



WEEK 3 – LESSON 5





Learning Question:

How can I compare measurements of mass, volume and capacity?

Success Criteria:

- I can compare measurements of mass and units of volume and capacity using $<$, $>$ or $=$.
- I can compare measurements in different units by converting them so that their units are the same.
- I can solve a problem involving comparing or ordering measurements of mass, volume and capacity.

Vocabulary

- Mass
- Volume
- Capacity
- Compare
- Order
- Convert

STARTER – SOLVE THESE CALCULATION

■ $5 \times 1000 =$

■ $2.5 \times 1000 =$

■ $9 \times 1000 =$

■ $8.2 \times 1000 =$

■ $12 \times 1000 =$

■ $15.5 \times 1000 =$

■ $13.9 \times 1000 =$

■ $8000 \div 1000 =$

■ $7500 \div 1000 =$

■ $4000 \div 1000 =$

■ $8500 \div 1000 =$

■ $7900 \div 1000 =$

■ $10,000 \div 1000 =$

■ $12,500 \div 1000 =$

HOW DID YOU DO?

- $5 \times 1000 = 5000$
- $2.5 \times 1000 = 2500$
- $9 \times 1000 = 9000$
- $8.2 \times 1000 = 8200$
- $12 \times 1000 = 12000$
- $15.5 \times 1000 = 15,500$
- $13.9 \times 1000 = 13,900$

- $8000 \div 1000 = 8$
- $7500 \div 1000 = 7.5$
- $4000 \div 1000 = 4$
- $8500 \div 1000 = 8.5$
- $7900 \div 1000 = 7.9$
- $10,000 \div 1000 = 10$
- $12,500 \div 1000 = 12.5$

Comparing Grams and Kilograms

Which is heavier – 3500g or 3kg?

It is difficult to answer this question because the masses are measured in different units. It is best to convert one of the measurements into the same unit as the other.

What fact could we use to help us convert between grams and kilograms?

1 kilogram = 1000 grams

What calculation do we do to convert from kilograms to grams?

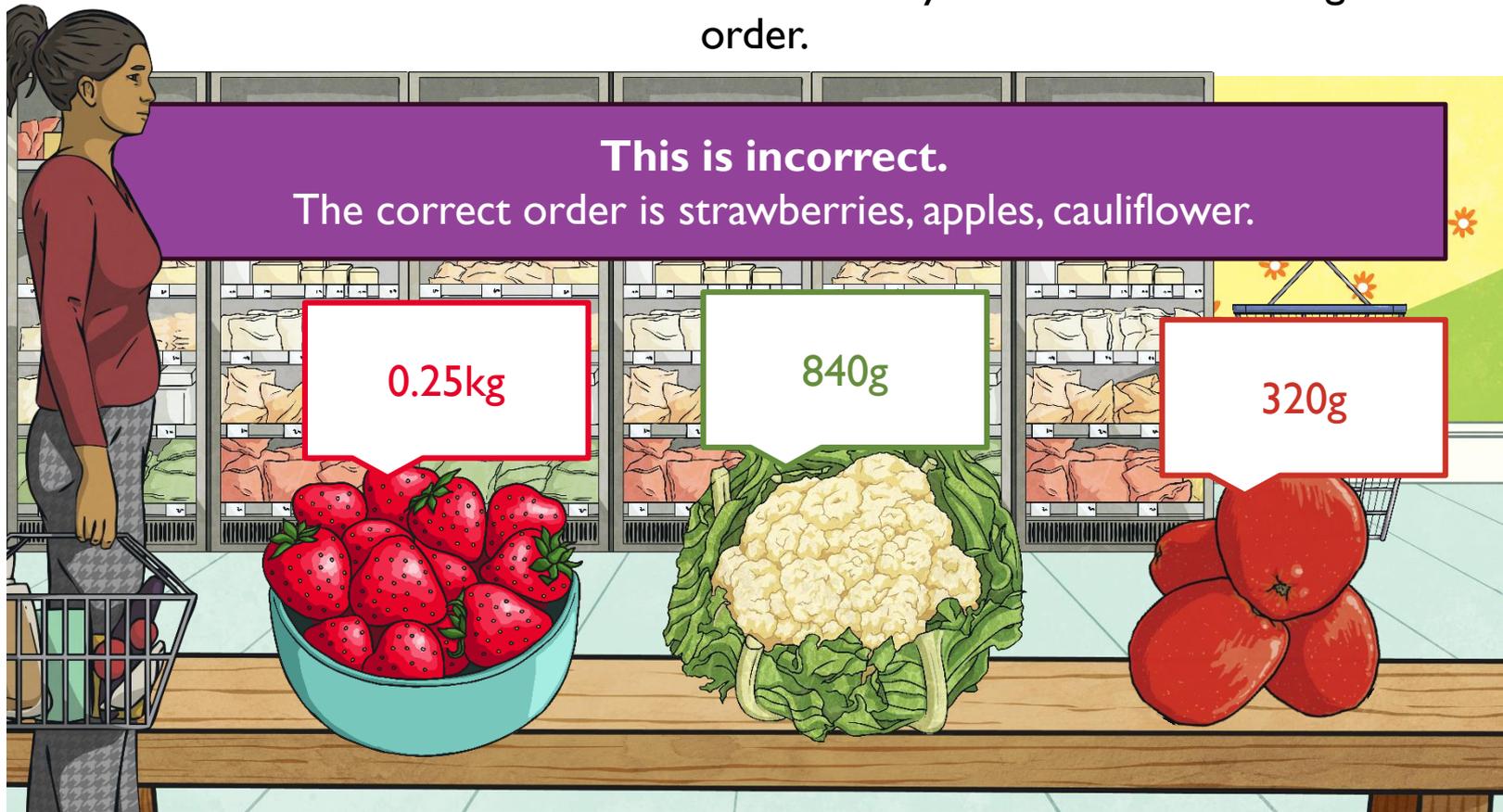
We multiply the number of kilograms by 1000.

