Mathematical focus
★ Number: number and place value
★ Measurement: lengths and heights, days of the week

Prior learning
Children should already be able to:
• count to 10 and beyond
• read and write numbers to 10 and beyond
• recognise the names of some days of the week.

Key new learning
• Count to and across 30, forwards and backwards, beginning with 0 or 1; count, read and write numbers to 30 in numerals.
• Given a number, identify one more and one less (numbers to at least 30).
• Identify and represent numbers up to at least 30 (to 50 in tens) using objects and pictorial representations including the number track, and use the language of: equal to, more than, less than (fewer), most, least.
• Compare, describe and solve practical problems for: lengths and heights, e.g. long/short, longer/shorter, longest/shortest, tall/short, taller/shorter, tallest/shortest.
• Recognise and use language relating to dates, including days of the week, weeks, months and years.

Making connections
• Counting forward and back is a good way to get to know the order of the numbers. We use the same numbers, in the same order, when measuring and in dates. Children will begin to recognise that the number system works in the same way when we use those numbers to count, compare and order, whatever it is we are exploring.
• Ten is a fundamental building block to our number system and children use tens and ones to build any number. Hundreds, and beyond will be added to the children’s toolbox later.
• Using a week wheel with a pointer will help the children to see the cyclical nature of a week. We can also number the days and explore the date to recognise another use of numbers.

Talk about
It is important to use precise mathematical vocabulary from the beginning. Ones is a more accurate word for the number to the right of the tens. Units should be used for measures, e.g. centimetres, grams, litres, etc. A ‘unit’ is one block of a value, so when using Base 10 equipment, for example, a single cube is a unit of 1, a stick is a unit of 10, a flat is a unit of 100, a block is a unit of 1000.
Engaging and exploring

Ask the children to tell you their house or flat number. Explain that one of the photos in the textbook is of house number 27. Does anyone in the class have 27 on their door? Or a number with a 2 or a 7 in it? Ask the children if they can see a 2 or a 7 in the classroom. Give them some time to look at the photos in the Textbook and discuss what they notice with a partner before sharing ideas with the class. You could extend this further by asking them to discuss where they have seen numbers in their own daily lives.

There are several photos showing 5, or 5 of something, to engage the children, since most of them will be 5 years old. Ask children to find the photo of the birthday card. Can they tell you how old they are now? What about how old they were on their last birthday? How old will they be on their next birthday? Can they find a photo that shows a date? Relate to their birthdates. You could then move on to other important dates, e.g. the date today/tomorrow.

Other numbers shown relate to common experiences. Discuss what numbers are used for, for example: to show how many (or how much) of something; age in years; days in the month so far. Explain, if necessary, that they are also used to measure (e.g. the length of pencil, as a number of centimetres); to label (e.g. a bus route or telephone number); and to order (e.g. door numbers and dates).

Ensure that the children recognise that numbers are used in different ways and can mean different things in different situations. Encourage them to find examples of numbers throughout the day and consider how they are being used.

Things to think about

- How numbers are used in different ways.
- Are both the classroom and outdoor area number-rich environments?
- How will you organise groupings for discussions and activities?
- How will you check conceptual understanding?
- What opportunities will you provide to build fluency?
- Which problem-solving strategies are most appropriate in Year 1, for example:
  - Another, another, another
  - Convince me
  - What do you notice?
  - What is the same? What is different?

Checking understanding

You will know pupils have mastered these concepts when they can represent and explain what happens when counting forwards and backwards in ones and can compare two or more measures and describe the relationship between them.
One more, one less

Warming up

Count to 20 in ones using a ruler, number track or number line for support. Count forwards and backwards. Repeat several times in a range of voices, for example squeaky, deep, whisper and so on to make it memorable.

• Count forwards and backwards to 30 in ones and to 50 in tens.
• Find one more and one less for numbers up to 30.

Background knowledge

Children will have already counted to at least 20 in the Foundation Stage. At this early stage, they may need support to correctly recall the order of numbers to 20 and may not have noticed many number patterns.

Our number system is very straightforward. The numbers 0 to 9 are repeated over and over again, in the same order. Children can use this pattern to extend their counting range. Children need to see a range of numbered apparatus to help them to recognise that the order of the numbers is always the same. This recognition helps children to understand that 1 more is the next counting number and 1 less is the counting number before. Placing items along a numberline or track so that we can see ‘how many so far’ helps to develop the understanding that the last number said tells us how many.

