Year 2 Maths Activities - Weeks Beginning 6.7.20. and 13.7.20.

Dear Parents and Carers,

We are going to continue with our revision, and in fact, it has all worked out rather nicely! We have two weeks left and two areas left to cover. Anyone would think I had planned it that way! ☺

I have decided to put the two weeks worth of work together into one document. Don't worry though, you still only need to complete one activity per day and it will all be posted again on next weeks page.

The areas left to cover are;

- Mass (weight),
- Capacity and Volume.

There is also one session about Temperature, as it is a long while since we touched on that.

As with last week, I have not included any additional notes, as I feel the 'notes and guidance' for each activity are pretty good and self-explanatory.

I have decided not to divide the sessions up into 3 levels of difficulty, as this topic is a bit more straight-forward than some of the others. However, I have tried to find some extra challenges for those children Working At Greater Depth.

I have included the White Rose End of Block Assessment so that you can give it to your child to check their understanding.

Activity 1	**Objective:** Compare mass. ## Notes and Guidance Children recap on Year 1 learning by comparing the mass of different objects. They will initially use balance scales to compare two objects. Children compare mass using < and > and order objects based on their mass. ## Mathematical Talk Look at the scale, which side is lower? What does this tell us about the objects? Which object is heavier? Which object is lighter? Can you predict which object will be heavier?

Activities

1. Using the words 'more' and 'less' and the > or < symbols, describe the mass.

The lettuce weighs _____ than the pineapple.

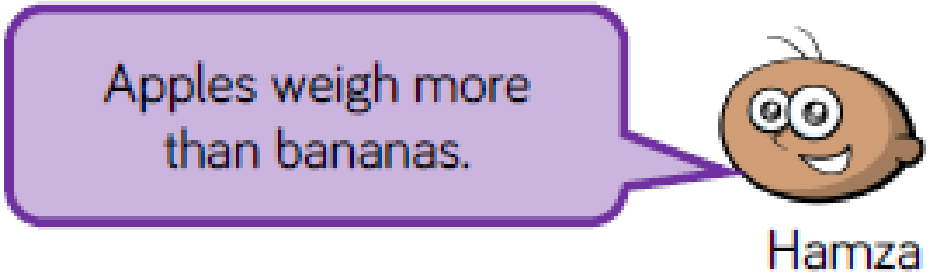
2. Choose three objects. How can you use the balance scales to order them from the heaviest to lightest?

The [ ] is heavier than the [ ] but lighter than [ ]
The [ ] is lighter than the [ ] but heavier than [ ]

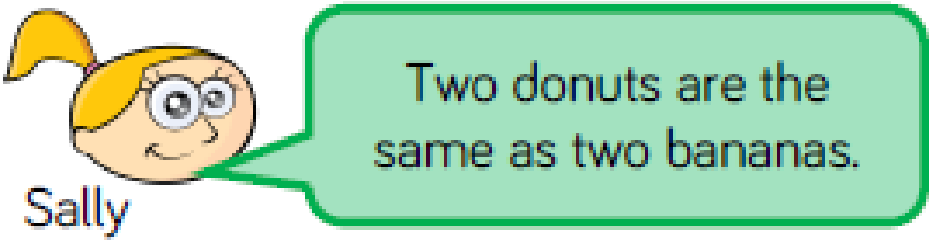
3. Complete the sentences:

[ ] bananas are equal to [ ] donuts.
2 bananas are equal to [ ] donuts.
[ ] banana is equal to 2 donuts.
Can you write sentences using 'more' or 'less' about the image?

N.B. I realise that most people probably do not have balance scales at home. Perhaps you could weigh your objects using normal kitchen or bathroom scales, but talk about what that would look like (or draw pictures to show) on a set of balance scales. The side with the heavier object would go down and the side with the lighter object would go up. If the two objects weighed the same amount, the scales would balance.

