## Lesson 9: Grams and Kilograms, Liters and Milliliters

* Let’s explore measurements in grams, kilograms, liters and milliliters.

### Warm-up: Which One Doesn’t Belong: Meter, Meter on the Page

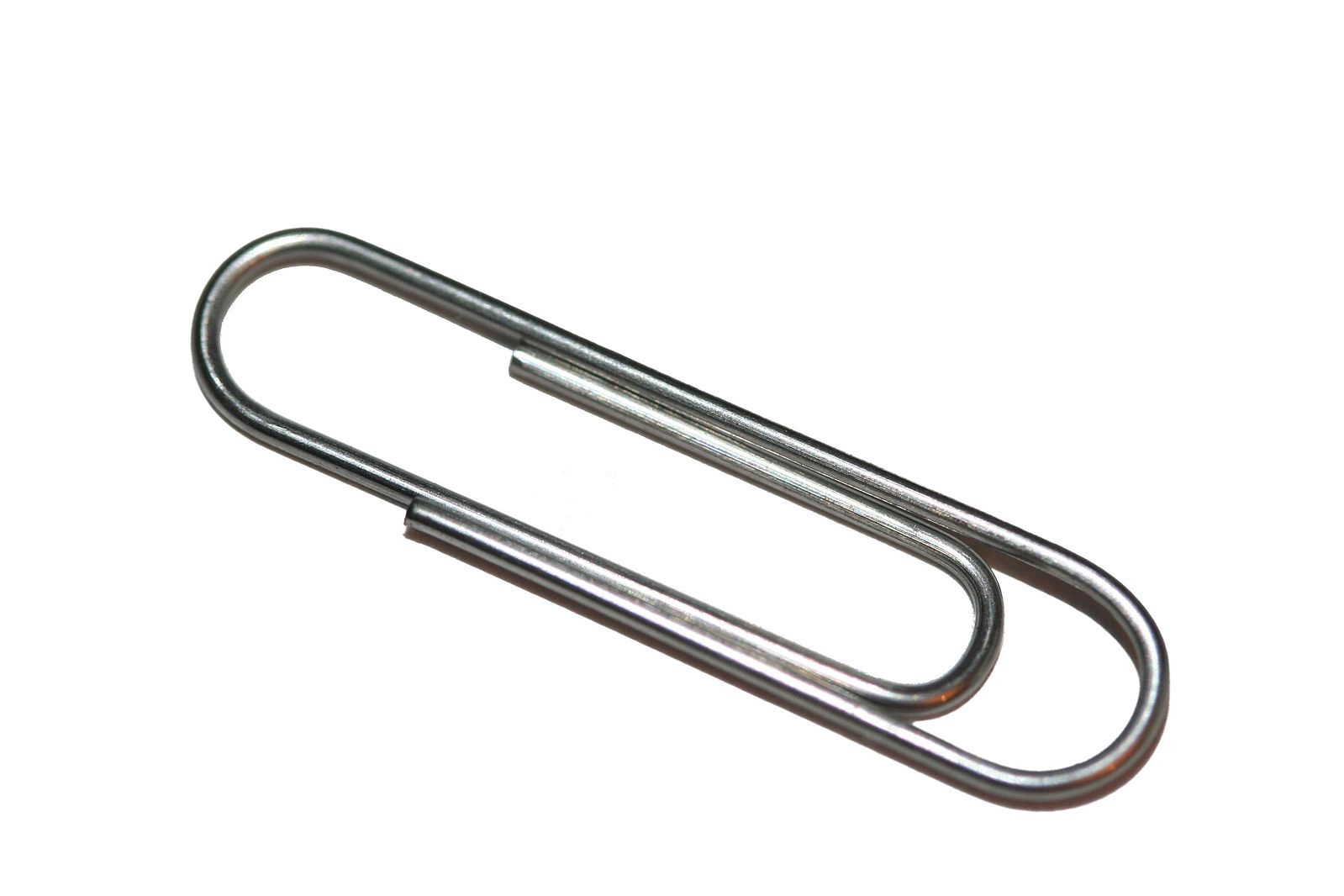
Which one doesn’t belong?

