

WEEK 2

Mass



DAY 1

◦ **INVESTIGATION**

MEASUREMENT OF MASS

Mass tells us how heavy or light an object is.



WHAT IS MASS?

L.O. Can I understand which units are used for measuring mass?

- You don't have to worry about milligrams.

Equivalent Units of Mass - Metrics

1 kilogram (kg) = 1000 grams (g)

1 gram = 1000 milligrams (mg)

INVESTIGATION



L.O. Can I investigate how much things weigh?



Find some objects which have their weight on. The kitchen would probably be a good place to start.



Put them in order from lightest to heaviest.



What units of measurements have you found?

L.O. Can I estimate objects that weigh more or less than a kilogram?

- Find 8 objects.
- Estimate their weight . Do you think they weigh more or less than a kilogram.
- If you have a pair of scales check your estimates.

L.O. Can you put these objects in order from lightest to heaviest? 150g



130g



500g



800g



730g



1kg

Think about animals.



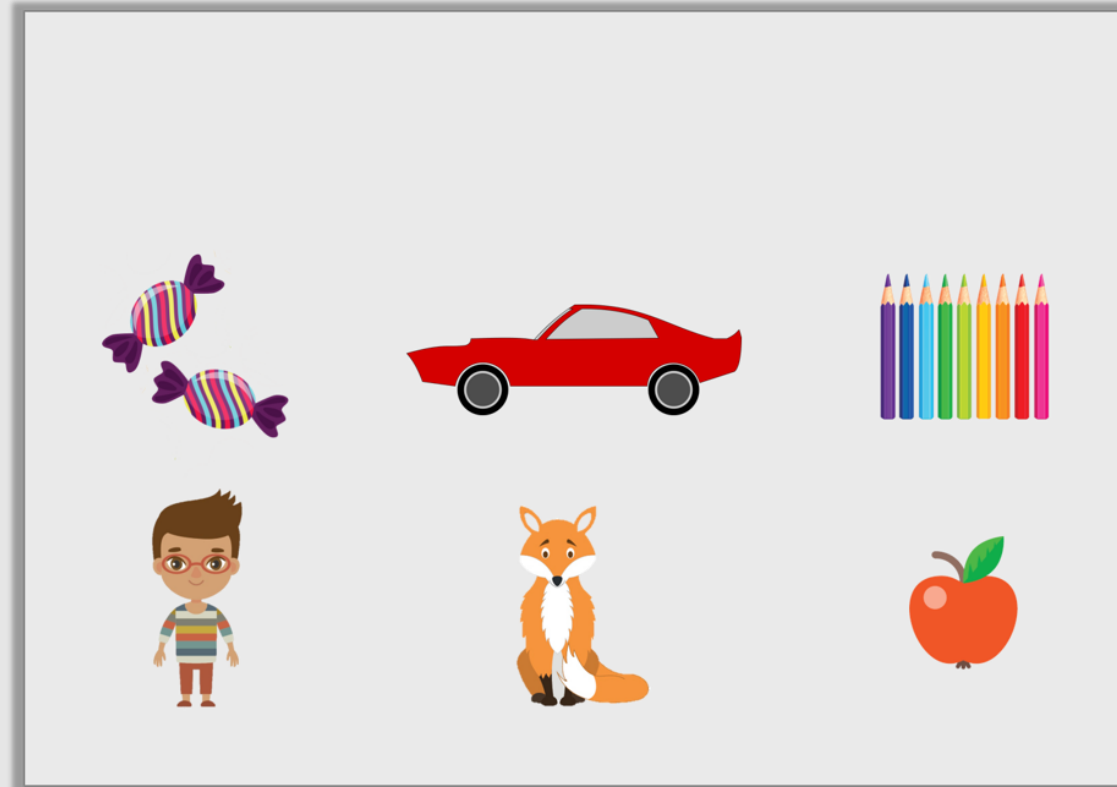
- Choose 8 animals put them in order of lightest to heaviest.
- Draw the animals.



