

Year 5

Number and Place Value Rounding Maths Mastery Challenge Cards



Maths Mastery Number and Place Value Rounding

1

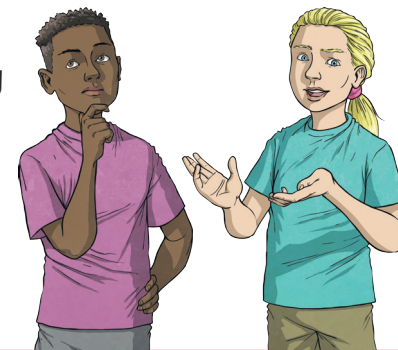
Lily and Adam decided to play a game.

Lily starts by writing a number (up to six digits) on a small whiteboard. She reads the number to Adam, who must round it to the nearest 100.

If Adam answers correctly, he gets to write the next number.

If he gets it wrong, Lily gets a point and writes another number. They play until one of them has five points.

Play the game with a partner. If your partner needs help, show them the number or ask them to write it down.



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2

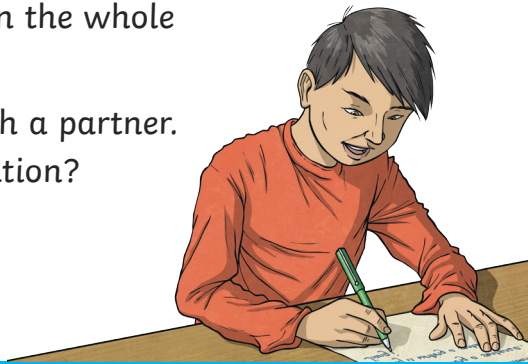
Jiang writes these four numbers:

6000 12 000 34 000 200 000

For each of these numbers, write five numbers that can be rounded to the number when rounded to the nearest 1000.

For one of the numbers, explain the whole range of possible answers.

Compare your explanation with a partner.
Can you improve your explanation?



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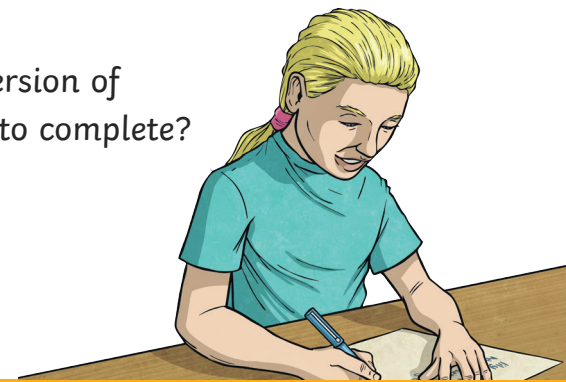
3

Lily writes down some numbers:

406 345, 412 902, 403 672, 417 782, 405 000, 404 499

Which numbers are rounded to 410 000 when rounded to the nearest ten thousand?

Can you make your own version of this question for a partner to complete?



Adam writes two 6-digit numbers. He rounds the numbers to the nearest 100 000.

He adds the rounded numbers together. Then, he adds the original numbers together and rounds the answer to the nearest 100 000.

Will he get the same answer?

Does it depend on the numbers?



Lily says, "When you round a number to the nearest 1000, the important digit is the thousands digit."

Explain why Lily is not correct and write a better statement to explain how to round to the nearest 1000.

Share your explanation with a partner and make any improvements to your own explanation as a result.



Jiang and Adam work together.

Jiang has a number. He writes down 34 700 and says that this is the result when his number is rounded to the nearest 10. What is the largest possible number that Jiang could have chosen?

Adam has a number. He writes down 580 000 and says that this is the result when his number is rounded to the nearest 100. What is the smallest possible number that Adam could have chosen?

Work with a partner and set each other similar challenges.

Adam uses a standard dice. He rolls the dice 5 times to create a 5-digit number. He rounds the number to the nearest 1000.

He repeats this 30 times and finds that more of the numbers round down than round up. He expected half of the numbers to round up and half to round down.

Can you help Adam explain why this is the case?



Year 5 Number and Place Value

Rounding Maths Mastery Challenge

Cards **Answers**

1. Lily and Adam decided to play a game.

Lily starts by writing a number (up to six digits) on a small whiteboard. She reads the number to Adam, who must round it to the nearest 100. If Adam answers correctly, he gets to write the next number. If he gets it wrong, Lily gets a point and writes another number. They play until one of them has five points. Play the game with a partner. If your partner needs help, show them the number or ask them to write it down.

2. Jiang writes these four numbers:

6000 12 000 34 000 200 000

For each of these numbers, write five numbers that can be rounded to the number when rounded to the nearest 1000. For one of the numbers, explain the whole range of possible answers. Compare your explanation with a partner. Can you improve your explanation?

Accept any correct answer between 5500 and 6499, 11 500 and 12 499, 33 500 and 34 499, 199 500 and 200 499.

Accept any correct explanation. For example, if rounding to the nearest 1000 gives 6000, 5500 is the smallest in the range as the 5 hundreds will round up to 6000, but 4 hundreds would round down. 6499 is the greatest possible number because 4 hundreds will round down whereas 5 hundreds would round up.

3. Lily writes down some numbers:

406 345, 412 902, 403 672, 417 782, 405 000, 404 499

Which numbers are rounded to 410 000 when rounded to the nearest ten thousand? Can you make your own version of this question for a partner to complete?

406 345, 412 902, 405 000.

Accept any correct response.

4. Adam writes two 6-digit numbers. He rounds the numbers to the nearest 100 000.

He adds the rounded numbers together. Then, he adds the original numbers together and rounds the answer to the nearest 100 000. Will he get the same answer? Does it depend on the numbers?

Accept any explanation with examples that shows that roughly half of the answers will be the same and the rest will differ by 100 000.

For example, $225\ 000 + 325\ 000 = 550\ 000$ which rounds to 600 000

$200\ 000 + 300\ 000 = 500\ 000$

5. Lily says, "When you round a number to the nearest 1000, the important digit is the thousands digit." Explain why Lily is not correct and write a better statement to explain how to round to the nearest 1000. Share your explanation with a partner and make any improvements to your own explanation as a result.

Accept any correct explanation. For example, when you round a number to the nearest 1000, the important digit is the hundreds digit. If the hundreds digit is 0 – 4, then round the number down. If the hundreds digit is 5 – 9, then round the number up.

6. Jiang and Adam work together.

Jiang has a number. He writes down 34 700 and says that this is the result when his number is rounded to the nearest 10. What is the largest possible number that Jiang could have chosen? Adam has a number. He writes down 580 000 and says that this is the result when his number is rounded to the nearest 100. What is the smallest possible number that Adam could have chosen?

Work with a partner and set each other similar challenges.

34 704

579 950

7. Adam uses a standard dice. He rolls the dice 5 times to create a 5-digit number. He rounds the number to the nearest 1000.

He repeats this 30 times and finds that more of the numbers round down than round up. He expected half of the numbers to round up and half to round down. Can you help Adam explain why this is the case?

Accept any suitable answer that refers to the numbers on the dice. For example, the dice has the numbers 1 to 6, so 1 – 4 will round down and only 5 – 6 will round up. Over time, it would be expected that twice as many numbers will round down.