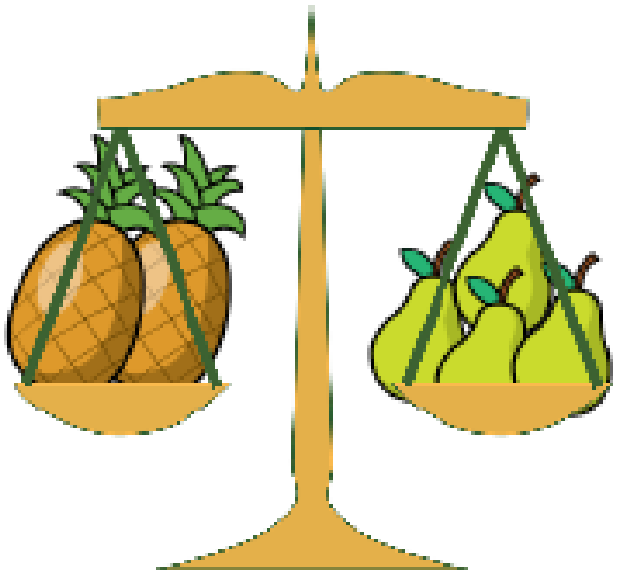


Hamza



Sally

Do you agree?
Explain why.



One pear weighs 10 cubes.
How much does one pineapple weigh?
Explain how you know.

Always, sometimes, never.

The bigger the box, the heavier it is.

Complete the worksheet about comparing mass.

	Extra Activities for Children Working at Greater Depth Again, a problem for much older children, but I know that some of you clever children can figure it out! Maybe with a little help from your super clever parents! # Rugby and Ballet **Age 11 to 14 Short** ★ The total mass of five rugby players is $425\ \mathrm{kg}$. The average (mean) mass of ten ballet dancers is $40\ \mathrm{kg}$. What is the average mass of all fifteen people?

Activity 2	**Objective:** Measure mass in grams. ## Notes and Guidance In Year 1, children have experienced measuring mass using non-standard units. In Year 2, they will use gram weights and balance scales before moving on to use standard scales. Children will apply their counting in 2s, 5s and 10s skills to measuring mass in grams. Give children the opportunity to feel the mass of gram weights so they can use this to estimate. ## Mathematical Talk What does the balance scale being level tell us? What symbol could we use? (=) How much heavier is this object? How could you work it out? If I add 100 g to the scale, what would the new mass be? N.B. I wouldn't expect people at home to have 1g, 5g, 10g weights, etc. But you could weigh out small quantities, e.g. what does 10g of flour actually look like? What about 50g or 100g? Children of this age often have no concept what so ever of what different quantities actually look like, especially really small quantities, because they are not used to seeing this (most recipes would call for amounts like 100g or 200g). You could label these tiny amounts and take photographs to put up to act as a reminder.

