

UNIT 7: DECIMAL METRIC SYSTEM.

Metric Prefixes:

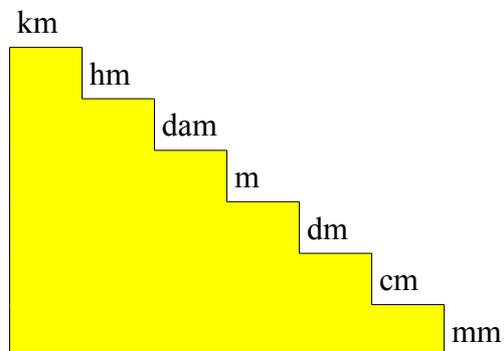
The metric system has prefix modifiers that are multiples of 10.

Prefix	Symbol	Factor Number	Factor Word
kilo-	k	1000	Thousand
hecto-	h	100	Hundred
deca-	da	10	Ten
deci-	d	0.1	Tenth
centi-	c	0.01	Hundredth
milli-	m	1	Thousandth

Length Units:

To measure lengths, the main unit is the meter (m). Its multiples and factors are:

- A kilometer is 1000 meters
- A hectometer is 100 meters
- A decameter is 10 meters
- A meter is the basic unit of length
- A decimeter is 1/10 meter
- A centimeter is 1/100 meter
- A millimeter is 1/1000 meter

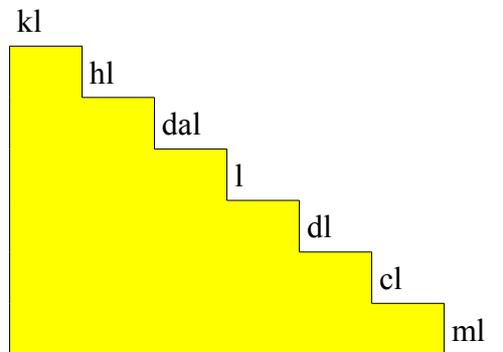


As we move down the units, the next unit is one tenth as long. As we move upward, each unit is 10 times as long.

Capacity Units:

To measure capacities, the main unit is the liter (l). Its multiples and factors are:

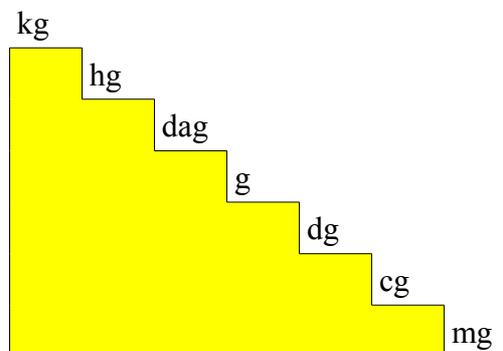
- A kiloliter is 1000 liters
- A hectoliter is 100 liters
- A decaliter is 10 liters
- A liter is the basic unit of capacity
- A deciliter is 1/10 liter
- A centiliter is 1/100 liter
- A milliliter is 1/1000 liter



