

## Five daily lessons

### Unit 5

#### Understanding measure including problems

#### Year 2

#### Autumn term

### Unit Objectives

#### Year 2

- Use and begin to read the vocabulary related to length. (page 73)
- **Estimate, measure and compare lengths using metres, recording as '3 and a bit' metres.** (page 77)
- **Suggest suitable units and equipment for such measurements.** (page 75)
- Use and begin to read the vocabulary related to time. (page 79)
- Use units of time: second, minute, hour, day, week. Know the relationship between them. (page 79)
- Suggest suitable units to estimate or measure time. (page 71)
- Use mental addition and subtraction to solve simple word problems involving numbers in 'real life' measures. Explain how the problem was solved. (page 67)

This Unit Plan is designed to guide your teaching.

You will need to adapt it to meet the needs of your class.

#### Resources needed to teach this unit:

Number cards 1-100

Multilink cubes, string and any other non-standard measuring equipment you may have in school.

Metre sticks

Tape measure

Analogue and digital teaching clockfaces

ITP 'tell the time'

Smaller analogue clockfaces for the children's use

Whiteboards and pens

Days of the week cards

### Link Objectives

#### Year 1

- Understand the vocabulary related to length.
- **Compare two, then more lengths by direct comparison.**
- **Suggest suitable standard or uniform non-standard units of length to estimate, then measure,** recording estimates and measurements as 'about 10 cubes long'.
- Understand the vocabulary related to time.
- Order familiar events in time. Know the days of the week and the seasons of the year.

#### Year 3

- Read the time to 5 minutes on an analogue clock and a 12-hour digital clock.
- Read and begin to write the vocabulary related to length.
- Use a ruler to draw and measure lines to the nearest cm.
- Measure and compare lengths using metres and centimetres. Understand the relationship between metres and centimetres; metres and kilometres.
- Record as mixed units (e.g. 3m20cm).
- Read scales to the nearest division.

(Key objectives in bold)



Planning sheet		Day One	Unit 5 <i>Understanding measure including problems</i>	Term: <i>Autumn</i>	Year Group: 2
Oral and Mental		Main Teaching			Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/ Focus Questions	
<p>Count on and back in ones from any number up to 100</p> <p>VOCABULARY Smaller Larger Numerical order</p> <p>RESOURCES 100 square selection of number cards 1-100</p>	<ul style="list-style-type: none"> <li>Choose two number cards, find numbers on 100 square.</li> </ul> <p><b>Q</b> Which is the smaller/larger?</p> <ul style="list-style-type: none"> <li>Count from smaller to larger and back again.</li> <li>Repeat with other cards. Illustrate on ITP 'counting on and back'.</li> <li>Hand out six number cards.</li> </ul> <p><b>Q</b> Can children with cards get into numerical order starting with the smallest?</p> <ul style="list-style-type: none"> <li>Use ITP 'counting on and back' to illustrate place value.</li> </ul>	<p><b>Estimate, measure and compare lengths using metres, recording as '3 and a bit' metres.</b></p> <p><b>Suggest suitable units and equipment for such measurements</b></p> <p>VOCABULARY Measure Size Length, long Tall, height Compare Guess, estimate Metre Metre stick Tape measure</p> <p>RESOURCES Metre stick Classroom equipment to use as non-standard measures (eg pencils, cubes, string)</p>	<ul style="list-style-type: none"> <li>Measure a standard unit in the classroom (eg a table or the mat) with different kinds of non-standard measures (eg cubes, pencils, children). Draw up a chart on whiteboard to show your findings.</li> </ul> <p><b>Q</b> Why do you think we've ended up with a different number each time if we measured the same thing?</p> <p><b>Q</b> Suppose we needed to buy a cloth to cover it, how could we tell the shopkeeper which size cloth we needed?</p> <p><b>Q</b> Have you ever seen anyone measuring anything? What did they use?</p> <ul style="list-style-type: none"> <li>Hold up metre stick. Write '1 metre' on the board.</li> </ul> <p><b>Q</b> Have you seen one of these before?</p> <p><b>Q</b> Look at the numbers. Which is the smallest/largest? Are the numbers in numerical order?</p> <ul style="list-style-type: none"> <li>Hand out number cards again.</li> </ul> <p><b>Q</b> Can you find these numbers on the metre stick?</p> <p><b>Q</b> Has anyone got a certificate for swimming?</p> <ul style="list-style-type: none"> <li>Choose 2 volunteers to estimate how far the distance is.</li> </ul> <p><b>Q</b> How can we find out if they are right?</p> <ul style="list-style-type: none"> <li>Model using the metre stick, starting at the beginning and reusing the metre stick carefully to measure as accurately as possible.</li> <li>Choose a volunteer to measure height using metre stick.</li> </ul> <p><b>Q</b> When I measure my volunteer do you think it matters where I start?</p> <ul style="list-style-type: none"> <li>Model measuring the volunteer, recording in metres 'and a bit'. In pairs or groups, children can measure each other and record their height and that of their partner.</li> <li>Stand a group of children in order of size by sight. Then take a look at their recorded height.</li> </ul> <p><b>Q</b> Do the recorded heights and actual heights match? Why is this?</p> <p><b>Q</b> Can you think of any other things that we would measure in metres? Which things on our list do we have in school?</p>	<p><b>Q</b> What could we do if we needed to measure something that was not flat?</p> <ul style="list-style-type: none"> <li>Show children a tape measure.</li> </ul> <p><b>Q</b> If I show you 1m on the metre stick and 1m on the tape measure do you think it will be the same? How can we find out?</p> <p><b>By the end of the lesson, children should be able to:</b></p> <ul style="list-style-type: none"> <li><b>Estimate, measure and compare lengths using metres, recording as '3 and a bit' metres.</b></li> </ul> <p>(Refer to supplement of examples, section 5, pages 71-75)</p>	

