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| **Project Title:** |
| Solar Oven  |
| **Description:** |
| Your goal is to build a solar oven with gathered materials around your house / community that uses the sun’s rays to melt a marshmallow and chocolate on a graham wafer to make a delicious s’more or roast a hot dog so it can be eaten safely. |
| **Purpose: (Why do I have to do this?)** |
| Solar power is readily available and the energy from the sun can be harnessed to produce clean energy. Understanding how radiation works and can be used is key to our future on this planet.  |
| **Steps:** |
| 1. Research various solar ovens online and determine what plan works best for you
2. Consider the following concepts: Solar radiation, principals of heat (including heat loss, heat collection and heat storage), the “greenhouse effect”, suns wave lengths.
3. Research different materials that would be best suited to trapping or capturing the suns energy and converting it to heat
4. Create an effective plan on what materials you plan on using and how you will design your oven
5. Gather all required materials and let me know if you need help tracking any materials down
6. Bring all required materials on the date we have indicated and build your oven that day (please ensure oven can be built in approx. 1-2 hours!)
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| **Final Product:** |
| At camp, you will be given time to build your solar oven and then time to use it to melt the marshmallow and chocolate or roast the hot dog. We will probably build the ovens in the morning of a sunny day so that when the sun is at its peak (noon), we can start cooking. |

**Solar Oven Criteria Checklist**

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| **Criteria** | **Specifics** | **Self** |  | **Teacher** |
| Planning | Created an effective plan for cooking a hot dog using only solar energy |  |  |  |
| Followed the plan you had designed or made learned improvements |  |  |  |
| Used principles of solar radiation/solar energy to plan for your solar oven |  |  |  |
| Researched various solar oven and determined the best design for camp |  |  |  |
| Gathered all the required materials and brought them to school for gear check day |  |  |  |
| Choose materials that either reflected or captured solar energy |  |  |  |
| Selected materials that could be used for storing heat energy from the sun |  |  |  |
| Considered the following heat principals while creating your solar oven plan, heat loss, heat collection and heat storage |  |  |  |
| Completion | Solar oven was able to successfully cook a hot dog |  |  |  |
| Adjusted plan as needed while building the oven |  |  |  |
| Created an oven that trapped/captured solar energy in an effective manner |  |  |  |
| Used all required materials to create a working solar oven |  |  |  |
| **Record two things that you liked about your achievement in this project.** |
| **Record two things you would improve about your achievement in this project** |