

Walter One

Ideas for questions and discussion points

The Map of Numberline Lane

- Would Walter One live on the odd or even side of the lane?
- Who would he meet next along the lane?
- Who would he meet next on his own side of the lane?
- If he walked up the lane on his own side, would he ever meet Nick Six? Why?
- What number comes before one on a number line?

Development of the mathematics in the story

- When Gus Plus makes the muddled numberline appear, try recreating this with number cards, or get children to represent the different numbers. Ask one child to muddle the numbers up and another child to sort them out. Repeat this activity muddling the numbers in different ways.
- As above, but remove one of the number cards: how quickly can you spot which card is missing?
- Which numbers would come next, or before, given numbers on Gus Plus' numberline?
- Encourage the children to join in the repeated addition when Walter One works out the order of the numberline.
- What numbers would Walter One use if he started on two instead of one?
- What numbers would Walter One use if he started on one, but this time developed a number line counting in twos or even threes? Which numbers would be left out?
- What would happen if Walter One started with the biggest number he could think of and then added one, or two, or even ten?
- How could you make a numberline where the numbers got less each time?
- If you take any three numbers (consecutive or otherwise) from the numberline, can you put them into numerical order?
- Start a numberline where the numbers increase or decrease in size by one, two or more. Can the children work out what numbers come next?
- Start a numberline that can be extended in both directions. How far can it be extended?

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Suzie Two

Ideas for questions and discussion points

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- Who would she meet next along the lane?
- Who would she meet next on her own side of the lane?
- If she walked up the lane on her own side, would she ever meet Nigel Nine? Why?
- What number comes before, or after, two on a number line?

Development of the mathematics in the story

- Encourage children to join in counting from two up to ten, and back again, as Suzie Two runs up and down the lane.
- Can the children count up, and back, starting on any other number on the numberline? Try starting on four or ten and counting upwards.
- Try counting a given number of times either backwards or forwards starting on any given number.
- Suzie meets Nigel Nine, Clive Five and Hebe Three. What have these three numbers got in common? What is the total of the numbers in each of the three scenes on this page?
- When Clive Five lifts up his weights, how much is the total weight he lifts?
- What are the totals of the three-legged pairs e.g. $9+8$, $3+5$.
- If Linus Minus had not cheated in the egg and spoon race, in what position would Hebe Three, Clive Five or Nora Four have come? Use the picture to help!
- Encourage the children to participate in the final run-down of positions in the last race.
- Who came fifth? Third? Second?
- With the results as they were for the egg and spoon race, who was the second even number over the finishing line? Who was the third odd number over the line?
- Kevin Seven came third in an event - which event?
- Who came last in the last event? What position was this?
- What was the first event? The third event?

Suzie Two

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- Who would she meet next along the lane?
- Who would she meet next on her own side of the lane?
- If she walked up the lane on her own side, would she ever meet Nigel Nine? Why?
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Hebe Three

Ideas for questions and discussion points

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- Would Hebe Three live on the odd or even side of the lane?
- Who would she meet next along the lane?
- Who would she meet next on her own side of the lane?
- If she walked up the lane on her own side, would she ever meet Kevin Seven? Why?
- What number comes before, or after, three on a number line?

Development of the mathematics in the story

- There are three posts on Hebe Three's bed. If she had two beds like this, how many posts would there be?
- There are three threes in the first picture, what would the total be if you added all these together.
- Try counting in ones emphasizing every third number. Try whispering the others.
- Hebe Three has ten hats in her cupboard. She takes one out. How many are left? How many hats are on each shelf? How many shelves are there?
- Can the children think of a way of sorting the shoes into different groups? Can they find a way of sorting their own shoes that would organize them into different groups?
- If Hebe Three had four pairs of shoes and she sorted them into the two cupboards as Walter One suggested, how many shoes would there be in each cupboard? How many shoes would there be altogether?
- If Hebe Three had ten shoes, how many pairs would that be? How many would go in each of the cupboards?
- Knock the appropriate number of times for each of the numbers, and encourage the children to count the knocks to anticipate who is at the door.
- Why wouldn't Nora Four's idea of sorting the shoes be very helpful for Hebe Three?
- Try sorting things into colours. Use hoops or bags to collect the different groups.
- With a given pile of socks or shoes, how many different ways can you find of sorting them into groups. How could this be recorded?