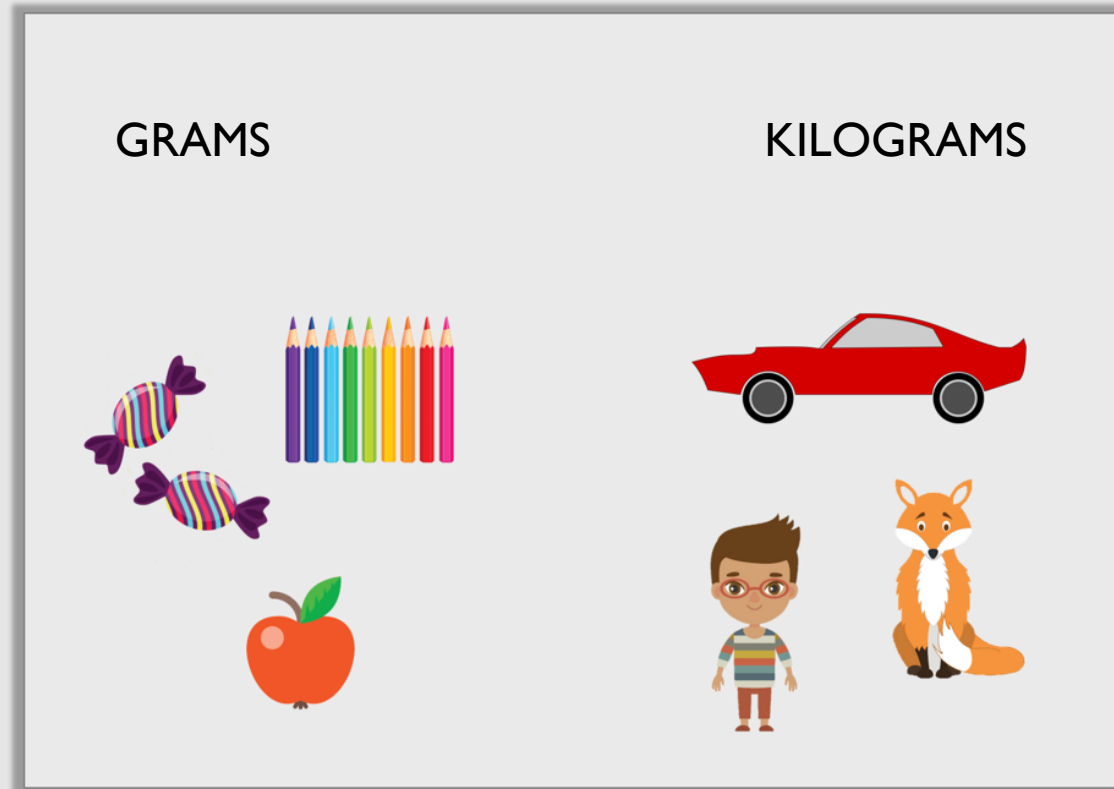
DAY 2

- **Grams and
Kilograms**

Which items would you measure in kilograms?
Which items would you measure in grams?





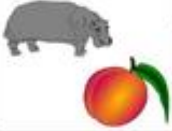







Which items would you measure in kilograms?
Which items would you measure in grams?



L.O. Can I consider lighter and heavier?

LO: To measure, compare, add and subtract: mass (g/kg) (ARE)

Answer the following word problems:

	A banana weighs 116g. A basketball weighs 623g. How much heavier is a basketball than a banana?												
<input type="text"/> g	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>												
	A young hippopotamus weighs 152kg. A young giraffe weighs 136 kg. How much heavier is a hippo than a giraffe?												
<input type="text"/> kg	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>												
Tick the lightest object. 	Tick the heaviest object. 	Tick the heaviest object. 	Tick the lightest object. 										
Challenge: Working at greater depth. Arrange these objects in order of mass – lightest to heaviest .													
A 	B 	C 	D 										
_____	_____	_____	_____										
Order these masses from heaviest to lightest .													
65g	650g	65kg	165g										
_____	_____	_____	_____										
heaviest			lightest										

ANSWERS



1. 507g

5

2. 288kg



3. apple, calculator, watermelon, sellotape.



