



**THIRD SPACE
LEARNING**

Math Enrichment Activities

Place Value

4th Grade

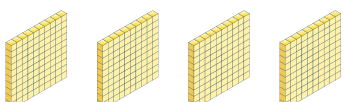
About this resource

These math enrichment activities have been designed to make your students think deeper about a given topic. The questions can be used when a student finishes a task or to add an extra challenge within a lesson. Additionally, the questions can be used in pairs, small groups or as a whole class. .

This resource is designed to be cut up and worked on throughout a topic. With this in mind, each question has been given a reference number matching those in the answer key. This means that you can prepare the math enrichment activities at the beginning of a topic and feel confident that you will share the right answer at the right time.

Each question has a title within a colored banner. The title tells the students what type of question they are working on. The different question categories are detailed in the 'Math Enrichment Activities: Question Categories' document.



What's the Question?



2PV3

Odd One Out

a) 42 tens + 4 ones

b)  

c) $300 + 120 + 4$

2PV10

Question 2PV3, for example, is titled 'What's the question?'. The students have been given four hundred cubes as the answer, their task is to think of at least one question that has the answer of 4 hundreds.

Some of the questions could have multiple possible answers, for these questions, there is at least one example answer in the answer key.

Questions

True or False

With the digits 3, 5, 8, 7, 9, 0, 4, the greatest number I can make is 987,543.

4PV1

Prove It

The digit 3 is 100 times more in the number 6,349 than it is in the number 513.

4PV2

Picture This

Draw a pictorial representation to show the number 3,421.

4PV3

Spot the Mistake

The following numbers have been ordered from smallest to largest:

76,538

77,275

77,259

78,383

78,981

4PV4

Odd One Out

a) Eight million, three hundred forty thousand, five hundred ten

b) $8,000,000 + 300,000 + 4,000 + 500 + 10$

c) 8,340,510

4PV5

Prove It

The number 7,569,259 has 25 tens, 69 thousands and 75 hundred thousands.

4PV6

Questions

What's the Question?

The rounded number is 820,000

4PV7

Always, Sometimes, Never

When adding 300 to a 6-digit number, only the digit in the hundreds place changes.

4PV8

Picture This

Draw a visual representation, to show how 5,645 is greater than 5,445.

4PV9

Prove It

Starting at 17, counting up by 100s, I will say the number 1,217.

4PV10

Make a Mistake

Write 867,534 in expanded form and word form, but make a mistake and explain what you have done.

4PV11

Odd One Out

- a) 79 ten thousands
- b) 790,000
- c) $740,000 + 50,000$
- d) 790 hundreds
- e) 790 thousands

4PV12

Explain your reasoning.

Questions

Methods

Draw and explain your method for estimating the position of the number 784,000 on the number line below.



4PV13

Word Problem

Write a number so that the digit 7 is 10 times more than it is in 3,749.

4PV14

Same and Different

Give one thing that is the same and one thing that is different about these two number sequences.

a) 97,652, 97,552, 97,452, 97,352

b) 62,212, 62,112, 62,012, 61,912

4PV15

Spot the Mistake

Which number sentence has used the wrong symbol?

a) $400,000 + 2,000 < 420,000$

b) 1,000 less than 813,000 = 812,900

c) $600,000 > \text{Half of a million}$

4PV16

Word Problem

What is the greatest number Sam could be thinking of?

Rounded to the nearest ...

100,000 the number is 8,400,000

10,000 the number is 8,430,000

1,000 the number is 8,426,000

4PV17

Always, Sometimes, Never

When rounding any 6-digit number to the nearest 1,000, the answer will be the same as rounding it to the nearest 100.

4PV18

Questions

Prove It

The digit 5 is 1,000 times more in the number 652,386 than it is in the number 843,158.

4PV19

True or False

When rounding to the nearest 1,000, the hundreds digit is always increased by 1 if the tens digit is 5 or more.

4PV20

Answers

Question Reference	Question	Answer
4PV1	True or False With the digits 3, 5, 8, 7, 9, 0, 4, the greatest number I can make is 987,543.	False. The greatest number you can make using all of the digits is 9,875,430.
4PV2	Prove It The digit 3 is 100 times more in the number 6,349 than it is in the number 513.	In 6,349 the digit 3 is worth 300. In 513, the digit 3 is worth 3. 300 is 100 times more than 3. If we multiplied 3 by 100, we would get 300.
4PV3	Picture This Draw a pictorial representation to show the number 3,421.	There are various ways this can be represented with a pictorial representation.
4PV4	Spot the Mistake The following numbers have been ordered from smallest to largest: 76,538, 77,275, 77,259, 78,383, 78,981	The second and third numbers in the list have been written in the wrong order. 77,259 should be before 77,275.
4PV5	Odd One Out a) Eight million, three hundred forty thousand, five hundred ten b) $8,000,000 + 300,000 + 4,000 + 500 + 10$ c) 8,340,510	b) $8,000,000 + 300,000 + 4,000 + 500 + = 8,304,510$ Part b has 4,000 while parts a and c have 40,000
4PV6	Prove It The number 7,569,259 has 25 tens, 69 thousands and 75 hundred thousands	25 tens is the same as 250. The number ends in 259. The number is made up of 60,000 and 9 thousand. Altogether, this is 69,000. There is 7 million and 500,000, which is the same as 75 hundred thousands.

