



TABE Math-E

PAXEN

Unit-5 Measurement and Data

Lesson 40

Measure of Mass

(Metric)

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Some graphics may not have copied well during the scan process.

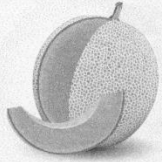
Math-E - Lesson 40 – Mass (Metric)

Lesson 40

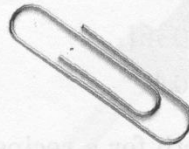
Measure Mass

3.MD.2 – Medium

The **mass** of an object determines how much the object weighs. You can measure mass using grams (g) and kilograms (kg). A kilogram is 1,000 grams.



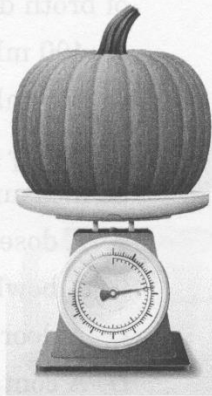
Kilograms (kg) are used to measure greater amounts of mass. This cantaloupe is about 1 kg.



Grams (g) are used to measure the mass of smaller objects. This jumbo paper clip is about 1 g.

Example How much does the pumpkin weigh?

- 1) Determine the units measured by the scale.
Each point labeled on the scale indicates kg, so the scale measures in kilograms.
- 2) Read the scale.
The indicator on the scale points to 4.
So, the pumpkin weighs 4 kilograms.



Example John's dog weighs 14 kilograms. The dog had a puppy that weighs 1 kilogram. How much more does John's dog weigh in kilograms than the puppy?

- 1) Subtract to find the difference.

$$14 - 1 = 13$$

So, John's dog weighs 13 kg more than the puppy.

Test Example

1. What is the best estimate for the mass of a car?
A. 2 kg B. 2 g
C. 2,000 kg D. 2,000 g

1. C A car has a large mass, so the most appropriate estimate would be 2,000 kilograms.

Hint

When estimating mass, consider whether the mass is small or large to help you determine whether to use grams or kilograms.

Math-E - Lesson 40 – Mass (Metric)

Practice

Read each question. Select the correct answer.

- 1 Jennifer gets on the scale at the doctor's office. Which is most likely her mass?
A. 60 grams B. 260 grams
C. 60 kilograms D. 260 kilograms
- 2 Curt has 9 pennies. Each penny has a mass of 3 grams. What is the mass of the pennies?
A. 12 grams B. 27 grams
C. 12 kilograms D. 27 kilograms
- 3 Warren buys a small bag of rice. The measurement has worn off. Which is most likely the missing measurement?
A. 45 g B. 45 kg
C. 450 g D. 450 kg
- 4 Marcia works out with weights at the gym. She stacks 4 plates that have a mass of 12 kilograms each. How much weight does she lift?
A. 8 kilograms B. 16 kilograms
C. 48 kilograms D. 124 kilograms
- 5 Lucy and her friend pick 20 apples at an orchard. Which is the best estimate of the mass of the apples?
A. 2 kilograms B. 200 kilograms
C. 40 grams D. 4 grams
- 6 Jolene is making a recipe that calls for 600 grams of ground meat. She places 812 grams of ground meat on a scale. How many grams of ground meat should Jolene remove before she makes her recipe?
A. 12 grams B. 212 grams
C. 12 kilograms D. 212 kilograms
- 7 Daniel wants to know the mass of his 8-year-old son. Which is most likely his mass?
A. 30 g B. 30 kg
C. 350 g D. 350 kg
- 8 Marybeth buys a 30-kilogram bag of rice. It is too heavy for her to carry, so she splits it equally into 5 containers. How much rice is in each container?
A. 6 grams B. 15 grams
C. 6 kilograms D. 15 kilograms
- 9 Jessie measures the mass of some small bolts to make sure they are all the same. Which estimate might be the mass of one of the bolts?
A. 60 kilograms B. 6 kilograms
C. 6,000 grams D. 60 grams
- 10 A bunch of bananas has 3 bananas. Each banana has a mass of 11 grams. How much mass does the bunch of bananas have?
A. 8 grams B. 14 grams
C. 30 grams D. 33 grams

Math-E - Lesson 40 – Mass (Metric)

Lesson 40

Measure Mass

(3.MD.2)

