

How does the size of a solar trough change temperature of marshmallows?

Aim: to find out how the size of the solar trough effects the temperature of the marshmallows.

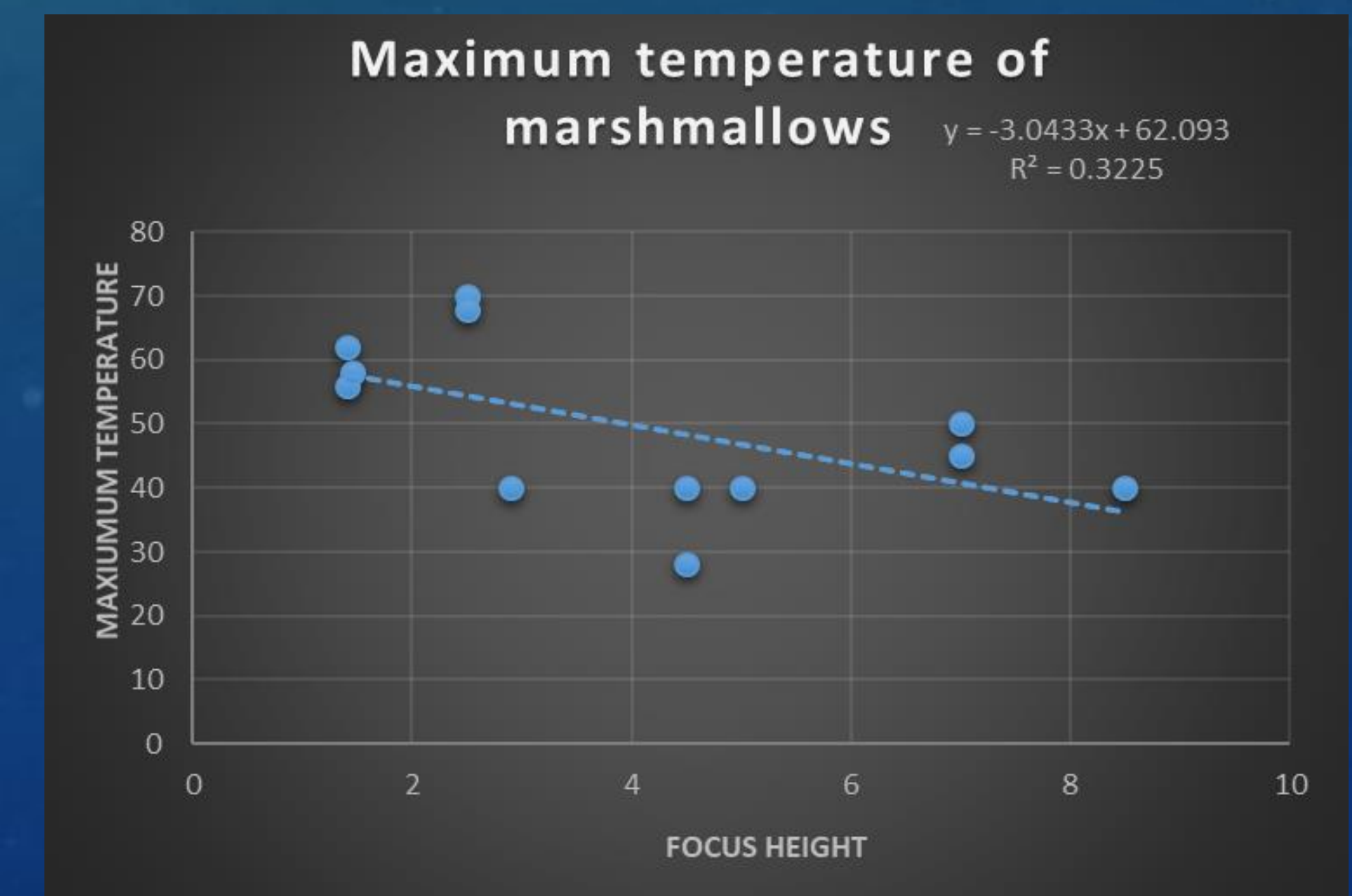
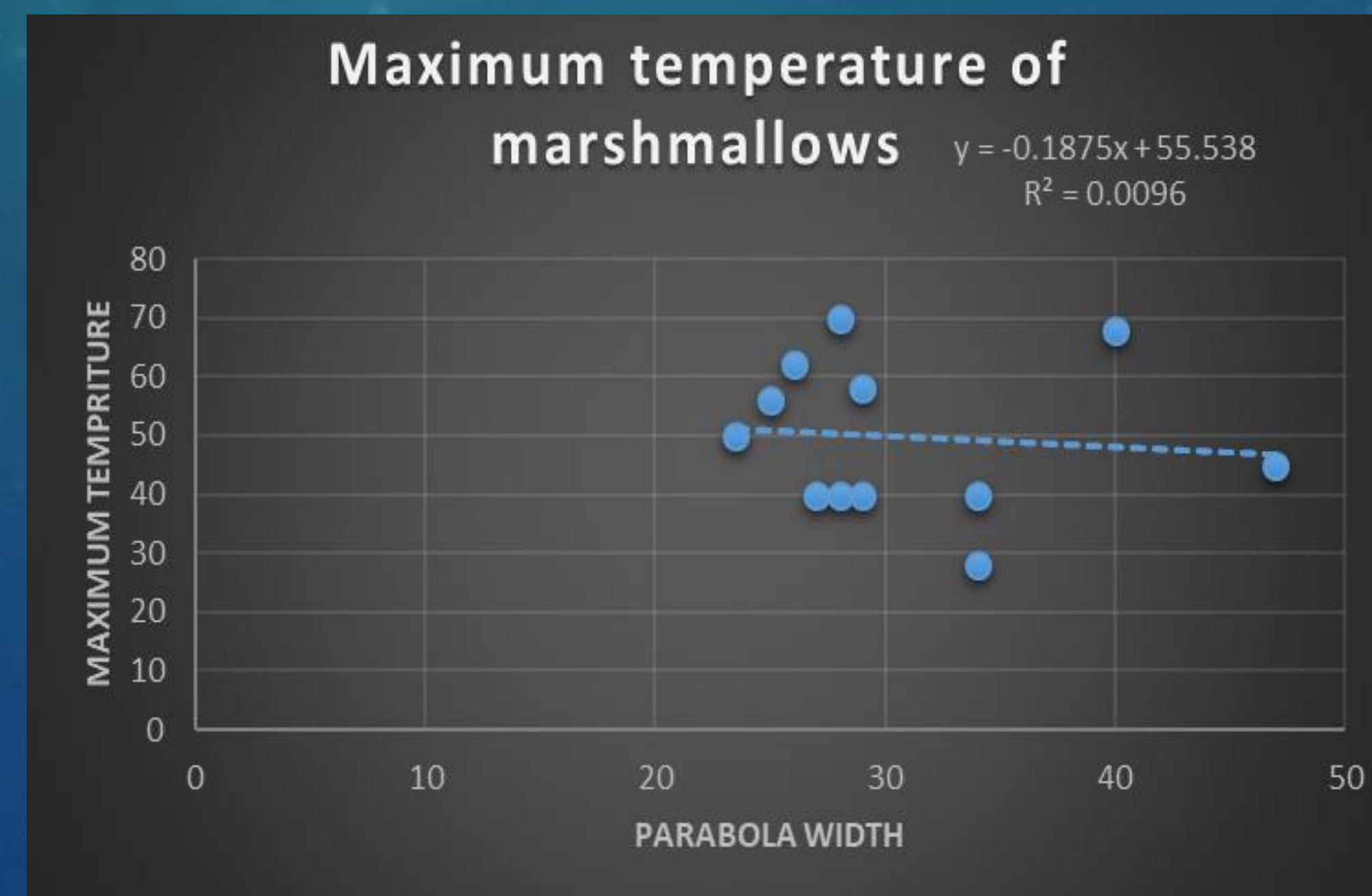
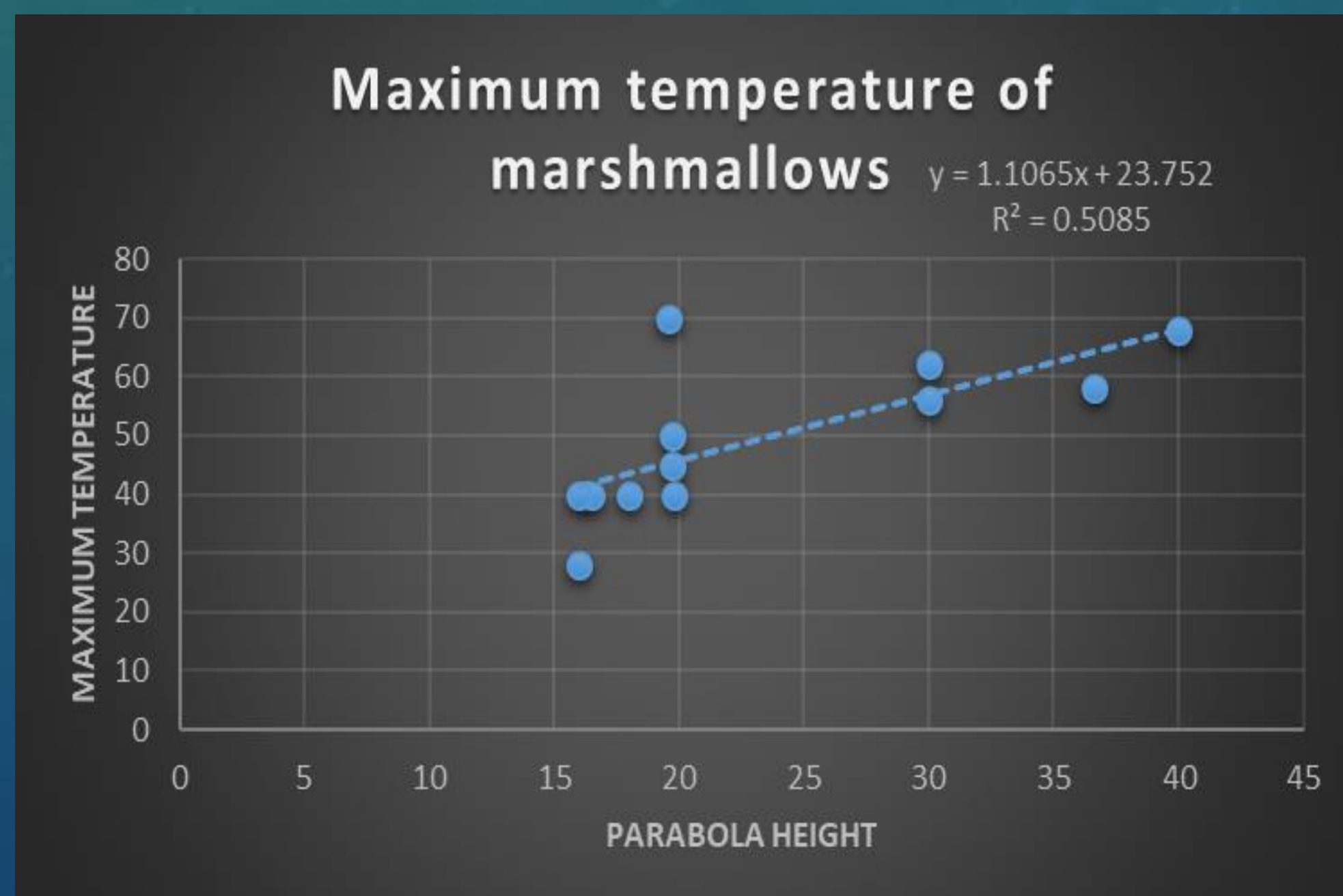
Hypothesis: we think a taller box would toast the marshmallows faster.

Equipment: cardboard box, reflective cardboard, Tape, a metal skewer, marshmallows, baking paper and a thermometer

Method:

1. Plot your parabola on paper.
2. Trace it onto baking paper.
3. Use the baking paper and trace the parabola on to a box with different parabola widths, heights, and focus points.
4. Stab holes on the dots on your box.

5. Cut out the holes.
6. Repeat step 4 and 5.
7. Use tape to stick the reflected cardboard on the parabola and stick the cardboard back on.
8. Poke the metal skewer through the focus point.
9. Put 5-20 marshmallows on your skewer.
10. Toast your marshmallows and measure the temperature of marshmallows at different times.



Conclusion: Our results showed that there was some correlation with temperature and height of the box where taller parabolas produced hotter marshmallows. We were right in our hypothesis.