Hebe Three

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Nora Four

Ideas for questions and discussion points

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- Would Nora Four live on the odd or even side of the lane?
- Who would she meet next along the lane?
- Who would she meet next on her own side of the lane?
- If she walked up the lane on her own side, would she ever meet Katy Eight? Why?
- What number comes before, or after, four on a number line?
- Ask the children which of them live in an even, or odd, house number at home?

Development of the mathematics in the story

- Encourage the children to count Nick Six's knocks on Nora Four's door. Try grouping the knocks in ones, twos or threes.
- When Nora Four and Nick Six stand next to each other, how much do they make if you add the two numbers together? Which other numbers add together to make the same total?
- Gus Plus lives at the Add Pad. What other words can the children think of that mean the same as add?
- When Gus Plus suggests adding two each time, can the children build the numberline before Nora Four manages it?
- What would the numberline look like if you added two but started on one?
- Why is it helpful to count in twos to solve Nora Four's problem?
- What is special about the numbers that Nora Four counts up in?
- Can the children develop the numberline further?
- Try starting at twenty, counting backwards in twos. Try starting at nineteen, counting back in twos.
- Encourage the children to join in adding on two and counting in twos.
- What number would come before two on Nora's new numberline?
- If Nora Four made ten gloves, how many pairs would that be?
- If Nora Four made six pairs of gloves, how many gloves would that be?
- If she made gloves for all the numbers, and some for Gus Plus and Linus Minus, how many gloves would that be altogether?

Nora Four

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- Who would she meet next along the lane?
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- If she walked up the lane on her own side, would she ever meet Katy Eight? Why?
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- If she made gloves for all the numbers, and some for Gus Plus and Linus Minus, how many gloves would that be altogether?

Clive Five

Ideas for questions and discussion points

The Map of Numberline Lane

- Would Clive Five live on the odd or even side of the lane?
- Who would he meet next along the lane?
- Who would he meet next on his own side of the lane?
- If he walked up the lane on his own side, would he ever meet Jenny Ten? Why?
- What number comes before, or after, five on a number line?
- Ask the children which of them live in an even, or odd, house number at home?

Development of the mathematics in the story

- If Clive Five bounced the ball five times and Kevin Seven bounced the ball seven times, how many times is that altogether?
- If Clive Five and Kevin Seven are in one team for the football match, how many numbers are left in the other team? What type of sum is needed to work this out? Can you show the four number questions that relate to this idea e.g. $2+8$, $8+2$, $10-2$, $10-8$.
- Repeat the same discussion when Suzie Two makes her suggestion with her and Walter One and Nora Four on one team and everyone else on the other team.
- Gus Plus puts everyone into pairs, where the partners add up to ten. Which number would Jenny Ten need to stand beside?
- Discuss who Clive Five would need to be standing beside. Look at it as finding the difference by counting up from five to ten.
- Does it matter that Walter One is standing before Nigel Nine - does $1+9$ equal the same as $9+1$?
- Looking at the bonds, encourage adding the smaller number to the bigger number by putting the larger number first and then counting up.
- If Nora Four stops playing, how many players are left in the match before Linus Minus joins in? Are the teams fair at this point?
- If it was a six-a-side match, how many players would there be? How many for seven-a-side? How would you work out how many players?
- The final score is one goal each. How many goals is this altogether? If the score was 3:4 how many goals would that be altogether? What about 5:6, or 4:3, etc.?

Clive Five

Ideas for questions and discussion points

The Map of Numberline Lane

- Would Clive Five live on the odd or even side of the lane?
- Who would he meet next along the lane?
- Who would he meet next on his own side of the lane?
- If he walked up the lane on his own side, would he ever meet Jenny Ten? Why?
- What number comes before, or after, five on a number line?
- Ask the children which of them live in an even, or odd, house number at home?

