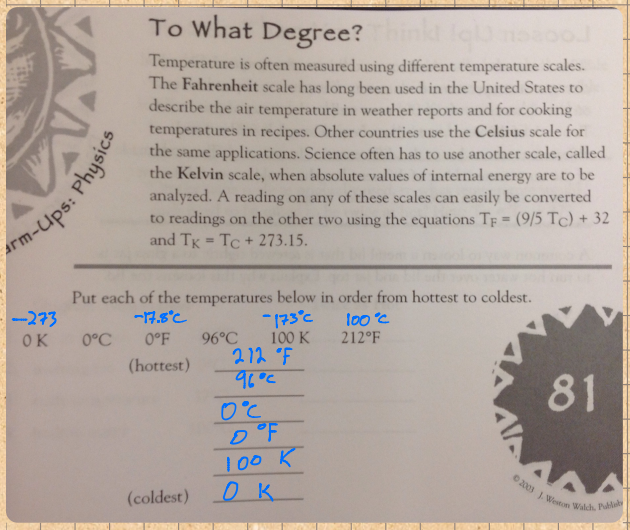
Warm-Up:



Warm-Ups: Physics

To What Degree?

Temperature is often measured using different temperature scales. The **Fahrenheit** scale has long been used in the United States to describe the air temperature in weather reports and for cooking temperatures in recipes. Other countries use the **Celsius** scale for the same applications. Science often has to use another scale, called the **Kelvin** scale, when absolute values of internal energy are to be analyzed. A reading on any of these scales can easily be converted to readings on the other two using the equations $T_F = (9/5\ T_C) + 32$ and $T_K = T_C + 273.15$.

Put each of the temperatures below in order from hottest to coldest.

−273 | −17.5°C | −173°C | 100°C

0 K | 0°C | 0°F | 96°C | 100 K | 212°F

(hottest) 212 °F

96 °C

0 °C

0 °F

100 K

(coldest) 0 K

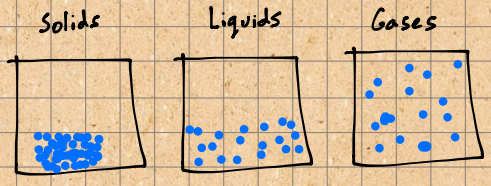
81

- Heat: transfer of thermal energy between objects
  - ↳ High energy → Low energy
- Thermal Equilibrium: Same temperature

Think about it:

- What has more thermal energy, a teacup with boiling water or a pond at 40°F?
  - ↳ Thermal energy depends on mass & temperature
- Why is it that you burn yourself on a 200°C oven, but a 1200°C spark from a sparkler doesn't burn you? → Depends on surface area

Phase change Review:



- If an object is heated, it will increase in temp until the phase change occurs.