MILE
Math Interactive
Learning Experience

Place Value

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Supplies

Hundreds-Tens-Ones mat (a sheet of paper with 3 columns marked H-T-O), base-ten flats (representing the 100's), rods (representing the 10's), cubes (representing the ones), spinner, number cubes, or number cards, paper, markers
Note: You can make "base-ten flats," "rods," and "cubes" by cutting craft paper and dividing it into 10 equal columns or peices.

The Activity

In this activity, students will practice identifying the value of each digit in a three-digit number. They will learn that each digit holds different value depending on its placement within the number. For example, in the number 345, the 3 represents three hundreds, the 4 represents four tens, and the 5 represents five ones.

The student will generate numbers by rolling a number die or using a spinner. Then, they will place the corresponding base ten blocks in the appropriate places on the H-T-O-mat, write down the number in long and short form, and rearrange the numbers to form larger or smaller numbers.

Variations

- Create a stack of cards with different 3-digit numbers. Each card should have one of the numbers circled. Take turns drawing cards. The person with the highest value of the circled number wins both cards. If both cards have the same circled number, the higher number wins the card. The person with the most cards at the end wins the game.

Focus:

Encourage the child to focus their attention on the task at hand. Allow the student to get acquainted with the supplies by touching, holding, and talking about them. Then explain what you will do. Formulate a plan with the child to accomplish the goal.

Questions: What is the plan? What do you need to do first? Next?

Act:

The student will make up three-digit numbers and determine the value of each number.

Questions: How come the 3 here means thirty and here it means 300 - it's the same 3? When you have a 3, a 4, and a 5 what is the biggest number you can make? The smallest? How come?

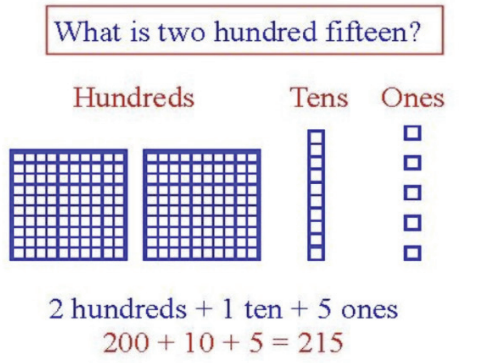
Reflect:

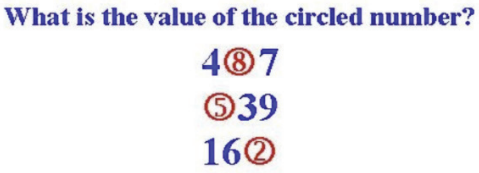
During and after the activity reflect on what the student is doing/has done.

Questions: What did you do? What happened after 99? After 199? Which 5 was more, the one in the hundreds column or the one in the tens column? How come?

Math Observation Checklist:

This activity will give insight into the student's ability to understand whole numbers; place value; focused perception, correct orientation in space, attend to relevant information.





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Supplies

Thousands-Hundreds-Tens-Ones mat (paper with 4 columns labeled Th-H-T-O), base-ten blocks (thousands, hundreds, tens, ones), spinner, number cubes or cards, paper, markers. To create DIY base-ten blocks: cut a square of paper with 10 columns for flats, cut the columns into strips for rods, and then cut rods into 10 pieces for cubes. Tape 10 flats together in 2 rows of 5 for a thousands block.

The Activity

The student will determine the value of each digit in a four-digit number. Start by rolling a die or using a spinner to generate the number. Have the student place the base-ten blocks in the correct columns on the Th-H-T-O mat. Then, ask the student to write the number in long form (e.g., 2000+300+40+5) and short form (2345). Next, have the student rearrange the digits to create a new number (e.g., 5342). Explain that digits are grouped in threes (hundreds, tens, ones) and that thousands are separated by a comma. For example, starting from the ones, count three digits and place a comma: 2,345. Emphasize that a 0 in a number acts as a placeholder, so 201 is read as two hundred one, not twenty-one, because the 0 indicates there are no tens.

Variations

- Create 5- or 6-digit numbers (e.g., 10-thousand, 100-thousand). Reinforce the concept of grouping digits in threes, separated by commas: ones, tens, hundreds, then thousands, ten-thousands, hundred-thousands.

Focus:

Encourage the student to focus their attention on the task at hand. Allow the student to get acquainted with the supplies by touching, holding, and talking about them. Formulate a plan with the student.

Questions: What is the plan? What do you need to do first? Next?

Act:

The student will make up four-digit numbers and determine the value of each number.

Questions: How come the 3 here means 30 and here it means 300—it's the same 3? When you have a 2, a 3, a 4, and a 5, what is the biggest number you can make? The smallest? How come?

Reflect:

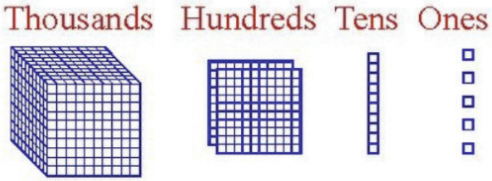
During and after the activity reflect on what the student is doing/has done.

Questions: What did you do? What happened after 99? After 999? Which 5 was worth more, the one in the hundreds column or the one in the tens column? How come? What was the use of putting a comma in the number?

Math Observation Checklist:

This activity will give insight into the student's ability to understand whole numbers, place value, focused perception, correct orientation in space, and attention to relevant information.

What is one thousand two hundred fifteen?



1 Thousand + 2 hundreds
+ 1 ten + 5 ones
1000 + 200 + 10 + 5 = 1,215

What is the number and what is the value of the circled number?

3,4⑧7
7,⑤39
1,16②
⑥,981

Classroom Activities