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Objectives

- To read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.
- To round any whole number to a required degree of accuracy.
- To use negative numbers in context, and calculate intervals across zero.
- To solve number and practical problems that involve all of the above.

What the children need to know

- How to solve problems involving number lines.
- How to round numbers.
- How to find differences between large numbers and between positive and negative numbers.

NUMBER
Place value and negative numbers

✈ Challenge and mastery ideas

- Working in pairs or small groups, provide children with a copy of the number lines from the photocopiable page 37. List pairs of numbers on the board for them to write at each end of a number line, for example: 100,000 and 50,000, or –20 and 20. Ask children to then take turns to mark a point on a line and work out its value.
- Use short, whole-class sessions to invite children to say large numbers aloud and to write them on the board. Highlight two digits of each given number. Ask children to identify the values of the digits and to find the difference between them. For example: the difference between the two digit 3s in 4,**3**96,5**3**2 is 300,000 – 30 = 299,970. Encourage children to say the answers in words.
- Write three consecutive multiples of a power of 10 on the board. For example: 600,000, 700,000 and 800,000 or 135,000, 136,000 and 137,000. Ask children to give numbers that lie between the smallest and largest of the numbers, for example: 673,463 or 136,420. They should then round the number to the nearest multiple shown, for example: 700,000 or 136,000. Provide more opportunities for children to extend their understanding by asking them to give the smallest or largest possible number that would round to the middle value.

✈ Review

- Check that children understand how to say large numbers and that they know the value of the digits.
- When working with number lines, ensure children are finding the value of each interval first by dividing the difference by the number of intervals. Number lines with different numbers of intervals could be included to check children's understanding of this.

✈ Watch and listen

- Listen for children finding differences between values of digits using mental methods or visualising numbers on number lines easily. They are displaying a good appreciation of our number system.
- Further questions similar to question 7 on page 8 of the *Workbook* can be easily devised to assess children working at a higher than expected standard.