Spring Scheme of Learning

Year 4/5

#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.

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.

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.
How to use the mixed-age SOL

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

### 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.

### 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.
### WRM – Year 4/5 – Scheme of Learning 2.0s

<table>
<thead>
<tr>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
<th>Week 5</th>
<th>Week 6</th>
<th>Week 7</th>
<th>Week 8</th>
<th>Week 9</th>
<th>Week 10</th>
<th>Week 11</th>
<th>Week 12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Autumn</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number: Place Value</td>
<td>Number: Addition and Subtraction</td>
<td>Number: Multiplication and Division</td>
<td>Measurement: Length, Perimeter and Area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spring</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number: Multiplication and Division</td>
<td>Number: Fractions</td>
<td>Number: Decimals (including Y5 Percentages)</td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td><strong>Summer</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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.
Converting Time
Year 4 (Sum B3)
- Hours, minutes and seconds
- Years, months, weeks and days
Year 5 (Sum B4)
- Converting units of time

In this block, both year groups start by converting between different units of time.
Teachers may decide to recap digital time with Year 5 as this will support their learning when looking at timetables.

Digital time
Year 4 (Sum B3)
- Analogue to digital- 12-hour
- Analogue to digital- 24-hour

Timetables
Year 5 (Sum B4)
- Timetables
Sort the activities under the headings depending on the approximate length of time they take to complete.

<table>
<thead>
<tr>
<th>One hour</th>
<th>One minute</th>
<th>One second</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clap</td>
<td>Run around the playground</td>
<td>Blink</td>
</tr>
<tr>
<td>Swimming lesson</td>
<td>PE lesson</td>
<td>Tie your shoe laces</td>
</tr>
</tbody>
</table>

One hour = ___ minutes
Two hours = ___ minutes
Half an hour = ___ minutes
Three minutes = ___ seconds.

Josh reads a chapter of his book in 5 minutes and 28 seconds.
Tom reads a chapter of his book in 300 seconds.
Who reads their chapter the quickest?

Josh reads a chapter of his book in 5 minutes and 28 seconds.
Tom reads a chapter of his book in 300 seconds.
Who reads their chapter the quickest?
Jack takes part in a sponsored silence. He says, If I am silent for five hours at 10p per minute, I will raise £50.

Do you agree with Jack? Explain why you agree or disagree.

Dora says, To convert hours to minutes, I multiply the number of hours by 60.

Is she correct? Can you explain why?

Jack is incorrect. There are 60 minutes in an hour so 60 \times 10p = 600p or £6 £6 \times 5 = £30.

Dora is correct. For example 1 hour = 60 minutes 1 \times 60 = 60 2 hours = 120 minutes 2 \times 60 = 120.

Five friends run a race. Their times are shown in the table.

<table>
<thead>
<tr>
<th>Name</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eva</td>
<td>114 seconds</td>
</tr>
<tr>
<td>Dexter</td>
<td>199 seconds</td>
</tr>
<tr>
<td>Teddy</td>
<td>100 seconds</td>
</tr>
<tr>
<td>Whitney</td>
<td>202 seconds</td>
</tr>
<tr>
<td>Ron</td>
<td>119 seconds</td>
</tr>
</tbody>
</table>

Which child finished the race the closest to two minutes?

Ron was the closest to two minutes, as he is one second quicker than 2 minutes (120 seconds).

Fastest time 100 seconds, slowest time 202 seconds.

The difference between the fastest and slowest time is 1 minute and 42 seconds.
Children recap the concept of a year, month, week and day from Year 3.

They use this knowledge, along with their knowledge of addition, subtraction, multiplication and division to convert between the different units of time.

Mathematical Talk

How many days are there in a week? How many days are there in each month?
How many weeks in a year?
How many days are there in _____ weeks? What calculation do we need to do to convert days to weeks/weeks to days?
How many months/weeks/days are there in _____years?

Varied Fluency

Use a calendar to help you complete the sentences.

There are ____ months in a year.
There are ____ days in February.
____ months have 30 days, and ____ months have 31 days.
There are ____ days in a year and ____ days in a leap year.

Complete the table.

