Note: Scholars are allowed to use this conversion chart on the STAAR test

STAAR GRADE 5 MATHEMATICS REFERENCE MATERIALS

LENGTH

Customary	Metric
1 mile (mi) = 1,760 yards (yd)	1 kilometer (km) = 1,000 meters (m)
1 yard (yd) = 3 feet (ft)	1 meter (m) = 100 centimeters (cm)
1 foot (ft) = 12 inches (in.)	1 centimeter (cm) = 10 millimeters (mm)

VOLUME AND CAPACITY

Customary	Metric
1 gallon (gal) = 4 quarts (qt)	1 liter (L) = 1,000 milliliters (mL)
1 quart (qt) = 2 pints (pt)	
1 pint (pt) = 2 cups (c)	
1 cup (c) = 8 fluid ounces (fl oz)	

WEIGHT AND MASS

Customary	Metric
1 ton (T) = 2,000 pounds (lb)	1 kilogram (kg) = 1,000 grams (g)
1 pound (lb) = 16 ounces (oz)	1 gram (g) = 1,000 milligrams (mg)

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1. Creepy Cristabelle is measuring one of the bookshelves in her creepy castle. It is 25 feet long. How long is that in inches?

2. Carlotta the Cavity Queen has 52,000 milliliters of maple syrup in her emergency syrup tank in the back yard. How much is that in liters?

3. Annoying Albert loves to squirt people with his 3 Super Soaker water guns. All 3 of the water guns are empty and he wants to fill them up. It takes 2 quarts of water to fill each gun. Albert has 1 gallon of water. How much more water does he need to fill all 3 of his super soakers?

4. Ridiculous Rachel likes to make sure her herd of pill bugs has plenty to eat. She needs 3,785 milligrams of pill bug food to feed the whole herd. She only has 3 grams of food. How many more milligrams of pill bug food does she need?

5. Muscular Marvin likes to mix up a protein smoothie for breakfast every day. He puts 2 ounces of protein powder in his smoothie every morning. If he has 3 cups of protein powder in the can in his kitchen, how many days can he make his smoothies before he will have to get some more?

6. Annoying Albert likes to annoy people by shooting spitballs at them. He can accurately shoot a spitball a distance of 450 centimeters. How far is that in meters?

Unit: 5th – Measurement & Data Analysis
Lesson: 5.7.A – Measurement Word Problems
Problem Set 1

Tip: Bigger → Smaller = Multiply; Smaller → Bigger = Divide

1	2	3	4	5	6
300 inches	52 liters	3 guns = 6 quarts. One gallon = 4 quarts. So, Albert needs 2 more quarts.	785 milligrams	3 X 8 = 24. 24/2 = 12 days	4.5 meters
7	**8**	**9**	**10**	**11**	**12**
50 meters	1.5 Liters	12 X 2 = 24 pints.	6 X 3 = 18. 18 – 7 = 11 Feet	10 pounds	300 + 600 = 900 grams. 1 KG = 1000 g, so 1000 – 900 = 100 g
13	**14**	**15**	**16**	**17**	**18**
200 ML X 5 = 1,000 ML = 1 Liter a day. X 7 days = 7 liters	10 feet 8 inches = 128 inches. 130 – 128 = 2 inches.	8,000 pounds	156 feet	2.65 liters	2 grams = 2,000 milligrams – 1,500 milligrams = 500 milligrams
19	**20**	**21**	**22**	**23**	**24**
72 inches	0.5 kg	2 pints in a quart, 4 quarts in a gallon. So, 8 pints in a gallon. X 2 gallons = 16 guests.	250 X 5 = 1,250 milliliters. Or 1.25 liters.	2 meters = 2,000 mm. 1.35 meters = 1,350 mm. 2,000 – 1,350 = 650 mm	1 ton
25	**26**	**27**	**28**	**29**	**30**
1.3 meters	50 X 100 = 5,000 ml or 5 liters.	2 pounds	20 quarts	500 mg = .5 grams. Or 2 hearts per gram. 2 X 1000 = 2,000 hearts.	4 yards X 36 inches = 144 inches. 144 – 120 = 24 more inches.