<b>Planning sheet</b>	<b>Day Two</b>	<b>Unit 5 Understanding measure including problems</b>	<b>Term: Autumn</b>	<b>Year Group: 2</b>
<b>Oral and Mental</b>		<b>Main Teaching</b>		<b>Plenary</b>
<b>Objectives and Vocabulary</b>	<b>Teaching Activities</b>	<b>Objectives and Vocabulary</b>	<b>Teaching Activities</b>	<b>Teaching Activities/ Focus Questions</b>
<p><b>Order whole numbers to at least 100.</b></p> <p>VOCABULARY Place Between, half way Compare Tens Fives Multiple</p> <p>RESOURCES Counting stick</p>	<ul style="list-style-type: none"> <li>Use a counting stick.</li> </ul> <p><b>Q</b> If the numbers on my counting stick start at 0 and end at 100, where will 10 be?</p> <ul style="list-style-type: none"> <li>Repeat with other multiples of 5.</li> </ul> <p><b>Q</b> I'm thinking of a number and it would be about here on my counting stick.</p> <ul style="list-style-type: none"> <li>Repeat several times to reinforce place value to 100.</li> </ul>	<p><b>Estimate, measure and compare lengths using standard units.</b></p> <p><b>Suggest suitable units and equipment for such measurements.</b></p> <p>VOCABULARY Metre, centimetre. Measure measurements</p> <p>RESOURCES Metre sticks Tape measures Pencils and paper for sketching</p>	<ul style="list-style-type: none"> <li>Hold up the metre stick.</li> </ul> <p><b>Q</b> In our last session what did we use this piece of equipment for?</p> <p><b>Q</b> What do the numbers on the metre stick mean?</p> <ul style="list-style-type: none"> <li>The numbers on the stick are called centimetres. When we talked about a metre and 'a bit' last time we were talking about metres and centimetres.</li> </ul> <p><b>Q</b> How many centimetres can you see? How many centimetres are there in one metre?</p> <p><b>Q</b> Could we use this flat metre stick to measure absolutely everything?</p> <p><b>Q</b> What kinds of things was it good to measure with a metre stick?</p> <p><b>Q</b> what about measuring round things?</p> <ul style="list-style-type: none"> <li>I want you to imagine that you are going to a very important party, maybe a birthday party or a wedding or a meeting with someone famous. You are going to need some new clothes. Not just any old off-the-peg clothes, specially made clothes.</li> </ul> <p><b>Q</b> What measurements do you think you will need to make to give to the tailor who will make your clothes?</p> <ul style="list-style-type: none"> <li>Depending on the resources in your classroom, give the children the choice of using a metre stick or a tape measure as appropriate to measure their body and record their measurements.</li> </ul> <p><b>Q</b> Are everyone's measurements the same? What would happen if the measurements were accidentally mixed up?</p> <ul style="list-style-type: none"> <li>Draw a sketch of your special clothes.</li> </ul> <p><b>Q</b> In metres and centimetres, estimate how much cloth you will need for your new clothes, how many buttons, metres of ribbon, etc.</p>	<p><b>Q</b> What could you do if you needed to measure around your head but only had a metre stick?</p> <ul style="list-style-type: none"> <li>If the children are stuck, show them a piece of string as a clue.</li> </ul> <p>(refer to supplement of examples pages 73 and 75))</p>