Question Reference	Question	Answer
4PV7	What's the Question? The rounded number is 820,000	Various answers; E.g. Round the number 824,567 to the nearest ten thousand. Round the number 819,999 to the nearest hundred.
4PV8	Always, Sometimes, Never When adding 300 to a 6-digit number, only the digit in the hundreds column changes.	Sometimes true, If the hundreds column has 0, 100, 200, 300, 400, 500, or 600, the rest of the digits won't change, if 300 is added. If the hundreds column has a number that is greater than 700, then at least the thousands digit will also change.
4PV9	Picture This Draw a visual representation, to show how 5,645 is greater than 5,445.	A variety of visual representations showing 5,645 and 5,445 represented with place value manipulatives, demonstrating how 5,645 is greater by 2 more hundreds.
4PV10	Prove It Starting at 17, counting up by 100s, I will say the number 1,217.	If I count up by hundreds, the tens and ones columns won't change, but the hundreds and thousands column will. E.g. 17, 117, 217.....1,017, 1,117, 1,217 (added 1,200 to 17)
4PV11	Make a Mistake Write 867,534 in expanded form and word form, but make a mistake and explain what you have done.	Various answers; Students might show a mistake by writing one of the digits in the wrong place value.

Question Reference	Question	Answer
4PV12	<p>Odd One Out</p> <p>Which one is the odd out? Explain your reasoning.</p> <p>a) 79 ten thousands b) 790,000 c) 740,000 + 50,000 d) 790 hundreds e) 790 thousands</p>	<p>790 hundreds is the odd one out because it equals 79,000. All the others equal 790,000,</p>
4PV13	<p>Methods</p> <p>Draw and explain your method for estimating the position of the number 784,000 on the number line below.</p> <p>(Horizontal number line from 700,000 to 800,000 with end markers only)</p>	<p>Children should draw the number line and explain that they would mark it going up in ten thousands. They would then look at 780,000 and 790,000 and mark the position just before half way., explaining that they know 785,000 would be half way between the two, so 784,000 must come just before this.</p>
4PV14	<p>Word Problem</p> <p>Write a number so that the digit 7 is 10 times more than it is in 3,749.</p>	<p>Various answers; E.g. 7,453</p>
4PV15	<p>Same and Different</p> <p>Give one thing that is the same and one thing that is different about these two number sequences.</p> <p>a) 97,652, 97,552, 97,452, 97,352 b) 62,212, 62,112, 62,012, 61,912</p>	<p>Various answers.</p> <p>For example:</p> <p>Same: Both sequences are going down in hundreds or both sequences have the same ones digit each time.</p> <p>Different: The second sequence crosses 1,000.</p>

Question Reference	Question	Answer
4PV16	<p>Spot the Mistake</p> <p>Which number sentence has used the wrong symbol?</p> <p>a) $400,000 + 2000 < 420,000$</p> <p>b) 1,000 less than 813,000 = 812,900</p> <p>c) $600,000 > \text{Half of a million}$</p>	B has the wrong symbol. It should be the $<$ symbol, because 1,000 less than 813,000 is 812,000.
4PV17	<p>Word Problem</p> <p>What is the greatest number Sam could be thinking of?</p> <p>Rounded to the nearest ...</p> <p>100,000 the number is 8,400,000</p> <p>10,000 the number is 8,430,000</p> <p>1,000 the number is 8,426,000</p>	The greatest number it can be is: 8,426,499
4PV18	<p>Always, Sometimes, Never</p> <p>When rounding any 6-digit number to the nearest 1,000, the answer will be the same as rounding it to the nearest 100.</p>	<p>Sometimes</p> <p>846,995 rounded to the nearest 1000 is 847,000 and rounded to the nearest 100 is also 847,000.</p> <p>751,625 rounded to the nearest 1000 is 752,000 but rounded to the nearest 100 is 751,600.</p>
4PV19	<p>Prove It</p> <p>The digit 5 is 1000 times more in the number 652,386 than it is in the number 843,158.</p>	<p>In 652,386 the digit 5 is worth 50,000. In 843,158, the digit 5 is worth 50.</p> <p>50,000 is 1000 times bigger than 50. If we multiplied 50 by 1000, we would get 50,000.</p>
4PV20	<p>True or False</p> <p>When rounding to the nearest 1,000, the hundreds digit is always increased by 1 if the tens digit is 5 or more.</p>	<p>False.</p> <p>If the hundreds digit is 5 or more, the thousands digit is increased by 1. The tens digit doesn't determine whether a number is rounded up or down to the nearest 1,000.</p>

Do you have a group of students who need a boost in math?

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- ✓ Scaffolded learning to close gaps

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