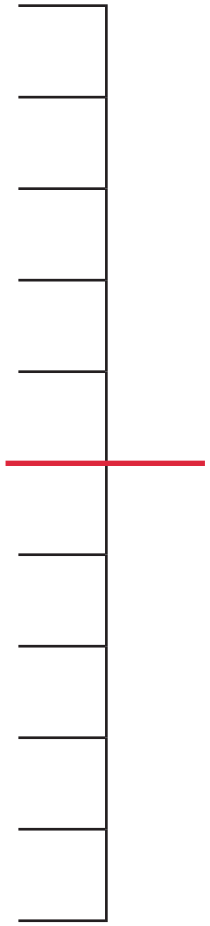
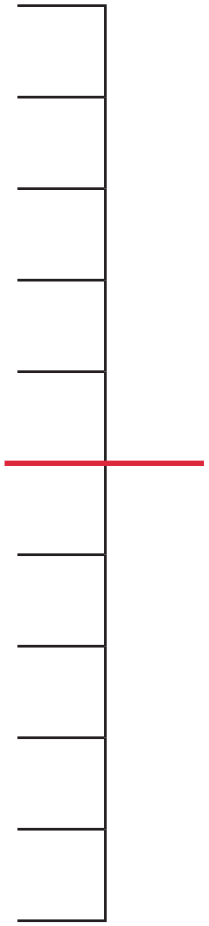
Blank Vertical Number Lines

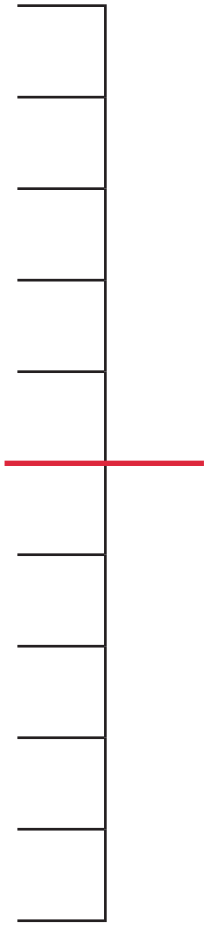
nearest multiple of 10



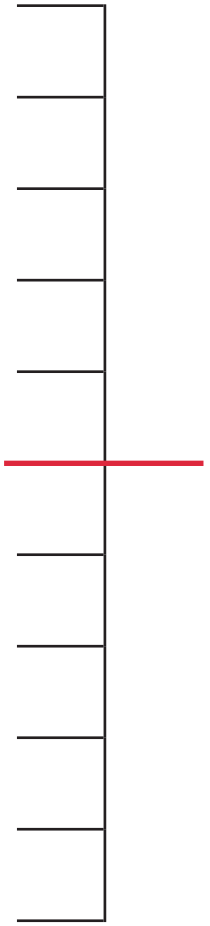
nearest multiple of 100



nearest multiple of 1000



nearest multiple of 10 000



Nearest Multiple of 10, 100, 1000 and 10 000 Challenge

5-digit number:			
Nearest Multiple of 10	Nearest Multiple of 100	Nearest Multiple of 1000	Nearest Multiple of 10 000