Children need to experience counting concrete objects, pictures and sounds before abstract recording. This Concrete-Pictorial-Abstract route is vital for developing number sense.

Let’s learn: Modelling and teaching

Counting in ones/tens

• Using the first three rows of a 100 square, explore the patterns in the numbers. Make sure children recognise the numbers 1 to 9 occur on each row and that there are no tens until the end of the first row. Focus on how the numbers beyond 10 are made, one ten and one (eleven), one ten and two (twelve), and so on. Place-value cards are useful to show that numbers are built from tens and ones. Practise counting to 50 in tens, moving down the numbers in the right-hand column.

More and less

• Explain that because the 1 to 9 pattern repeats itself again and again, we can use that to help us find out what one more is. Count some objects onto a number track or 100 square together, then show the children one more. Ask them to count the 1-9 pattern in their heads and to say which number comes next. Repeat with other amounts of objects, then without objects, pausing a count and asking for 1 more. Make sure the children understand that 1 more is simply the next counting number, and they can check on a number line or number track. Looking at numbers on a ruler is also ideal for this type of activity.

• Refer to the cartoon, asking children to explain what is wrong with twenty-ten. Encourage them to explain in their own words that 1 more than 29 is 30.

• When the children are confident with 1 more, use the same strategies to illustrate 1 less. Talk through removing 1 object and focus on the 1 to 9 pattern to show that you now have the counting number before.

Mathematical vocabulary

One more, the next counting number, one less, the counting number before, ten, twenty, thirty

Representations and resources

30 cm ruler, number line or number track, 100 square (or the first 3 then 5 rows), counters, cubes and other small counting objects, place value cards.
Let’s practise: Digging deeper

Step 1
Children demonstrate their understanding by copying the picture but drawing 1 more or 1 less. Encourage the use of physical objects. Children match the pictures with objects before adding 1 more or removing 1 and drawing what they see. This will link the concrete and the pictorial and demonstrate one to one correspondence. Some children may simply count the objects on the page to find out how many to draw and may want to label their pictures with numbers.

Step 2
In this section, children write 1 more or 1 less than a particular number. Some may need concrete objects to model the given number before writing it. Others will have internalised the pattern of the numbers and be able to say, then write, the appropriate number. If necessary, give children support with writing the numbers.

Step 3
In pairs, children take turns to take a handful of small objects such as paperclips, counters, small cubes, buttons and so on. They place a single item on each square of a 1 to 30 number track, number line, ruler or 100 square. As they place the objects, children should enumerate the number they have reached. Children can each other. What is one more than that? What is one less than that? Children could use the grid in the textbook for support. Remind the children that whatever number they choose, 1 more is the next counting number and 1 less is the previous counting number. Encourage children to make their own record of how many, 1 more and 1 less before repeating with different objects and comparing quantities.

Step 4
Ask the children if it is always, sometimes or never true that 1 more is the next counting number. Challenge them to convince you by drawing, writing or showing you. Some children could go on to investigate if it is always sometimes or never true that 1 less is the counting number before.

Follow-up ideas
• Label containers with the number of objects inside. Children turn over a 1 more or 1 less card and say 1 more or 1 less than the contents.
• Using a range of toys such as cars, people, bricks and so on, set up some play situations. Begin by asking the children to count the objects, then give them 1 more and ask them to tell you how many now that they have 1 more and how they know. Repeat but take 1 away and ask the children to tell you what 1 less is.
• As above, but move a toy from one situation to another, so that the first situation has 1 less and the second situation has 1 more. Challenge the children to tell you how many in each situation now.

Ensuring progress
Supporting understanding
A bead string is very useful for practising 1 more and 1 less. Show children a number to count to, then slide one more bead to join the others. Use the number to remind the children what they had before and how to use the 0 to 9 pattern to think about what is 1 more without needing to re-count. Repeat several times before moving on to 1 less.

Broadening understanding
Give children some numbers up to 30. Challenge them to record the number itself, 1 more and 1 less using the 0 to 9 pattern but without a number track or 100 square.

Play ‘One more, one less…Bingo!’ Activity 13 in Rising Stars Problem Solving and Reasoning Year 1.

