**Solar Cookers**

**Group Activity**

Based on the video about solar cookers, your group should determine an effective design for a solar cooker. Consider things such as the shape of the solar cooker, capacity, and focus of the sun’s rays. Use the space provided to create your designs.

1. Suppose that the cross section of a solar cooker with a diameter of 3 feet can be modeled by the function: $f\left(x\right)=0.4x^{2}-1.2x$.

Based on the function, try to determine the vertex algebraically.

1. Use the table and grid below to confirm the coordinate of the vertex.



|  |  |
| --- | --- |
| ***x*** | ***f*(*x*)** |
| 0 |  |
| 0.5 |  |
| 1.5 |  |
| 2 |  |
| 2.5 |  |
| 3 |  |

1. a. Identify the line of symmetry of the parabola. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What does the line of symmetry represent in terms of reflected light, sound, or heat waves going into or coming out of a parabolic reflector?
3. Sketch how you think incoming rays of light will reflect off of the parabolic reflector.

Light Source

1. Sketch in the line of symmetry and identify where the hottest spot will be for a cooker.