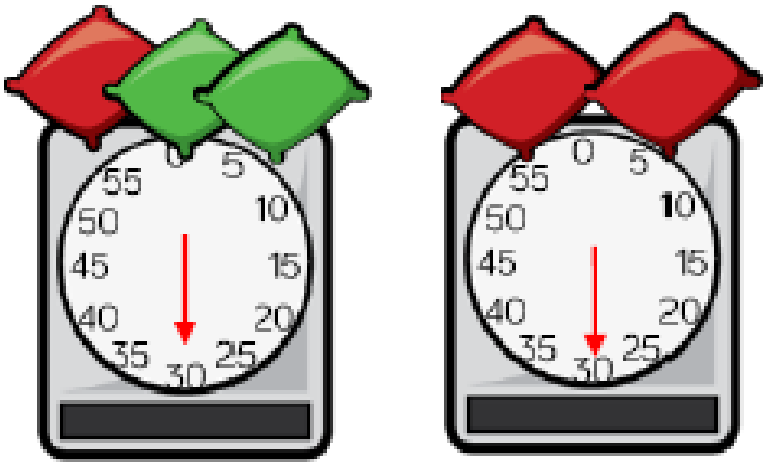
Activities

1 Using gram weights in multiples of 5 to measure the mass of objects using a balance scale.

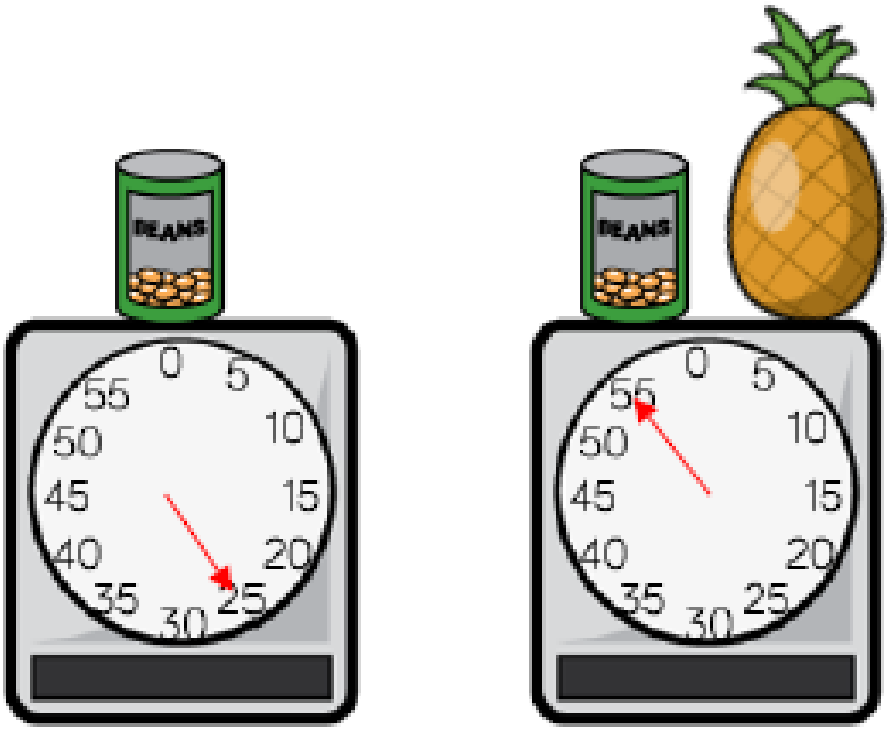
The _____ weighs _____ grams.

2 Use scales to record the mass of objects in grams.

3 Order the items from heaviest to lightest.



Which is heavier, the red or the green beanbag? Give your reasoning.



The  weighs ☐ g

The  weighs ☐ g

Complete the worksheet about measuring mass in grams.

	Extra Activities for Children Working at Greater Depth Another one for older children, but give it a go!!! # Kate's Date **Age 11 to 14 Short** ★ The mean mass of five giant dates was 50g. Kate ate one, and the mean mass of the four remaining dates was 40g. What was the mass of the date that Kate ate?

Activity 3	**Objective:** Measure mass in kilograms. ## Notes and Guidance Children use their knowledge of measuring mass in grams to start to measure mass in kilograms. They apply their counting in 2s, 5s and 10s to measuring mass and reading scales in kilograms. Give children the opportunity to feel the mass of kilogram weights and real life objects that weigh 1 *Kg*, so they can use this to estimate. ## Mathematical Talk How much do you think one tin of beans weigh? Explain why you think that. Which is heavier, one gram or one kilogram? What else do you think we might measure in kilograms?

Activities

1 Find the mass of the sweets and the beans.

The sweets weigh ☐ *kg*

The beans weigh ☐ *kg*

2 Read the scales to find the mass of each.

The bag weighs ☐ *kg*

The person weighs ☐ *kg*

3 Sophie's family are going on holiday. At the airport they weigh their suitcases. Compare the weight of their cases.

Sophie's case ◯ Dad's case

Mum's case weighs ☐ *kg* more than Dad's case.

N.B. in question 1, both weights next to the sweets are 1kg weights, the three weights next to the tin of beans are, 2kg, 1kg and 1kg. Sorry that it is difficult to read!

The scale with the bag on it is marked 500g (in black), 1kg (in red), 1500g (in black), 2kg (in red), 2500g (in black), 3kg (in red), 3500g (in black), then there is no marking at the point where the arrow is pointing and the next number is 4500g. Therefore, the backpack weighs 4kg or 4000g.

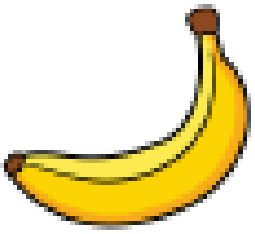
The bathroom scales go 40kg, 45kg, 50kg, with 4 little unmarked points between each. The arrow points to the second little marker after 45kg, so the weight is 47kg.

The suitcases are; Dad – 21kg, Mum – 25kg and Sophie – 11kg.

Which unit would you measure the objects in?
Grams or Kilograms?