Concept mastered
Children can count forwards and backwards to 30 in ones and find one more and one less than each number.

Answers
1a
1b
1c
1d
t
1e
1f
2a
2b
2c
2d
2e
2f

Let’s practise (page 3 of 4)
Mathematical vocabulary
Ten, twenty, thirty, forty, fifty, tens, ones, equal to, more than, less than (fewer), most, least

Warming up
Count forwards and backwards from 0 to at least 30, stopping occasionally to ask what is one more or one less. Count how many in each row of a 100 square (or at least the first 5 rows) and remind the children that every row is a ten. Generate numbers for children to count to or from in a variety of different ways.

Background knowledge
Most children initially see numbers as a series of ones. It is important that they now move on to recognise that each 2-digit number can be made from tens and ones. This understanding will enable them to read the value of each digit and record numbers correctly.

Let’s learn: Modelling and teaching

Ten
- Children need to repeatedly count 10 objects onto a ten frame until they know that it has 10 spaces. Then move on to exploring number bonds (or pairs) for 10. Using 10 identical counters, place a counter in each space. Then, systematically change each counter for a new colour to show 9 + 1 = 10, 8 + 2 = 10, 7 + 3 = 10 and so on.
- Introduce equal as meaning ‘has the same value’. Give children plenty of opportunity to explore this. Later, return to each number bond and show that 9 + 1 = 10 is the same as 1 + 9 = 10, so there are only six number bonds for 10 to remember.
- Show children how to record the number statements, linking similar bonds, e.g. 9 + 1 = 10 and 1 + 9 = 10. Make large cards with one number from the bond for 10 on the front and the other on the back. Regularly show the children the front of the card and ask them to predict what is on the reverse. Confirm by showing them.

Place value
- Show children 10 in a variety of formats, including a ten frame, a 10p coin, on a beadstring and so on. Explain that 10 is a vital part of our number system. Use two ten frames to show 11 as 10 and 1 and show the matching place-value cards. Continue up to two tens, checking that children see these numbers as ‘ten and some more’. Children will need lots of opportunities to make the numbers, label them with place-value cards and write them.
- Give children different numbers to represent using a variety of representations. It is important not to move on to higher numbers too quickly – children need a clear understanding of our system of place value. As they move on to numbers to 30 and later 50, talk about how many tens and how many ones in each number. Compare numbers by discussing which number has more (or fewer) tens and so on. Give children opportunities to write numbers in the 3 circles format in addition to the standard 2-digit format.
Let’s practise: Digging deeper

Step 1
It is important that children know all the number bonds for 10 and recognise 10 as an essential building block of our number system. Using the 10 frame with counters or cubes or other counting objects will help them to recognise and memorise these number bonds. Encourage them to show several single-digit numbers on a ten frame and recognise how many empty spaces there are. This will lead them into recording the matching number bond for 10.

Step 2
In this step, children are given a number and asked to show how it made up of tens and ones. For the last two numbers, they are given the tens and ones values and asked to combine them to make the matching 2-digit number. Encourage children to use a base 10 representation and place-value cards for support.

Find bonds to 10.

Show a number on a 10 frame. Look at the empty squares. Write the number bond. Try again.

Copy and complete.

There are 2 rings on the tens spike and 3 rings on the ones spike.

10...20...30...40...50!

What numbers can you make with 5 rings?

Step 3
Although it would be useful for children to have used an abacus, essentially this is just another representation. To get them started, either show them an abacus, use the diagram in the Textbook or model with 5 cubes. Explain that each ring can be a one or a ten, depending on where you put it. Put all the rings on the ones spike, counting: 1, 2, 3, 4, 5. Repeat but this time place each ring on the tens spike, counting: 10, 20, 30, 40, 50. Explain that they do not have to put all the rings on any spike, they can choose where to put them but they must use all the rings. Put some rings on each spike and show how to work out what the number is, matching the rings to the corresponding place-value cards. Remove all the rings to give children the opportunity to decide their own starting point. Some may start with 5 and systematically move one ring at a time onto the ten spike, others may start with 50 and systematically move one ring at a time onto the one spike. Those who use either of these approaches are likely to be able to explain how they know they have all the possible numbers, while those who randomly place the rings on either spike are likely to have duplicates and be unsure if they have found all the possible solutions.