7. Ridiculous Rachel likes to take her herd of pill bugs for a walk every afternoon. They usually walk .05 Kilometers. How far is that in meters?

8. Muscular Marvin likes to hydrate after exercise by drinking at least 1,500 milliliters of water. How much is that in liters?

9. Stinky Stan uses a quart of skunk spray a month to spray on his dogs to keep them extra smelly. If he does this every month for a year, how many pints of skunk spray is that?

10. Wanda the Witch had 6 yards of black cloth that she was planning to use to make a new witch dress for herself. She ended up using 7 feet of it for a tablecloth. How many feet does she have left to make her dress?

11. Stinky Stan found some super stinky cheese at the farmer's market. He bought 160 ounces of it. How much is that in pounds?

12. One of Polly's Pandas has terrible allergies. She needs to give him a kilogram of allergy medicine to make him feel better. She found 300 grams in her medicine cabinet, and she borrowed another 600 grams from one of the other Panda trainers. How much more does she need to have a kilogram?

Unit: 5th – Measurement & Data Analysis
Lesson: 5.7.A – Measurement Word Problems
Problem Set 2

Tip: Bigger → Smaller = Multiply; Smaller → Bigger = Divide

1 300 inches	2 52 liters	3 3 guns = 6 quarts. One gallon = 4 quarts. So, Albert needs 2 more quarts.	4 785 milligrams	5 3 X 8 = 24. 24/2 = 12 days	6 4.5 meters
7 50 meters	8 1.5 Liters	9 12 X 2 = 24 pints.	10 6 X 3 = 18. 18 – 7 = 11 Feet	11 10 pounds	12 300 + 600 = 900 grams. 1 KG = 1000 g, so 1000 – 900 = 100 g
13 200 ML X 5 = 1,000 ML = 1 Liter a day. X 7 days = 7 liters	14 10 feet 8 inches = 128 inches. 130 – 128 = 2 inches.	15 8,000 pounds	16 156 feet	17 2.65 liters	18 2 grams = 2,000 milligrams – 1,500 milligrams = 500 milligrams
19 72 inches	20 0.5 kg	21 2 pints in a quart, 4 quarts in a gallon. So, 8 pints in a gallon. X 2 gallons = 16 guests.	22 250 X 5 = 1,250 milliliters. Or 1.25 liters.	23 2 meters = 2,000 mm. 1.35 meters = 1,350 mm. 2,000 – 1,350 = 650 mm	24 1 ton
25 1.3 meters	26 50 X 100 = 5,000 ml or 5 liters.	27 2 pounds	28 20 quarts	29 500 mg = .5 grams. Or 2 hearts per gram. 2 X 1000 = 2,000 hearts.	30 4 yards X 36 inches = 144 inches. 144 – 120 = 24 more inches.

13. Ophelia uses extra gentle liquid soap to wash the Octopi at the zoo. She uses 200 milliliters per Octopus per day. If she washes 5 octopi a day, how many liters of soap does she use in 7 days?

14. Nicholas the Narwhal Expert says the world's longest Narwhal tusk was 10 feet and 8 inches long until yesterday! Yesterday a narwhal was discovered with a tusk that is 130 inches long. How many inches longer is that than the previous record?

15. Zoe the Zoo-Keeper is having an elephant shipped from Africa. The elephant weighs 4 tons. How much is that in pounds?

16. Wanda the Witch is having some trouble with her broom. The last time she flew, she could only make it 52 yards without stopping to re-charge. How far is that in feet?

17. Fashionable Fiona bought a white dress, but now she would like it to be blue. She has 2,650 milliliters of blue dye. How much is that in liters?

18. Sylvia the Sardine Chef plans to add 1,500 milligrams of salt to her Sardine Stew. If she has 2 grams of salt in her saltshaker, how many milligrams of salt will she have left once she seasons her stew?

