Date:

Unit 1: Scientific Thinking and Inquiry

6.2C – SI Units

OBJECTIVE(S): SWBAT name the six main prefixes used in the International System of Measurement and identify appropriate

situations in which to use them.

SWBAT name the main base units used in science and what they are used to measure.

LEARNER PROFILE: Communicators

DO NOW: Answer the three questions below.

- 1. What units would you use to measure the distance between Dallas and Arlington?
- 3. Can you think of a unit that would allow you to accurately measure the width of a human hair?
- 2. What units would you use to tell someone the temperature?

4. Do you think other countries measure distance, time, temperature, etc. the same as the United States? Why or why not?

GUIDED NOTES: SI Units

- Scientists, and most of the world, use the International System of Measurement.
- This is also known as ______ or the ______ system.

Base Units:

- Each type of measurement in SI units has a _______
- There is one ______ for each physical quantity.

| Physical Quantity | Definition | Base Unit | Abbreviations |
|-------------------|------------|-----------|---------------|
| Length/Distance | | | |
| Mass | | | |
| Volume | | | |
| Temperature | | | |
| Time | | | |

Homework: Finish ENTIRE guided notes packet.

Name: _____ Pod: _____ Date: _____

Prefixes:

- A _______ is a letter or word that's placed in front of another word to give it meaning. •
- In SI Units, ______ or ______ or ______ • units for that quantity.
 - For example: The prefix kilo- might be added to a *base unit* to create a unit that is 1,000 times larger than the base. **Prefix Ladder**



GUIDED PRACTICE:

| 1. | The length of a sheet of notebook paper. Why? | 2. | The length of a classroom wall. Why? |
|----|---|----|--------------------------------------|
| | The volume of 2 jugs of milk. Why? | | The volume the Gulf of Mexico. Why? |
| | The mass of a human eyelash. Why? | | The mass of a large ant. Why? |
| 3. | The distance from Dallas, TX to Chicago, IL. Why? | 4. | The thickness of a washer. Why? |
| | The volume of 20 drops of water. Why? | | The mass of a couch. Why? |
| | The mass of a paper clip. Why? | | The volume of a mug of coffee. Why? |

INDEPENDENT PRACTICE:

DIRECTIONS: Complete the charts with the correct terms or numbers in the space provided.

| SI Base Units | | | | |
|-------------------|-------|--------|--|--|
| Quantity Measured | Unit | Symbol | | |
| length | 1. | 2. | | |
| | 3. | g | | |
| time | 4. | 5. | | |
| 6. | Liter | 7. | | |
| 8. | 9. | °C | | |

| Prefixes | | |
|------------|---------|--|
| Prefix | Meaning | |
| kilo- (k) | 10. | |
| hecto- (h) | 11. | |
| deka- (da) | 12. | |
| base unit | 13. | |
| deci- (d) | 14. | |
| centi- (c) | 15. | |
| milli- (m) | 16. | |

DIRECTIONS: On each line, write the term or phrase that correctly completes each sentence.

- 17. The internationally accepted system for measurement is called the ______, which is abbreviated as ______.
- **18.** The SI system of measurement has standard measurements called ______ units and a set of _____ to tell the size of the unit.
- 19. The International System of Units (SI) uses _______to identify the size of the unit.
- 20. Because SI is based on ______, it is easy to convert from one SI unit to another.

Qualitative and Quantitative Observations {HOMEWORK}

Directions: Determine which of the following statements are qualitative and quantitative observations. Place a **capital QL** on the lines in front of the statements that are <u>qualitative</u> observations. Place a **capital QN** on the lines in front of the statements that are <u>quantitative</u> observations.

| 1. | Kim observed six red objects in a basket. |
|---------|---|
| 2. | Ricky determined the objects in the basket have a circumference of ten centimeters. |
| 3. | Ian measured an object to have a mass of 23.5 grams. |
| 4. | The object has a black shiny surface. |
| 5. | The thermometer indicates that the liquid has a temperature of 32°C. |
| 6. | Billy observed 3 green geckos sitting on a tree branch. |
| 7. | Jake recorded into his journal that the blue block floated lower in the water than the red block. |
| 8. | The earth material has a density of 3.2 g/cm^3 . |
| 9. | The mineral is greenish-blue in color. |
| 10. | This morning, the temperature was 42°F. |

Observation or Inference {HOMEWORK}

Directions: Label the following statements as either observation (O) or inference (I).

- 1. When I rang the doorbell, no one answered.
- 2. The hamburger was hot. _____
- 3. Jamal must be very popular.
- 4. The rabbit uses fur from her stomach to build her nest.
- 7. Those clouds look like a mountain. ______8. The beaker contains 250 ML of water.

6. The rock feels like an ice cube.

- 9. The bark on the birch tree was white.
- 10. A gas was formed when I mixed the liquid and solid.

5. That sounded like a mean dog.