Review which numbers can and cannot be made by starting with five on the ones spike, systematically moving a one onto the tens spike to make 14, 23, 32, 41 and 50. Repeat starting with 50 to show that you get the same results.

Ensuring progress
Supporting understanding
Some children may find it better to stick with one representation initially. Ten frames are particularly useful as they can be placed side by side as each multiple of 10 is built. However, children do need to move on from counting in ones to counting in tens and this should be practised many times using a variety of resources such as empty ten frames, ten sticks and 10p coins to reinforce that they are counting tens not ones. Count one ten, two tens, three tens, four tens, before explaining that each group of tens has its own name, 10, 20, 30, 40. This is an essential part of understanding place value.

Broadening understanding
Children need to see many different representations of the same number. Since the focus is on place value, representations need to be in tens and ones at this point. Comparing representations helps children to notice when a mistake has been made.

Follow-up ideas
• Read the story, One is a Snail, Ten is a Crab by April Pulley Sayre - a counting by feet book. Create simple stamps for crabs (10) and snails (1) using clip art. Give children a number to create in stamps.
• Give pairs of children a number and ask them to make it using 4 different representations. Children take it in turns to remove either a ten or a one from one representation while their partner isn’t looking, challenging their partner to identify what is missing.
• Give children a set of digit cards, excluding zero. Show them how to place 1, 2, 3, and 4 in the tens place. Challenge them to use 5, 6, 7, 8 and 9 to make a set of numbers. How many different sets can they make?

Concept mastered
Children can read, write and represent numbers up to at least 30 as tens and ones.

Answers
Step 1
Any 3 of the following:
- 4 + 6 = 10
- 5 + 5 = 10
- 6 + 4 = 10

Step 2
- a 20, 7
- b 30, 2

Step 3
- c 10, 9
- d 40, 6
- e 21
- f 34
- g 5, 14, 23, 32, 41, 50
Warming up

Prepare some towers or snakes of cubes. Use numbers greater than 10 but less than 30; alternating the colours will make the cubes easier to count. After counting some towers together, put two towers side by side. One tower should be one cube longer than the other. Ask the children which tower is taller. Encourage them to explain how they know and then repeat, asking which is shorter. Encourage children to count how many cubes in one tower then use what they know about 1 more and 1 less to tell you how many cubes in the second tower without counting. Repeat with further sets of two.

Let’s learn: Modelling and teaching

Long, longer, longest

• Pass around baskets of ribbons of assorted lengths for children to choose and compare. Ensure they match up one end of the ribbons so that they are accurately comparing length. Invite them to share what they noticed and write any length words for the children to see. Invite a child who describes their ribbon as long to come to the front and compare with other children until a longer ribbon is found. Repeat to find an even longer one: the longest. We move on to number-based comparisons to begin to link to standard measures. Centimetres can be added and subtracted and more centimetres will mean longer or taller objects because numbers work in exactly the same way as they do with discrete objects.

Tall, taller, tallest

• Explain that we have seen many taller examples of the object you used to model tall, taller and tallest, so you are going to rename the tallest one ‘short’. Ask what you can now say about the height of the other two objects. Re-order them to show short, shorter and shortest.

Background knowledge

Children will have used everyday language to talk about height and length but often without comparing the object they are describing to anything in particular. They need to develop the language of comparison before moving on to exploring standard units. We add ‘er’ when comparing two objects and add ‘est’ when comparing 3 or more.

Let’s learn: Representations and resources

Ribbon or wool, string, strips of paper or other items for comparing lengths; toy buildings, bears or other items for comparing heights; large sheets of paper for drawing animal footprints; dough for making snakes, interlocking cubes, paper clips, scissors.

Mathematical vocabulary

Short, shorter, shortest, long, longer, longest, tall, taller, tallest, compare

Representations and resources

Ribbon or wool, string, strips of paper or other items for comparing lengths; toy buildings, bears or other items for comparing heights; large sheets of paper for drawing animal footprints; dough for making snakes, interlocking cubes, paper clips, scissors.

Counters  Concept 1c  Homework 1c  Practice Book 1c

Length and height

Long, longer, longest

How many cubes long is each object?

Tall, taller, tallest

Find 9 objects. How many cubes tall are they? Which is the tallest?

Short, shorter, shortest

Use your objects to show short, shorter and shortest. What did you change?