What calculation do we do to convert from grams to kilograms?
(Hint: this is the inverse!)

We divide the number of grams by 1000.

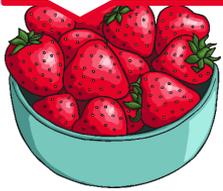
Order, Order!

Helen has ordered the items on each shelf in her shop from lightest to heaviest. Check each shelf and correct any that are not in the right order.



Order these weights from the lightest to the heaviest.

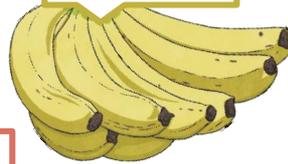
0.25kg



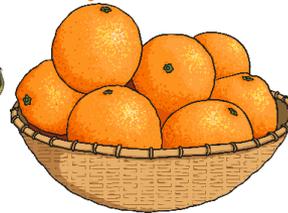
840g



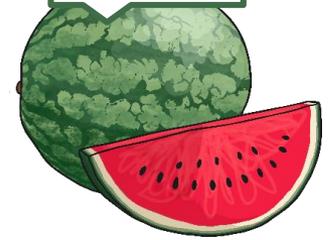
1098g



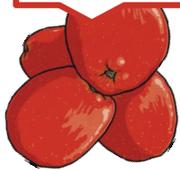
1.575kg



3.4kg



320g



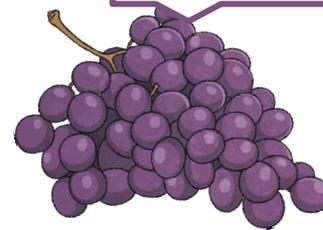
1200g



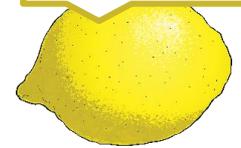
0.9kg



0.65kg



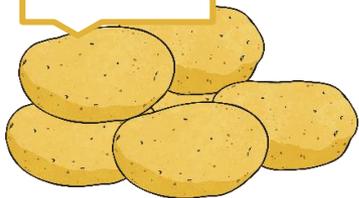
345g



1kg
750g



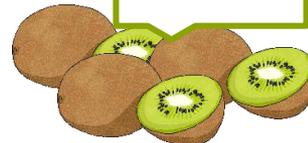
12kg



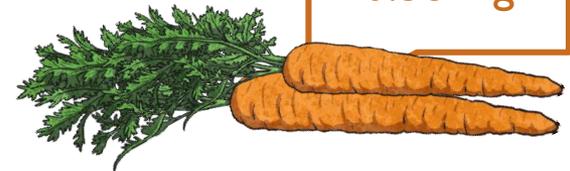
1kg
300g



0.35kg

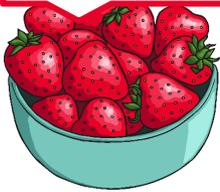


0.584kg

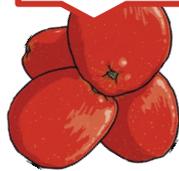


Order these weights from the lightest to the heaviest.