4. banana, basketball, giraffe, lorry. (Unless it is a very big giraffe and a small lorry)



5. 65kg, 650g, 165g, 65g.

L.O. Can I estimate weights?



Determine which letter best represents the weight.

<p>Gram (g) A gram is about the weight of a paperclip.</p> 	<p>Kilogram (kg) A kilogram is about the weight of a thick book.</p> 	<p>Remember: Kilo means 1,000. So a kilogram is 1,000 grams. 1 Kilogram is also about the same weight as 2 pounds.</p>
---	---	---

Answers

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____

 1) Adult Horse A. 400 grams B. 400 kilograms C. 30 grams D. 30 kilograms	 2) Gallon of Milk A. 1 gram B. 500 grams C. 4 Kilograms D. 30 kilograms	 3) Ruler A. 1 gram B. 999 grams C. 20 grams D. 30 kilograms
 4) Lawn Mower A. 500 grams B. 100 kilograms C. 200 grams D. 22 kilograms	 5) Frog A. 5,000 kilograms B. 5,000 grams C. 30 kilograms D. 30 grams	 6) Baseball Cap A. 85 grams B. 5 kilograms C. 3 Grams D. 200 Kilograms
 7) Dresser A. 350 grams B. 70 kilograms C. 20 grams D. 500 kilograms	 8) Envelope A. 30 grams B. 1 gram C. 200 Kilograms D. 675 grams	 9) Clothes Iron A. 100 grams B. 15 kilograms C. 2 kilograms D. 15 grams

**ANSWERS. These
are my ideas
yours might be
different.**

1. 400 kg

2. 4kg

3. 20g

4. 100kg

5. 30g

6. 85g

7. 70kg

8. 30g

9. 2kg

Think!

◦ Have a go.

Name _____ Date _____

Grams and Kilograms



=1 gram (g)



= 1 kilogram (kg)



A bowling ball weighs about:
90 grams
120 grams
5 kilograms
48 kilograms



A bowling pin weighs about:
30 grams
300 grams
1 kilogram
5 kilograms



A jump rope weighs about:
6 grams
600 grams
14 kilograms
19 kilograms



A handful of chalk weighs about:
10 grams
100 grams
7 kilograms
25 kilograms



A DS weighs about:
80 grams
800 grams
8 kilograms
80 kilograms



A football weighs about:
25 grams
700 grams
25 kilograms
100 kilograms

ANSWERS.
Talk to
someone at
home about
your ideas.

◦ 1.5kg

2. 1kg

◦ 3.600g

4. 100g

◦ 5.80g

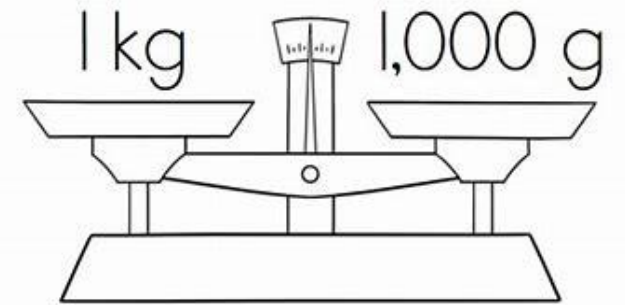
6. 700g

DAY 3

- **Converting grams and kilograms**

L.O. Can I convert between grams and kilograms?