You need:
- objects to compare
- cubes
- pencil
- scissors
Let’s practise: Digging deeper

Step 1
Children draw and use a large animal footprint as the standard to compare one length to another. They could draw their large animal footprints on sugar paper and cut them out. Ideally, the footprints should be similar in length and about the same length as a 30-cm ruler. Ask groups of children to explore the classroom, using their animal footprint as the standard measure to compare against. Draw up three different lists of the things the children find to help them to record their response to Step 1. You could display the three posters with the footprints.

Step 2
In this section, the children are moving on to measuring length using objects which are always the same length. Give them some interlocking cubes to measure the length of their animal footprint. They could also compare the length of each other’s animal footprints. Children could move on to repeating their measuring of the large footprint with other identical objects such as paperclips or counters. Some children will be able to draw conclusions about the objects they use, e.g. if the footprint needs more cubes than paperclips to measure its length, then a cube must be shorter than a paperclip. Children could use their knowledge of how many cubes, paperclips or counters long the animal footprint is to estimate, using the same non-standard unit, the length of other objects.

Step 3
Children now move on to quantifying and comparing lengths using consistent units, in this case paperclips, beads or cubes. This helps children to see that numbers work in exactly the same way in measures – longer or taller objects need more cubes, beads or paperclips to measure them. Ask children to draw or write about how they know which object is longer (or taller) and shorter, referring to the number of objects needed to measure it.

Step 4
Given a measurement in cubes of the length of the snake, children are now asked to suggest how many cubes long a shorter, longer or same length snake could be. Children could check their ideas by making and measuring dough snakes.

Follow-up ideas
- Give children a wide strip of paper. Ask them to draw, for example a fish, snake, person or building so that their drawing fills the full length (or height) of the paper strip. Show children how to fold the strip in half and half again, then open out the strip and refold so that the middle two quarters fold to the back. Their tall tower or long snake suddenly becomes a short tower or short snake. Unfold to return to the original size.
- Ask children questions to get them thinking about length and height in an everyday and personal context: Which is longer, a snake or a worm? Which is shorter, a child or a grown up? What is the tallest thing you can think of? What is the shortest thing you can think of? What is the longest thing you can think of?

Ensuring progress

Supporting understanding
Make sure that children understand why we need to line up the objects we are comparing. Compare the heights of two children, with the shorter child standing on a box so that they appear to be taller. Children are familiar with the concept of fair and unfair, so talking about how this comparison is unfair will help children to understand.

Broadening understanding
Ask children to measure something such as the length or height of a table using different parts of the body, for example a hand, foot or thumb. Can the children correctly predict which measure will give the largest number and why? Explaining that the smallest measure gives the largest number because more repetitions of that measure are needed to reach the same length demonstrates a clear understanding of measuring with different units.

Concept mastered
Children compare, describe and solve practical problems for lengths and heights.

Answers
Steps 1 and 2
Answers will vary.
Step 3
a. 13 paperclips long
b. 8 cubes tall

Step 4
a. 18 or more cubes long
b. 16 or fewer cubes long
c. 17 cubes long
Days of the week, Months of the year

• Count, read and write numbers to 30 in numerals.
• Recognise and use language relating to days of the week, months of the year and dates.
• Begin to use ordinal language in the context of dates.

Mathematical vocabulary
Calendar, day, week, month, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday, yesterday, tomorrow, January, February, March, April, May, June, July, August, September, October, November, December, before, after, next, last, first, second, third …

Warming up
Sing a song or share any rhymes the children know about days of the week and/or months of the year. Talk about today’s date, yesterday’s date and tomorrow’s date. Use the visual timetable to talk about what the children will be doing on each day. Discuss with the children what they need to remember to bring to school or to an after-school activity on certain days, e.g PE kit on Tuesdays, violin on Fridays.

Background knowledge
When children learn to count, they repeat the counting sequence over and over again. They need to do the same to learn the days of the week and months of the year. A week wheel helps children to see how the days are repeated again and again. As their understanding develops, they can explore the days of the week and months of the year in the same way that they do numbers. For example, instead of one more, they can say the day after. Children experience the days of the week on a much shorter time scale than the months of the year, so they generally find them easier to learn. Showing the children the months of the year in the same format as the days of the week helps children to make the connection between the two time sequences and to begin to recognise their cyclical nature.

