Spring Scheme of Learning

Year 1/2

#MathsEveryoneCan

2019-20
How to use the mixed-age SOL

In this document, you will find suggestions of how you may structure a progression in learning for a mixed-age class.

Firstly, we have created a yearly overview.

For each block of learning, we have grouped the small steps into themes that have similar content. Within these themes, we list the corresponding small steps from one or both year groups. Teachers can then use the single-age schemes to access the guidance on each small step listed within each theme.

The themes are organised into common content (above the line) and year specific content (below the line). Moving from left to right, the arrows on the line suggest the order to teach the themes.

Each term has 12 weeks of learning. We are aware that some terms are longer and shorter than others, so teachers may adapt the overview to fit their term dates.

The overview shows how the content has been matched up over the year to support teachers in teaching similar concepts to both year groups. Where this is not possible, it is clearly indicated on the overview with 2 separate blocks.
How to use the mixed-age SOL

Here is an example of one of the themes from the Year 1/2 mixed-age guidance.

Subtraction

Year 1 (Aut B2, Spr B1)
- How many left? (1)
- How many left? (2)
- Counting back
- Subtraction - not crossing 10
- Subtraction - crossing 10 (1)
- Subtraction - crossing 10 (2)

Year 2 (Aut B2, B3)
- Subtract 1-digit from 2-digits
- Subtract with 2-digits (1)
- Subtract with 2-digits (2)
- Find change - money

In order to create a more coherent journey for mixed-age classes, we have re-ordered some of the single-age steps and combined some blocks of learning e.g. Money is covered within Addition and Subtraction.

The bullet points are the names of the small steps from the single-age SOL. We have referenced where the steps are from at the top of each theme e.g. Aut B2 means Autumn term, Block 2. Teachers will need to access both of the single-age SOLs from our website together with this mixed-age guidance in order to plan their learning.

Points to consider

- Use the mixed-age schemes to see where similar skills from both year groups can be taught together. Learning can then be differentiated through the questions on the single-age small steps so both year groups are focusing on their year group content.
- When there is year group specific content, consider teaching in split inputs to classes. This will depend on support in class and may need to be done through focus groups.
- On each of the block overview pages, we have described the key learning in each block and have given suggestions as to how the themes could be approached for each year group.
- We are fully aware that every class is different and the logistics of mixed-age classes can be tricky. We hope that our mixed-age SOL can help teachers to start to draw learning together.
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In this section, content from single-age blocks are matched together to show teachers where there are clear links across the year groups. Teachers may decide to teach the lower year’s content to the whole class before moving the higher year on to their age-related expectations. The lower year group is not expected to cover the higher year group’s content as they should focus on their own age-related expectations.

In this section, content that is discrete to one year group is outlined. Teachers may need to consider a split input with lessons or working with children in focus groups to ensure they have full coverage of their year’s curriculum. Guidance is given on each page to support the planning of each block.

The themes should be taught in order from left to right.
In this block, both year groups measure and compare length however Year 1 start with a focus on non-standard units of measure before moving on to standard units of measure. Both year groups measure in centimetres, with Year 2 moving on to consider if items are longer or shorter than a metre and measuring longer distances in metres.

Year 2 apply their understanding of the four operations in the context of length and height.

Four Operations
Year 2 (Spr B5)
• Four operations with lengths
Measure Length (1)

Notes and Guidance

Children use non-standard units, such as cubes, hands and straws to measure length and height. Ensure children understand the units they use need to be of equal length. Children recognise that longer, non-standard units are more suitable for measuring the length and height of longer/taller objects. Children need to understand that non-standard units should be exactly in line with one end of the object with no gaps between them to get an accurate measurement.

Mathematical Talk

What other things could you use to measure how long a pencil is?

What could you use to measure how tall you are? Is it easier to measure someone lying down or standing up?

What could you use to measure the length of your classroom?

Why is it important to measure in a straight line?

Varied Fluency

Use cubes to measure the length of objects around your classroom. Write a sentence for each object.

The pencil is □ cubes long.

The □ is □ cubes long.

Mr White is 5 sticks tall.
Choose a suitable piece of equipment to measure how tall your friend is.

Which is longer – your maths book or a lunch box?

The □ is longer than the □.

Choose a unit to measure the objects to check you are correct.
True or false?

The flower is 8 cubes tall. Explain your answer.

False because the cubes should be level with the bottom of the flower. The flower is about 6 cubes tall.

Whitney measures the length of two toys. She says, The toys are the same length.

Do you agree with Whitney? Explain your answer.

Whitney is wrong. Both toys are 4 units long, but the rubber and the cubes are different lengths so the toys are not the same length.
Children build on prior knowledge of measuring length and height using non-standard units and apply this to measuring using a ruler.

They should be able to understand that objects can vary in length and size, so a standard unit of measurement is required.