- $1 \text{ kg} = 1000\text{g}$
- So...
- $\frac{1}{2} \text{ kg} = 500\text{g}$
- $\frac{1}{4} \text{ kg} = 250\text{g}$
- $\frac{1}{10} \text{ kg} = 100\text{g}$



**Complete
this work.**

- **GRAMS**
- **1000g**
- **500g**
- **250g**
- **750g**
- **100g**
- **200g**
- **300g**
- **400g**
- **600g**
- **700g**
- **800g**
- **900g**

KILOGRAMS

1kg

3/10 kg

**Change
these from
grams to
kilograms.**

○ 1. 1000g =

2. 2000g =

○ 3. 500g =

4. 1,500g =

○ 5. 4,500g =

6. 7,500g =

○ 7. 250g =

8. 750g =

○ 9. 3,250g =

10. 100g =

○ 11. 600g =

12. 2,300g =

ANSWERS

- 1. 1kg 2. 2kg
- 3. $\frac{1}{2}$ kg 4. $1\frac{1}{2}$ kg
- 5. $4\frac{1}{2}$ kg 6. $7\frac{1}{2}$ kg
- 7. $\frac{1}{4}$ kg 8. $\frac{3}{4}$ kg
- 9. $1\frac{1}{4}$ kg 10. $\frac{1}{10}$ kg
- 11. $\frac{6}{10}$ kg 12. $2\frac{3}{10}$ kg

**Change
these from
kilograms to
grams.**

○ 1.3 kg

2.9 kg

○ 3.4 kg

4.2 $\frac{1}{2}$ kg

○ 5.6 $\frac{3}{4}$ kg

6. $\frac{3}{10}$ kg

○ 7. $\frac{8}{10}$ kg

8.7 $\frac{1}{2}$ kg

○ 9.1 $\frac{1}{10}$ kg

10. $\frac{4}{10}$ kg

○ 11. 10 kg

12.3 $\frac{3}{4}$ kg

ANSWERS

- 1. 3,000g
- 2. 9,000g
- 3. 4,000g
- 4. 2,500g
- 5. 6,750g
- 6. 300g
- 7. 800g
- 8. 7,500g
- 9. 1,100g
- 10. 400g
- 11. 10,000g
- 12. 3,750g

L.O. Can I convert grams and kilograms?

- This is tricky

Grams and Kilograms



LO: To convert one unit of weight in to another.

Remember...

_____g is equal to (or the same as) 1kg.

Grams in to kilograms = _____

Kilograms in to grams = _____

Convert these lengths in to the unit of measure given...look carefully!

- | | |
|--------------------|---------------------|
| a) 2000g = _____kg | h) 1.5kg = _____g |
| b) 5000g = _____kg | i) 3.5kg = _____g |
| c) 9000g = _____kg | j) 1.25kg = _____g |
| d) 5040g = _____kg | k) 0.9kg = _____g |
| e) 250g = _____kg | l) 8.64kg = _____g |
| f) 675g = _____kg | m) 0.025kg = _____g |
| g) 480g = _____kg | n) 0.63kg = _____g |

Have a go at these word problems...

- 1) A baker has a big order of cakes he needs to bake. He needs 5 oranges for his recipe. Each orange weighs 150g. What is the total weight of the oranges?
 - a) In grams?
 - b) In kilograms?
- 2) A gardener has 10 plants to pot. Each plant pot needs 50g of soil. How much soil does the gardener need altogether?
 - a) In grams?
 - b) In kilograms?
- 3) A builder has to fix 3 walls that have fallen down. He needs 2kg of cement for each wall. How much cement will he need altogether?
 - a) In kilograms?
 - b) In grams?

Day 4

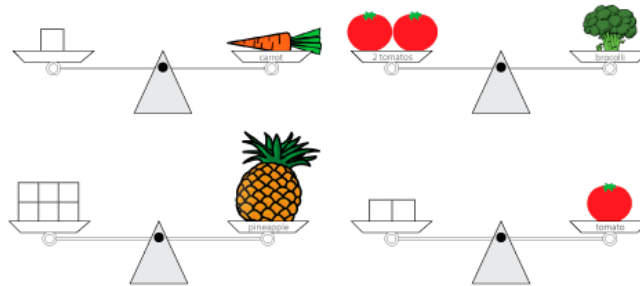
◦ Reasoning
problems.

L.O. Can I
solve
reasoning
problems?

Fruits and Veggies

Name: _____ Class: _____

Fill in the blanks. Use as 1 unit of mass.



The mass of the pineapple is _____ units.

The mass of the _____ is 2 units.

The mass of the broccoli is _____ units.

