

Open-Ended Questions

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Open-ended questions encourage students to think about different methods, representations and possible solutions, all the while promoting mathematics understanding and processing. Sharing these possible solutions with peers is also a powerful strategy for teachers.

Some open-ended questions are listed below: Can you use one or adapt one for your math students to see how powerful the conversations/number talks and mathematical thought processes can be through this? Is this something that you could build into your weekly lessons? Think about having students represent their possible solution on a personal whiteboard, vertical nonpermanent surface or through a placemat activity.

Grade 1: You went to the store and bought red and blue candies. There were more red candies than blue candies. How many of each could you have bought? How many candies did you buy altogether? How many more red candies than blue candies did you buy?

Grade 3: You write a number with tens and ones. When you switch the numbers around, your new

number increases by more than 20 but less than 30. What could your original and new number be? Can you think of another solution?

Grade 4: Write a four-digit number whose digits total 23. Let your partner check this. What is the greatest/least four-digit number you can make whose digits total 23? 18? Create another one for a partner to try. Can you pick any number for the digits to total or are there only certain numbers that would work?

Grade 5: You buy an item with a \$100 bill. You get back four bills and six coins. How much did your item cost?

Grade 7: Add in order of operations to make the following true: $5 _ 3 _ 2 _ 2 = 9$. Now create one of your own for a partner to solve.

Grade 9: Choose any number that is 10 less than or 10 more than a certain perfect square number. Describe how you could estimate the square root of the number you picked and actually share what your estimate would be.