1. 2 m
2. 2,000 meters
3. 200 centimeters

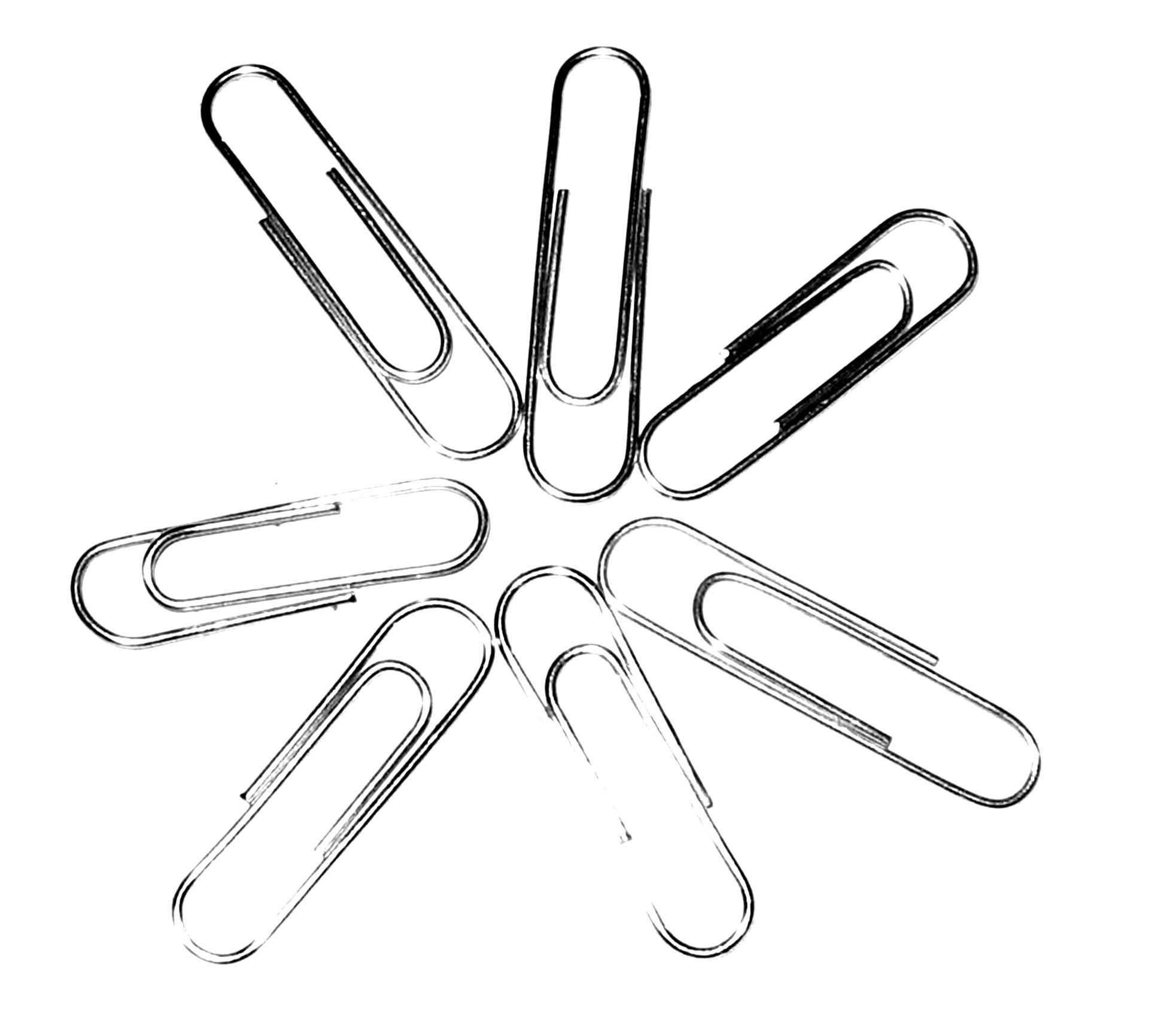
* 

### 9.1: A Whole Lot of Paper Clips

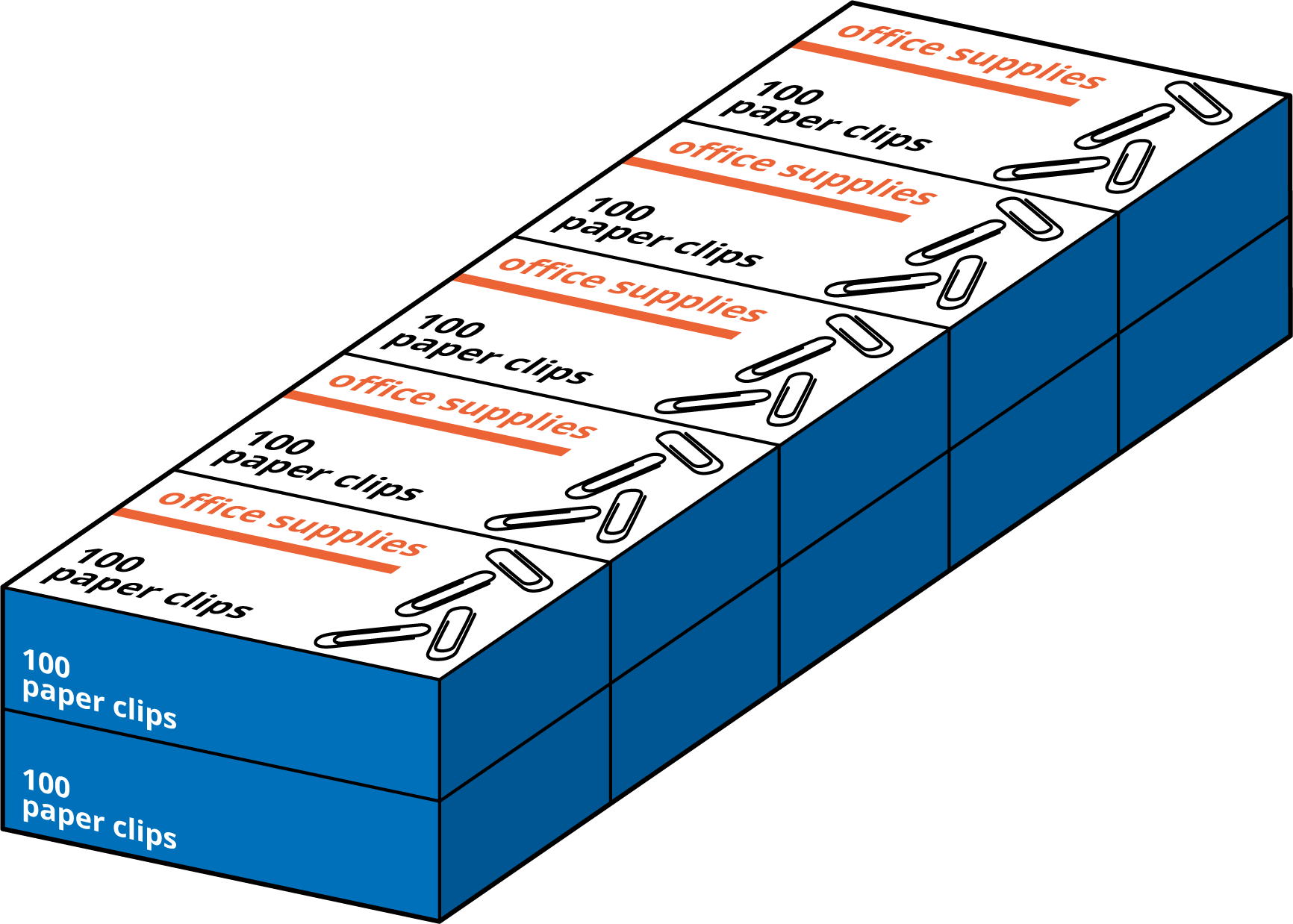
One paper clip weighs 1 gram.



1. How many grams are the paper clips in each image?

* a.
* b.
* c.

1. The paper clips in this image weigh 1 kilogram.

* 
* What is the relationship between kilograms and grams?

1. Complete the table with the missing amounts in grams.

| * kilograms (kg) | * grams (g) |
| --- | --- |
| * 2 |  |
| * 7 |  |
| * 15 |  |
|  |  |
|  |  |

1. Which weighs more? Be prepared to explain how you know.
   1. 8 kilograms or 8 boxes with 100 paper clips in each box
   2. 1,250 paper clips or 1 kilogram
   3. 500 grams or 2 boxes of 250 paper clips in each box
   4. kilogram or 500 paper clips

### 9.2: Liters and Milliliters



* 1. Estimate: How many times do we fill the 100-milliliter glass to get 1 liter of liquid? (Assume that each time the liquid is filled to the 100-milliliter line.)
  2. Write a sentence to describe the relationship between milliliters and liters.

1. How many times do we need to fill each of these containers to get 1 liter?
   1. A 1-milliliter medicine dropper
   2. A 250-milliliter measuring cup
   3. A 20-milliliter cup
2. Complete the table with the missing amounts in liters or milliliters.

| * liters (L) | * milliliters (mL) |
| --- | --- |
| * 1 |  |
| * 4 |  |
| * 7 |  |
| * 16 |  |
|  | * 500 |
|  | * 20,000 |



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