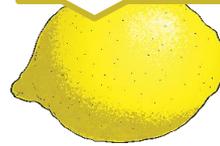
0.25kg



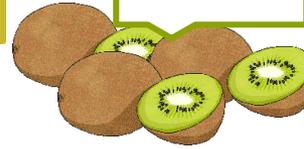
320g



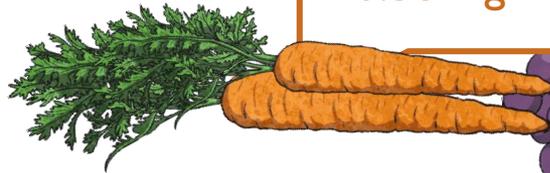
345g



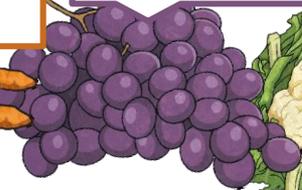
0.35kg



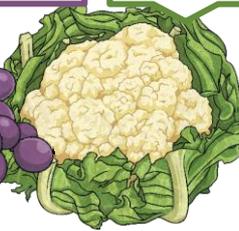
0.584kg



0.65kg



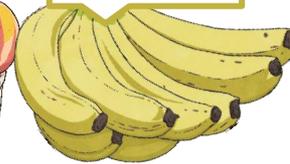
840g



0.9kg



1098g



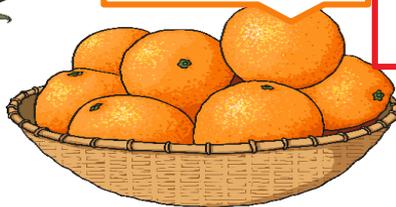
1200g



1kg 300g



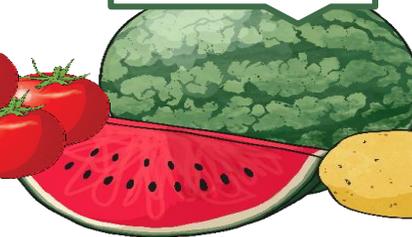
1.575kg



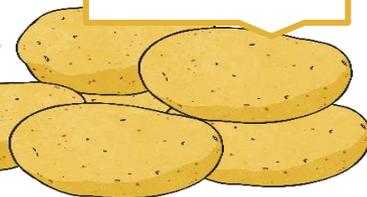
1kg 750g



3.4kg

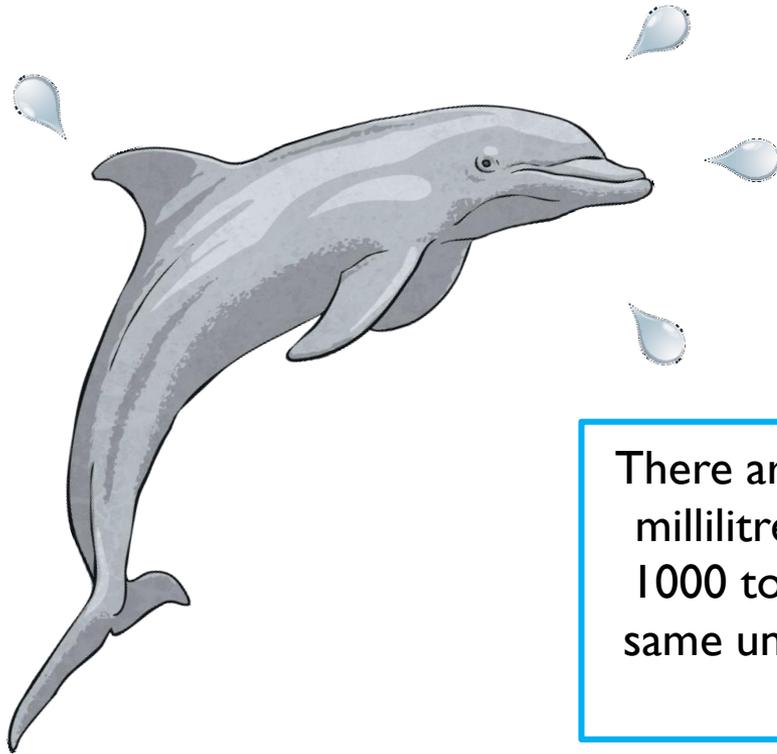


12kg



Compare It – Millilitres and Litres

How is comparing grams and kilograms similar to comparing millilitres and litres?



Hint: Think about how many grams are in 1 kilogram and how many millilitres are in 1 litre.

There are 1000 grams in 1 kilogram and 1000 millilitres in 1 litre. We multiply or divide by 1000 to convert grams and kilograms to the same unit, so we can do the same to convert millilitres and litres.

Compare It – Millilitres and Litres

Use $<$, $>$ or $=$ to compare these measurements.

7.3l

$<$

7400ml

In this comparison, we could change litres into millilitres
by multiplying by 1000:

$$7.3\text{l} = 7300\text{ml}$$

Alternatively, we could change millilitres into litres by
dividing by 1000:

$$7400\text{ml} = 7.4\text{l}$$

Use $<$, $>$ or $=$ to compare these measurements.

6900ml

6.9l

9.6l

9650ml

3005ml

3.5l

1250ml

1.2l



How did you do?

6900ml

=

6.9l

9.6l

<

9650ml

3005ml

<

3.5l

1250ml

>

1.2l



Order It!

Here are some containers and their capacities.
Order the containers from smallest to greatest capacity.



paint tin
1.5l



**washing-up
liquid bottle**
750ml



drinks can
330ml



teapot
1.25l

How did you do?

Here are some containers and their capacities.
Order the containers from smallest to greatest capacity.



paint tin