Let’s learn: Modelling and teaching

Days of the week
• Show the children the week wheel. Discuss what they do on each day, both in and out of school. Talk about why the week is shown as a wheel, encouraging them to think about last and next week. Children can then make their own week wheel, illustrating each day with something that they do on it.
• Read and say the days of the week together repeatedly, using songs and rhymes to help children memorize the order. Ordering the days of the week on a strip of paper then joining the ends to make a ring also demonstrates the cyclical nature of each week.
• Use a visual timetable for each day of the week. Remind the children what they did yesterday and compare what is the same and different about today. Display a week wheel next to the timetable with the pointer pointing at today.

Months of the year
• Revisit the week wheel and use a second wheel to show how the months of the year work in the same way. Show the current month on a calendar. Read along the month saying the days of the week to show that a month is longer than a week. Explore how many, e.g. Tuesdays, in this month. Revisit the month and read again saying the day number and ordinal number. As children become more familiar with the calendar and how the date is written, give them whiteboards to write today’s date in numbers and later the full date. Extend the daily discussion of the date to include seasons, weather, celebrations and any other significant events.

1d Days of the week, Months of the year

Let’s learn

Calendar
| Concept 1d |

Homework 1d

Practice Book 1d

Representations and resources
Calendars (showing the current month, showing the whole year on one page), week wheel card circle with arrows and split pins, month wheel, visual week timetables, months of the year written on rectangles of paper, rectangles of paper with words relating to days of the week, months, etc written on them.

Let’s learn

Today is Wednesday, so yesterday was Thursday.

No, it’s Thursday tomorrow. Yesterday was Tuesday.

Days of the week
The days of the week always follow the same order. Start from Monday.

Months of the year
The months of the year always follow the same order. Start from January.

Let’s learn: Modelling and teaching

Days of the week
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Warming up
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Sing a song or share any rhymes the children know about days of the week and/or months of the year. Talk about today’s date, yesterday’s date and tomorrow’s date. Use the visual timetable to talk about what the children will be doing on each day. Discuss with the children what they need to remember to bring to school or to an after-school activity on certain days, e.g PE kit on Tuesdays, violin on Fridays.

Background knowledge
When children learn to count, they repeat the counting sequence over and over again. They need to do the same to learn the days of the week and months of the year. A week wheel helps children to see how the days are repeated again and again. As their understanding develops, they can explore the days of the week and months of the year in the same way that they do numbers. For example, instead of one more, they can say the day after. Children experience the days of the week on a much shorter time scale than the months of the year, so they generally find them easier to learn. Showing the children the months of the year in the same format as the days of the week helps children to make the connection between the two time sequences and to begin to recognise their cyclical nature.
Follow-up ideas

- Bring in a newspaper each day. Invite children to highlight the date on each page or cut them out. Have some mini whiteboards available for children to write the date for themselves. Ask where they see or hear the day or date each day. If you are going on a trip or a significant event is due, make a week or month paper chain and use it to count down to the event.

- Invite parents to add both older and current photographs of their children on one of your display boards. Provide a speech bubble for parents to record the date the photograph was taken and what they were doing. This should generate discussion of times of the year because of changes in clothing, significant events and so on.

Let’s practise: Digging deeper

Step 1
The days of the week repeat themselves again and again, always in the same order. By using their own week wheel or ring (or the one in the Textbook) to help them to record the day before and the day after, children are reinforcing this fact again and again. The format used is the same as when writing one less and one more to further support understanding. Some children may find it useful to quietly sing a familiar days-of-the-week song to help them.

Step 2
With the longer timescale involved, children find it more difficult to recall the months of the year. Ordering the months from the current month (September, or adjust accordingly) will help children to add some meaning to each month. As the order moves further away from the current month, children are likely to need more support to annotate the month. Some children may find it useful to quietly sing a familiar months-of-the-year song or rhyme to help them. Ordering the months of the year on a strip of paper then joining the ends to make a ring also demonstrates the cyclical nature of each month. These rings can also be added to any timetable or time display.

Step 3
This step asks children to choose a day of the week and a month of the year from a limited selection to write and draw about. Children will need to recognise the day or month and describe what it means to them. Responses to this activity will indicate the child’s level of understanding. For example if they choose 2 days, are they unclear about which are months or unable to think of anything for any of the months?

