

DIMENSIONAL ANALYSIS AND MEASURING PRACTICE & REVIEW

WHAT ARE METRIC SYSTEM MEASUREMENTS FOR:

1. distance **METER** volume **LITER** mass **GRAM**

Convert the following measurements (show all work in your notebook):

2. 987 m = **.987 km**

11. 151 mL = **.151 L**

3. 1,234,560 mg = **1.23456 kg**

12. 1 m = **1000 mm**

4. 456 L = **456,000 ml**

13. 1 kg = **1000000 mg**

5. 1km = **1000 m**

14. 225 kg = **495 lbs.**

6. 1 m = **100 cm**

15. 49 in = **124 cm**

7. 1000m = **1km**

16. 12 gallons = **46 L**

8. 1 cm = **10 mm**

17. 35 mi = **56 km**

9. 1.5 L = **1500 ml**

18. 8 oz. = **224 grams**

10. 35 cm³ = **35 ml**

19. -40 C = **-40 F**

20. List the value of each of the following metric prefixes:

Kilo **1000** Hecta **100** Deca **10** Deci **1/10** Centi **1/100** Milli **1/1000**

Name the Equipment

21. **BALANCE (TRIPLE BEAM)**



23. **FLASK (ERLENMEYER)**



22. **GRADUATED CYLINDER**



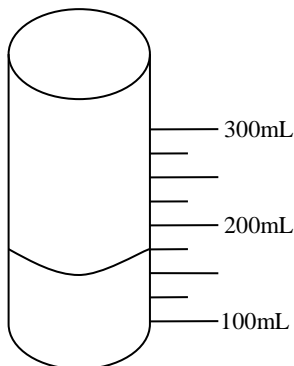
24. **BEAKER**



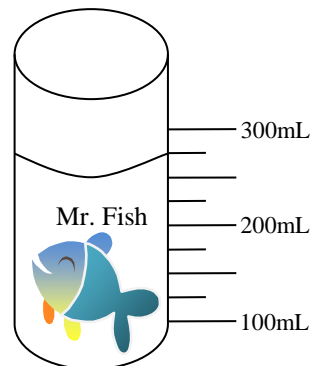
DETERMINING VOLUME OF AN IRREGULARLY SHAPED SOLID:

25. What is the volume of Mr. Fish? **100 ml or 100 cm³**

Graduated cylinder with water before fish



Graduated cylinder with water after Mr. Fish is added



26. How **tall** is Mr. Fish's graduated cylinder he is swimming in? **3.5 cm or 35 mm**

27. What is the **width** in cm of Mr. Fish's graduated cylinder? **2 cm or 20 mm**

28. What is the **volume** of a box that is 10 cm by 5 cm by 3 cm? **150 cm³**

29. At what temperature are Celsius and Fahrenheit **equal**? **-40 °C and -40 °F**

30. What formula can you use to **convert Celsius to Fahrenheit**? **+40 x 1.8 - 40**

31. Convert -78 °C to Fahrenheit **-108 °F**

32. Convert 57 °C to Fahrenheit **136 °F**

33. What weighs more **100 kg of feathers or 100 kg of bricks and rocks**? **SAME, 100 kg**

*100 plants are split into two separate groups in an experiment on natural pest control. One group has lady bugs spread throughout the 50 plants and the other group has nothing added for controlling aphids (small parasitic insects) from eating the plants. 86% of the plants **with** lady bugs were still alive after 4 weeks. 52% of plants **without** lady bugs were dead after 4 weeks.*

34. Which group above is the **experimental group**? **PLANTS WITH LADY BUGS**

35. Which is the **control group**? **NO LADY BUGS**

36. What is the **variable** being tested? **LADY BUGS**

37. What is the **manipulated** (independent variable)? **THE PEST CONTROL METHOD (LADY BUGS)**

38. What is the **responding** (dependent variable)? **NUMBER OF APHIDS**

39. What could you **infer** about the **lady bugs** from this study? **THEY EAT APHIDS**

40. Would it be good to have **multiple variables being tested at once**? Explain. **NO, BECAUSE YOU WOULD NOT KNOW WHAT IS CAUSING THE DECREASE IN THE NUMBER OF APHIDS.**

41. What is **another manipulated variable** you could test for pest control & its **responding variable**?
MANIPULATED VARIABLE: INSECTICIDE, BUG SPRAY, ETC.

RESPONDING VARIABLE: NUMBER OF LIVING PLANETS OR NUMBER OF PESTS (APHIDS)