Planning sheet	Day Three	Unit 5 <i>Understanding measure including problems</i>	Term: <i>Autumn</i>	Year Group: 2
<b>Oral and Mental</b>		<b>Main Teaching</b>		<b>Plenary</b>
<ul style="list-style-type: none"> <li>Count on and back in tens from any number up to 100.</li> </ul> <p>VOCABULARY add subtract count on count back 2-digit number multiple of 10 more/less</p> <p>RESOURCES 100 square Place value cards Whiteboards</p>	<ul style="list-style-type: none"> <li>Use numberline, counting stick or 'counting on and back' ITP recap on counting in 10s to 100 and back.</li> </ul> <p><b>Q</b> If I point at a Multiple of 10 can you tell me the number that is 10 more/less?</p> <ul style="list-style-type: none"> <li>Record numbers alongside the 10 more/less number.</li> </ul> <p><b>Q</b> What do you notice about these numbers? Which digit changes each time I add/take away 10?</p>	<p>Use and begin to read the vocabulary related to time.</p> <p>Use units of time: day, week.</p> <p>VOCABULARY Hour Clock Analogue Digital Morning, afternoon, night. O'clock</p> <p>RESOURCES Days of the week cards Large analogue clock Smaller analogue clocks ITP 'tell the time'</p>	<ul style="list-style-type: none"> <li>Show days of the week cards.</li> </ul> <p><b>Q</b> Are they in the correct order?</p> <ul style="list-style-type: none"> <li>Volunteers place cards in order on whiteboard. Chant days of week. Notice any peculiar spellings.</li> </ul> <p><b>Q</b> How many days in 1 week? Is each week the same length of time as any other? How do you know?</p> <p><b>Q</b> What do we do on each of these days?</p> <ul style="list-style-type: none"> <li>Write up suggestions under each day on whiteboard.</li> </ul> <p><b>Q</b> If today is Tuesday, what day will it be tomorrow? What day was it yesterday? How many days have I got to wait until I can go to my friend's party on Saturday?</p> <p><b>Q</b> If tomorrow is Friday, what day is it today? What day will it be in two days time? In one week's time?</p> <ul style="list-style-type: none"> <li>Use a large analogue clock or ITP 'tell the time' (NB set time using digital clock).</li> </ul> <p><b>Q</b> What time do you get up in the morning?</p> <ul style="list-style-type: none"> <li>Show this time on the large clock/ITP. Write it up on the whiteboard, explaining how to spell o'clock. Children show times on their smaller analogue clocks if they have them.</li> </ul> <p><b>Q</b> What time do we have lunch? When we come back from lunchtime play it is afternoon. Why is it called this? What time do you go home/ have dinner/go to bed?</p> <ul style="list-style-type: none"> <li>Count the numbers on the clockface.</li> </ul> <p><b>Q</b> We use each of these numbers twice in 1 day to tell the time on an analogue clock. How many hours are there in 1 day?</p> <ul style="list-style-type: none"> <li>Start at midnight and count each hour using the clock to help, chanting the time until you get to midnight again.</li> </ul> <p><b>Q</b> If I get up at 7 o'clock how long is it until I have lunch at 12 o'clock? How long between lunch at 12 o'clock and dinner at 5 o'clock?</p> <p><b>Q</b> If it is 10 o'clock now, what time will it be in 5 hours time? 7 hours time? Etc.</p> <p><b>Q</b> if it is 6 o'clock in the morning now, what time will it be in 12 hours time? 24 hours time?</p>	<ul style="list-style-type: none"> <li>Use days of the week cards as flashcards.</li> <li>Play 'days of the week' hangman.</li> </ul> <p><b>Q</b> If I get up at 8 o'clock and meet my friends to go swimming at 11 o'clock, how long have I got to get dressed, have my breakfast and get to the swimming pool to meet them?</p> <p>Go through the word problem above to remove any surplus information and reduce it to its mathematical content.</p> <p><b>By the end of the lesson, children should be able to:</b> Read the words relating to days of the week.</p> <p>Read time to the hour on an analogue clock.</p> <p>Use mental addition and subtraction to solve simple word problems involving numbers in 'real life' measures. Explain how the problem was solved.</p> <p>Use units of time: day, week. (Refer to supplement of examples page 76 &amp; 71)</p>

