Dr Fog Presents

Place Values

Year 3 (National Numeracy Strategy)
(Based on DFEE Sample Lessons)

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Resources

- Ten sheets of A4 paper, each showing one of the digits 0 to 9.

- Six cards showing +1, -1, +10, -10, +100, -100.

For each group
- Three dice
- Cubes of counters
- Base boards (one per pupil)
Mental Learning Objective

• I know what each digit in a three-digit number represents.
Mental Learning Task

• Today’s lesson is about the size of numbers.

• Today we will go up to....
Mental Learning Task

- I need three volunteers.

- Five each volunteer a sheet of paper with a large number written on it.
Mental Learning Task

• What is the biggest number you can make?

• What is the smallest number you can make?
Mental Learning Task

• Repeat this, including a
Mental Learning Task

• Now we are going to imagine some three-digit numbers.
Mental Learning Task

• Imagine the number four hundred and seventy three in front of you.

• Which digit is on the left?
• Which digit is on the right?
• Which digit is in the middle?
Mental Learning Task

• Imagine the number **five hundred and seventy** in front of you.

• Which digit is on the left?
• Which digit is on the right?
• Which digit is in the middle?
Mental Learning Task

• Imagine the number **three hundred and one** in front of you.

• Which digit is on the left?
• Which digit is on the right?
• Which digit is in the middle?
**Mental Learning Task**

- This is a base board.

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<tr>
<th>Hundreds</th>
<th>Tens</th>
<th>Units</th>
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**Mental Learning Task**

- Suppose we had 11 counters.
- We can put them in any of the three sections.
- Where shall we put them?

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**Mental Learning Task**

- Suppose we had 11 counters.
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<tr>
<td>200</td>
<td>60</td>
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Mental Learning Task

• Suppose we had 11 counters.
• We can put them in any of the three sections.
• Where shall we put them?

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<td>300</td>
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Mental Learning Task

- How else could we arrange them?
- What would the number be?

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Mental Learning Task

• What number could we make with those counters that is close to 500?

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Mental Learning Objective

- I know what each digit in a three-digit number represents.
Main Learning Objective

• I can partition a number into its component hundreds, tens and units.

• I can use, read and write the vocabulary of comparing and ordering numbers.
The position of a digit determines its value.
Main Learning Task

• Today you are going to be using the base boards.
Main Learning Task

• Sit in groups of four to six.
• Everyone needs a base board.
• The group shares some cubes.
• Each group needs three dice
• A set of cards numbered between 100 and 999.
Main Learning Task

- One pupil takes a number card.
- This number is the target.
- Another pupil throws three dice.
- Work out the total of the three dice and say out loud.
Main Learning Task

• Take this many cubes.

• Arrange them on the base board.

• Make a number as close as possible to the target number.

• Record the number of cubes, target and your answer.
Main Learning Task

• If there are several answers....

• Place them into order....

• Work out which answer is the closest.
Main Learning Task

• **Challenge:**
  • With ten cubes, what is the largest number you can make?
  • What about other numbers of cubes?
  • Try 11, 12, 13... up to 20.
Main Learning Objective

- I can partition a number into its component hundreds, tens and units.

- I can use, read and write the vocabulary of comparing and ordering numbers.
Plenary

• What numbers did you make with your last dice throw?

• Can you read them out.

• Which is the largest number.

• Which is the smallest?
Plenary

- If I had 11 cubes....
- The target number was 200
- Where would you put them?

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Plenary

• Can you count around the class in ones.

• Watch the screen as every 10 seconds a number will appear...

• If it is a 10, continue counting numbers but in tens etc...
Plenary

- 1 is the start number
- Now change to...

+1 -100 +10 End
Today's Key idea

• Today's key idea was the position of a digit determines its value.

• Did you get it?
# Base Boards

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