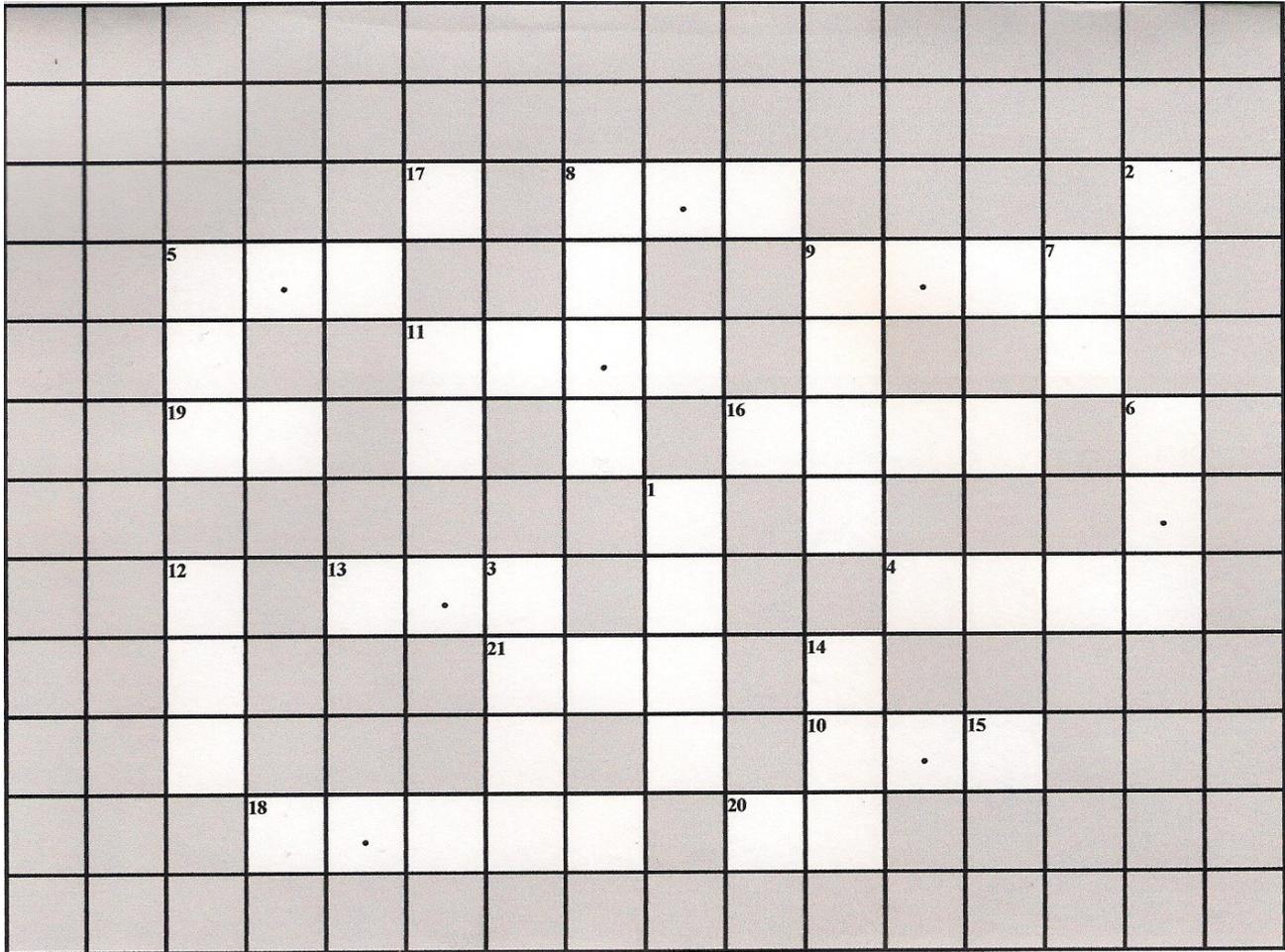
Weight Units:

To measure weights, the main unit is the gram (g). Its multiples and factors are:

- A kilogram is 1000 grams
- A hectogram is 100 grams
- A decagram is 10 grams
- A gram is the basic unit of weight (or mass)
- A decigram is 1/10 gram
- A centigram is 1/100 gram
- A milligram is 1/1000 gram



METRIC NUMBER PUZZLE:



Down

1. 7.4 km = _____ m
2. 6.9 cg = _____ mg
3. 8.7 kl = _____ l
4. 8000 g = _____ kg
5. 10.5 cm = _____ mm
6. 5300 ml = _____ l
7. 12000 mg = _____ g
8. 12100 mg = _____ g
9. 2.2 kl = _____ l
10. 4 cg = _____ mg
11. 11000 l = _____ kl
12. 6 l = _____ cl
13. 30 ml = _____ cl
14. 5.4 l = _____ cl
15. 5000 g = _____ kg

Across

1. 70 mm = _____ cm
2. 60 ml = _____ cl
4. 8.043 kg = _____ g
5. 1600 l = _____ kl
8. 1100 ml = _____ l
9. 2419 mg = _____ g
10. 4500 mm = _____ m
11. 1060 cl = _____ l
13. 38 mm = _____ cm
16. 1 kg = _____ g
17. 20 mm = _____ cm
18. 3505 l = _____ kl
19. 5.6 cg = _____ mg
20. 3 cl = _____ ml
21. 7 m = _____ cm

Area Units:

To measure areas, the main unit is the square meter (m^2). Its multiples and factors are:

A square kilometer is 1000000 square meters

A square hectometer is 10000 square meters

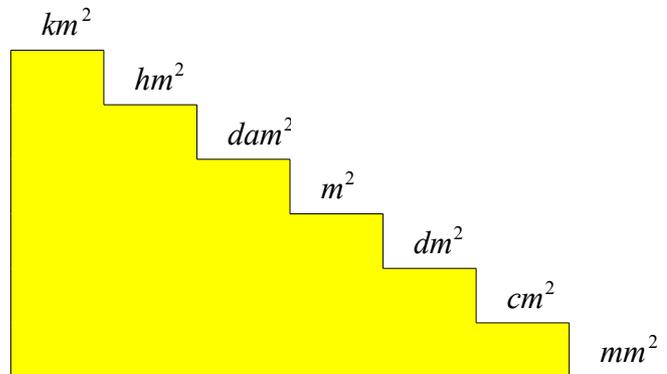
A square decameter is 100 square meters

A square meter is the basic unit of area

A square decimeter is 1/100 square meter

A square centimeter is 1/10000 square meter

A square millimeter is 1/1000000 square meter



(Other units for measuring areas: Hectare = Square hectometer; Are = Square decameter; Centiare = Square meter).