Step 4
This step brings together the recognition of the regular order of the days of the week and the order of the numbers to read a calendar. An example of how to write the date in numbers and words is given. Children use this information to help them to write their chosen date. Most children will find it easier to write the date in numbers. You may need to remind children that September is the ninth month of the year by counting along the months rings they made in step 2, starting from January.

Ensuring progress

Supporting understanding

Learning the days of the week and the months of the year and being able to talk about them with understanding is, in many ways, simply down to practice. Most children quickly recognise and can talk with confidence about the days of the week, but the months of the year are likely to take longer. Continue to talk about the day and date whenever relevant. Make any countdown to a visit or event visible by making a paper chain and cutting off a link each day until the date is reached. Wherever possible, make the passage of time visual to support children to develop their internal picture of time.

Some children will find it useful to place a counter on a particular day on their week wheel and move the pointer to the day before or the day after to help them keep their start day in mind. Alternatively, they could use different-coloured counters on the days-of-the-week wheel in the Textbook. Do the same with the months-of-the-year wheel. Children need to see both lists in wheel and ring format to reinforce the repeated, cyclic nature of these measures of time.

Broadening understanding

Children who regularly travel abroad or have familial connections to other countries may recognise that the seasons of the year are different in different parts of the world. For example in Australia, December is a hot summer month. Using a months-of-the-year wheel and an outer ring showing the seasons, turn one of the wheels to show how the seasons can be at different times in different parts of the world.

Answers

Answers will vary depending on children’s choices.

Concept mastered

Children recognise and use language relating to days of the week, months of the year and dates.
Game 1: Ones race
This is a simple race game, with the first player to reach 30 as the winner. Ask children to count from 1 to 30 and back again using the track for support before they play the game.

Maths focus
• Count and read numbers to 30
• Count on in ones from any number between 1 and 30

Resources
1 counter per player (1 colour per player), 1–6 dice (1)

How to play
Children place their counters on Start. They take it in turns to roll the dice and move their counter that number of spaces. The winner is the first player to reach 30. The players must throw the correct number needed to land on 30. Ask children questions such as: Which number have you landed on? Are you in the lead or behind the other player? How many more do you need to win? Encourage children to verbalize these comments themselves without needing to be asked the questions.

Making it easier
Use a 1 to 3 dice. Mark the numbers off on a number line to check progression to 30.

Making it harder
Place a sticker over the number 6 on the dice, writing miss a turn on the sticker. You could also place miss a turn stickers over 2 or 3 game squares as well.

Game 2: Pairs race
This is a more complex race game. Ask children to count from 1 to 30 and back again using the track for support if they need the practise. Each player now has 2 counters to move to reach 30. They will need to make decisions about which counter to move depending on what the dice shows and what will happen when each counter is moved by that amount. For example, will a move of 3 enable one counter to take a shortcut from 7 or 18, or is it the exact number needed to get the other counter to 30?

Maths focus
• Count and read numbers to 30
• Count on in ones from any number between 1 and 30

Resources
2 counters per player (1 colour per player), 1–6 dice (1)

How to play
Children place their counters on start. They take it in turns to roll a the dice and move one of their two counters that number of spaces; They can choose which counter to move, but they cannot split the move between two counters. The winner is the first player to get both their counters to 30. They must throw the correct number needed to land on 30.

Making it easier
Focus on getting one counter to 30 first, leaving the second counter on start.

Making it harder
Although this game is called Pairs race, adding a third counter for each player would increase the challenge by giving children additional options to consider on each throw of the dice. Children could also split any move between their two counters.

Game 3: Your race
Children should invent their own game, designing rules that use the concepts covered in the unit. Challenge children to make their game easier or harder.
Choose a game to play.

**Game 1: Ones race**

How to play
- Each place your counter on Start.
- Take turns to roll the dice. Move your counter that number of spaces.
- If you land on 7 or 18, you can use the shortcut to race ahead.
- The winner is the first player to reach 30.
- You must throw the correct number to land on 30 or wait for your next turn to try again.