- 1. C.** A person would be measured in kilograms. A piano has a mass of about 260 kilograms.
- 2. B.** $9 \times 3 = 27$. The mass of the pennies is 27 grams.
- 3. C.** 45 and 450 kilograms would be too large a mass for a bag of rice. 45 grams would be too small a mass.
- 4. C.** $4 \times 12 = 48$. Marcia lifts 48 kilograms.
- 5. A.** While an apple might be measured in grams, kilograms is the most reasonable estimate for 20 apples. 200 kg is too large a mass for 20 apples.
- 6. B.** $812 - 600 = 212$. Jolene should remove 212 grams of ground meat before she makes her recipe.
- 7. B.** A person has too much mass to be measured in grams. 350 kg is too large a mass for a child.
- 8. C.** $30 \div 5 = 6$ kilograms.
- 9. D.** The most reasonable estimate of mass for a small object would be measured in grams; 6,000 grams = 6 kilograms, too large for a bolt.
- 10. D.** $11 \times 3 = 33$. The bunch of bananas has a mass of 33 grams.

Math-E - Practice 40 – Mass (Metric)

Practice 40

Measure Mass

3.MD.2 – Medium

Conversion factor: 1 kilogram = 1,000 grams

- 1 Tanuja buys potting soil for her garden. Which is most likely the mass of a bag of soil?
 - A. 18 g
 - B. 180 g
 - C. 18 kg
 - D. 180 kg
- 2 Arturo buys 480 grams of deli meat to make sandwiches. Each sandwich has 120 grams of meat. How many sandwiches can Arturo make?
 - A. 1 sandwich
 - B. 2 sandwiches
 - C. 3 sandwiches
 - D. 4 sandwiches
- 3 Kailani is curious about the mass of her cell phone, so she places it on a scale. Which is most likely the mass of Kailani's cell phone?
 - A. 3 g
 - B. 300 g
 - C. 3 kg
 - D. 300 kg
- 4 Hiroto's cookie recipe calls for 180 grams of sugar. He has already measured out 96 grams of sugar. How many more grams of sugar does Hiroto need to measure?
 - A. 80 g
 - B. 84 g
 - C. 100 g
 - D. 116 g
- 5 Yolanda buys 6 bottles of soda. Each bottle of soda has a mass of 2 kilograms. What is the total mass of the soda Yolanda buys?
 - A. 9 g
 - B. 12 g
 - C. 9 kg
 - D. 12 kg
- 6 Jejomar puts a letter inside a standard envelope to mail. At the post office, he places it on the scale. Which is the best estimate for the mass of Jejomar's letter?
 - A. 15 g
 - B. 500 g
 - C. 10 kg
 - D. 150 kg
- 7 Luz has two books in her bag. One book has a mass of 380 grams, and the second book has a mass of 521 grams. What is the total mass of Luz's books?
 - A. 141 g
 - B. 801 g
 - C. 901 g
 - D. 991 g
- 8 Fares places his cat on the scale at the vet's office. Which is most likely the mass of Fares's cat?
 - A. 40 kg
 - B. 4 kg
 - C. 40 g
 - D. 4 g
- 9 Divya needs 400 grams of flour to make one dozen muffins. How much flour does Divya need for three dozen muffins?
 - A. 4,800 g
 - B. 1,200 g
 - C. 800 g
 - D. 400 g
- 10 Which two objects would most likely be measured in kilograms?
 - A. a bus
 - B. a pencil
 - C. a sock
 - D. a napkin
 - E. a piece of paper
 - F. a laser printer

Math-E - Practice 40 – Mass (Metric)

