



Using an Infrared Laser Thermometer Design Challenge

DESIGN CHALLENGE Notes:

This design challenge explores how to use an infrared thermometer to determine surface pressures to promote health, safety, and sanitation.

For a better understanding of Laser Thermometers, go [here](#).

Problem: We need to determine exact temperatures of surfaces to insure healthy and sterile spaces don't get too hot

Challenge: Pressure seems like an obvious thing, right? But how much pressure in the form of heat and temperature does it take to make an environment unhealthy to animals?

Materials:

We need a laser thermometer

We need a candy thermometer

We need a sensor thermometer

Brainstorm:

1. What is pressure and why is pressure related to temperature?
2. Why does a higher value of pressure mean a higher temperature?
3. Does color affect temperature?
4. What is the safe temperature for animals?
5. Why do you think that?
6. Does everything have a temperature?

Design/Build:

1. Determine an area that you need to test the temperature of
2. How can you test this area using the three thermometers you have been given

Test:

What happens when you try your design?

Can you be sure you have an accurate measure?

Can we tell it is working? How?

How do you know each thermometer is working?

Evaluate:

- How will you record your results?
- How will you know how much of each component you have is doing what?
- What would you modify to test your results?
- Can you create different types of dirty materials and test them?
- What would you do differently?

Share:

- Record your tests on a chart.
- Which combination or type of thermometer worked best?
- How did you know?