

School Energy Investigations - Temperature

Complete the worksheet below for each room in the building you wish to audit. You will need: Infrared Thermometer.

Name _____
Date _____
Room _____

Introduction

Every occupied space in a building needs fresh air, heating and cooling to maintain indoor air quality and keep occupants comfortable. Heating, ventilating, and air conditioning systems (HVAC) accomplish this goal. Occupants who understand their role and are engaged in the flow of energy through the building enhance the operation and performance, saving energy and money.

Background

1. Is the building heating or air conditioning system operating this time of year? Yes No

If yes, please answer the following:

Are windows closed to keep heating and cooling inside? Yes No

Are doors closed to keep heating and cooling inside? Yes No

2. Are any windows cracked or broken? Yes No

3. Do any doors leak air or water? Yes No

4. What other heating or cooling appliances are in the room?

Space heater Fan Other _____

5. Are any heating or cooling vents in the room blocked by items, such as books, papers, jackets, or plants?

Yes No

6. Does the room have a thermostat located on the wall? Yes No

If yes, please answer the following:

Is the thermostat blocked by furniture or equipment? Yes No

Is the thermostat located near a strong heat source or air vents? Yes No

Can you change the temperature setting? Yes No

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Activity 1 - Thermostat Activity

1. Complete the table below to check the accuracy of the room thermostat. Use the infrared thermometer to measure and record the room temperature in the following locations as described.

| Room Location | Temperature in degrees Fahrenheit (°F) As measured by the infrared thermometer |
|-----------------------------------|---|
| A. Front of the room | _____ °F |
| B. Center of the room | _____ °F |
| C. Back of the room | _____ °F |
| D. Room Average (A + B + C) / 3 = | _____ °F |

| Room Thermostat* | Temperature in degrees Fahrenheit (°F) |
|-----------------------------------|--|
| See table below | |
| E. Record the temperature setting | _____ °F |

2. Is the calculated room average (from Table 1 part D) within 2 degrees of the thermostat setting (from part E)? Yes No

If yes, the room thermostat is working correctly.

*If your classroom does not have a thermostat, use the table below.

| Recommended Temperature Setpoints | |
|-----------------------------------|---------|
| Heating | Cooling |
| 68 °F | 78 °F |

Congratulations! You completed a simple energy audit of room temperature.

Based on your observations and results above, recommend ways to save energy used by heating and cooling in this room.