Unit: 5th – Measurement & Data Analysis
Lesson: 5.7.A – Measurement Word Problems
Problem Set 3

Tip: Bigger → Smaller = Multiply; Smaller → Bigger = Divide

1	2	3	4	5	6
300 inches	52 liters	3 guns = 6 quarts. One gallon = 4 quarts. So, Albert needs 2 more quarts.	785 milligrams	3 X 8 = 24. 24/2 = 12 days	4.5 meters
7	**8**	**9**	**10**	**11**	**12**
50 meters	1.5 Liters	12 X 2 = 24 pints.	6 X 3 = 18. 18 – 7 = 11 Feet	10 pounds	300 + 600 = 900 grams. 1 KG = 1000 g, so 1000 – 900 = 100 g
13	**14**	**15**	**16**	**17**	**18**
200 ML X 5 = 1,000 ML = 1 Liter a day. X 7 days = 7 liters	10 feet 8 inches = 128 inches. 130 – 128 = 2 inches.	8,000 pounds	156 feet	2.65 liters	2 grams = 2,000 milligrams – 1,500 milligrams = 500 milligrams
19	**20**	**21**	**22**	**23**	**24**
72 inches	0.5 kg	2 pints in a quart, 4 quarts in a gallon. So, 8 pints in a gallon. X 2 gallons = 16 guests.	250 X 5 = 1,250 milliliters. Or 1.25 liters.	2 meters = 2,000 mm. 1.35 meters = 1,350 mm. 2,000 – 1,350 = 650 mm	1 ton
25	**26**	**27**	**28**	**29**	**30**
1.3 meters	50 X 100 = 5,000 ml or 5 liters.	2 pounds	20 quarts	500 mg = .5 grams. Or 2 hearts per gram. 2 X 1000 = 2,000 hearts.	4 yards X 36 inches = 144 inches. 144 – 120 = 24 more inches.

19. The Queen of Hasmuchia is measuring the distance across the wading pool she had built for the royal puppies. It is 2 yards across. How far is that in inches?

20. Disgusting Donald is adding some powdered insects to his pancake mix to make it more disgusting. He added 500 grams of powdered bugs. How much is that in kilograms?

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21.Creepy Cristabelle made 2 gallons of ghostly grape punch to serve at her Halloween party. If she gives each guest a pint of the punch. How many guests can she serve?

22.Picky Patrick waters his petunias with exactly 250 milliliters of water every day at exactly 2:30. How many liters of water is that in 5 days?

23. Sammy the Slug is going to see his mother who lives 2 meters away. It has taken him 2 hours to travel 1.35 meters. How many millimeters does he have left to get to his mother's house?

24. Polly the Panda trainer is training 8 pandas. Their combined weight is 2,000 pounds. How much is that in tons?

Unit: 5th – Measurement & Data Analysis
Lesson: 5.7.A – Measurement Word Problems
Problem Set 4

Tip: Bigger → Smaller = Multiply; Smaller → Bigger = Divide

1 300 inches	**2** 52 liters	**3** 3 guns = 6 quarts. One gallon = 4 quarts. So, Albert needs 2 more quarts.	**4** 785 milligrams	**5** 3 X 8 = 24. 24/2 = 12 days	**6** 4.5 meters
7 50 meters	**8** 1.5 Liters	**9** 12 X 2 = 24 pints.	**10** 6 X 3 = 18. 18 – 7 = 11 Feet	**11** 10 pounds	**12** 300 + 600 = 900 grams. 1 KG = 1000 g, so 1000 – 900 = 100 g
13 200 ML X 5 = 1,000 ML = 1 Liter a day. X 7 days = 7 liters	**14** 10 feet 8 inches = 128 inches. 130 – 128 = 2 inches.	**15** 8,000 pounds	**16** 156 feet	**17** 2.65 liters	**18** 2 grams = 2,000 milligrams – 1,500 milligrams = 500 milligrams
19 72 inches	**20** 0.5 kg	**21** 2 pints in a quart, 4 quarts in a gallon. So, 8 pints in a gallon. X 2 gallons = 16 guests.	**22** 250 X 5 = 1,250 milliliters. Or 1.25 liters.	**23** 2 meters = 2,000 mm. 1.35 meters = 1,350 mm. 2,000 – 1,350 = 650 mm	**24** 1 ton
25 1.3 meters	**26** 50 X 100 = 5,000 ml or 5 liters.	**27** 2 pounds	**28** 20 quarts	**29** 500 mg = .5 grams. Or 2 hearts per gram. 2 X 1000 = 2,000 hearts.	**30** 4 yards X 36 inches = 144 inches. 144 – 120 = 24 more inches.

