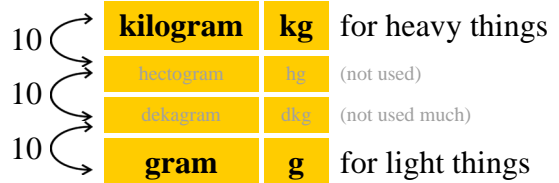


# Metric Units of Weight

In the metric system, each unit is 10 of the smaller unit. For example, 1 dekagram is 10 grams. But dekagrams and hectograms are not commonly used. We only use kilograms and grams.

You just need to remember that **1 kg = 1000 g**. The word “kilo” actually means a thousand!



1. Choose the right weight for each thing.

<b>a. a 10-year old boy</b> 1 kg   30 g   30 kg	<b>b. a cat</b> 2 kg   200 g   2000 g	<b>c. an apple</b> 1 kg   100 g   1 g
<b>d. a table</b> 2 kg   200 g   20 kg	<b>e. a pencil</b> 5 g   5 kg   500 g	<b>f. an adult woman</b> 50 kg   200 kg   5 kg

2. One kilogram is a thousand grams. Fill in the table.

<b>kilograms</b>	1/2	2	3	3 1/2	5	10	12
<b>grams</b>							

<b>kilograms</b>							
<b>grams</b>	500	1000	4000	4500	6000	10 000	40 000

<b>1 kg = 1000 g</b>
To change 3 kg into grams, multiply by 1000: $3 \times 1000 \text{ g} = 3000 \text{ g}$
To change 5 kg 50 g into grams, first convert the 5 kg into grams: $5 \times 1000 \text{ g} = 5000 \text{ g}$ . Then, add the 50 grams: $5000 \text{ g} + 50 \text{ g} = 5050 \text{ g}$ .

3. Convert to grams.

<b>a.</b> 2 kg = _____ g	<b>b.</b> 1 kg 600 g = _____ g	<b>c.</b> 8 kg 600 g = _____ g
3 kg = _____ g	8 kg 80 g = _____ g	5 kg 8 g = _____ g
4 kg = _____ g	2 kg 450 g = _____ g	7 kg 41 g = _____ g

4. Convert grams to kilograms and grams.

<p><b>a.</b> 6000 g = _____ kg _____ g</p> <p>6700 g = _____ kg _____ g</p> <p>5030 g = _____ kg _____ g</p>	<p><b>b.</b> 12 000 g = _____ kg _____ g</p> <p>21 070 g = _____ kg _____ g</p> <p>4008 g = _____ kg _____ g</p>
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5. Circle the heavier amount.

<b>a.</b> 3 kg 300 g OR 3030 g	<b>b.</b> 6 kg 400 g OR 640 g	<b>c.</b> 10 kg OR 5000 g
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6. Apples weigh about 150 grams each. Grandma wants about 1 kg of apples.  
How many apples should she get?