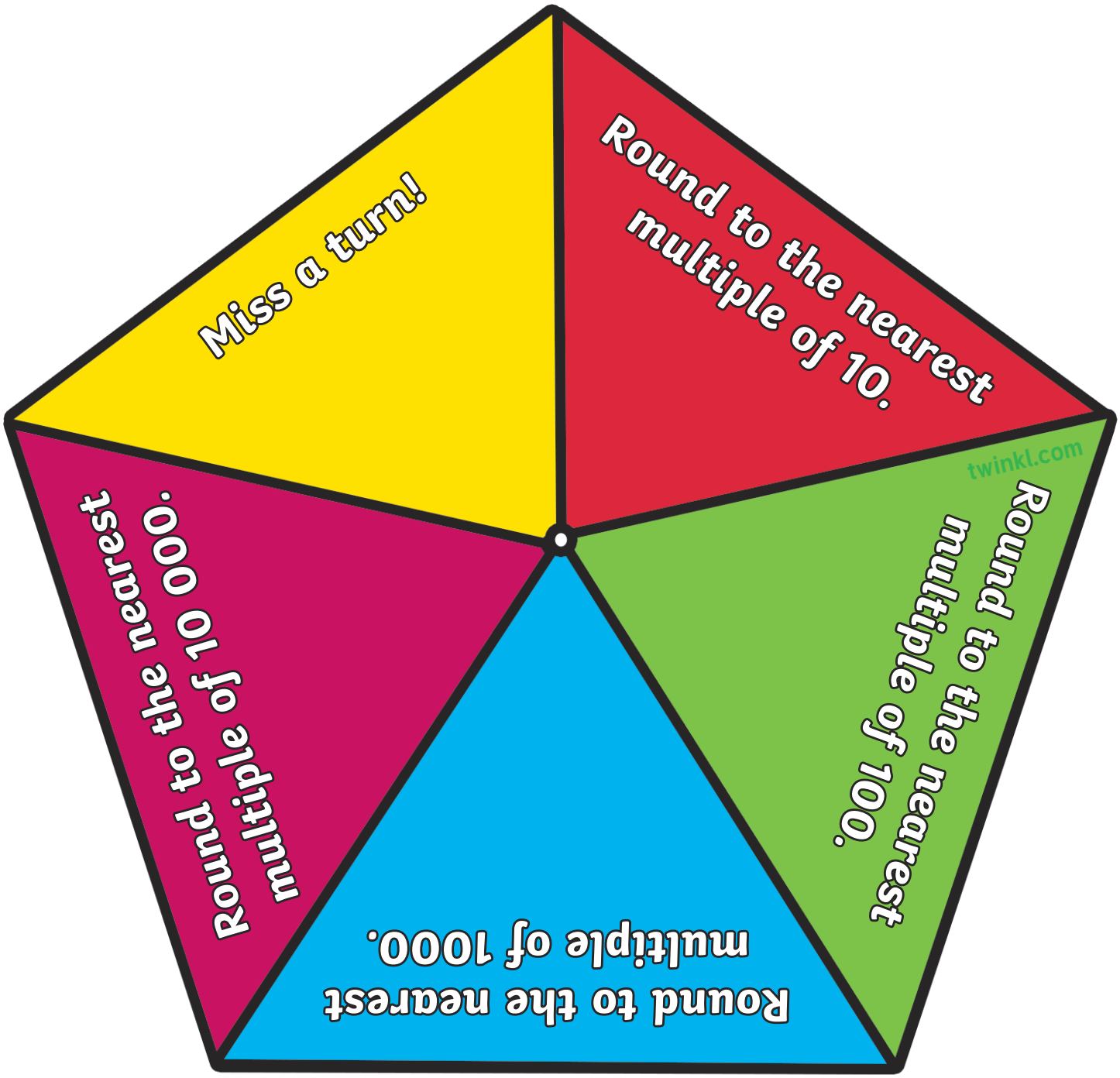
5-digit number:			
Nearest Multiple of 10	Nearest Multiple of 100	Nearest Multiple of 1000	Nearest Multiple of 10 000

5-digit number:			
Nearest Multiple of 10	Nearest Multiple of 100	Nearest Multiple of 1000	Nearest Multiple of 10 000

Rounding to the Nearest Multiple of 10, 100, 1000 or 10 000 Game

32 893	78 428	93 271	56 737	87 396
21 091	49 552	38 459	96 738	77 837
59 759	34 085	18 938	44 549	88 888
67 892	26 735	94 778	37 628	75 254
48 597	14 449	85 575	64 646	35 555

Spinner


Miss a turn!
Round to the nearest multiple of 10.
Round to the nearest multiple of 100.
Round to the nearest multiple of 1000.
Round to the nearest multiple of 10 000.
twinkl.com

What Is My Number?

