

Dr Fog Presents

**Using an abacus
with decimal
numbers.**

Year 4 (National Numeracy Strategy)
(Based on DFEE Sample Lessons)



Resources

- Large beads
- Open-topped abacus with at least four spikes.
- Each spike should take 9 beads.
- An abacus such as this can be made using rods or pencils stuck into a base of plasticine with space for labels.
- A label showing a large decimal point.
- Abacus or place value worksheet.



Mental Learning Objective

- I can use decimal notation for tenths and hundredths.



Mental Learning Task

- Today's lesson is about representing decimal numbers on the abacus.



Mental Learning Task

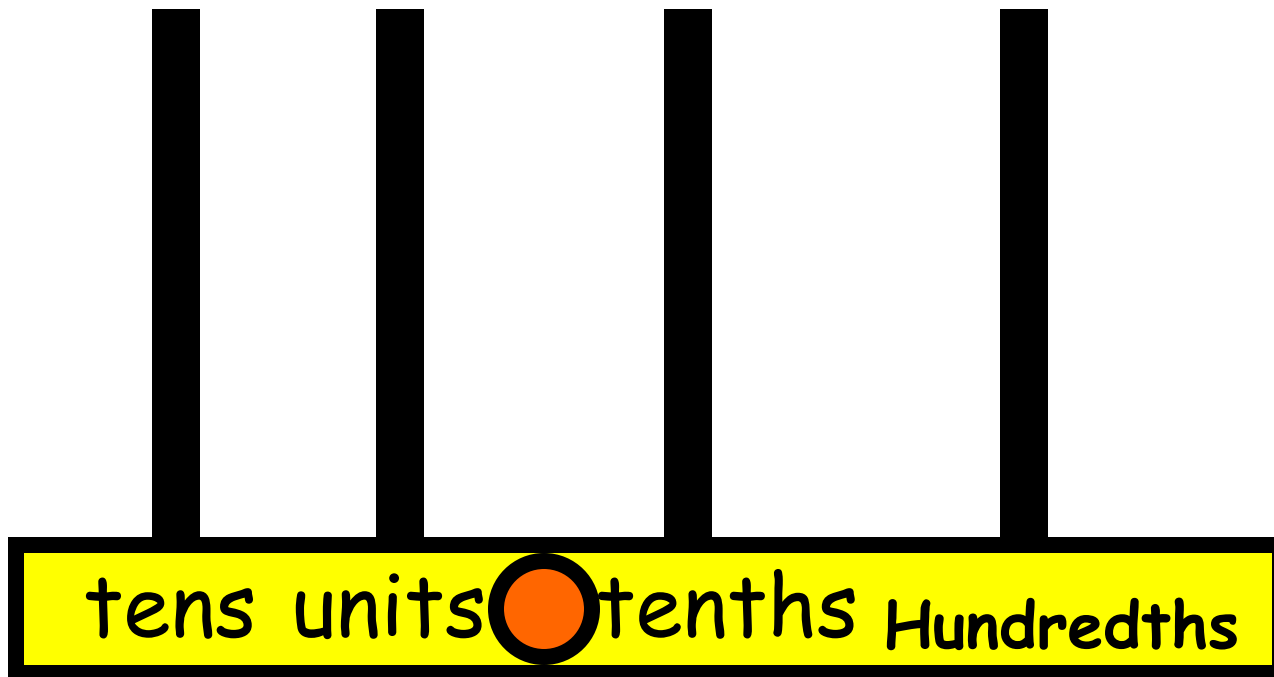
- Think of a decimal number.
- Write it in this box.

