

**Topic:** SI Prefixes - Mass Worksheet

**Summary:** Students learn to use common mass SI prefixes.

**Goals & Objectives:** Students will be able to convert SI units. Students will be able to make measurements using the metric system.

**Standards:** CA Investigation and Experimentation: *1.* Analyze situations and solve problems that require combining and applying concepts from more than one area of science.

**Time Length:** 20 minutes

**Materials:**

- Pencils
- Handout

**Procedures:**

1. Teach students how to find the difference in zeros when converting prefixes. A simple way is for students to count the number of decimal places. Example kilo has three decimal moves. Then teach the students to move the decimal from left to right when going from a larger value to a smaller value and to move the decimal to the left when going from a smaller value to a larger value.
2. Students convert prefixes by answering questions 1 – 15. The data table can be used to help students with the conversions. Questions 1-5 have the correct underlines provided. Questions 5-9 have some underlines that are not used. Questions 10-15 have no numbers.

**Accommodations:**

Students with an IEP can have extra time or do questions 1-5. ESL students can work with, but not copy, a student fluent in English.

**Evaluation:**

Each question is worth 1 point. This assignment is worth a total of 15 points.

## SI Prefixes – Mass

Prefix	Symbol	Factor of Base Unit
kilogram	kg	1,000
gram	g	1
milligram	mg	.001
microgram	μg	.000001

Convert a large value to a small value = move the decimal to right ! Convert a small value to a large value = move the decimal to left

To change SI prefixes is as simple as moving the decimal place. You are going to practice this by discovering how many decimals you need to move and then by drawing arrows under the lines in order to move the decimal point. Start with the measurement on the left side and convert it to the measurement, in bold, on the right side. Example:

$$1000 \text{ g} = \overset{1}{\underbrace{\quad \quad \quad}} \overset{0}{\underbrace{\quad \quad \quad}} \overset{0}{\underbrace{\quad \quad \quad}} \overset{0}{\underbrace{\quad \quad \quad}} = 1 \text{ kg}$$

1)  $7 \text{ kg} = \underline{7} . \underline{0} \quad \quad \quad = \underline{\quad \quad \quad} \text{ g}$

2)  $3.3 \text{ mg} = \quad \quad \quad \underline{3} . \underline{3} = \underline{\quad \quad \quad} \text{ g}$

3)  $93 \text{ g} = \quad \quad \quad \underline{9} \underline{3} . = \underline{\quad \quad \quad} \text{ kg}$

4)  $5.4 \text{ kg} = \underline{5} . \underline{4} \quad \quad \quad = \underline{\quad \quad \quad} \text{ g}$

5)  $94.2 \text{ mg} = \quad \quad \quad \underline{9} \underline{4} . \underline{2} = \underline{\quad \quad \quad} \text{ g}$

6)  $7 \mu\text{g} = \quad \quad \quad \underline{7} . \quad = \underline{\quad \quad \quad} \text{ mg}$

7)  $2.5 \text{ g} = \underline{2} . \underline{5} \quad \quad \quad = \underline{\quad \quad \quad} \text{ mg}$

8)  $4.1 \text{ mg} = \quad \quad \quad \underline{4} . \underline{1} = \underline{\quad \quad \quad} \text{ g}$

9)  $1.06 \text{ mg} = \underline{1} . \underline{0} \underline{6} \quad \quad \quad = \underline{\quad \quad \quad} \mu\text{g}$

10)  $76.5 \text{ mg} = \quad \quad \quad \quad \quad \quad = \underline{\quad \quad \quad} \text{ g}$

11)  $.4 \text{ g} = \quad \quad \quad \quad \quad \quad = \underline{\quad \quad \quad} \text{ mg}$

12)  $.55 \text{ kg} = \quad \quad \quad \quad \quad \quad = \underline{\quad \quad \quad} \text{ g}$

13)  $.2 \text{ mg} = \quad \quad \quad \quad \quad \quad = \underline{\quad \quad \quad} \mu\text{g}$

14)  $89 \text{ g} = \quad \quad \quad \quad \quad \quad = \underline{\quad \quad \quad} \text{ kg}$

15)  $.004 \text{ kg} = \quad \quad \quad \quad \quad \quad = \underline{\quad \quad \quad} \text{ mg}$