Math Enrichment Activities

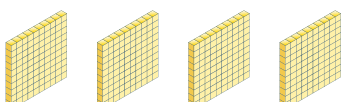## Place Value

5th Grade

THIRD SPACE
LEARNING

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) 100 100 100 100 10 10
   1 1 1 1
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

Spot the Mistake

Explain each mistake.

a) $743.019 = 700 + 40 + 3 + 0.1 + 0.009$

b) $907.902 = 900 + 7 + 0.9 + 0.02$

c) 5,183.276 has 6 hundredths

5PV1

Picture This

Draw a pictorial representation to show what will happen if I add 3 ones and 7 hundredths to the number: 12.406

5PV2

Odd One Out

a) $300 + 40 + 2 + 0.6 + 0.07$

b) $3 \times 100 + 4 \times 10 + 2 \times 1 + 6 \times \frac{1}{10} + 7 \times \frac{1}{1000}$

c) 342.67

5PV3

Prove It

The number one tenth the size of 7,345 is 734.5

5PV4

True or False

With the digits 3, 5, 0, 4, the smallest number I can make is 0.345

5PV5

Picture This

Draw a number line to show the difference between 7.2 and 7.209

5PV6

Questions

Word Problem

Oliver is thinking of a number with one decimal place. He says when he rounds it to the nearest whole number, his number is 85. What is the largest and smallest possible numbers he could be thinking of?

5PV7

Make a Mistake

Explain the mistake you have made. Round 854.857 to the nearest tenth.

5PV8

Always, Sometimes, Never

When adding 0.05 to a number with 3-digits behind the decimal, only the digit in the hundredths place changes.

5PV9

Word Problem

What is the smallest number Ava could be thinking of?
Rounded to the nearest ...
Whole number, it's 63
Tenth, the number is 63.2
Hundredth, the number is 63.16

5PV10

True or False

6.504 > 6.54

5PV11

Prove It

The digit 6 in 126 is $\frac{1}{10}$ the size of the digit 6 in 463

5PV12

Answers

Question Reference	Question	Answer
5PV1	Spot the Mistake Explain each mistake. a) 743.019 = 700 + 40 + 3 + 0.1 + 0.009 b) 907.902 = 900 + 7 + 0.9 + 0.02 c) 5,183.276 has 6 hundredths	a) 0.1 should be 0.01. b) 0.02 should be 0.002. c) It has 6 thousandths and 7 hundredths
5PV2	Picture This Draw a pictorial representation to show what will happen if I add 3 ones and 7 hundredths to the number: 12.406	The new number represented should be: 15.476
5PV3	Odd One Out a) 300 + 40 + 2 + 0.6 + 0.07 b) $3 \times 100 + 4 \times 10 + 2 \times 1 + 6 \times \frac{1}{10} + 7 \times \frac{1}{1000}$ c) 342.67	b) is the odd one out because it has 7 thousandths instead of 7 hundredths
5PV4	Prove It The number one tenth the size of 7,345 is 734.5	To figure out the number one-tenth the size of 7,345, I need to move all digits 1 place to the right. 7 thousand will now be worth 7 hundred and so on, down to 5 now being worth 0.5.
5PV5	True or False With the digits 3, 5, 0, 4, the smallest number I can make is 0.345	True; some may argue that the smallest number you can make is .0345, but it is standard to have a place holder in the ones place with decimals.

Question Reference	Question	Answer
5PV6	**Picture This** Draw a number line to show the difference between 7.2 and 7.209	Students should draw a number line going up by thousandths, starting at 7.2 and ending at 7.21. Students may write 7.2 as 7.200 and go up by 7.201, 7.202, 7.203, etc. The difference between 7.2 and 7.209 is .009
5PV7	**Word Problem** Oliver is thinking of a number with one decimal place. He says when he rounds it to the nearest whole number, his number is 85. What is the largest and smallest possible numbers he could be thinking of?	The largest possible number is: 85.4 and the smallest possible number is 84.5.
5PV8	**Make a Mistake** Explain the mistake you have made. Round 854.857 to the nearest tenth.	Various answers For example, for an answer of 854.86, I have rounded to the nearest hundredth, not tenth.
5PV9	**Always, Sometimes, Never** When adding 0.05 to a number with 3-digits behind the decimal, only the digit in the hundredths place changes.	Sometimes true, If the digit in the hundredths place is less than or equal to 4, then this could be true. If the digit in the hundredths place is greater than or equal to 5, then it will also add to the tenths place. This could then even change the whole number as well. Eg: 4.523 + 0.05 = 4.573 9.953 + 0.05 = 10.003
5PV10	**Word Problem** What is the smallest number Ava could be thinking of? Rounded to the nearest … Whole number, it's 63 Tenth, the number is 63.2 Hundredth, the number is 63.16	The smallest number it can be is: 63.155

Question Reference	Question	Answer
5PV11	True or False 6.504 > 6.54	False; 6.504 < 6.54 Students can justify this by writing 6.54 as 6.540
5PV12	Prove it The digit 6 in 126 is $\frac{1}{10}$ the size of the digit 6 in 463	The value of the digit 6 in 126 is 6, and the digit 6 in 463 is 60. 60 is 10 times 6 and 6 is $\frac{1}{10}$ of 60. $\frac{1}{10}$ x 60 = 6

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"We just had our first session and it went great! The kids really liked it and felt like they were learning! One even said he finally felt like math was making sense."

Michelle Craig, Instructional Coach,
Sherwood Forest Elementary, Washington

Speak to us

💻 thirdspacelearning.com/us/

📞 +1 929-298-4593

✉️ hello@thirdspacelearning.com

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