Planning sheet	Day Four	Unit 5 <i>Understanding measure including problems</i>	Term: <i>Autumn</i>	Year Group: 2
<b>Oral and Mental</b>		<b>Main Teaching</b>		<b>Plenary</b>
<ul style="list-style-type: none"> <li>Count on and back from any number up to 100.</li> </ul> <p>VOCABULARY add subtract count on count back 2-digit number multiple of 10 multiple of 5</p> <p>RESOURCES 100 square Place value cards Whiteboards Counting equipment (beadstrings, etc) 'Counting on and back' ITP number cards (multiples of 5, starting from 0)</p>	<ul style="list-style-type: none"> <li>Use number cards for multiples of 5 to 60.</li> <li>Count in 5s to 60 and back, making a numberline using cards and volunteers.</li> </ul> <p><b>Q</b> If I point at a multiple of 5 can you tell me the number that is 5 more/less?</p> <ul style="list-style-type: none"> <li>Use numberline, counting stick, beadstring or 'counting on and back' ITP.</li> <li>Count in 5s to 60, missing one out, can children identify your 'mistake'?</li> </ul>	<p>Use and begin to read the vocabulary related to time.</p> <p>Use units of time: hour, minute.</p> <p>VOCABULARY Hour/minute O'clock, half past Digital/analogue clock How long will it take to...? How long will it be to...?</p> <p>RESOURCES Large teaching clock showing analogue and digital times ITP 'tell the time' Large number cards (1-12 and multiples of 5 to 60) Smaller clockfaces for the children to handle Whiteboards and pens</p>	<ul style="list-style-type: none"> <li>Write up numbers 1-12 on board.</li> </ul> <p><b>Q</b> Where might you see these numbers everyday?</p> <ul style="list-style-type: none"> <li>Establish that they occur on an analogue clockface. Use large clock/ ITP 'tell the time'.</li> </ul> <p><b>Q</b> Who can describe the position of the hands at 1 o'clock?</p> <ul style="list-style-type: none"> <li>Repeat with other o'clock times. Then recap on half past in same way.</li> <li>If you have smaller analogue clockfaces for the children to use, hand them out.</li> </ul> <p><b>Q</b> If I get on the train at 10 o'clock and my journey takes 2 hours, what time will I arrive at the end of my journey?</p> <ul style="list-style-type: none"> <li>Model using a clockface to find out the answer.</li> </ul> <p><b>Q</b> I go to my swimming lesson at half past 4 and finish my lesson at 5 o'clock. How long did my swimming lesson last?</p> <p><b>Q</b> Can we use our numbercards to sit in a circle like a clockface?</p> <p><b>Q</b> What do we call it when the minute hand has gone all the way round the clock? How many minutes are there in 1 hour?</p> <ul style="list-style-type: none"> <li>Hand out multiple of 5 cards and sit volunteers inside the clockface circle to show every five minutes on the clockface. Emphasise that the numbers around the clockface (1-12) do not represent the number of minutes passed since the top of the hour.</li> <li>Use the large clock, or the ITP as a visual aid. Hand out smaller clockfaces if you are using them.</li> </ul> <p><b>Q</b> If I start at the 12 (0 minutes), how many minutes will have passed when the minute hand gets to the number 2?</p> <ul style="list-style-type: none"> <li>Repeat with other numbers to reinforce the concept of 60 minutes in the hour.</li> <li>Use the ITP digital clockface or other digital clock display. Explain that it is a different kind of clockface. Use it to show 60 minutes in 1 hour.</li> </ul> <p><b>Q</b> If the digital clock says 3.15, what time will the analogue clock show?</p> <ul style="list-style-type: none"> <li>Repeat with other times, comparing digital and analogue.</li> </ul>	<ul style="list-style-type: none"> <li>Tell the children the starting and finishing times of school activities.</li> </ul> <p><b>Q</b> Write down on your whiteboard: how long do you think these activities take?</p> <p>Homework: note down the times you do 4 things after school and time how long you take to do them.</p> <p><b>By the end of the lesson, children should be able to:</b></p> <p>Understand the relationship between hours and minutes.</p> <p>Know how many minutes in 1 hour.</p> <p>Use this knowledge to begin to solve time problems in minutes.</p> <p>(Refer to supplement of examples, section 5, page 71.)</p>