<table>
<thead>
<tr>
<th>Number of days</th>
<th>Number of weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5</td>
</tr>
<tr>
<td>49</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

Sally is 7 years and 2 months old.
Macey is 85 months old.
Who is the oldest?
Explain your answer.
Amir, Rosie and Jack describe when their birthdays are.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Date Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amir</td>
<td>My birthday is in exactly two weeks.</td>
<td>Amir – 2 weeks is equal to 14 days so his birthday is 22(^{nd}) June.</td>
</tr>
<tr>
<td>Rosie</td>
<td>My birthday is in exactly 2 months.</td>
<td>Rosie – 8(^{th}) August</td>
</tr>
<tr>
<td>Jack</td>
<td>My birthday is in 35 days.</td>
<td>Jack – there are another 22 days left in June plus 13 in July, so his birthday is 13(^{th}) July.</td>
</tr>
</tbody>
</table>

Use the clues to work out when their birthdays are if today is the 8\(^{th}\) June.

### Always, sometimes, never?

There are 730 days in two years.

### True or false?

- 3 days > 72 hours. (False)
- 2 \(\frac{1}{2}\) years = 29 months (True)
- 11 weeks 4 days < 10 weeks 14 days (True)
Converting Units of Time

Notes and Guidance

Children convert between different units of time including years, months, weeks, days, hours, minutes and seconds. Bar modelling will support these conversions. Use of time lines, calendars, clocks is recommended to enhance pupils’ understanding.

It is worth reminding pupils that time is not decimal so some methods may not be effective for conversions.

Mathematical Talk

How many months / weeks / days are there in a year?

How many hours / minutes / seconds are there in a day?

Can 21 days be written in weeks? Can 25 days be written in weeks? Explain your answers.

Is 0.75 hours the same as 75 minutes? Why or why not?

Varied Fluency

Complete the conversions.

1 year = [ ] months  
[ ] years = 24 months

[ ] years = 60 months  
2.5 years = [ ] months

3 years 2 months = [ ] months  
[ ] years [ ] months = 75 months

Complete the table.

<table>
<thead>
<tr>
<th>Days</th>
<th>Weeks / Weeks and Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>42 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 weeks and 5 days</td>
</tr>
<tr>
<td></td>
<td>10 weeks and 5 days</td>
</tr>
<tr>
<td>100 days</td>
<td></td>
</tr>
</tbody>
</table>

Use this information to complete the conversions.

\[ \frac{1}{3} \text{ hour} = [ ] \text{ minutes} \]

3 [ ] and 24 [ ] = 204 [ ]

1.5 minutes = [ ] seconds

1.05 minutes = [ ] seconds
Teddy’s birthday is in March.
Amir’s birthday is in April.
Amir is 96 hours older than Teddy. What dates could Teddy and Amir’s birthdays be?

<table>
<thead>
<tr>
<th>Date Combination</th>
</tr>
</thead>
<tbody>
<tr>
<td>28th March and 1st April</td>
</tr>
<tr>
<td>29th March and 2nd April</td>
</tr>
<tr>
<td>30th March and 3rd April</td>
</tr>
<tr>
<td>31st March and 4th April</td>
</tr>
</tbody>
</table>

Three children are running a race.

- Whitney finishes the race in 3 minutes 5 seconds.
- Eva finishes the race in 192 seconds.
- Alex finishes the race in 2 minutes and 82 seconds.

Who finishes the race first?

<table>
<thead>
<tr>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whitney: 3 min 5 s</td>
</tr>
<tr>
<td>Eva: 3 min 12 s</td>
</tr>
<tr>
<td>Alex: 3 min 22 s</td>
</tr>
</tbody>
</table>

Whitney finishes the race first.
The time is _______ past 10

This can also be written as ____ minutes past 10

The digital time is ____ : ____

Write each of these times in the digital format.

Record the time of each activity in digital format.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netball</td>
<td>01:00 p.m.</td>
</tr>
<tr>
<td>Football</td>
<td>09:00 a.m.</td>
</tr>
<tr>
<td>Rock climbing</td>
<td>02:00 p.m.</td>
</tr>
<tr>
<td>Roller disco</td>
<td>08:00 a.m.</td>
</tr>
</tbody>
</table>

Alfie looks at his digital watch and sees this time. What could he be doing at this time?
Annie converts the analogue time to digital format. Here is her answer.

Explain what Annie has done wrong. What should the digital time be?

On a 12 hour digital clock, how many times will the time be read the same forwards and backwards?