- 11 Crystal packs her suitcase for her vacation. Which is most likely the mass of Crystal's packed suitcase?
- A. 200 g
 - B. 200 kg
 - C. 22 g
 - D. 22 kg
- 12 Earl rides his mobility scooter to the grocery store. The scooter has a mass of 82 kilograms. Earl puts 12 kilograms of groceries in his scooter's basket. What is the mass of Earl's scooter with the groceries?
- A. 112 kg
 - B. 98 kg
 - C. 94 kg
 - D. 92 kg
- 13 Ho-yin buys a bundle of firewood at the store. Which is most likely the mass of the firewood Ho-yin buys?
- A. 9 kg
 - B. 9 g
 - C. 900 kg
 - D. 900 g
- 14 Yasmeen's recipe calls for 543 grams of cheese. She places 752 grams of cheese on the scale. How much cheese should Yasmeen remove before she makes her recipe?
- A. 119 g
 - B. 209 g
 - C. 211 g
 - D. 219 g
- 15 A box of 12 equal-sized cookies has a total mass of 360 grams. What is the mass of one cookie?
- A. 30 g
 - B. 36 g
 - C. 30 kg
 - D. 36 kg
- 16 A lion has a mass of 187 kilograms. A cheetah has a mass of 65 kilograms. How much more mass does the lion have than the cheetah?
- A. 92 kg
 - B. 112 kg
 - C. 122 kg
 - D. 132 kg
- 17 Steve grows a watermelon in his garden. Which is most likely the mass of Steve's watermelon?
- A. 10 g
 - B. 10 kg
 - C. 100 g
 - D. 100 kg
- 18 Milagros buys a box of eight pens. Each pen has a mass of 50 grams. What is the total mass of Milagros's pens?
- A. 40 g
 - B. 45 g
 - C. 400 g
 - D. 4,000 g
- 19 Henry delivers a new washing machine to a house. Which is most likely the mass of the washing machine?
- A. 6 kg
 - B. 60 kg
 - C. 6 g
 - D. 60 g
- 20 Mei's banana bread recipe calls for 455 grams of chocolate chips. Her cookie recipe calls for 782 grams of chocolate chips. How many more grams of chocolate chips are in Mei's cookie recipe than her banana bread recipe?
- A. 223 g
 - B. 327 g
 - C. 333 g
 - D. 337 g

Math-E - Practice 40 – Mass (Metric)

Practice 40

Measure Mass

pp. 20–21

(3.MD.2)

1. C. A bag of potting soil has too much mass to be measured in grams. A mass of 180 kilograms is too much for a bag of potting soil. The most reasonable estimate is 18 kilograms.
2. D. $480 \div 120 = 4$; Arturo can make 4 sandwiches.
3. B. A cell phone is too small a mass to be measured in kilograms, and it has more mass than 3 grams. The most reasonable estimate is 300 grams.
4. B. $180 - 96 = 84$; Hiroto needs 84 more grams of sugar.
5. D. $6 \times 2 = 12$; Yolanda buys 12 kilograms of soda.
6. A. A letter is too small a mass to be measured in kilograms. A mass of 500 grams is too much for a letter. The most reasonable estimate is 15 grams.
7. C. $380 + 521 = 901$; Luz's books have a mass of 901 grams.
8. B. A cat's mass would be measured in kilograms. A mass of 40 kilograms would be too large for a pet cat. The most reasonable estimate is 4 kilograms.
9. B. $400 \times 3 = 1,200$; Divya needs 1,200 grams of flour for three dozen muffins.
10. A, F. A bus and a laser printer have masses that would be measured in kilograms. The other objects have too small a mass to be measured in kilograms.
11. D. A packed suitcase has too much mass to be measured in grams. A mass of 200 kilograms is too much for a suitcase. The most reasonable estimate is 22 kilograms.
12. C. $82 + 12 = 94$; Earl's scooter and groceries have a combined mass of 94 kilograms.
13. A. Firewood has too much mass to be measured in grams. A mass of 900 kilograms is too much for a bundle of firewood. The most reasonable estimate is 9 kilograms.
14. B. $752 - 543 = 209$; Yasmeen should remove 209 grams of cheese before she makes her recipe.
15. A. $360 \div 12 = 30$; One cookie has a mass of 30 grams.
16. C. $187 - 65 = 122$; The lion has 122 more kilograms of mass than the cheetah.
17. B. A watermelon has too much mass to be measured in grams. A mass of 100 kilograms is too much for a watermelon. The most reasonable estimate is 10 kilograms.
18. C. $8 \times 50 = 400$; Milagros's pens have a mass of 400 grams.
19. B. A washing machine has too much mass to be measured in grams, and it has more mass than 6 kilograms. The most reasonable estimate is 60 kilograms.
20. B. $782 - 455 = 327$; Mei's cookie recipe calls for 327 more grams of chocolate chips than her banana bread recipe.