It is important that children know to measure from 0 cm.

What do the numbers on the ruler mean? (1 cm etc.)

Where should we place the object to start measuring it?

Does the ruler look like anything else we have used? (number line)

Can you count how many cm the _____ measures?

How does using a ruler help us to compare objects?

How long is the building block?

The building block is ____ cm.

What is the length of the chocolate bar?

The chocolate bar is ____ cm.

Which straw is the tallest?

The blue straw is ____ cm tall.

The red straw is ____ cm tall.

The ____ straw is the tallest.

The ____ straw is the shortest.
Teddy measures the length of the pencil. He says, 

The length of the pencil is 10 cm.

Do you agree with Teddy? Explain why.

Teddy is wrong because he has started measuring from the end of the ruler not from 0.

Eva, Dexter and Rosie are comparing ribbons that they have. Unfortunately, Dexter has lost his ribbon.

He says, My ribbon is shorter than Rosie’s, but longer than Eva’s.

How long could Dexter’s ribbon be?

Possible answers:
11 cm
12 cm
13 cm
14 cm
Measure Length (cm)

Children measure to the nearest centimetre using a ruler or tape measure.

They measure both length and height and focus on the importance of measuring from 0 rather than the end of the ruler or tape measure.

Notes and Guidance

Mathematical Talk

What is the length?

How can the numbers on the ruler help us?

How do you know you have drawn a line that is 5cm long?

How can you check?

Why is it important to start measuring from 0 on the ruler?

Varied Fluency

Choose a variety of objects and practice measuring them using a centimetre ruler. Remember to line up the object to the 0 mark on the ruler.

e.g. How long is the pencil to the nearest centimetre?

How tall is the glass?

What other objects can you find to measure the height of?

Draw a line that is:

- 5 cm long
- 8 cm long
- Longer than 4 cm but shorter than 7 cm.
The length will not change if you change the orientation so it will be easier to measure if you put it in a straight line.

Mo has used the ruler to measure the length of the car.

Mo says the car is 8 centimetres long. Do you agree? Explain your answer.

Mo is incorrect because he has not lined the car up with the 0 marker. If he had measured from 0 he would see that the car is 7 cm long.
Children begin to measure larger objects using metres. They think about whether it is better to measure items in centimetres or metres and discuss the reasons why.

Children do not yet convert from metres to centimetres; however they may see that 100 centimetres is the same as 1 metre and measurements can be written as mixed units e.g. the child is 1 metre and 25 centimetres tall.

**Mathematical Talk**

When would it be appropriate to use metres?

Why is more efficient to use metres instead of centimetres for longer objects/distances?

What equipment would you use to measure longer objects/distances?

**Measure Length (m)**

**Notes and Guidance**

Use a metre stick to measure objects in your classroom and place them into the groups.

Can you find anything that is exactly one metre?

Use a metre stick to count up in 10 cm blocks. What do you notice about 100 cm? Possible responses: it is the same a metre, 1 m is written, it is the end of the stick.

Measure the length of the school hall. Record the length in metres and centimetres, e.g. 15 metres and 13 centimetres.
Measure Length (m)

Reasoning and Problem Solving

Usain Bolt can run 100 m in 9.58 seconds (just under 10 seconds).

How far do you think you can run in 10 seconds? Do you think it will be more or less than 100 m?

Measure how far you and your friends can run in 10 seconds.
Record your answers in metres and centimetres.

Children will have a variety of answers. They could measure using different equipment including metre sticks and trundle wheels.

Amir has a metre stick.
He wants to measure the length of his classroom.

Amir can measure the length of the classroom by putting a marker at the end of the metre stick and then starting again at that point, moving his metre stick as he measures.

I can't measure the length of the classroom because my metre stick isn't long enough.

Circle elephant, school and tree

Circle the objects that you would measure in metres. Tick the objects that you would measure in centimetres.

Explain to Amir how he could measure the length of his classroom.

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Circle elephant, school and tree

Circle the objects that you would measure in metres. Tick the objects that you would measure in centimetres.
Block 3 – Length & Height

Theme 2 - Compare & Order Lengths
Children use and understand the language of length such as long, longer, short, shorter, tall, taller. They recognise this language will change depending on what type of length they are describing and comparing.

Children understand that height is a type of length. They should also be exposed to lengths that are equal to one another.

Which person is taller/shorter?
Which pencil is shorter/longer?

Are we measuring the height or length of something? What is the same? What is different?

How many different sentences can you make to compare the vehicles? Say them to your partner.

Use the words **taller** and **shorter** in the sentence stems to compare the height of the man and the boy.

The man is _ than the boy.
The boy is _ than the man.

Use the words **longer** and **shorter** in the sentence stems to compare the length of the blue pencil and the orange pencil.

