



**PURPOSE AND  
PROMPTS**

The idea of building up the 0–1 strip will help children to make sense of the relationship between tenths and hundredths.

This will help children to see how the interval 0 to 0.1 relates to hundredths.

**UNIT 5 SUPPLEMENTARY TEACHING SEQUENCES**

**SEQUENCE 1**

**Establishing hundredths**

**RESOURCES:**

Large  $10 \times 10$  square marked off in 100 small squares  
Counting sticks  
Sticky labels for 0, 0.01, 0.02, 0.03, etc. to 0.1  
0–9 number cards (one set per pair)  
ITP 'Decimal Number Line' (optional) (on the accompanying CD-ROM in ITPs Index)

**STEP 1**

Show large  $10 \times 10$  square.

Point along the top strip and ask what fraction of the whole square this strip is. Ask how we write this as a decimal. Discuss the fact that each strip is one tenth and ask about two tenths, etc.

Point to the end of each strip in turn as they recite '0.1, 0.2, 0.3 ...' and write these decimals at the edge of each strip.

Talk about the divisions on the strips and establish that each small square is a hundredth of the whole square. Ask how we would write this as a decimal and how we would say it.

**STEP 2**

*Note:* ITP 'Decimal Number Line' is an excellent resource to use in place of a counting stick to support this and the following activities.

The top strip can then be cut off, then the next, and so on, then joined end to end to build up a number line from 0 to 1. Mark 0. Count again using the marked 0, 0.1, 0.2, etc.

Using a counting stick, explain that this is going to represent the section from 0 to 0.1 on the number line that has been made.

Using the stick, ask the children to count along zero, one hundredth, two hundredths, as far as ten hundredths.

Show the sticky labels with range of numbers 0, 0.01, 0.02, 0.03 ... to 0.1. Place 0.

Point to the end of the first section on the counting stick.

**Q Which of the decimal numbers goes here?**

**PURPOSE AND  
PROMPTS**

This will help children to see how a tenth interval relates to hundredths and provide an opportunity for them to count in hundredths.

This will help children to count efficiently with decimal numbers with one and two decimal places crossing the tenths boundaries.

**UNIT 5 SUPPLEMENTARY TEACHING SEQUENCES**

Work as a group to identify where each of the labels will go along the counting stick.

Count along the line as a group 'zero, nought point nought one, nought point nought two ...'

You may want to explain that we tend to use the word 'zero' for 0 on its own but use the word 'nought' when 0 is with other digits, especially in numbers with a decimal point.

Progress to counting back along the stick from one tenth, nine hundredths ... (and 0.1, 0.09 ...)

**STEP 3**

The counting stick or ITP can be used to represent any section of the number line you constructed, e.g. 0.3 to 0.4, and activities such as those in step 2 can be repeated using appropriate labels.

**SEQUENCE 2**

**Counting in decimals**

**RESOURCES:**

Whiteboards

Unnumbered number lines marked with at least twenty equal intervals (one between two)

Digit cards

Counters

Unnumbered but marked number line

ITP 'Decimal Number Line' (optional) (on the accompanying CD-ROM in ITPs Index)

**STEP 1**

Count around the group starting at any number with two decimal places, e.g. 1.25, 1.26, 1.27 ...; 2.04, 2.05, 2.06 ...; 6.16, 6.17, 6.18 ...; 3.57, 3.58, 3.59 ...; 5.88, 5.89, 5.9 ...

**Can children cross the tenths boundary?**

**PURPOSE AND  
PROMPTS**

Steps 2 and 3 will help children to count on and back in hundredths.

**UNIT 5 SUPPLEMENTARY TEACHING SEQUENCES**

(If you are using the ITP, the sections containing these sequences of numbers can easily be illustrated.)

**Q Which digit is changing each time?**

**Q Why is the hundredths digit changing?**

**Q When will other digits change?**

**STEP 2**

This is a paired activity with a blank number line marked with at least 20 equal intervals, each worth one hundredth.

Tell the children that each interval on the number line is worth one hundredth. Ask them to use three cards to make a number with two decimal places and put it on the number line.

Children then point to a place on the number line and challenge each other to identify what that number would be. They label the number line as numbers are agreed. Children win a counter for each number successfully placed and labelled.

**Can children explain their reasoning for placing numbers in various positions on the number line?**

**STEP 3**

Show the group an unnumbered but marked number line (e.g. counting stick) and place an arrow pointing at one of the marks between two intervals. Explain that each interval is a hundredth.

Ask for a number with two decimal places for the beginning of the number line. Write down the suggestion on a sticky label and place at the start of the number line.

Ask children to work in pairs and agree the number the arrow points to.

Agreed answers are to be written on the pair's whiteboard. Children show their whiteboards.

**Q How did you find your answer?**

Demonstrate using counting on to check answers. Remove sticky label. Ask for a new number but this time place it at the end of the number line.

**PURPOSE AND  
PROMPTS**

This will help children to understand the importance of place value to compare and order decimal numbers.

**UNIT 5 SUPPLEMENTARY TEACHING SEQUENCES**

**Q How could we find out which number the arrow is pointing to this time?**

Each pair agree their answer and record on their whiteboard. Compare answers from the group and check by counting back together along the number line.

Repeat this activity for several start and finish numbers.

The ITP 'Decimal Number Line' could also be used to help children locate, count on or count back from any number (up to 1000) with two decimal places.

**SEQUENCE 3**

**Comparing and ordering decimals**

**RESOURCES:**

Target board (resource sheet 5.1)

Metre stick and sticky notes

Whiteboards

Ladder game (resource sheets 5.2 and 5.3)

**STEP 1**

As a group, read aloud numbers on the target board.

Point to digits within some of the numbers. Ask children to tell you the value of the digit you are pointing to and to explain how they know.

Point to the first column of numbers on the target board. Ask children to decide on the order from the smallest to the largest and then write them in order on their whiteboards.

Ask them to explain to their partner how they decided on the order. Share these explanations with the group.

Point to the middle row of the target board. Ask pairs to order the numbers on their whiteboard.

Check and discuss answers.

**PURPOSE AND  
PROMPTS**

This will encourage children to think about ordering and positioning a set of numbers with two decimal places.

**UNIT 5 SUPPLEMENTARY TEACHING SEQUENCES**

**STEP 2**

**Ladder game**

(Resource sheets 5.2 for the board and 5.3 for the cards)

Instructions are given on resource sheet 5.2.

Children play the game in pairs or as a group.

The winning team is the one with most cards on the ladder at the end of the game.

Children will need to know the range of the numbers chosen, i.e. between 0 and 0.99.

It will be useful to start off a game with everyone so that discussion about relative positioning of numbers can take place.

The game can be repeated several times and new decimal numbers generated by using digit cards with an additional 0 card.

This material should lead into Year 5 unit plan: Unit 5, Fractions, decimals, percentage, ratio and proportion, Autumn term, Day 1.

**UNIT 5 RESOURCE SHEET 5.1**

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<b>60</b>	<b>6</b>	<b>0.06</b>
<b>6.06</b>	<b>60.06</b>	<b>6.66</b>
<b>600</b>	<b>0.66</b>	<b>606</b>

**UNIT 5 RESOURCE SHEET 5.2**

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**Ladder Game**

For 2 players (or teams)



**Instructions**

The purpose of the game is to place as many cards as possible, in order, on the ladder. Each player (or team) has a ladder.

Shuffle the cards and deal, face down, to each player (or team). Take it in turns to turn over a card and place it on the ladder. Once a card has been placed it cannot be moved. Only one card can go in each space. Cards have to be placed in order, smallest at the foot of the ladder, largest at the top. Sometimes it may not be possible to place a card if there is not an appropriate space for it, in which case the card has to be discarded.

When all the cards have been turned over the winner is the player (or team) to have placed most cards on their ladder.

Players need to know that the numbers on the cards are all between 0 and 1.

**UNIT 5 RESOURCE SHEET 5.3**

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**Ladder Game**

<b>0.51</b>	<b>0.65</b>
<b>0.89</b>	<b>0.77</b>
<b>0.75</b>	<b>0.33</b>
<b>0.27</b>	<b>0.97</b>
<b>0.01</b>	<b>0.66</b>
<b>0.58</b>	<b>0.41</b>
<b>0.95</b>	<b>0.39</b>
<b>0.09</b>	<b>0.22</b>
<b>0.18</b>	<b>0.14</b>