A child

A banana

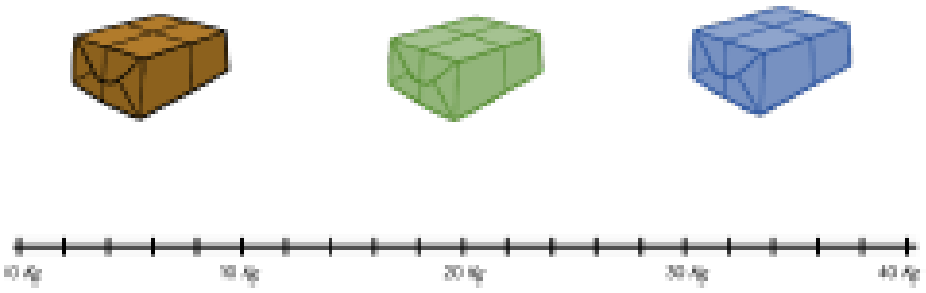


A pencil

A laptop

The brown parcel weighs twice as much as the blue parcel.
The green parcel weighs 2 *kg* more than 30 *kg*
The blue parcel weighs 12 *kg* less than the green parcel.

Draw an arrow to show where each parcel would be on the scale.



Again, I'm really sorry about how difficult this is to read!!!!! The marked points on the scale are 0kg, 10kg, 20kg, 30kg, 40kg.

Complete the worksheet about measuring mass in kilograms.

Extra Activities for Children Working at Greater Depth

Order, Order!

Age 5 to 11 ★

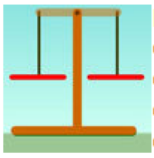
Have a look at the sets of four quantities below. Can you rank them in order from smallest to largest?

To help you decide, you may need to find extra information or carry out some experiments.

Can you convince us that your order is right?

Time
Taken to travel to school
For mustard and cress to grow from seeds
Taken to eat a biscuit
Between your 6th and 7th birthdays

Distance
You could jump up in the air
You can kick a football
You can run in half a minute
Length of a bug



Mass
Of a blown-up balloon
Of a bar of chocolate
Of a loaf of bread
Of your teacher

Activity 4	**Objective:** Compare Capacity / Volume. .

Notes and Guidance

Children build on their understanding from Year 1 to explore the difference between capacity and volume. They use containers to compare capacity and volume and recognise the capacity is the amount of liquid a container can hold and the volume is how much liquid is in the container.

Children use the language 'quarter', 'half' and 'three quarters full'.

Mathematical Talk

Which container has the largest/smallest capacity? Can we order them from largest to smallest?
Can we show the same volume in each container? Does it look the same? Why?
Which container has the more or less liquid in?
How many mugs does it take to fill the bottle? Is this more or less than the pot? Can we find the difference?

N.B. the really important thing to note here is that CAPACITY and VOLUME ARE NOT THE SAME THING!!!!
'Capacity' means how much a container CAN hold if you fill it up to its maximum.
'Volume' refers to how much is actually in the container.

For example, you could have a measuring jug in your kitchen with a 1 litre capacity. It COULD hold 1 litre if you filled it up to the top. However, you might only have 500 mililitres of water in that jug. The volume of liquid in the jug is 500ml, but the jug has the capacity to hold 1L.

Activities

1 Take three different containers. Using water or rice, which container has the largest capacity? Show me each container where the volume is: quarter full, half full and then three quarters full.

2 Complete the sentences using the words 'less', 'more' or equal'.

A B

Container A has _____ than container B.

A B C

Container C has _____ than container B.

Container A has _____ than container C but _____ than container B.

3 Complete the sentences:

The pot can fill _____ mugs.

The bottle can fill _____ mugs.

Which holds more?

Use other containers to investigate how many mugs of rice they take to fill.

Steph pours juice from two identical bottles into two identical glasses.

Which glass has the most juice in?
Which has the least juice in?
Explain why.

Choose different sized containers in your classroom. Measure how much liquid each container can hold. Order your containers from which one can hold the most water to the least. Compare the containers using <, > or =

Complete the worksheet about comparing volume.

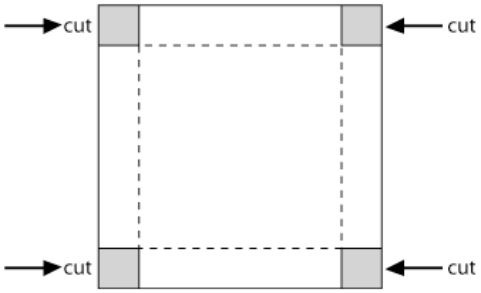
Extra Activities for Children Working at Greater Depth

Making Boxes

Age 7 to 11 ★★

In this problem you start with some sheets of squared paper measuring 15×15 and use them to make little boxes without lids.