Development of the mathematics in the story

- If Clive Five bounced the ball five times and Kevin Seven bounced the ball seven times, how many times is that altogether?
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Nick Six

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The Map of Numberline Lane

- Nick Six is an even number. Can you name 3 other even numbers?
- Nick Six's house comes between two other even numbers. Which are these?
- Nick Six's house is opposite Kevin Seven's house. What is the total of 6 and 7?
- To travel from Nick Six's house to Walter One's house how many houses would you see?
- There are three windows on the front of Nick Six's house and four more on the back. How many windows are there altogether?

Development of the mathematics in the story

- Nick Six know lots of songs. He can sing 5 gentle songs, 5 pop songs and 5 really loud songs. How many songs does he know altogether?
- Nick Six knows a song called "Add on one". Add on one to 7,4,10.
- What shapes can you spot in Nick Six's bathroom?
- If Linus Minus had taken away 2 strings, how many would be left? If he had taken away 5 strings, how many would be left?
- Nick Six knocks on the door of the Add Pad 6 times. Three groups of two. Can you knock 6 knocks with two groups of three?
- Gus Plus doubles the number of cakes on the table. How many would there have been if he had halved the number of cakes?
- If there were 5 cakes on the table and Gus Plus doubled them, how many would there have been?
- What would happen if Gus Plus doubled the number of cakes on the plate again? And then again?
- Can you halve all even numbers? Can you halve any odd numbers?
- Can you double all even numbers? Do they stay as even numbers?
- Can you double all odd numbers? Do they stay as odd numbers?
- At the end, numbers 4,8,3 and 9 stand together. Is the total of these numbers more or less than the total of the numbers 5,2,10 and 7?

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Kevin Seven

Ideas for questions and discussion points

The Map of Numberline Lane

- Kevin Seven is an odd number. What other numbers are odd?
- Kevin Seven lives between which two other odd numbers?
- Kevin Seven lives near Katy Eight. What is the total of 7 and 8?
- How many numbers come between Kevin Seven and Hebe Three?

Development of the mathematics in the story

- If Kevin Seven came out of his house at seven o'clock in the morning. What would the time be in one hours time?
- There are a lot of leaves blowing around in the story? How many leaves are there altogether in the pictures during the book?
- What could you measure the planks with to help fix Nick Six's roof?
- Could you measure the roof in litres? Kilograms? Metres?
- If on of the planks came up to the number 3 on Kevin Seven's measuring numberline, how long would a plank be if it were twice as long? What if the plank was 7 long to start with, how long would a plank be if it were twice as long?
- If one plank came up to the "6" and the next came up to the "10", how much longer is the second plank? If one plank came up to the "4" and the next came up to the "9", how much shorter is the first plank to the second plank?
- The last plank measured by Kevin Seven comes up to the "5" on his measuring numberline. How big would a plank be if it were 3 longer? Or if it were 4 shorter?
- If Kevin Seven had two planks, one measured up to the "8" and the next plank measured up to the "3", how long would they be if he put them together?
- Can you find something that is longer or shorter than this book? Can you find something the same length? Can you find something twice the length of this book?
- Nigel Nine has measuring to do when he is cooking. What sort of things does Nigel Nine have to measure?

Kevin Seven

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Katy Eight

Ideas for questions and discussion points

The Map of Numberline Lane

- Katy Eight is an even number. Can you describe what an even number is?
- Katy Eight, Nick Six and Jenny Ten are even numbers. There are two other even numbers down the lane. Who are they?
- Katy Eight is on the even side of the lane. Whose houses are not on the even side of the lane?
- If you take away 5 from 8, what are you left with?
- If you add 2 to 8, what number would you get?

Development of the mathematics in the story

- There are eight pet goldfish in the bowl. If one jumped out, how many would be left?
- Katy Eight pours herself some Number Flakes. The first numbers to land in her bowl are 3, 4 and 5. What is the total of these numbers?
- Katy Eight planted eight pink flowers. If she had planted 3 more, how many would there have been?
- If she had planted half that number, how many would there have been?
- Clive Five tells Katy Eight that the difference between eight and six is two. What other pairs of numbers have a difference of two?
- Linus Minus had taken the two flowers away. If he had taken three away, how many flowers would have been left?
- Katy Eight and Clive Five went to the Add Pad. Katy Eight knocks on the door eight times. If she knocked another eight times, how many knocks would that have been altogether?
- Can you find the difference between 4 and 6, 2 and 5, 7 and 10?
- Gus Plus is thinking of two numbers that have a difference of 4. What numbers might he be thinking of?
- Katy Eight plants her flowers in rows of four. If she planted another row, how many would there be? If she had only planted one row, how many would there be?
- Is there another way of arranging her eight pink flowers in a group?