Card 1:

- I sit between 56 780 and 56 790.
- I am higher in value than the midpoint.
- I am an odd number.
- I have no 9 digits in my number.
- What is my number?
- Which multiple of 10 do I round to?

Card 2:

- When rounding to the nearest multiple of 100, I sit between 32 400 and 32 500.
- I am lower in value than the midpoint.
- I am an even number.
- I have four tens and my ones digit is less than four but is not a zero.
- What is my number?
- Which multiple of 100 do I round to?

Card 3:

- Rounding to the nearest multiple of 1000, I sit between 67 000 and 68 000.
- My hundreds digit is even and between 2 and 6.
- My tens and ones digits are the total of double 9.
- What is my number?
- Which multiple of 1000 do I round to?

Card 4:

- Rounding to the nearest multiple of 10 000, I sit between 20 000 and 30 000.
- My thousands digit is odd. It is not seven but is higher in value than the midpoint.
- My hundreds digit is half of 14. I have no tens and my ones digit is double three.
- What is my number?
- Which multiple of 10 000 do I round to?

Card 5:

- Rounding to the nearest multiple of 100, I sit between 76 900 and 76 400.
- My hundreds digit is odd and between 5 and 9.
- My tens and ones digits are half of 46.
- What is my number?
- Which multiple of 100 do I round to?

Card 6:

- Rounding to the nearest multiple of 1000, I sit between 45 000 and 46 000.
- My hundreds digit is one quarter of 20.
- My tens and ones digits are the total of double 17.
- What is my number?
- Which multiple of 1000 do I round to?

Answers

1. **56 787**, **56 790**
2. **32 442**, **32 400**
3. **67 418**, **67 000**
4. **29 706**, **30 000**
5. **76 723**, **76 700**
6. **45 534**, **46 000**

	Adult:	Pupil/s:	Date:
Key Questions for Deepening Understanding	**Comments**		
• What is the value of the 2/7/8/7/2 digit? How do you know? • Which two multiples of 10 did you write on your number line? Why? • Can you explain what a multiple of 10/100/1000/10 000 is? • Can you see a pattern with the zeros in each of these? • Why did you write that number on the midpoint line? • Where on the number line did you write 34 678? Why? • Which multiple of 10 would you round this to? Why? • Which multiple of 10 would you round the midpoint number 34 675 to? Why? • Which place value column do we need to focus on when rounding? Why? • Which digit always goes in the ones column when rounding to the nearest multiple of 10? • Which number would go here? How do you know? • Do any other place value columns change when rounding to the nearest multiple of 10? (tens column if rounding to the higher multiple) • Does the hundreds digit ever change when rounding to the nearest multiple of 10? (e.g. rounding 798 to the nearest multiple of 10 would be 800 so the hundreds and tens digit both change) • Why did you write that number on the midpoint line? • Where on the number line did you write 34 627? Why? • Which multiple of 100 would you round this to? Why? (It is closer to 34 600.)			

	Adult:	Pupil/s:	Date:

Key Questions for Deepening Understanding (Continued)	Comments
• Which multiple of 100 would you round the midpoint number 34 650 to? Why? • Which is the key place value column to focus on here? (tens) Why? • Which number would go here? How do you know? • What did you find? (They all round to 60 000.) • Can you explain why for each one? • What have I rounded this to – the nearest multiple of 10, 100, 1000 or 10 000? How do you know? • What do you notice about the digits in the columns to the right of the focus column? • Why have you written that number? • What do you notice about the zeros in each number?	

Additional Notes

Same-Day Intervention: **Rounding Five-Digit Numbers**

Children will learn how to apply their rounding knowledge to round five-digit numbers to the nearest 10, 100, 1000 and 10 000.

