to the minute that human life originated and when the hunter/gatherer style took hold in humanity. (55 points)</p>	<p>Often times it is difficult to imagine the difference in size of the planets, the sun, other stars and other astronomical bodies. Come up with a way to describe the nine planets, the sun, and a few of the other very bright objects in the sky relative sizes to one another. Use everyday objects whenever possible, and be as accurate as you can. Be specific when you say your distances and relative sizes (i.e. Quote the actual diameter of the earth and the sun, as well as the accurate analogy of “if the Sun is as big as a basketball, then the Earth is as big as a _____.”). (40 points)</p>	<p>Talk about a walk you would have to go on in Roseburg to effectively demonstrate the scale between planets. Imagine you walked the distance of the football field on Finlay Field, and called that the reference scale of the distance from the Earth to the Sun. How many yards would you have to walk to get to the inner planets? How many football fields would you have to walk to get Mars? What approximate distance would that be from the high school? What landmark is that distance away? What about the next planet? Would we end up walking to Sutherlin? To Eugene?? To Portland??? (45 points)</p>
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<p>Informative Science</p>	<p>Design a Planet Brochure that advertises a specific planet (or dwarf planet!) in our solar system as a travel guide. Include all the information that a potential Earthling traveler would want to know about their destination. Be sure to include all kinds of factual information that might well describe the planet, but be sure to include some disbelief-suspension-required methods of staying alive on Mars as well as traveling without aging (i.e. make some stuff up). Include flashy, tacky art that you might see inside a travel brochure with plenty of interesting, applicable visuals. Make sure that you provide visitors with something to do with their time... or maybe the hotels are too good to leave? Don't forget to provide a slogan and a deal for seeing that special salesman. (30 points)</p>	<p>Design 15-20 attractive, informative solar system trading cards. Include the information that you think is important for collectors... information that they'd want to compare and contrast with other cards. (30 points)</p>	<p>You are an inter-universal traveler, and you have come to our universe to pass on information. Your only purpose is to share what you've learned with as many other civilizations as possible. The only difference between this universe and the one you've come from is that you are from Mars. Prepare a brief list of questions and answers that you might encounter about the similarities and differences between our Earth and your Mars. Be sure to talk about what makes your Mars bear life, whereas our Mars does not. Discuss briefly the seasons you would encounter as well as Martian years and other significant bits of information. (30 points)</p>
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<p>How-Tos:</p>	<p>Develop an activity that would give kids a step-by-step method of figuring out what causes seasons, eclipses and moon phases. Pretend your material list is a flashlight to represent the sun, a foam moon on a pencil to represent the moon and a foam Earth on a pencil to represent the Earth. Be sure to clearly state how to perform each task and what it means for us and what we observe on Earth. Don't forget to discuss Earth axis tilt, some way of discussing orbital plane, and rotation and revolution. (35 points)</p>	<p>Design a Stellar Evolution presentation board. Parallel the life of a star with the life of a human. Build this presentation board in the spirit of a Science Fair submission. (30 points)</p>	<p>Create a different type of Science Fair presentation board that focuses on Near Earth Objects. Discuss what qualifies as an NEO, upcoming NEO activity, historical facts, and recent news. (30 points)</p>
<p>The Story behind the Science</p>	<p>Constellation Myth: Research and summarize a constellation that interests you and your group. Present your findings in a well-written paper. (25 points)</p>	<p>Interview the Sun: Imagine the Sun suddenly had a representative on Earth... some being that could take a list of questions back to "El Sol" and return with a list of answers. Write two letters, one from a random, inquisitive student as if interviewing the Sun for his astronomy project, and another from the Sun back to the curious, innocent student. Be sure to give the student and the Sun some personality. (30 points)</p>	<p>Martian Weather: Prepare a <u>lively</u> Martian weather report and forecast. Follow the format that nightly news or daily newspapers might use. Be sure to talk about what is normal, every day weather, and what might be considered extremes. Don't forget to provide daily tips on how to dress for the Earthlings on vacation! (25 points)</p>