**Science 10** Name: \_\_\_\_KEY\_\_\_\_\_\_\_\_

**Physics Unit: Metric Conversion Sheet** Block: \_\_\_\_

1. Bring a calculator to every class.
2. For every question in the Physics unit you must

* show your work and include units
* the answer must be circled, rounded off appropriately and include the correct units.

***During the Physics unit – you will have to do a lot of conversions- explained on pages 547-548.***

**A. The units you will use in the Physics unit are listed below – write in the abbreviation for each unit:**

Time – seconds (\_\_s\_\_\_\_), minutes ( \_\_min\_\_\_), hours (\_h\_), days (\_\_days\_\_\_ ) and years (\_\_a\_\_\_\_ ).

Distance- millimeters (\_mm\_\_\_\_), centimeters (\_\_cm\_\_\_\_), meters (\_\_m\_\_) and kilometers (\_km\_\_\_\_\_\_)

**B. Now fill in the following conversion factors:**

a. \_100\_\_cm b. 1000mm c. \_\_\_1000\_\_\_\_\_m

1m \_1\_\_\_\_m 1km

**d. \_\_60\_\_ sec e. \_60\_ min f. \_\_24\_\_hr g. \_365\_\_\_days**

**1min 1hr 1 day 1 year**

**C. To do conversions, the following work must be shown:**

**Example 1: To convert 2.5 m to km you need to multiply 2.5m by the conversion factor (in the box) that will cancel off the metres.**

**2.5m x 1km =\_\_0.0025\_\_\_\_km**

**1000m**

**Example 2: To convert 250 hours to days you will need to multiple 250 hours by the conversion factor (in the box) that will cancel off the hours.**

**250 hours x 1day = \_\_10.4\_\_\_\_\_days**

**24 hours**

**D. Now you try it, convert:**

**1. 35 days to hours.**

**35 days x 24hr = \_\_\_840\_\_\_\_\_\_\_\_\_ hours**

**1 days**

**2. 250 cm to metres**

**250 cm x 1m = \_\_\_2.5\_\_\_\_\_\_\_\_\_ m**

**100cm**

**3. 6 days to minutes**

**6 days x \_\_24\_\_\_ hr x \_60\_\_ min = \_\_8640\_\_\_\_ min**

**1 day 1 hr**

**4. 1500 mm to km**

**1500 mm x 1cm\_\_ x 1m x 1km = \_0.0015\_\_km**

**\_10\_\_mm \_100\_\_\_cm \_1000\_\_\_\_m**

**E. Try these by yourself. – show all of the work**

1. **25 cm to km**

**25 cm x 1m x 1km = 2.5 x 10-4 or 0.00025 km**

**100cm 1000m**

1. **5 min to seconds**

**5 min x 60sec = 300 sec**

**1 min**

**F. Bonus: The speed of light is 3 x108 m/s. Make the conversion to light years (km/year). This is how far light will travel in one year. – *Must show all work!!***

**3 x 108 m x 1km x 60 s x 60 min x 24 hr x 365 days = 9.5 x 1012km**

**1 s 1000m 1 min 1 hr 1 day 1 a a**