The _____ is 1 unit lighter than the tomato.

The total mass of the 4 items is _____ units

The _____ is lighter than the tomato.

The _____ is 3 times heavier than the tomato.

The _____ is 4 times heavier than the carrot.

ANSWERS



1. 6 units



2. Tomato



3. 4 units



4. Carrot



5. 13 units



6. Carrot



7. Pineapple



8. Broccoli

Mass

Name: _____

Date: _____

1. How many grams in one kilogram?

- 10 1000
 100 10000

2. There are _____ grams in half a kilogram.

-  = 185 grams  = 200 grams
 = 260 grams  = 250 grams

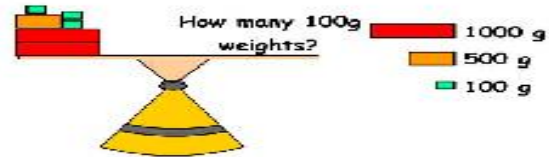
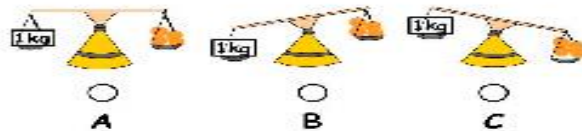
3. Which is the heaviest fruit?

- apple pear
 orange banana

4. Four _____ equal to one kilogram (1kg)?

- apples pears
 oranges bananas

5. What would happen to the equal arm balance arm if there were 4 oranges on one side and a one kilogram weight on the other?



6. How many 100g weights are needed to balance the scale?

- 28 26
 27 6



7. How many more bananas are needed to balance the scale?

- 1 3
 2 4

8. Grams in $3\frac{1}{2}$ kg?

- 3500 350
 3250 35

9. $\frac{1}{4}$ of a kilogram | _____ grams

10. $3\frac{3}{4}$ of a kilogram | _____ grams

ANSWERS

1. 1,000g

2. 500g

3. Orange

4.
Bananas

5. c

6. 28

7. 3
Tricky!

8. 3,500g

9. 250g

10.
3,750g

A pen has a mass of 15 grams. What is the mass of 5 identical pens?



A

A large box has a mass of 125 kilograms. A small box has a mass of 114 kilograms. What is the total mass of both boxes?



B

Sarah's fish tank holds 32 liters of water. Sarah uses a 4 liter container to fill the tank. How many times will Sarah need to fill the 4 liter container in order to fill the fish tank?



C

Ben has three cups, each filled with 325ml of lemonade. What is the total liquid volume of lemonade in the three cups?



D

© 2013 Math Teaching Resources.com

L.O. CAN I SOLVE
WORD
PROBLEMS?

ANSWERS



A. 75g



B. 239kg



C. 8 times

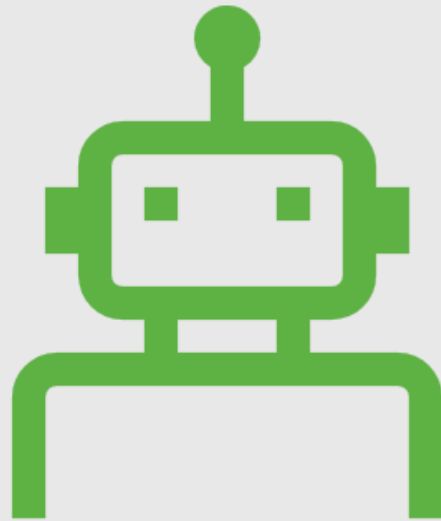


D. 975ml

DAY 5

- **Mixed Calculations**
- **Try Ready, Steady or, if you are feeling brave, Go!**

ANSWERS



◦ Ready	Steady	Go
◦ 58	374	655
◦ 53	706	357
◦ 129	730	1,326
◦ 13 r2	16 r1	22 r6
◦ 191	532	3,483
◦ 67	357	450
◦ 68	468	7,644
◦ 7 r5	22 r2	45 r1
◦ 89 girls		
◦ 15 cake tins		
◦ 10 oranges		