Pre-Intervention Check

To access this intervention, can the children… *Tick as appropriate.

...confidently round any number with up to four digits to the nearest multiple of 10, 100 or 1000?

...identify the previous and next multiple of 10, 100, 1000 or 10 000 for any given five-digit number?

Explaining the Gap in Mathematical Understanding

In year 4, children learn to round any given number with up to four digits to the nearest multiple of 10, 100 and 1000. In year 5, they now need to apply this learning to five-digit numbers, together with learning how to round to the nearest multiple of 10 000. Children should be prompted to recall their prior learning of identifying the previous and next multiple the number sits between. Children can become confused when asked to round a number to the nearest multiple of 10, 100, 1000 and 10 000 when the answer is the same for each instruction.

For example, if asked to round 29 996 to the nearest multiple of 10, 100, 1000 and 10 000, a child may not understand why each instruction would result in the answer of 30 000 and, as a result, try to answer each instruction differently or not be able to answer at all.

Using a number line to explore rounding numbers such as these can support children with their understanding of what is happening and why. Being able to round a five-digit number is a key skill that children need to master as this will support them in approximating amounts and answers to calculations.

Preparation

- **Blank vertical number lines** (laminated)
- Whiteboards and pens
- **Nearest multiple of 10, 100, 1000 and 10 000 challenge**
- **'What's My Number?' game**
- **Nearest multiple of 10, 100, 1000 or 10 000 game**
- **Spinner** (one per pair)

Key Vocabulary

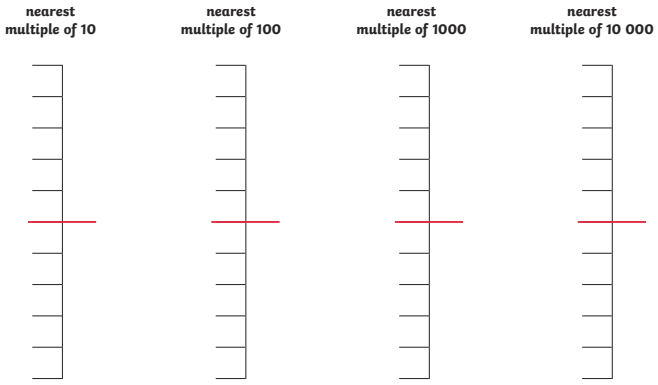
- Rounding to the nearest multiple of 10, 100, 1000 and 10 000
- Previous/next multiple of 10, 100, 1000 and 10 000
- Midpoint
- Place value
- Ten thousands, thousands, hundreds, tens, ones
- Five-digit numbers

Addressing the Gap

Children will start by recapping their understanding of rounding by using a number line to identify the previous and next multiple of 10, 100, 1000 and 10 000 from a given five-digit number. Then, they will learn to round any five-digit number to the nearest multiple of 10, 100, 1000 and 10 000 on their number lines, using their understanding of which place value columns to focus on when rounding to the nearest multiple. They will also learn that when some numbers are rounded to the nearest multiple of 10, 100, 1000 and 10 000, the answer can be the same. Finally, children will consolidate their learning by taking part in fun activities that require them to round five-digit numbers to the nearest multiple of 10, 100, 1000 and 10 000.

Key Questions for Deepening Understanding

Give each pair a laminated **blank vertical number lines** sheet.