Annie has recorded the minutes past the hour first instead of the hour. The time should be 02:22.

Children can work systematically to work this out. For example, 12:21, 01:10, 02:20, 03:30 etc.

Jack arrives at the train station at the time shown in the morning.

Which trains could he catch?

<table>
<thead>
<tr>
<th>Destination</th>
<th>Departs</th>
</tr>
</thead>
<tbody>
<tr>
<td>York</td>
<td>07:10 a.m.</td>
</tr>
<tr>
<td>New Pudsey</td>
<td>09:25 a.m.</td>
</tr>
<tr>
<td>Bramley</td>
<td>09:42 a.m.</td>
</tr>
<tr>
<td>Leeds</td>
<td>10:03 a.m.</td>
</tr>
</tbody>
</table>

Jack could catch the train to Bramley or Leeds.

He would have to wait 7 minutes to go to Bramley and 28 minutes to go to Leeds.
 Analogue to Digital – 24 hour

Notes and Guidance

Children now move on to convert between analogue and digital times using a 24 hour clock.

They use 12 and 24 hour digital clocks, and a number line, to explore what happens after midday.

Mathematical Talk

What do you notice about the time 1 o’clock in the afternoon on a 24 hour digital clock?
How will the time be shown for 3 o’clock in the morning/afternoon? How do you know?
What time is the analogue clock showing?
Why is it important to know if it is a.m. or p.m.?
What time does she leave school on a 24 digital clock?

Varied Fluency

Explore an interactive 12 and 24 hour digital clock with the children.
Compare what happens when the time reaches 1 o’clock in the afternoon. Move the 24 hour clock on to 2 o’clock.
Plot the times above a 0-24 number line.
What do you notice?
Record these times using 24 hour digital format.
4 pm 8 pm 11 pm

Match the analogue and digital times.

a.m.  p.m.  p.m.  a.m.

13 : 10  07 : 10  00 : 45  21 : 20

Sally leaves school at the time shown.
She arrives home 1 hour later.
What will the time be on a 24 hour digital clock?
Three children are meeting in the park.

Rosie says, We are meeting at 14:10.

Teddy says, We are meeting at 02:10 p.m.

Eva says, We are meeting at ten to two.

Will all the children meet at the same time? Explain your answer.

Annie has recorded the minutes past the hour first instead of the hour. The time should be 02:22 a.m.

Jack says, To change any time after midday from 12 hours to 24 hours digital time just add 12 to the hours.

Will this always be true? Are there any examples where this isn’t the case?

Can you match the time dominoes together so that the touching times are the same?

Children can work systematically to work this out. For example, 12:21, 01:10, 02:20, 03:30 etc.

Sometimes true

You need to add 12 to the hour, but not if it is 12 in the hours e.g. 12:04 p.m.

Children may find more than one way to solve this.

Can you create your own version for your partner?
Block 2 - Time

Theme 3 - Timetables
Use the timetable to answer the questions.

Is the time to get from Shelf Roundabout to Bradford Interchange the same for every bus?
Why might the time not always be the same?
Why are some of the times blank?

There are five TV programmes on between 17:00 and 23:00
The News starts at 6 p.m. and lasts for 45 minutes.
Mindless is on for 1 hour and ends at 18:00.
Junk Collectors is on for 75 minutes and starts straight after The News.
Catch Up is on for 300 seconds and starts at 20:00.
The Thirsty Games is on for 175 minutes and ends at 23:00.
Make a timetable for the evening TV.
Three trains travel from Halifax to Leeds on the same morning: the express train, the slow train and the cargo train.

The express train leaves Halifax 10 minutes after the slow train, but arrives at Leeds 10 minutes before it.

The slow train takes 50 minutes to reach Leeds and arrives at 10:33.

The cargo train leaves 20 minutes before the slow train and arrives at Leeds 39 minutes after the Express.

What time does each train leave Halifax and what time does each train arrive at Leeds Station?

The slow train leaves Halifax at 9:43 and arrives in Leeds at 10:33.

The express train leaves Halifax at 9:53 and arrives in Leeds at 10:23.


Make a timetable of your school day.

Calculate how many hours each week you spend on each subject.
Can you convert this into minutes?
Can you convert this into seconds?

If this is an average week, how many hours a year do you spend on each subject?
Can you convert the time into days?

Answers will vary depending on the school day.