7. How many workbooks weighing 300 g each can you pack into a box so that its weight will not be over 2 kg?

8. Which is more chocolate: five chocolate bars 400 g each, or two jumbo chocolate bars 1 kg each?

<p>When some weights are given in kilograms and some in grams, you can change them all to grams first, then calculate.</p>	<p>Add kilograms to kilograms and grams to grams. Here, 1050 g makes 1 kg 50 g, so the final answer is 8 kg 50 g.</p>																																											
<p><b>5 kg + 3 kg 650 g + 490 g = ?</b></p> <p>Change to grams first, then add:</p> <p>= 5000 g + 3650 g + 490 g</p> <p>= 9140 g OR 9 kg 140 g</p> <div style="float: right; text-align: right;"> <table style="border-collapse: collapse;"> <tr><td style="padding: 0 10px;">5</td><td style="padding: 0 10px;">0</td><td style="padding: 0 10px;">0</td><td style="padding: 0 10px;">0</td></tr> <tr><td style="padding: 0 10px;">3</td><td style="padding: 0 10px;">6</td><td style="padding: 0 10px;">5</td><td style="padding: 0 10px;">0</td></tr> <tr><td style="padding: 0 10px;">+</td><td style="padding: 0 10px;">4</td><td style="padding: 0 10px;">9</td><td style="padding: 0 10px;">0</td></tr> <tr><td colspan="4" style="border-top: 1px solid black;"></td></tr> <tr><td style="padding: 0 10px;">9</td><td style="padding: 0 10px;">1</td><td style="padding: 0 10px;">4</td><td style="padding: 0 10px;">0</td></tr> </table> </div>	5	0	0	0	3	6	5	0	+	4	9	0					9	1	4	0	<table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr><td style="padding: 0 10px;">4</td><td style="padding: 0 10px;">kg</td><td style="padding: 0 10px;">250</td><td style="padding: 0 10px;">g</td></tr> <tr><td style="padding: 0 10px;">+</td><td style="padding: 0 10px;">3</td><td style="padding: 0 10px;">kg</td><td style="padding: 0 10px;">800</td><td style="padding: 0 10px;">g</td></tr> <tr><td colspan="5" style="border-top: 1px solid black;"></td></tr> <tr><td style="padding: 0 10px;">7</td><td style="padding: 0 10px;">kg</td><td style="padding: 0 10px;">1050</td><td style="padding: 0 10px;">g</td></tr> <tr><td colspan="5" style="padding: 5px 0 0 20px;">= 8 kg 50 g</td></tr> </table>	4	kg	250	g	+	3	kg	800	g						7	kg	1050	g	= 8 kg 50 g				
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9. Add.

<p><b>a.</b></p> <table style="margin-left: 20px;"> <tr><td style="padding: 0 10px;">1</td><td style="padding: 0 10px;">kg</td><td style="padding: 0 10px;">820</td><td style="padding: 0 10px;">g</td></tr> <tr><td style="padding: 0 10px;">+</td><td style="padding: 0 10px;">5</td><td style="padding: 0 10px;">kg</td><td style="padding: 0 10px;">700</td><td style="padding: 0 10px;">g</td></tr> <tr><td colspan="5" style="border-top: 1px solid black;"></td></tr> </table> <p>=</p>	1	kg	820	g	+	5	kg	700	g						<p><b>b.</b> 7 kg 800 g + 4200 g</p> <div style="text-align: center; margin-top: 10px;"> <table border="1" style="border-collapse: collapse; width: 100px; height: 100px;"> <tr><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td></tr> <tr><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td></tr> <tr><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td></tr> <tr><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td></tr> </table> </div>																	<p><b>c.</b> 4150 g + 3 kg 60 g + 600 g</p> <div style="text-align: center; margin-top: 10px;"> <table border="1" style="border-collapse: collapse; width: 100px; height: 100px;"> <tr><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td></tr> <tr><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td></tr> <tr><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td></tr> <tr><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td><td style="width: 25px; height: 25px;"></td></tr> </table> </div>																
1	kg	820	g																																													
+	5	kg	700	g																																												

10. Calculate.

a.	b.
1 kg 700 g + 4 kg 200 g = _____ kg _____ g	$4 \times 300 \text{ g} = \text{_____ kg _____ g}$
1500 g + 500 g = _____ kg _____ g	$4 \times 500 \text{ g} = \text{_____ kg _____ g}$
4 kg 800 g + 4 kg 400 g = _____ kg _____ g	$2 \text{ kg} - 900 \text{ g} = \text{_____ kg _____ g}$

11. Jeremy received in the mail packages that weighed 700 g, 350 g, 4 kg 400 g, and 1 kg 900 g.  
What was the total weight of the packages?

12. Angie bought three 1-kg packages and seven 400-gram packages of buckwheat flour.  
How much did the flour weigh in total?

13. You need 2 kg of flour to make bread. The scale shows you already have 1050 g.  
How many more grams of flour do you need?

14. A 200-gram bag of millet costs \$1.69.  
How many bags do you need for 1 kg of millet?  
What is the total cost?