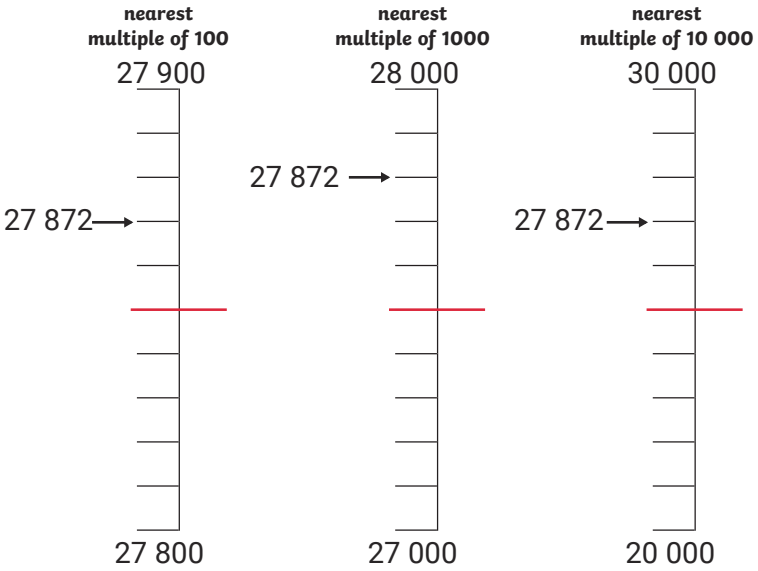
Ask children to write 27 872 next to each number line. Ensure that children are confident with the value of each column.

- **What is the value of the 2/7/8/7/2 digit? How do you know?**

Ask them to look at the nearest multiple of 10 number line and to write the previous and next multiple of 10 for 27 872.

- **Which two multiples of 10 did you write on your number line? Why?**

Repeat with the same number (27 872) using the nearest multiple of 100/1000/10 000 number lines.



Next, ask children to label the number lines as follows:

- nearest multiple of 10 number line – 34 670 at the bottom of the line and 34 680 at the top
- nearest multiple of 100 number line – 34 600 at the bottom and 34 700 at the top
- nearest multiple of 1000 number line – 34 000 at the bottom and 35 000 at the top
- nearest multiple of 10 000 number line – 30 000 at the bottom and 40 000 at the top
- **Can you explain what a multiple of 10/100/1000/10 000 is?**
- **Can you see a pattern with the zeros in each of these?**

Establish that there are zeros in all the columns to the right of the multiple of 10/100/1000/10 000.

Next, children write the number they think goes next to the red midpoint line on the nearest multiple of 10 number line.

- **Why did you write that number on the midpoint line?**

On the board, write 34 678. Ask children to label where they think this number should go on their nearest multiple of 10 number line.

- **Where on the number line did you write 34 678? Why?**
- **Which multiple of 10 would you round this to? Why?**
- **Which multiple of 10 would you round the midpoint number 34 675 to? Why?**

Take this opportunity to clarify that 5/50/500/5000 are the midpoints and always round to the next multiple of 10/100/100/1000/10 000.

Key Questions for Deepening Understanding (Continued)

- **Which place value column do we need to focus on when rounding? Why?**
- **Which digit always goes in the ones column when rounding to the nearest multiple of 10?**

Point to random intervals on the number line.

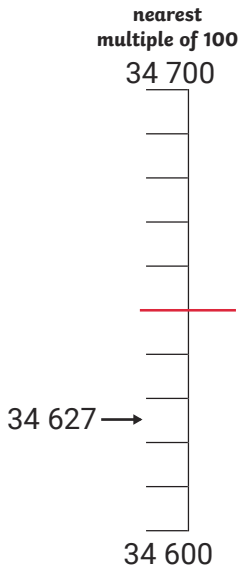
- **Which number would go here? How do you know?**
- **Do any other place value columns change when rounding to the nearest multiple of 10?** (tens column if rounding to the higher multiple)
- **Does the hundreds digit ever change when rounding to the nearest multiple of 10?** (e.g. rounding 798 to the nearest multiple of 10 would be 800 so the hundreds and tens digit both change)

Repeat with 34 672 and 34 676 and ask similar questions.

Now, ask children to label the midpoint number for the nearest multiple of 100 number line.

- **Why did you write that number on the midpoint line?**

On the board, write 34 627. Ask children to approximately label where this number should go on their nearest multiple of 100 number line (as shown).