1.5l



**washing-up
liquid bottle**
750ml



drinks can
330ml



teapot
1.25l

smallest		greatest	
drinks can	washing-up liquid bottle	teapot	paint tin

Birth Mass

Here are the average masses of different animals when they are born and when they are fully grown.

Animal	Birth	Fully Grown
seal	9.5kg	165kg
dolphin	10.4kg	115kg
crocodile	6.8kg	550kg
sheep	4.2kg	80kg

Order the animals from greatest mass gained to least mass gained.



Do you need to do exact calculations for all of the animals?

How did you do?

Animal	Birth	Fully Grown
seal	9.5kg	165kg
dolphin	10.4kg	115kg
crocodile	6.8kg	550kg
sheep	4.2kg	80kg

greatest				least			
crocodile	seal	dolphin	sheep				



Did you need to do exact calculations to work out the differences?

No – rounding the birth masses to the nearest whole number is accurate enough in this case.

Hard

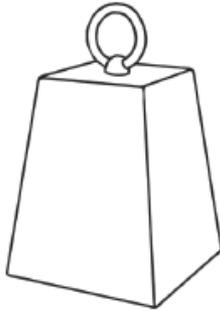
Comparing and Ordering Measurements of Mass, Volume and Capacity

I can compare measurements of mass, volume and capacity.

Mass

1. In each pair, draw a circle around the greater mass.

a)	500g	1.2kg
b)	3kg 750g	3800g
c)	1.9kg	1600g
d)	4kg 200g	4.3kg
e)	2.8kg	2500g
f)	2850g	2.9kg



2. Order these measurements from smallest to greatest mass.

a)	2.6kg	2550g	3kg
	smallest		greatest

b)	5kg	4.9kg	4500g
	smallest		greatest

c)	8.7kg	5800g	5kg
	smallest		greatest

Comparing and Ordering Measurements of Mass, Volume and Capacity

Volume and Capacity



750ml



2l



330ml



1.25l

3. Write $<$, $>$ or $=$ in each row of the table to compare the capacity of the containers:

washing-up liquid bottle		teapot
drinks can		lemonade bottle
lemonade bottle		washing-up liquid bottle and teapot
washing-up liquid bottle		2 drinks cans

4. Joanna records the volume of water she drinks each day for three days. Order the days according to how much she drank.