You do this by cutting out squares at the corners and then folding up the sides. (The folds are indicated by the dotted lines in the diagram.)



Begin by cutting one square out of each corner. Fold up the sides. What is the size of the base? How high are the sides? So what is its volume?

Now cut a 2×2 square out of each corner and fold up the sides.
Does it look as if it holds more than the first box, less than the first box or just the same amount?
What is the size of the base now? How high are the sides now? So what is its volume?

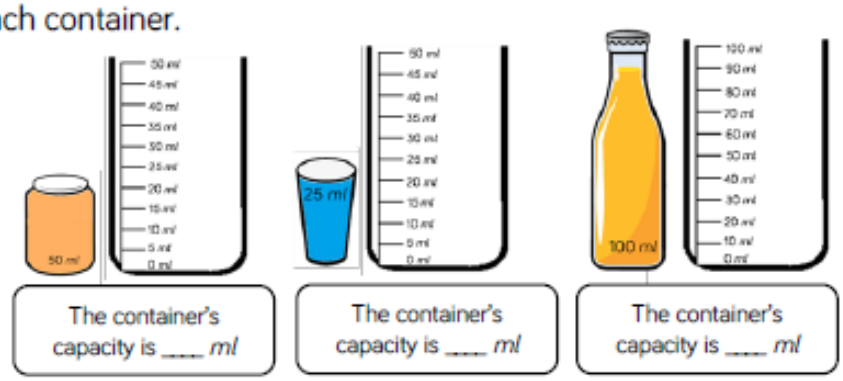
	Now cut a 3×3 square out of each corner and fold up the sides. Does it look as if it holds more than the other boxes, less than the other boxes or just the same amount? What is the size of the base now? How high is it now? So what is its volume? If you keep on doing this, taking larger and larger squares from the corners, which box will have the largest volume? View this problem, approaches to getting started and the solution at; https://nrich.maths.org/89

Activity 5	**Objective:** Mililitres. ## Notes and Guidance Children are introduced to standard units for the first time. They use measuring containers to measure capacity and volume in millilitres. Once children are secure in using and understanding millilitres as a standard unit they move on to solve problems involving capacity and volume. ## Mathematical Talk Which container has the largest/smallest capacity? Can we order them from largest to smallest? Look at the scale on my cylinder, what do we notice? Is this the same for this cylinder? If we pour the liquid from this jar/glass into the cylinder, how much does each container hold? Can we identify the volume in each cylinder? Which container had more/less liquid in than this? N.B. as I said above about mass / weight, children don't often see what different amounts of liquid look like. They may not realise that a teaspoon only holds about 5ml and that this is a very small amount. Try showing them different amounts and perhaps labelling and photographing these to act as a reminder.

Activities

1. Use a variety of different containers with *ml* clearly labelled e.g. measuring spoon, water bottle, liquid soap, vinegar etc. Introduce that liquid can be measured in millilitres. Show 5 *ml* using a medicine spoon. Discuss is 5 *ml* a large or small amount? Look at the containers and identify how many *ml* each container holds.

2. Show on the measuring jug where the liquid would go to from each container.



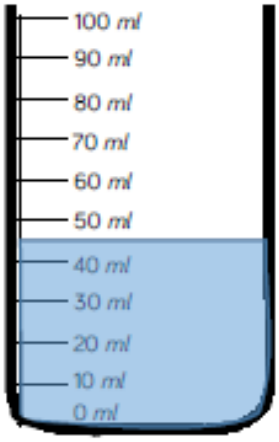
3. Use different containers e.g. mug, bowl, pan, tea cup. Fill them with water or rice. Pour them into a measuring cylinder and measure the volume of liquid or rice in the measuring cylinder.

N.B. once more, the pictures are extremely difficult to read!!!!
The first one (with the sort of 'peach' coloured container), says 50ml and the scale on the jug starts at 0 and counts up in 5s (0, 5, 10, 15, 20, etc, all of the way up to 50 at the top).
The second one with the blue cup / glass is marked 25ml and the scale goes up in 5s (like the previous one).
The third one, with what looks like a bottle of orange juice says 100ml, but this time the scale is counting in 10s (0, 10, 20, 30, etc, all of the way up to 100).