Volume Units:

To measure volumes, the main unit is the cubic meter (m^3). Its multiples and factors are:

A cubic kilometer is 1000000000 cubic meters

A cubic hectometer is 1000000 cubic meters

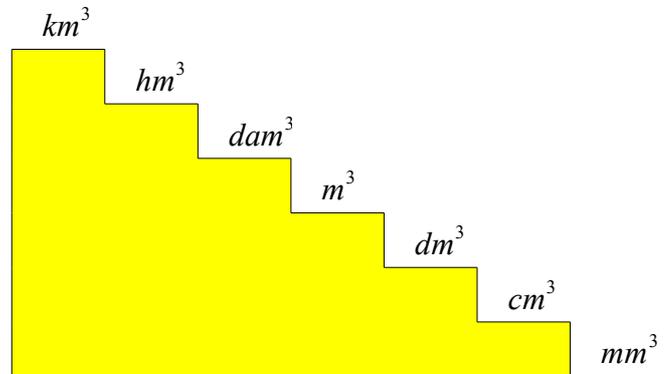
A cubic decameter is 1000 cubic meters

A cubic meter is the basic unit of volume

A cubic decimeter is 1/1000 cubic meter

A cubic centimeter is 1/1000000 cubic meter

A cubic millimeter is 1/1000000000 cubic meter



Activities.



Ethan lives at one end of Park Avenue. Brian lives at the other end of the avenue. It is 5.8 kilometers from one end of Park Avenue to the other. If Ethan walks 2.79 kilometers toward Brian's house, how many meters does he have to walk to get there?

Devin had the measles and had to stay inside even though he didn't feel very bad at all. He decided to make a cake to surprise his mother. The recipe said he needed four deciliters of milk. How many liters of milk did he need?

Aaron and Noah wanted to have a contest to see which of their paper airplanes could fly the longest distance. Aaron's plane flew four meters. Noah's plane only flew seventy-nine centimeters. How much further did Aaron's plane fly?

We are driving to Las Vegas. The sign says that it is one hundred forty-five kilometers to Las Vegas. How many meters is it to Las Vegas?

Three weeks ago, Andrew's weight was two hundred eighty-five and two tenths kilograms. He has since lost nineteen and five tenths kilograms. What is his current weight?

It was unusual for Cinnamon to wander so far from home. She was a good dog and usually stayed very near her home. After looking for her for almost three hours, Dylan found her three kilometers from home. How many meters was she from home?

Alexis wanted to build a bookshelf for her room. She needed six boards that are each three meters long and forty-one centimeters wide. What is the area of each board?

Cameron drinks 2 liters of water every day. He said his doctor told him it was good for him. If he continues to drink 2 liters of water each day, how many liters will he drink in seven weeks?

Benjamin really likes tropical fish. As a matter of fact, he likes them so much that he kept five aquariums with almost a hundred fish in his room! His mother said he was going to use up all their water just to fill the tanks. The tanks held eighty-seven liters, forty-four liters, sixty-eight liters, seventy-nine liters, and thirty-four liters of water. How much water do all of the tanks hold in all?

Anthony was thirsty. He drank a glass of ice water and leaned against the door. He and Benjamin were going to the river near their school to look for gold. If he walked to Benjamin's house and then to the river, it would be five thousand, six hundred sixty-six meters. If he walked straight to the river, it would only be four kilometers. How many more meters does Anthony need to walk if he walks to Benjamin's house first instead of walking directly to the river?

The naughty boy heard someone on television talking about how good a milk bath was for one's skin. He decided to try it. He went to the refrigerator and got out all the milk. The bathtub holds twenty-seven liters of liquid. If there are three liters of milk in each bottle, how many bottles will he have to use to fill up the bathtub?

Matthew kept track of his weight on a calendar. On April 1 he weighed forty-six kilograms. On May 1 he weighed nine hundred grams more. By June 1 he had gained another two kilograms. How much was his weight, in kilograms, on the first of June?

Eric wants to fill up his car's gas tank. The tank holds 21 liters and is currently a third empty. How many liters of gas will it take to fill the tank?

The boundary between our farm and the farm to the north is 4.3 km. The boundary between our farm and the farm to the south is two hundred thirty-three meters. How much longer, in kilometers, is the boundary with the farm to the north than the boundary with the farm to the south?

Sydney's boyfriend gave her a heart-shaped box of candy with 0.79 kilograms of chocolate candy in it. Elizabeth was jealous because her boyfriend only gave her 0.3 kilograms of chocolate candy. How many grams more did Sydney get?

Katherine was given a tiny lamb by her uncle. The lamb was a runt and had to be fed by hand. Every three hours Katherine had to give it two hundred ninety milliliters of formula. How much formula, in liters, will the lamb get in 24 hours?

According to the news report, the volcano dumped forty-one million kilograms of lava on the surrounding countryside. The biggest eruption up to this time had left three million, two hundred thousand kilograms of lava in its wake. How much more lava was dumped this time?

Mathematics Glossary

Write here new words you learned related to mathematics: