

**PURPOSE AND
PROMPTS**

This will help children to focus on and identify multiples of 10.

Using the ITP enables you to use any number as your starting point.

Children might need reminding of the meaning of the word 'multiple'.

This will help children to count and record patterns of multiples of 10, crossing different hundreds boundaries.

Counting back and crossing the hundreds boundary may prove to be challenging for some children but it is an important skill to be developed.

UNIT 2 SUPPLEMENTARY TEACHING SEQUENCES

SEQUENCE 1

Counting forwards and backwards in tens

RESOURCES:

Resource sheet 2.1 (in this pack) or ITP 'Number Grid' (on the accompanying CD-ROM in ITPs Index)
Digit cards

STEP 1

Use Resource sheet 2.1 as an OHT or the ITP 'Number Grid' to create a 61–160 grid. Cover some multiples of 10. Ask the children to identify the covered numbers.

Q What do these covered numbers have in common?

Can children go beyond saying these numbers all end in zero? Can they make statements such as '40 is a multiple of 10' or '40 is four tens'?

Do children understand that 110, 120, 130, etc. are multiples of 10?

STEP 2

Write three consecutive multiples of 10 on the board and ask the children for the next number in the pattern. Repeat, ensuring the pattern crosses the hundreds boundary.

Ask children to work in pairs. One child writes down three consecutive multiples of 10, and their partner continues the sequence. Swap roles.

Encourage children to go beyond 160 and ensure that sequences are continued across the hundreds boundary.

When the children have completed several examples, if they haven't already done so, ask them to generate sequences that count back in steps of 10.

Restrict numbers selected to less than 1000.

PURPOSE AND PROMPTS

Use of the grid or the ITP can also help to illustrate this.

This will help children to add 10 to any two- or three-digit number.

It is important that children understand and make the link between counting on and addition.

UNIT 2 SUPPLEMENTARY TEACHING SEQUENCES

Q Which patterns of tens are the most difficult to continue?

Q Which digits change when counting through a hundreds barrier?

Children can refer to their sequences to help them identify/illustrate the digits that change.

STEP 3

Display the number grid 61 to 160. Count on in steps of 10 from 63 to 153. Ask the children to recite the numbers with you and record the sequence on the board.

Q What do you notice about this set of numbers?

Can children explain that when we count in steps of 10 the units digit always stays the same and the number of tens increases by one?

Can the children explain the change when they cross the hundreds boundary?

Generate a second sequence to reinforce this point. Introduce this 'Counting in tens' activity.

Ask children to:

- choose two digit cards (one has to be greater than 5);
- combine them to make the largest two-digit number possible;
- write down the two-digit number;
- record the next five numbers in the sequence by adding 10 each time.

e.g. $\boxed{6} \boxed{2} \rightarrow 62 \rightarrow 72 \rightarrow 82 \rightarrow 92 \rightarrow 102 \rightarrow 112$

Remind children that they have been adding on 10 each time, e.g. 102 count on 10 is the same as 102 add on 10, which is 112.

Q How could we record the number sentence?

$$102 + 10 = 112$$

Check their understanding with some other additions,

e.g. $428 + 10 =$

$$395 + 10 =$$

PURPOSE AND PROMPTS

This will help children to subtract 10 from any two- or three-digit number. *Counting back in tens going through the hundreds boundaries will present a challenge to some children.*

It is important that children understand and make the link between counting back and subtraction.

This will help children count up in steps of 100.

UNIT 2 SUPPLEMENTARY TEACHING SEQUENCES

STEP 4

Adapt the activity to counting back in tens.

Q Which are the most difficult number patterns to continue?

Q Why do you need to be careful when you cross a hundreds boundary?

Remind children that they have been subtracting 10 each time, e.g. 147 count back 10 is the same as 147 subtract 10, which is 137.

Q How could we record the number sentence?

$$147 - 10 = 137$$

Check their understanding with some other subtractions.

e.g. $289 - 10 =$

$$604 - 10 =$$

SEQUENCE 2

Counting forwards and backwards in hundreds

RESOURCES:

Digit cards

STEP 1

Record on the board and ask the children to read out a pattern of numbers that go up in steps of 100.

(e.g. 134, 234, 334, 434 ...)

Ask children to extend the pattern and explain what is happening to the sequence of numbers.

Can children tell you which digit changes when counting in hundreds?

Introduce this 'Counting in hundreds' activity.

Ask children to:

- choose three digit cards;
- combine them to make a three-digit number;
- write down the three-digit number;

PURPOSE AND PROMPTS

Many children have difficulty in understanding that, for example, 1075 is ten hundreds and 75 or 1175 is eleven hundreds and 75. Understanding this will help them carry out calculations such as $1075 - 300$ mentally.

This will help children understand the effect of adding 1, 10 and 100 to, and subtracting them from, a number.

UNIT 2 SUPPLEMENTARY TEACHING SEQUENCES

- record the next three numbers in the sequence by adding 100 each time.

e.g. $\boxed{4} \boxed{2} \boxed{1} \rightarrow 421 \rightarrow 521 \rightarrow 621 \rightarrow 721$

Extend the activity to counting back in hundreds, and at each stage ask what they are doing, e.g. counting on in hundreds, adding hundreds, counting back in hundreds, subtracting hundreds. Also, for some of the examples, record, e.g. $374 - 100 = 274$.

Q What are some of the most challenging starting numbers and why?

(Starting numbers that take you over 1000 or go below zero may be some of the answers given by children.)

Q What happens if you add 100 to 975?

Q How do you write that number?

Q How do you say that number?

SEQUENCE 3

Adding and subtracting 1, 10, 100, 1000

RESOURCES:

None required

STEP 1

Write 231 on the board and ask children to come out and write new numbers by adding or subtracting 1, 10 or 100 to or from it.

A list of numbers will soon be generated, e.g. 232, 331, 131, 241.

Now point to these new numbers at random and ask the children how they were obtained.

e.g. 331 was made by adding 100 to 231, 230 was made by subtracting 1.

Q Would it ever be possible to choose a three-digit number so that all three of the digits would change by adding or subtracting 1, 10 or 100?

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UNIT 2 SUPPLEMENTARY TEACHING SEQUENCES

If no suggestion is made, write 399 on the board and ask what we could add (1, 10, 100) to make all three digits change.

Can children see that 399 add 1 would result in 400?

Ask the children to write down three numbers they think would work, and swap with a friend to see if they can work out how all three digits can be changed by adding or subtracting 1, 10 or 100.

Q When could two of the digits be changed?

(593 + 10 or 629 + 1 for example)

STEP 2

Write 876 on the board. Ask the children to count on in hundreds (at least five steps). Now start with 634 and ask children to count on in hundreds (at least five steps).

Extend this to counting in hundreds from numbers in the thousands (e.g. 3749, 3849, 3949, 4049, 4149 ...).

Repeat this activity counting backwards.

STEP 3

Repeat for three- or four-digit numbers, including adding or subtracting 1000.

Day 1 of the Year 5 unit plan: Unit 1, Place value, Autumn term, begins with several activities that could be adapted for use with four- and five-digit numbers.

Looking at numbers beyond 9999 is important because children often do not realise that the number system goes through tens and then hundreds of thousands before reaching millions.

UNIT 2 RESOURCE SHEET 2.1

61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150
151	152	153	154	155	156	157	158	159	160