Monday	Tuesday	Wednesday
1750ml	2.5l	1.9l

greatest		smallest

5. If Joanna had drunk 200ml more on Monday, would this have changed the order? If so, write the new order:

greatest		smallest

Harder



Comparing and Ordering Measurements of Mass, Volume and Capacity

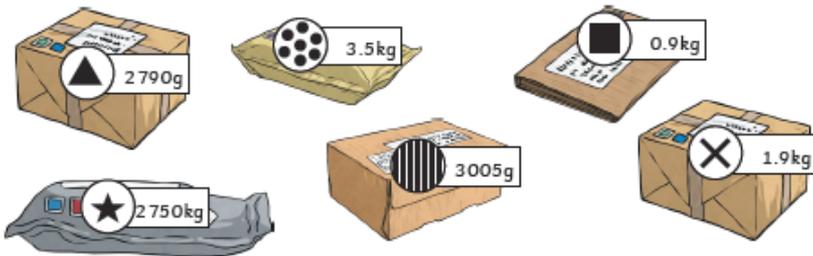
I can compare measurements of mass, volume and capacity.

Mass

1. Order these measurements from smallest to greatest mass.

a)	3.7kg	4250g	4.8kg	4kg 200g
	smallest			greatest
b)	10kg	9.9kg	9800g	9kg 500g
	smallest			greatest
c)	11.3kg	10kg 900g	11.2kg	11 000g
	smallest			greatest

2. In a sorting office, parcels are sorted by their mass. Draw the pattern or shape from each parcel's label into a circle in the correct section of the grid. Three of the circles will be left empty.



less than 1kg	over 1kg, less than 3kg	over 3kg
○ ○ ○	○ ○ ○	○ ○ ○



Comparing and Ordering Measurements of Mass, Volume and Capacity

Volume and Capacity



3. Write $<$, $>$ or $=$ in each row of the table to compare the capacity of the containers:

washing-up liquid bottle		measuring jug
teapot		lemonade bottle
lemonade bottle		measuring jug and drinks can
2 washing-up liquid bottles		measuring jug
teapot and washing-up liquid bottle		lemonade bottle

4. Sort these volumes into the table below so that the measurements in each row are in order from smallest to greatest.

3.1l	4195ml	2100ml	6.3l	900ml
1.35l				3000ml
5500ml				7.3l
0.75l				2l
2.5l				3500ml
4100ml				4.2l

Hardest

Comparing and Ordering Measurements of Mass, Volume and Capacity

I can compare measurements of mass, volume and capacity.

Mass

1. In each pair, draw a circle around the greater mass.

a)	8.6kg	8250g	8kg 450g	8.8kg	8kg 650g
	smallest				greatest
b)	15.5kg	15.9kg	14kg 300g	14 800g	15kg 200g
	smallest				greatest
c)	20.3kg	20kg 900g	20kg 850g	20.2kg	21 000g
	smallest				greatest
d)	23kg 500g	23.6kg	23kg 300g	24.7kg	24 100g
	smallest				greatest

2. Here are the mass measurements of two puppies as they grew:

	Birth	3 Months	6 Months	9 Months	1 Year
Coco	0.5kg	1.35kg	1950g	3.15kg	4500g
Poppy	700g	2.1kg	3200g	4.95kg	6.25kg

- a. Which puppy made the greatest mass gain from birth to 6 months?

- b. Which puppy made the smallest mass gain from 3 months to 6 months?

- c. Which puppy made the greatest mass gain from 9 months to a year?

Comparing and Ordering Measurements of Mass, Volume and Capacity

Volume and Capacity



750ml



2l



330ml



1.25l



1.5l

3. Write $<$, $>$ or $=$ in each row of the table to compare the capacity of the containers:

2 washing-up liquid bottles		teapot
2 measuring jugs		10 drinks cans
a measuring jug and 2 washing-up liquid bottles		2 lemonade bottles
3 washing-up liquid bottles		a measuring jug and a drinks can