The blue pencil is _ than the orange pencil.
The orange pencil is _ than the blue pencil.

Which pencil is the longest? Which pencil is the shortest?

Compare the vehicles using the words to help you.
Rosie, Alex and Mo are comparing the height of Mrs Rose and Jack.

Possible answer:
Rosie – Mrs Rose is taller than Jack.
Alex – Jack is shorter than Mrs Rose.
Mo – Mrs Rose is taller than Jack.
Taller is a better word than longer because we are comparing height.

Eva thinks the pencils are the same length.

How can Eva check if she is correct?

Using classroom equipment, can you find an object which is longer than your rubber but shorter than your pencil?
Can you find a friend who is shorter than you but taller than your other friend?

Eva needs line up one end of the pencils and see which is longer.

Children could explore other items and situations where they are asked to compare more than two objects.
Children compare lengths of objects using comparison language and symbols. They use language such as longer than, shorter than, taller than, longest, shortest and tallest.

Children only compare using the same unit of length in a question. However, the same number but different unit of measure could also be used to check that children understand metres are bigger than centimetres.

Which is longer: 10 centimetres or 10 metres?

Which symbols can we use to compare lengths?

What is the difference between using taller than and longer than? When would we use taller than instead of longer than?
**Compare Lengths**

### Reasoning and Problem Solving

A green pencil is twice as long as a blue pencil.

Using this, complete the statements using longer than, shorter than or equal to.

| 3 green pencils are ______ 2 blue pencils |
| 2 green pencils are ______ 5 blue pencils |
| 4 green pencils are ______ 8 blue pencils |

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<thead>
<tr>
<th>Compare the measurements using &lt;, &gt; or =</th>
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<tbody>
<tr>
<td>55 cm + 10 cm</td>
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<td>42 m + 6 m</td>
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<td>6 cm − 5 cm</td>
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<td>80 m − 5 m</td>
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Order Lengths

Notes and Guidance

Children order more than two lengths from shortest to longest and vice versa. This will help them recap their understanding of ordering numbers to 100.

Children will order given lengths as well as ordering objects by measuring each length themselves.

They will use the language of shorter, shortest, longer and longest to describe the order.

Mathematical Talk

How is ordering lengths similar to ordering numbers on a number line? Can we use a number line to help us?

Can we estimate which object is the longest before measuring?

Varied Fluency

Eva, Jack and Rosie are comparing the length of ribbons. Complete the sentences.

_________ has the longest ribbon.

_________ has the shortest ribbon.

_________ ‘s ribbon is shorter than ________’s.

_________’s ribbon is longer than ________’s.

Choose five objects in your classroom.
Measure them using a ruler.
Order the objects from longest to shortest.
Write at least three sentences to describe the objects using the words longer, longest, shorter and shortest.
Four children are measuring their heights.

Eva is taller than Rosie, but not as tall as Mo.

Dexter is taller than Mo.

Write down their names in order of their heights, starting with the shortest.

| Shortest: Rosie | Eva | Mo |
| Tallest: Dexter |

Dora says,

The taller you are, the longer your shoes are.

Measure the height of people in your class and measure the length of their shoes.

Is Dora correct?

Children will find different results depending on their class.
Children draw on their skills of the four operations and apply their understanding to length. They solve one-step and two-step problems relating to length and use concrete and pictorial representations to calculate efficiently.

**Notes and Guidance**

**Four Operations with Lengths**

- Eva, Jack and Rosie each have a piece of ribbon.
- How much longer is Jack’s ribbon than Eva’s?
- Jack and Rosie put their ribbons together. How long are they altogether?
- Eva cuts three more ribbons of the same length as hers. What is the total length of all four ribbons?
- Eva cuts her ribbon in half. What is the length of each piece?

**Mathematical Talk**

Can you draw a bar model to help to decide which operations to use?

What are the key words in the question?

Can you ask and answer any different questions using the objects and information given?

**Varied Fluency**

Teddy has a toy train and a toy plane.
The train is 28 cm long. The plane is 16 cm longer. How long is the plane?

The toy train is double the length of a toy car. How long is the toy car?
Four Operations with Lengths

Reasoning and Problem Solving

Here is a strip of orange paper.

A blue strip is four times longer than an orange strip.

The strips are joined end to end.

50 cm

How long is the orange strip?

How long is the blue strip?

The orange strip is 10 cm long and a blue strip is 40 cm long.

There are 3 teddies in a box.

The brown teddy is 15 cm taller than the yellow teddy.

The yellow teddy is 3 cm shorter than the pink teddy.

The pink teddy is 42 cm tall.

How tall are the brown and yellow teddies?

How much taller is the brown teddy than the pink teddy?

The yellow teddy is 39 cm tall.

The brown teddy is 54 cm tall.

The brown teddy is 12 cm taller.