Number box



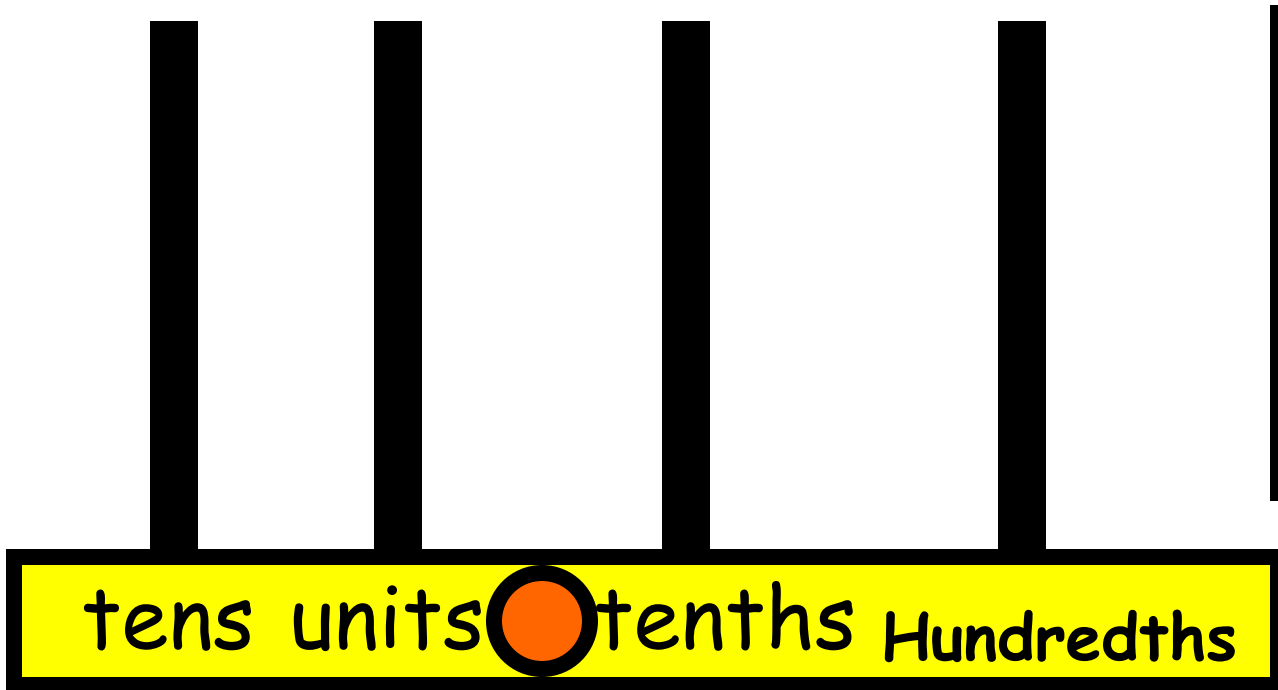
Mental Learning Task

- Does anyone know what an abacus looks like?



Mental Learning Task

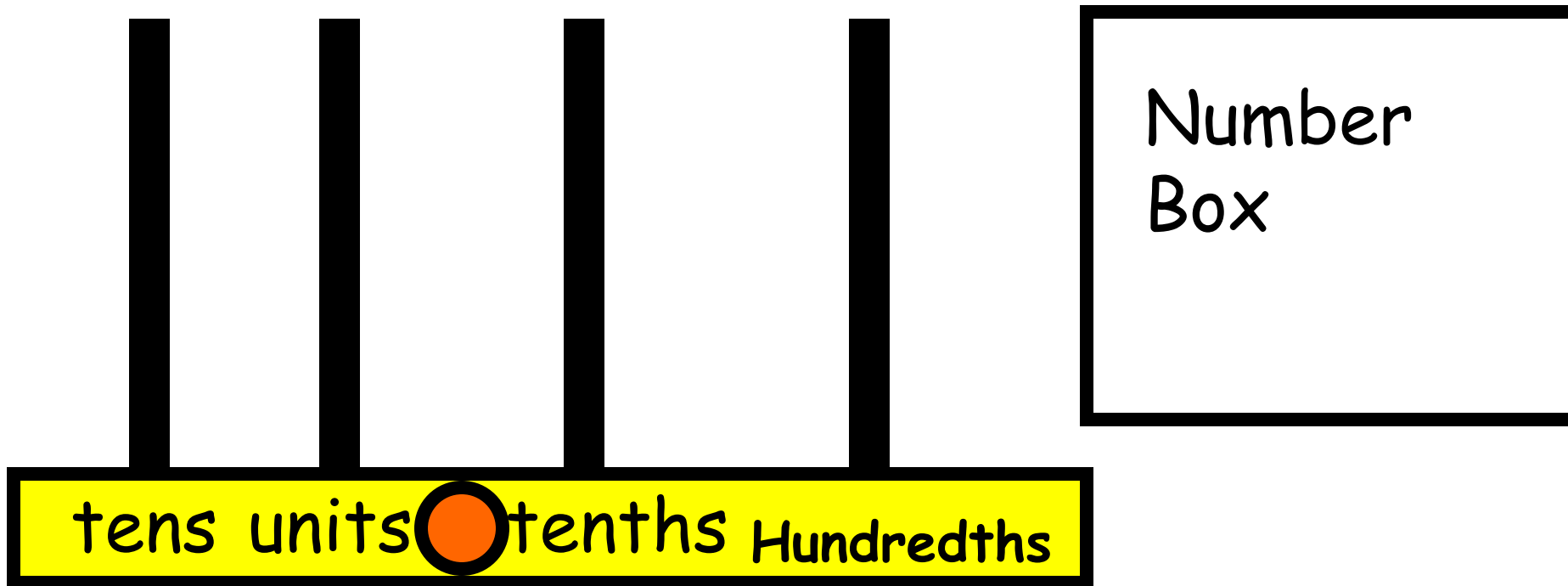
- Write a decimal number in the number box.



Number
Box

Mental Learning Task

- Try this abacus with other numbers.



Mental Learning Objective

- I can use decimal notation for tenths and hundredths.



Main Learning Objective

- I know what each digit represents in a number with up to two decimal places.
- I can explain methods and reasoning orally and in writing.



Key idea

**On an abacus,
as digits move one place
to the right they
get ten times smaller.**



Main Learning Task

- Complete a worksheet on place values or one of the abacus.



Main Learning Task

- We are going to now limit the number of beads to six.
- Can you think of a number which can be made from six beads?



Main Learning Task

- Draw an abacus with no beads on a sheet of paper.
- Explore the numbers you can make using six beads.
- Record in figures all the numbers you find.



Main Learning Task

- Challenge:-
- Work out all the possible numbers they could make using just 6 beads, **without using an abacus picture.**



Main Learning Objective

- I know what each digit represents in a number with up to two decimal places.
- I can explain methods and reasoning orally and in writing.



Plenary

- Which is the largest number you found?
- Why is it the largest number?
- Which is the smallest number?
- Why is it the smallest?



Plenary

- Which number is nearest to 30?
- Which numbers use only three spikes?
- Which numbers only use two spikes?
- Which numbers use one spike?



Plenary

- How many different numbers are possible with just six beads?
- How do you know that?



Plenary

- Here is a problem to solve...
- Choose three digits (including 0). Use these, and the decimal point, to find the numbers that can be made with them.
- Record all numbers, starting with the smallest.
- How many different ways can be made this way?
- What happens if two of the three digits are the same?

Review of Key Idea

- On an abacus, as digits move one place to the right, they get ten times smaller.



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