

# Extra Practice

Name: Key Period: \_\_\_\_\_

## Metric System: Friend of the Scientist

| Prefix            | kilo <sup>1000</sup><br><del>1000</del> | hecto<br>100        | deka<br>10          | unit<br>1        | deci<br>0.1         | centi<br>0.01        | milli<br>0.001        |
|-------------------|---|---------------------|---------------------|------------------|---------------------|----------------------|-----------------------|
| distance<br>meter | <del>1000 m</del> Km                    | <del>100 m</del> hm | <del>10 m</del> dam | <del>1 m</del> m | <del>0.1 m</del> dm | <del>0.01 m</del> cm | <del>0.001 m</del> mm |
| volume<br>liter   | <del>1000 L</del> Kl                    | <del>100 L</del> hl | <del>10 L</del> dal | <del>1 L</del> l | <del>0.1 L</del> dl | <del>0.01 L</del> cl | <del>0.001 L</del> ml |
| mass<br>gram      | <del>1000 g</del> Kg                    | <del>100 g</del> hg | <del>10 g</del> dag | <del>1 g</del> g | <del>0.1 g</del> dg | <del>0.01 g</del> cg | <del>0.001 g</del> mg |

**Instructions:** To convert from unit to another, simply count the number of steps between those units and then move the decimal the same number of steps and the same direction. For example, to convert from kilometers to decimeters you would move the decimal four spaces to the right.

Practice (Show your work!):

### Earth Science: Decimal Jump Method.

- A. 2 km = 2000 m 2.000
- B. 3.7 dam = 3700 cm 3.700
- C. 258.3 ml = 0.2583 l 258.3
- D. 0.0038 hm = 38 cm 0.0038
- E. 14,372 mg = 0.014372 kg 0.014372
- F. 1.2293 dm = 122.93 mm 1.2293
- G. 23,923 cm = 0.23923 km 23923
- H. 0.0096 kg = 9.6 g 0.0096
- I. 912 mm = 0.00912 hm 912
- J. 68.291 m = 6.8291 dam 68.291
- K. 0.0024 cm = 0.000024 m 0.0024
- L. 0.00000752 kg = 7.52 mg 0.00000752

Geology  
Extra Practice Problems  
Using Factor Label Method

$$A) 2 \text{ km} \left( \frac{1000 \text{ m}}{1 \text{ km}} \right) = 2000 \text{ m} = 2.0 \times 10^3 \text{ m}$$

$$B) 3.7 \text{ dam} \left( \frac{10 \text{ m}}{1 \text{ dam}} \right) \left( \frac{1 \text{ cm}}{0.01 \text{ m}} \right) = 3700 \text{ cm} = 3.7 \times 10^3 \text{ cm}$$

$$C) 258.3 \text{ mL} \left( \frac{.001 \text{ L}}{1 \text{ mL}} \right) = 0.2583 \text{ L} = 2.583 \times 10^{-1} \text{ L}$$

$$D) 0.0038 \text{ hm} \left( \frac{100 \text{ m}}{1 \text{ hm}} \right) \left( \frac{1 \text{ cm}}{0.01 \text{ m}} \right) = 38 \text{ cm} = 3.8 \times 10^1 \text{ cm}$$

$$E) 14,372 \text{ mg} \left( \frac{.001 \text{ kg}}{1 \text{ mg}} \right) \left( \frac{1 \text{ kg}}{1000 \text{ g}} \right) = 0.014372 \text{ kg} = 1.4372 \times 10^{-2} \text{ kg}$$

$$F) 1.2293 \text{ dm} \left( \frac{0.1 \text{ m}}{1 \text{ dm}} \right) \left( \frac{1 \text{ mm}}{0.001 \text{ m}} \right) = 122.93 \text{ mm} = 1.2293 \times 10^2 \text{ mm}$$

$$G) 23,923 \text{ cm} \left( \frac{0.01 \text{ km}}{1 \text{ cm}} \right) \left( \frac{1 \text{ km}}{1000 \text{ m}} \right) = 0.23923 \text{ km} = 2.3923 \times 10^{-1} \text{ km}$$

$$H) 0.0096 \text{ kg} \left( \frac{1000 \text{ g}}{1 \text{ kg}} \right) = 9.6 \text{ g} = 9.6 \times 10^0 \text{ g}$$

$$I) 912 \text{ mm} \left( \frac{0.001 \text{ hm}}{1 \text{ mm}} \right) \left( \frac{1 \text{ hm}}{100 \text{ m}} \right) = 0.00912 \text{ hm} = 9.12 \times 10^{-3} \text{ hm}$$

$$J) 68.291 \text{ m} \left( \frac{1 \text{ dam}}{10 \text{ m}} \right) = 6.8291 \text{ dam} = 6.8291 \times 10^0 \text{ dam}$$

$$K) 0.0024 \text{ cm} \left( \frac{0.01 \text{ m}}{1 \text{ cm}} \right) = 0.000024 \text{ m} = 2.4 \times 10^{-5} \text{ m}$$

$$L) 0.00000752 \text{ kg} \left( \frac{1000 \text{ g}}{1 \text{ kg}} \right) \left( \frac{1 \text{ mg}}{0.001 \text{ g}} \right) = 7.52 \text{ mg} = 7.52 \times 10^0 \text{ mg}$$