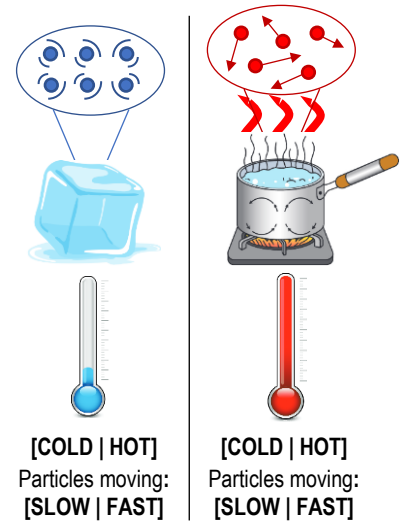
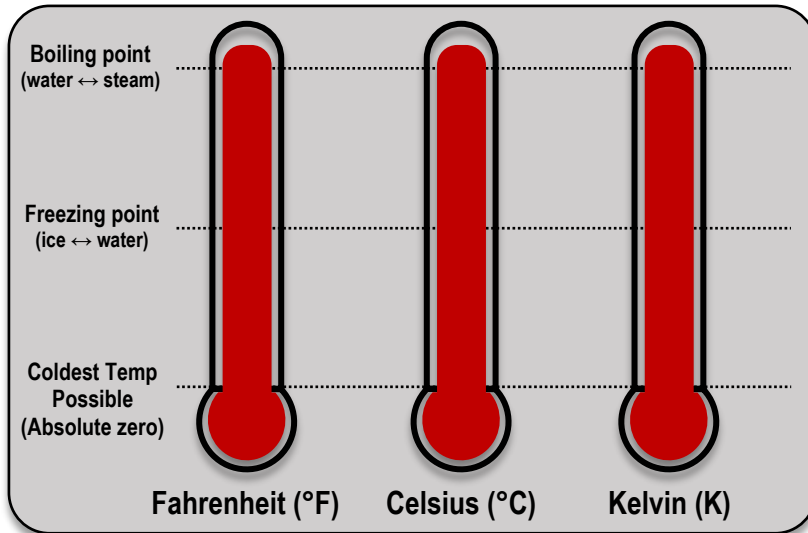


CONCEPT: INTRODUCTION TO TEMPERATURE SCALES

- A basic definition of Temperature is it measures how _____ or _____ something is.
 - It is related to the Average _____ of the particles in an object.
- There are 3 temperature scales or units, which are all based on arbitrary reference points:



- Kelvin scale is an ABSOLUTE temp. scale because it starts at _____, the coldest temperature possible.
- In most equations, we'll plug in temperature in Kelvin.

CONCEPT: CONVERTING BETWEEN TEMPERATURE UNITS

- Often times in problems, you'll have to convert between different temperature scales.

		GIVEN		
		FAHRENHEIT (°F)	CELSIUS (°C)	KELVIN (K)
ASKED FOR	FAHRENHEIT		$T_F = \underline{\hspace{2cm}}$	$T_F = \underline{\hspace{2cm}}$
	CELSIUS	$T_C = \underline{\hspace{2cm}}$		$T_C = \underline{\hspace{2cm}}$
	KELVIN	$T_K = \underline{\hspace{2cm}}$	$T_K = \underline{\hspace{2cm}}$	

EXAMPLE: Liquid nitrogen evaporates at a temperature of -196°C . **a)** What is this temperature in K? **b)** What is this in $^{\circ}\text{F}$?

PROBLEM: The tungsten filaments inside of most incandescent lightbulbs reach temperatures of about 4580°F when the lightbulbs are lit. What is this temperature in **a) Celsius** and **b) Kelvin**?

- A) a) 2512°C ; b) 2785 K
 B) a) 8276°C ; b) 8549 K
 C) a) 2527°C ; b) 2800 K
 D) a) 4853°C ; b) 2728 K

		GIVEN		
		F	C	K
ASKED FOR	F		$T_F = \frac{9}{5}T_C + 32$	$T_F = \frac{9}{5}(T_K - 273.15) + 32$
	C	$T_C = \frac{5}{9}(T_F - 32)$		$T_C = T_K - 273.15$
	K	$T_K = \frac{5}{9}(T_F - 32) + 273.15$	$T_K = T_C + 273.15$	

PROBLEM: Calculate the one temperature where the Celsius and Fahrenheit scales are equal.

		GIVEN		
		F	C	K
ASKED FOR	F		$T_F = \frac{9}{5}T_C + 32$	$T_F = \frac{9}{5}(T_K - 273.15) + 32$
	C	$T_C = \frac{5}{9}(T_F - 32)$		$T_C = T_K - 273.15$
	K	$T_K = \frac{5}{9}(T_F - 32) + 273.15$	$T_K = T_C + 273.15$	