25. Picky Patrick insists on extra long shoelaces for his hi-tops. Each shoelace must be exactly 1,300 millimeters long. How long is that in meters?	26. Leonard the Lizard Rancher likes to make lemonade for his lizards for a special treat in the summer. Leonard has 50 lizards in his herd, and he wants to make 100 ml of lemonade for each lizard. How many liters of lemonade does he need to make?	27. Creepy Cristabelle is buying eel food for the electric eels she keeps in her swimming pool. She needs 32 ounces of eel food. How much is that in pounds?
5.7.A – Measurement: Word Problems – PS	5.7.A – Measurement: Word Problems – PS	5.7.A – Measurement: Word Problems – PS
28. Carlotta the Cavity Queen just made 5 gallons of tea, extra sweet, just the way she likes it. How much is that in quarts?	29. Carlotta the Cavity Queen loves conversation heart candy for Valentine's Day! Each heart weighs 500 milligrams and Carlotta ate 1,000 grams of them last Valentine's Day! How many hearts is that?	30. Creepy Cristabelle wants a new table for the huge dining room in her creepy castle. She wants a table that is 4 yards long. She found a table, but it is only 120 inches long. How much longer does it need to be for Cristabelle to be happy with it?
5.7.A – Measurement: Word Problems – PS	5.7.A – Measurement: Word Problems – PS	5.7.A – Measurement: Word Problems – PS

Unit: 5th – Measurement & Data Analysis
Lesson: 5.7.A – Measurement Word Problems
Problem Set 5

Tip: Bigger → Smaller = Multiply; Smaller → Bigger = Divide

1	2	3	4	5	6
300 inches	52 liters	3 guns = 6 quarts. One gallon = 4 quarts. So, Albert needs 2 more quarts.	785 milligrams	3 X 8 = 24. 24/2 = 12 days	4.5 meters
7	**8**	**9**	**10**	**11**	**12**
50 meters	1.5 Liters	12 X 2 = 24 pints.	6 X 3 = 18. 18 – 7 = 11 Feet	10 pounds	300 + 600 = 900 grams. 1 KG = 1000 g, so 1000 – 900 = 100 g
13	**14**	**15**	**16**	**17**	**18**
200 ML X 5 = 1,000 ML = 1 Liter a day. X 7 days = 7 liters	10 feet 8 inches = 128 inches. 130 – 128 = 2 inches.	8,000 pounds	156 feet	2.65 liters	2 grams = 2,000 milligrams – 1,500 milligrams = 500 milligrams
19	**20**	**21**	**22**	**23**	**24**
72 inches	0.5 kg	2 pints in a quart, 4 quarts in a gallon. So, 8 pints in a gallon. X 2 gallons = 16 guests.	250 X 5 = 1,250 milliliters. Or 1.25 liters.	2 meters = 2,000 mm. 1.35 meters = 1,350 mm. 2,000 – 1,350 = 650 mm	1 ton
25	**26**	**27**	**28**	**29**	**30**
1.3 meters	50 X 100 = 5,000 ml or 5 liters.	2 pounds	20 quarts	500 mg = .5 grams. Or 2 hearts per gram. 2 X 1000 = 2,000 hearts.	4 yards X 36 inches = 144 inches. 144 – 120 = 24 more inches.