<b>Planning sheet</b>	<b>Day Five</b>	<b>Unit 5 Understanding measure including problems</b>	<b>Term: Autumn</b>	<b>Year Group: 2</b>
<b>Oral and Mental</b>		<b>Main Teaching</b>		<b>Plenary</b>
<b>Objectives and Vocabulary</b>	<b>Teaching Activities</b>	<b>Objectives and Vocabulary</b>	<b>Teaching Activities</b>	<b>Teaching Activities/ Focus Questions</b>
<ul style="list-style-type: none"> <li>Count on and back from any number up to 100.</li> </ul> <p>VOCABULARY Units, ones tens digit multiple of one more/less ten more/less five more/less</p> <p>RESOURCES Bead string Large place value cards</p>	<ul style="list-style-type: none"> <li>Use numberline, counting stick, beadstring or 'counting on and back' ITP to illustrate the teaching activities.</li> <li>Count in 1s, 10s, 5s, stopping at 60 and back.</li> <li>Choose a number between 0 and 60. <b>Q</b> Which number is 1 more? 1 less?</li> <li>Repeat with other numbers. Repeat with 10 more/less; 5 more/less.</li> </ul>	<ul style="list-style-type: none"> <li>Use units of time: second, minute, hour, day, week. Know the relationship between them.</li> <li>Suggest suitable units to estimate or measure time.</li> </ul> <p>VOCABULARY Hour, minute, second How long will it take to...? Takes longer, takes less time Digital, analogue clock/watch/timer</p> <p>RESOURCES Whiteboards &amp; pens ITP 'tell the time'/ a timer that can time seconds and minutes</p>	<p><b>Q</b> We know that 60 is a special number when we're talking about time. How many 1s in 60?</p> <p>How many minutes in 1 hour?</p> <p>What are 60 minutes called?</p> <p>What is half of 60? What do we call 30 minutes?</p> <p><b>Q</b> How many animals can you draw on your whiteboard in 1 minute?</p> <ul style="list-style-type: none"> <li>Use a timer to find out. (eg ITP 'tell the time')</li> </ul> <p><b>Q</b> Can you work out how many you could draw in 5 mins? 10 mins?</p> <ul style="list-style-type: none"> <li>Draw or write down something you could do in different lengths of time. (minutes, hours, days).</li> </ul> <p><b>Q</b> How long does it take you to write your name on your whiteboard?</p> <ul style="list-style-type: none"> <li>When something takes less than 1 minute to do we can measure it in seconds. There are 60 seconds in 1 minute.</li> </ul> <p><b>Q</b> If there are 60 seconds in 1 minute, how many do you think there are in half a minute?</p> <p><b>Q</b> Who could hop on the spot for 10 seconds? 1 minute? Do you think anyone could hop on the spot for 10 minutes without stopping? 10 hours? Why not?</p> <ul style="list-style-type: none"> <li>With a partner decide on something you could do for 1 minute. How could we test them?</li> </ul> <p><b>Q</b> We use timers a lot in sport. Can you work out whether we would use seconds, minutes or hours to time: a 100 metre sprint; a marathon run; a 1000 metre run, etc. (video or other resources relating to these sports would help reinforce this point.)</p> <p>(This topic could be linked to PE, and children could design a relay race and use metre sticks to measure distances and lay out equipment. They could then time the races.)</p>	<p><b>Q</b> Why is it important to be able to tell the time?</p> <p><b>Q</b> What would happen if all the clocks in the world suddenly disappeared?</p> <p>HOMEWORK Find out and write down the days &amp; times of your favourite TV programmes.</p> <p><b>By the end of the lesson, children should be able to:</b></p> <p>Compare the relationship between units of time.</p> <p>Suggest suitable units to estimate or measure time.</p> <p>(Refer to supplement of examples, section 5, page 71.)</p>

**Monday**

**Tuesday**

**Wednesday**

**Thursday**

**Friday**

**Saturday**

**Sunday**