



Name: \_\_\_\_\_

Block #: \_\_\_\_\_ Date: \_\_\_\_\_

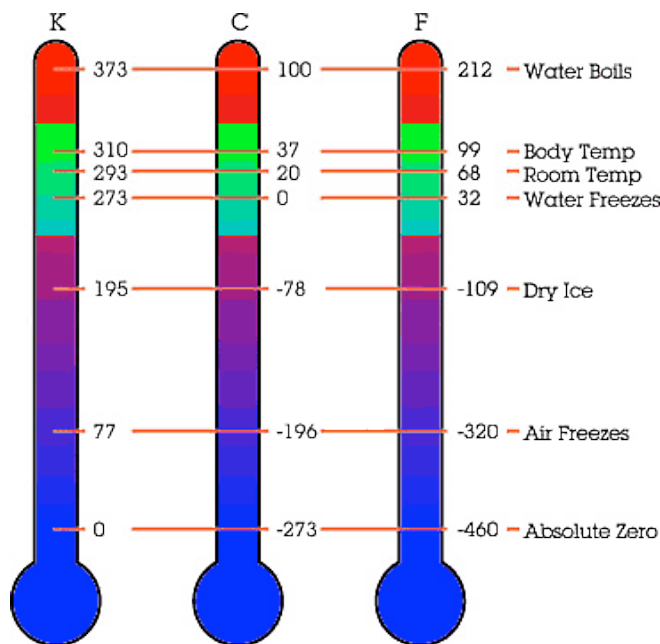
Pod Name: \_\_\_\_\_

**No Excuses**

Spring 2002

## Temperature Conversions

You are probably familiar with measuring temperature in °F (degrees Fahrenheit). Science, however, uses two other measurements of temperature: Celsius and Kelvin. Please see the picture below to understand how all three relate to one another.



### SYMBOLS

**K = Kelvin = K**

**C = Celsius = °C**

**F = Fahrenheit = °F**

Notice...  
No degrees

### Converting Between Temperature Scales

\* To convert Celsius to Kelvin, simply take your Celsius temperature and **add** 273°

Example:  $20^{\circ}\text{C} = \underline{\hspace{2cm}} \text{K} \rightarrow 20 + 273 = 293 \text{K}$

\* To convert Kelvin to Celsius, simply take you Kelvin temperature and **subtract** 273°

Example:  $321 \text{K} = \underline{\hspace{2cm}} ^{\circ}\text{C} \rightarrow 321 - 273 = 48 ^{\circ}\text{C}$

\* To convert between Fahrenheit and Celsius use the following equation  $T_C = (5/9)*(T_F-32)$

Example:  $80^{\circ}\text{F} = \underline{\hspace{2cm}} ^{\circ}\text{C} \rightarrow T_C = (5/9)*(80-32) = (5/9)*(48) = 26.6^{\circ}\text{C}$

\* To convert between Fahrenheit and Celsius use the following equation  $T_F = ((9/5)*T_C)+32$

Example:  $20^{\circ}\text{C} = \underline{\hspace{2cm}} ^{\circ}\text{F} \rightarrow T_F = ((9/5)*20) + 32 = (36)+32 = 68^{\circ}\text{F}$

## QUESTIONS

1. When does water boiling in:

- a. Fahrenheit: \_\_\_\_\_
- b. Celsius: \_\_\_\_\_
- c. Kelvin: \_\_\_\_\_

2. When does water freezing in:

- a. Fahrenheit: \_\_\_\_\_
- b. Celsius: \_\_\_\_\_
- c. Kelvin: \_\_\_\_\_

3. What is room temperature in:

- a. Fahrenheit: \_\_\_\_\_
- b. Celsius: \_\_\_\_\_
- c. Kelvin: \_\_\_\_\_

## Convert

4. It is a hot day in Franklin. The temperature is  $104^{\circ}\text{F}$ . How hot is it in Celsius?

5. How hot is it in Kelvin?

6. A scientist has a sample of liquid nitrogen. It is  $77\text{K}$ . What is its temperature in  $^{\circ}\text{C}$ ?

7. What is its temperature in  $^{\circ}\text{F}$ ?