Gather different sized containers in width and height. Estimate how much is in each container. Record your results in the table:

Container	Estimate	Amount

The water in this container does not reach a line exactly.
What is a good approximation?



N.B. this container is marked in 10s, starting from 0. The liquid inside is between 40ml and 50ml.

Explain why.

Complete the worksheet about millilitres.

Extra Activities for Children Working at Greater Depth

Pouring Problem

Age 7 to 11 ★★

Maya has two glasses of water:

Watch this short clip to see what she starts to do:

To view this problem and the videos that go with it, go to;
https://nrich.maths.org/13664

Activity 6	**Objective:** Litres. ## Notes and Guidance Children are introduced to litres as a standard unit for the first time. They use measuring containers to measure capacity and volume in litres. Children recognise the difference between measuring in millilitres and litres and when you would use litres to measure liquid opposed to millilitres. ## Mathematical Talk Would you measure in litres or millilitres? Why? How many litres of water do you think it would take to fill the bath? How many litres of water do you drink a day?

Activities

1. Use a variety of different containers with litres clearly labelled e.g. cola bottle, paint bottle, milk etc.
   Can we measure these in *ml*?
   Introduce litres and discuss how these are the same but different to millilitres. Identify how many litres fill each container.

2. Show the volume of liquid that is in each cylinder.
   - Pour 3 *l* of water into the cylinder.
   - Leave 1 *l* of cola in the bottle.
   - Half of the juice is in the cylinder.

3. Use different containers e.g. bucket, large pan etc.
   Estimate the capacity of each one.
   Measure the capacity in litres.

Impossible to read again!!!!!
The first one with the bottle of water says 5L,
The second one with the bottle of cola says 2L,
The third one with the orange juice says 1L.
The scales are all exactly the same. They start at 0, then there is an unmarked line, then 1L, then another unmarked like, then 2L, hen an unmarked line, then 3L, then an unmarked line, then 4L, then an unmarked line, then 5L is at the top.

Jed has a bucket which has 5 *l* of water in. He pours 3 and a half *l* into another bucket. Which sentence is correct?

- There is more in bucket A.
- There is less in bucket A.
- There are equal amounts in each bucket.

Explain why.

3 bowls each have more than 20 *l* of water in but less than 50 *l*
The green bowl has 5 *l* more than the red bowl.
The blue bowl has 10 *l* more than the green bowl.
How much could each bowl have in?

Complete the worksheet about litres.

Extra Activities for Children Working at Greater Depth

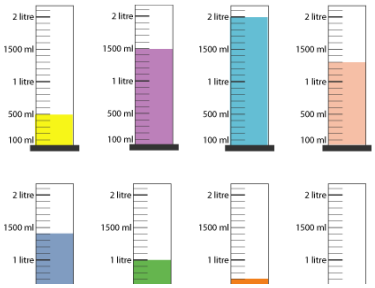
Oh! Harry!

Age 7 to 11 ★★

A group of eight children in Class 6 were measuring water using measuring cylinders. They coloured the water to make reading the scales easier.

They lined up the cylinders in two neat rows, each labelled with a child's name and the amount they had measured out.

Then Harry opened the window and the wind blew most of the labels onto the floor! "Oh! Harry!" they all wailed. Can you relabel the cylinders for them?



To view this problem and the solution, go to;

https://nrich.maths.org/5979

Activity 7	**Objective:** Temperature. ## Notes and Guidance Children are introduced to temperature, thermometers and the units °c for the first time. They apply their counting in 2s, 5s and 10s skills when reading different thermometers. ## Mathematical Talk What unit can we use to measure temperature? What is the scale going up in? How do you know? If the temperature increases what happens to the number? If the temperature decreases what happens to the number? Can we compare temperatures using vocabulary such as increased, decreased, warmer, colder and difference?

