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| Physical properties  East.H.S. ©λ€M|5+rγ  visit http://genest.weebly.com |  | Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Come for assistance and cheerful encouragement after school Tues, Thurs, and every day at lunch |

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| You may find the following  information useful. | silicon mp = 1414 °C bp = 3265°C  neon mp = -249°C bp = -246°C (note the negative)  gallium mp = 30°C bp = 2400°C |

1. **Fill in** these common metric conversions from memory. (They are in your notes from Monday.)

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| \_\_\_\_\_\_ = 2.54 cm  1 cm3 = \_\_\_\_\_\_ mL  \_\_\_\_\_\_ mL = \_\_\_\_\_\_ L  \_\_\_\_\_\_ g = \_\_\_\_\_\_ kg | \_\_\_\_\_\_ mm = \_\_\_\_\_\_ m  \_\_\_\_\_\_ cm = \_\_\_\_\_\_ m  \_\_\_\_\_\_ inch = \_\_\_\_\_\_ cm |

1. **How to read thermometers:** 
   * 1. Read to the nearest line.
     2. Write that number down.
     3. Estimate how far you are between the lines.
     4. Write that after the decimal point.

For example, write the temperature of each thermometer:

|  |  |  |
| --- | --- | --- |
| \_\_\_\_\_\_ degrees celsius |  | 33 34 35 36 37 38 39 40 41 |

|  |  |  |
| --- | --- | --- |
| \_\_\_\_\_\_ degrees celsius |  | 33 34 35 36 37 38 39 40 41 |

1. Draw ten particles of each substance at the indicated temperature. Use what you learned in the computer lab and in our cartoon videos (you may re-view these cartoons at the class website. There will be true-false questions on Friday’s test covering these videos:

|  |  |  |
| --- | --- | --- |
| Gallium at 3000 °C |  | Silicon at 100 °C |
|  |  |  |
| Gallium at -100 °C (negative) |  | Neon at -100 °C (negative) |

1. **How well can you memorize?** Write numbers onto each thermometer to match the three indicated amounts of temperature Try not to look at the other side of your class notes. . .

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| **Degrees Celsius** |  |
|  | boiling water  room temperature  frozen water |
| Write the symbol for “*degrees Celsius”:* | \_\_\_\_\_\_\_\_ |

1. You decide to boil water to cook noodles. You place the pan of water on the stove and turn on the burner.

a. How does the behavior of the water molecules change as the pan of water is heated?

b. What about your answer to (a) would change if there were more water in the pan?

1. What property of matter best describes the way a typical alcohol thermometer works? Explain (in terms of energy transfer) why the alcohol level in the thermometer rises (or falls) when you place the thermometer in contact with both warmer (or colder) objects.
2. If you feel feverish, why can't you take your own temperature with your hand?
3. Your older brother announces that the lid to a jar of pickles from the refrigerator is “impossible” to loosen. You take the jar, hold the lid under the hot water from your sink’s faucet for a few seconds, and calmly open the jar. Your brother, when faced with this blow to his pride, claims that he loosened it for you. What knowledge of materials have you applied in this situation that really explains how you were able to open the lid?
4. Describe how Anders Celsius devised the temperature scale that bears his name.(video notes for this are at our website. click Eureka: Thermometer)
5. Which would feel warmer to the touch - a bucket of water at 50˚C or a bathtub filled with water at 25˚C? Which of these stores more energy? Account for any differences in your answers to these questions.
6. Use and like a true chemist.

EXP

10x

Complete the following problems in your calculator and record the answer in the **proper** **number** of significant figures.

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| (7.27 x 10-3 mm)(6.77 x 105 mm) |  |
| (1.009 x 108 m )  (4.603 x 10-10 s ) |  |