Module 12   **Attributes and Tools**
Lesson 5   **Measurement: Weight and Mass**

1.   How many balls balance 16 blocks?

2. How many cans balance four blocks?
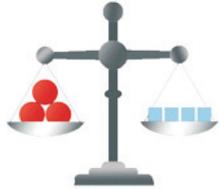
12 balls

Eight cans

Evaluate.

3.   12 lb 14 oz
+   9 lb 9 oz

    22 lb 7 oz

4.   28 lb   3 oz
−   13 lb 10 oz

    14 lb 9 oz

5.   55 lb
−   17 lb 14 oz

    37 lb   2 oz

6.   34 kg 805 g
+   19 kg 773 g

    54 kg 578 g

7.   A cat weighs 4,900 g. A dog weighs 5.12 kg. Which animal weighs more? How much more?

    The dog weighs 220 g, or 0.22 kg, more than the cat.

8. Adrian has three boxes to ship. One box weighs 5 lb 4 oz, one weighs 38 oz, and one weighs 18 lb. What is the total weight of the three boxes?

The total weight of the boxes is 25 lb 10 oz.

9. Larry has a 5 lb 10 oz bag of peanuts to divide equally among five people. How much will each person's share of peanuts weigh?

Each person's share will weigh 1 lb 2 oz.

10. A box of macaroni has a mass of 1.5 kg. Lilly used 525 g of macaroni. What is the mass of the remaining macaroni?

The mass of the remaining macaroni is 975 grams.

Journal

1. How does a balance scale differ from other scales such as a physician's scale or a kitchen scale? How can the specific weight of an object on a balance scale be determined when a balance scale has no readout or numbers on it?

2. Rico stood on a physician's scale and moved the weights to determine that he weighed 130 pounds because the big weight was on 100 and the small weight was on 30. Tell what would happen to the balance if Rico made the following movements:

   --moved the small weight to the right
   --moved the small weight to the left
   --moved the big weight to the right
   --moved the big weight to the left

   Explain your answers.

Cumulative Review

Fill in the blanks.

1. 3.5 mi = _____ ft

18,480

2. 154 h = ___ days ___ h

6; 10

3. 129 in. = _____ ft _____ in.

10; 9

4. 104 fl oz = _____ qt

$3\dfrac{1}{4}$

Use a ruler for Problems 5 and 6.

5. Find the length of the line segment to the nearest millimeter.

56 mm

6. Draw a line segment that is $3\dfrac{7}{8}$ inches long.

Perform the indicated operation.

7.   10 h 13 min
     8 h 42 min
  + 5 h 37 min

24 h 32 min

8.   55 ft 2 in.
  –   7 ft 11 in.

47 ft   3 in.

9.   19 cm 62 mm
  + 4 cm 81 mm

37 cm   3 mm

10. 129 km 254 m
  – 102 km 578 m

26 km 676 m

11. Donny is making a rectangular picture frame measuring $8\dfrac{1}{2}$ inches by $4\dfrac{3}{4}$ inches.

He has a strip of wood that is two feet four inches long. Does Donny have enough wood to make the picture frame? Why or why not?

Yes: Donnie needs $26\dfrac{1}{2}$ inches of wood. He has 28 inches of wood.

Possible Journal Answers

1. A balance scale has two trays, so it compares the weights of two objects or two sets of objects. The other types of scales can only be used to determine the weight of one object. The weight of an object in one of the trays of a balance scale can be determined by placing objects of known weight in the other tray. When the scales are balanced, the weight of the unknown object weighs the same as the object or objects in the other tray.

2. The scale is balanced at 130. If the small weight moves to the right, the balance would drop because the total weight would be heavier than Rico. If the small weight moves to the left, the balance would rise because the total weight would be lighter than Rico. If the big weight moves to the right, the weight would be too heavy, and the balance would drop to the bottom. If the big weight moved to the left, the weight would be too light, and the balance would rise to the top.