Activities

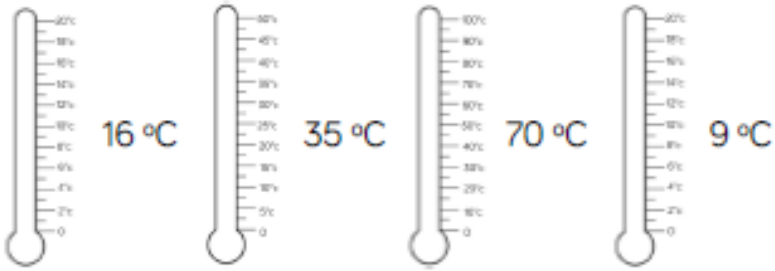
1 Take temperatures around the school and complete the following stem sentences.

The temperature in the classroom is _____

The classroom is _____ than the playground.

The difference in temperature between the _____ and the _____ is ___ degrees Celsius.

2 Complete the thermometers to show the temperatures.



3 Compare the temperatures using <, > or =

N.B. for question 1, if you do not have a thermometer at home, you could look up different temperatures on the internet, e.g. average outside temperature on a spring day / a winter day / a summer day / an autumn day, average indoor temperature, typical temperature of a cup of tea, lowest / highest temperature an oven can be. Compare these temperatures instead of measuring your own.

In question 2, the thermometers read;

- The first one on the left - 0, blank, 2, blank, 4, blank, 6, blank (up to 20).
- The second from the left – 0, blank, 5, blank, 10, blank, 15, blank (up to 50).
- The third one – 0, blank, 10, blank, 20, blank, 30, blank (up to 100).
- The last one – is the same as the first one.

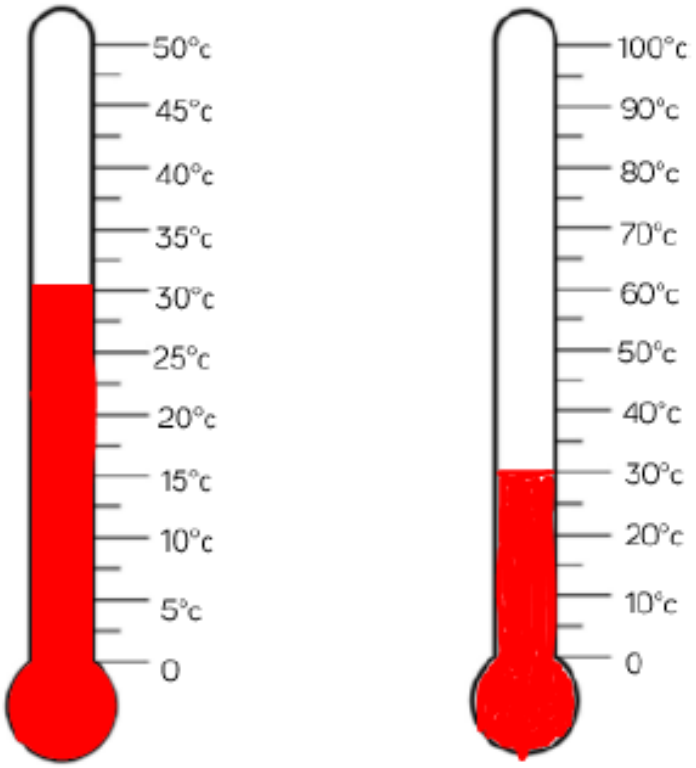
In question 3,

- The first one on the left - 0, blank, 10, blank, 20, blank, 30, blank (up to 100).
- The second one - 0, blank, 2, blank, 4, blank, 6, blank (up to 20).
- The third one - 0, blank, 5, blank, 10, blank, 15, blank (up to 50).
- The forth one is the same as the second.
- The fifth one is the same as the third.
- The sixth one is the same as the second.

Mollie took the temperature at 12 pm and again at 5 pm
There was a difference of 7°C

What could the temperatures be?

What is the same and what is different about the thermometers/temperatures?



	Complete the worksheet about temperature. **Extra Activities for Children Working at Greater Depth** Have a go at the temperature problem solving activity where you need to label the temperature in different UK cities.
Activities 8, 9, 10.	**Objective:** Mixed Year 2 Revision. **Activities** I have found some 'Year 2 Maths Activity Mats'. These have mixed questions from across the Year 2 curriculum. There are 6 documents, but they contain 2 or 3 activity mats in each, so lots to keep children going for these few last days. Hopefully they will serve as a useful reminder of all that we have covered and they might flag up any weaker areas that you want to revisit with your child.