4. Five friends recorded what they drank in a day. Write their names in order of the volume of liquid they each drank.

Ali	Billie	Chetna	Dina	Eden
2 jugs full of water	4 full cans of pop	1 full bottle of lemonade	1 full pot of tea and 1 full can of pop	1 jug full of water and half a bottle of lemonade

smallest				greatest

Answers

★ Comparing and Ordering Measurements of Mass, Volume and Capacity **Answers**

Mass

1. In each pair, draw a circle around the greater mass.

a)	500g	1.2kg
b)	3kg 750g	3800g
c)	1.9kg	1600g
d)	4kg 200g	4.3kg
e)	2.8kg	2500g
f)	2850g	2.9kg

2. Order these measurements from smallest to greatest mass.

a)	2.6kg smallest 2250g	2550g 2.6kg	3kg 3kg greatest
b)	5kg smallest 4500g	4.9kg 4.9kg	4500g 5kg greatest
c)	8.7kg smallest 5kg	5800g 5800g	5kg 8.7kg greatest

3. Write <, > or = in each row of the table to compare the capacity of the containers:

washing-up liquid bottle	<	teapot
drinks can	<	lemonade bottle
lemonade bottle	=	washing-up liquid bottle and teapot
washing-up liquid bottle	>	2 drinks cans

4. Joanna records the volume of water she drinks each day for three days. Order the days according to how much she drank.

greatest			smallest
Tuesday	Wednesday	Monday	

5. If Joanna had drunk 200ml more on Monday, would this have changed the order? If so, write the new order:

greatest			smallest
Tuesday	Monday	Wednesday	

★★ Comparing and Ordering Measurements of Mass, Volume and Capacity **Answers**

Mass

1. Order these measurements from smallest to greatest mass.

a)	3.7kg smallest 3.7kg	4250g 4kg 200g	4.8kg 4250g	4kg 200g 4.8kg greatest
b)	10kg smallest 9kg 500g	9.9kg 9800g	9800g 9.9kg	9kg 500g 10kg greatest
c)	11.3kg smallest 10kg 900g	10kg 900g 11 000g	11.2kg 11.2kg	11 000g 11.3kg greatest

2. In a sorting office, parcels are sorted by their mass. Draw the pattern or shape from each parcel's label into a circle in the correct section of the grid. Three of the circles will be left empty.

less than 1kg	over 1kg, less than 3kg	over 3kg
  	  	  

3. Write <, > or = in each row of the table to compare the capacity of the containers:

washing-up liquid bottle	<	measuring jug
teapot	<	lemonade bottle
lemonade bottle	>	measuring jug and drinks can
2 washing-up liquid bottles	=	measuring jug
teapot and washing-up liquid bottle	=	lemonade bottle

4. Sort these volumes into the table below so that the measurements in each row are in order from smallest to greatest.

1.35l	2100ml	3000ml
5500ml	6.3l	7.3l
0.75l	900ml	2l
2.5l	3.1l	3500ml
4100ml	4195ml	4.2l



Comparing and Ordering Measurements of Mass, Volume and Capacity **Answers**

Answers

Mass

1. In each pair, draw a circle around the greater mass.

a)	8.6kg	8250g	8kg 450g	8.8kg	8kg 650g
	smallest 8250g	8kg 450g	8.6kg	8kg 650g	8.8kg greatest

b)	15.5kg	15.9kg	14kg 300g	14 800g	15kg 200g
	14kg 300g	14 800g	15kg 200g	15.5kg	15.9kg

c)	20.3kg	20kg 900g	20kg 850g	20.2kg	21 000g
	20.2kg	20.3kg	20kg 850g	20kg 900g	21 000g

d)	23kg 500g	23.6kg	23kg 300g	24.7kg	24 100g
	23kg 300g	23kg 500g	23.6kg	24 100g	24.7kg

2. Here are the mass measurements of two puppies as they grew:

- Poppy
- Coco
- Coco

3. Write $<$, $>$ or $=$ in each row of the table to compare the capacity of the containers:

2 washing-up liquid bottles	$>$	teapot
2 measuring jugs	$<$	10 drinks cans
a measuring jug and 2 washing-up liquid bottles	$<$	2 lemonade bottles
3 washing-up liquid bottles	$>$	a measuring jug and a drinks can

4. Five friends recorded what they drank in a day. Write their names in order of the volume of liquid they each drank.

smallest					greatest				
Billie		Dina		Chetna		Eden		Ali	