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Nigel Nine

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- Is Nigel Nine an odd or even number?
- Can you think of other numbers with nine units? Are they odd or even?
- What is double nine?
- How many more do you need to add on to nine to make ten?
- How many would you need to subtract from nine to reach 5?

Development of the mathematics in the story

- Katy Eight and Kevin Seven are sitting at the same table. What is 8 plus 7?
- What is the time on the clock in Nigel Nine's shop?
- What types of shapes could the Shape Cakes be? How many sides would each cake have?
- What even numbers come between 4 and 9? Nora Four goes to visit Linus Minus and Nigel Nine goes to see Gus Plus. What is 4 plus 9? What is 9 minus 4?
- Nigel Nine has to share out 10 crisps between Gus Plus and Linus Minus. They get 5 crisps each. How many would they get if there had been 8 crisps? 12 crisps?
- He shares out Shape Cakes. Would there be one left over if he shared out 6 cakes? Why?
- Nora Four brings four Take Away Tarts. If she shared them out between 3 plates, how many would be left over?
- Nigel Nine discovers that if he tries to share out an odd number of food items between two there is always one left over. Would there be one left over if he shared out 15? 12? 23? 37? 24?
- Even numbers share exactly into 2 groups. Do any even numbers share exactly into 3 groups? Do all even numbers share into 3 groups?
- Linus Minus likes the Take Away Tarts. Why do you think this is?
- Can you think of a type of food that Gus Plus might like?
- Would 9 share into 2 groups? 3 groups? 4 groups? Can you find a number that shares into groups of 2 and groups of 3 and groups of 4?

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- Nigel Nine discovers that if he tries to share out an odd number of food items between two there is always one left over. Would there be one left over if he shared out 15? 12? 23? 37? 24?
- Even numbers share exactly into 2 groups. Do any even numbers share exactly into 3 groups? Do all even numbers share into 3 groups?
- Linus Minus likes the Take Away Tarts. Why do you think this is?
- Can you think of a type of food that Gus Plus might like?
- Would 9 share into 2 groups? 3 groups? 4 groups? Can you find a number that shares into groups of 2 and groups of 3 and groups of 4?

Jenny Ten

Ideas for questions and discussion points

The Map of Numberline Lane

- Is Jenny Ten odd or Even?
- Who else is on the same side of the Lane as Jenny Ten?
- Which numbers are on the opposite side of the lane?
- Can you count backwards in even numbers from 20?
- Can you count backwards in odd numbers from 19?
- If you added all the even numbers in the lane, what would the total be?
- If you added all the odd numbers in the lane, what would the total be?

Development of the mathematics in the story

- Jenny Ten is a two-digit number. What other two-digit numbers have a zero in the units?
- What other two-digit numbers have a one in the tens position?
- Can you describe, using mathematical vocabulary, the patterns in Jenny Ten's studio at the beginning of the story?
- Jenny Ten designs a pattern for Walter One using circles and squares. Are there other patterns you could design with these two shapes?
- Suzie Two has a design with overlapping triangles. Can you see what patterns can be made with overlapping circles, or squares or rectangles?
- Can you make a design for Jenny Ten using lots of different sized circles?
- Kevin Seven has a design made with three different colours. Can you make a repeating pattern with 3 different colours?
- Nick Six has a design made with shapes that change size. Which shapes can you see? Do any of them have right angles?
- Gus Plus has a tessellating pattern designed for him. Which other shapes can tessellate? Which shapes do not tessellate?
- Jenny Ten does not show us the patterns for Hebe Three, Nora Four, Clive Five or Nigel Nine. Can you design a pattern for each of these characters and describe the pattern you have made?
- Can you design a symmetrical pattern? What does symmetrical mean?
- Can you design a rotating pattern?
- Jenny Ten would like a pattern designed using hexagons! How many sides does a hexagon have? Can you make them tessellate?

Jenny Ten

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