- **Where on the number line did you write 34 627? Why?**
- **Which multiple of 100 would you round this to? Why?** (It is closer to 34 600.)
- **Which multiple of 100 would you round the midpoint number 34 650 to? Why?**
- **Which is the key place value column to focus on here?** (tens) **Why?**

Point to random intervals on the number line.

- **Which number would go here? How do you know?**

Repeat with similar questions for numbers 34 649, 34 653 and 34 681. Next, repeat the above process for the other two number lines using the following numbers:

- nearest multiple of 1000 number line – 34 289, 34 496, and 34 525
- nearest multiple of 10 000 number line – 38 794, 32 654 and 35 139

Now, on the board, write 59 996. Ask children to round this number on each of their number lines.

- **What did you find?** (They all round to 60 000.)
- **Can you explain why for each one?**

Explain that when we round to 10, 100, 1000 and 10 000, the digits to the right of the column that is being rounded to will always be zero. For example, 43 268 rounded to the nearest multiple of 100 is 43 300 so the columns to the right of the hundreds are zeros. When rounded to the nearest multiple of 1000, it is 43 000 and when rounded to the nearest multiple of 10 000, it is 40 000. Next, write 76 825 on the whiteboard and write 76 800 below it.

- **What have I rounded this to – the nearest multiple of 10, 100, 1000 or 10 000? How do you know?**
- **What do you notice about the digits in the columns to the right of the focus column?**

Repeat this for 63 687 and 29 374, asking children to round to either the nearest multiple of 10, 100, 1000 or 10 000.

Key Questions for Deepening Understanding (Continued)

Put children in pairs and give each pair a laminated **nearest multiple of 10, 100, 1000 and 10 000 challenge** (they can also use their blank number lines to support them if needed). Ask children to write 78 367 in the space at the top and use a whiteboard pen to complete the grid by rounding to the nearest multiple of 10, 100, 1000 and 10 000.

- **Why have you written that number?**
- **What do you notice about the zeros in each number?**

Repeat with 32 489, 65 673 and 84 791.

In pairs, play the **What's My Number? game**. Spread the number cards out, face down, on the table. Each child takes it in turns to solve the clue as to which number is being described. They write down the answer on a whiteboard. After all the cards have been picked, both children check their answers using the answer sheet. The child with the most correct answers wins.

Example of a card:

Card 1:

- I sit between 56 780 and 56 790.
- I am higher in value than the midpoint.
- I am an odd number.
- I have no 9 digits in my number.
- What is my number?
- Which multiple of 10 do I round to?

Additional Opportunities to Reinforce Learning

In pairs, children play the **nearest multiple of 10,100, 1000 or 10 000 game**. Give each pair a **spinner**.

Each player takes it in turns to spin the spinner. Whichever segment it lands on, the player selects a number from the grid to round to the nearest multiple shown (or miss a turn). If they get it right, they colour the number in. If not, they leave it uncoloured. The first player to get four in a row is the winner.

Home Learning Slip

Today, at school, your child has been working on rounding five-digit numbers to the nearest multiple of 10, 100, 1000 and 10 000. This means that if the digit in the ones column is five or above, they round to the higher nearest multiple of 10. If it's four or below, they round to the lower nearest multiple of 10. An example of this is: 43 276 rounded to the nearest multiple of 10 is 43 280 because the ones digit is more than 5. The same concept applies to 50 when rounding to the nearest multiple of 100, 500 when rounding to the nearest multiple of 1000 and 5000 when rounding to the nearest multiple of 10 000. To help them consolidate their learning, you could complete the following activity with them at home. Write a five-digit number on a piece of paper and ask your child to round it to the nearest multiple of 10, 100, 1000 and 10 000. They get a point for each one they get correct. Award them a bonus point if they explain to you why it is correct.

Thank you for your support with this. Your help will really make a difference to your child.

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