You need:
- 1 counter per player (1 colour per player)
- one 1–6 dice

**Game 2: Pairs race**

How to play
- Each place 2 counters on Start.
- Take turns to roll the dice. Move one of your counters that number of spaces. You can choose which counter to move, but you can only move one of your counters in any turn.
- If one of your counters lands on 7 or 18, you can use the shortcut to race ahead.
- The winner is the first player to get both their counters to 30.
- You must throw the correct number to land on 30 or wait for your next turn to try again.

You need:
- 2 counters per player (1 colour per player)
- one 1–6 dice

**Game 3: Your race**

- Make up your own game using the game board.
- Can you think of a way to collect 10p coins as you move along the track? The winner could be the player who collects the most money.
- You could continue the race back to the start or do something else.
- What are the rules for your game? Explain them to someone.
Assessment task 1

Resources
Cardboard box turned into a function machine, blank labels, number cards (2–49).

Running the task
If necessary, demonstrate the function machine using a box. Check that children understand the task and give them plenty of time to explore. After choosing five number cards to use and record what happens, change the label to 1 less. Some children may need the support of a number line, showing that they have not yet mastered the concept.

Can the children think of other ways to use the function machine? They could feed in single-digit numbers and the function machine gives the number bond to 10, or something else. Alternatively, children could cover the rule written on the function machine, pass a number through the machine and use what comes out to help them explain what the label on the function machine must be.

Evidencing mastery
Here, evidence of mastery is particularly clear when children can generalise. Recognising that one more is simply the next counting number, so that the children can put any number into the machine and know what will come out is evidence of mastery. For one less, generalising and explaining that the number coming out of the function machine is the previous counting number is evidence of mastery. Some children may need to count from zero to find the number before, even though they can say the number which is one more. Mastery of one less may well lag behind that for the concept one more. Further practice may be needed. Being able to say what the label on the function machine must be according to what happens to a number is further evidence of mastery.

Assessment task 2

Resources
Two 1–6 dice, different kinds of structured apparatus.

Running the task
Before the children begin the task, explore rolling two dice to create two 2-digit numbers. Show how to place the numbers on the dice together to turn them into digits to create a number and also how to swap them round to create a second number. Some children may need place-value cards for support. Explore when only one number can be made, when both dice show the same number, e.g. a 1 and 1 can only make 11.

As the children explore the task, ask which numbers they have made and how they are linked. Children could draw their representations or take a photograph of them. Once they have had several turns, share the ‘I wonder’ question. Give the children plenty of time to discuss before helping in any way.

Evidencing mastery
Children who need place-value cards to help them understand what number they have made before they can represent it have not yet fully mastered the concept of place value. Having to use something to help them find out is not the same as knowing. A quick, accurate representation of each number demonstrates that children understand that they have used the dice to create tens and ones. They are already generalising when they swap the two digits round to create a second number, but further evidence of mastery is apparent when children can explain that what was a 10 is now a 1 and what was a 1 is now a 10.
Assessment task 3
Resources
A variety of structured apparatus, e.g. number rods, ten sticks and cubes, bead strings, and tens frames, number cards (11–49).

Running the task
Before asking children to complete task 3, you may want to provide them with additional practice to familiarise them with the task. Prepare some number cards with incorrect illustrations next to them. You could make a series of slides for the interactive whiteboard, take photographs or model with apparatus. Ask the children to look for what’s wrong. Children may want to correct the number card or the apparatus; as long as they make both the apparatus and the number match, they are correct.

You could also extend the task in the textbook by having children take it in turns to set a similar challenge for a partner. Throughout, encourage children to not only correct the errors, but explain their thinking.

Evidencing mastery
Being able to recognise just how the number and representation does not match and then being able to correct it is clear evidence of mastery of early place value. Children are demonstrating that they know which digit means tens and which digit means ones. Some children may always correct the number; others may always correct the representation. Make sure that you see both, as being able to do a task the other way round confirms a deeper level of understanding.

Did you know?
Some children may like to explore counting the letters in the number words. Provide a list of numbers with the words next to them to allow children to explore and look for patterns.

Tell the children that the Roman symbol for 10 is X, with perhaps a connection two crossed hands and therefore 10 fingers and thumbs altogether. Explain that deca- means 10, so a decade is 10 years, a decagon has 10 sides and a crab is a decapod because it has 10 legs. Encourage children to think about other tens and ten words, e.g. a 10p coin, ten-pin bowling, lobsters and shrimps (they are also decapods), any teen number as tens and ones.