Journal Prompts

In this section 168 prompts are provided in categories described in the introduction and description of materials. As a teacher you can give prompts as a homework assignment in conjunction with a textbook assignment. Or, you can use them as a warm-up for the first 5–7 minutes of the class period. Student responses can be collected and graded or students can share their ideas within a whole class discussion. Their ideas can be recorded on chart paper, on transparencies, or on the board. The chart paper provides a permanent record or archive of student responses so that they can be revisited later in the unit of study or in an associated unit. An archive for responses allows the progress of students' understandings, or thinking about mathematical concepts or skills, to be monitored.

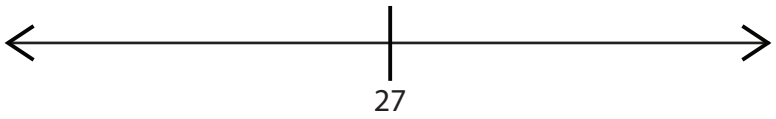
You can also use the prompts in a problem-solving context where students create a solution in a pair, group, or individually. If pairs or groups work on the problems, they can share their ideas before the whole class. Individual student responses can be shared by having other students read them and analyze the response.

Prompts are organized as follows:

5. "I think subtraction is commutative," said Randy. "I don't agree," said Brenna. Who do you agree with? Use examples to support your response.

Students should agree with Brenna. Subtraction is not commutative. Students' responses may include examples that show that changing the order of the minuend and the subtrahend gives differences that are not the same. Given the developmental level, students may not use integers. It may also be appropriate if students draw pictures of the concrete models or use the number line to support their response.

6. Lee found a number line like the one shown. Where on the number line would you find a number larger than 27? How do you know?



Numbers larger than 27 are found to the right of 27. Students may give examples to illustrate the correctness of their response.

7. Carla, a second grader, has 850 M&Ms. Can she hold all of them in her hand? Why? If not, how many do you think she can hold? Support your answer.

Answers will vary. Check for reasonableness of the number of M&Ms that she can hold in her hand. Some reasonable responses could include any number of M&Ms less than 30.

8. Thomas said, "802 is greater than 820." Robert said, "No, it's not." Who is correct? Why do you think that person is correct?

Students should show that Robert is correct. They may "prove" he is correct by drawing or showing with manipulatives, such as base-ten blocks. The numbers in the problem can be changed to be smaller or larger than 802 and 820.

9. Sara asked, "What's the largest number you've ever used?" What would you tell Sara? Be specific. Describe how you used the number.

Answers will vary. Students' responses often include everyday contexts that require large numbers.

10. Casey wrote 5 + 6 = 11 on the board. What does "=" mean??

Responses should show some representation of equivalence rather than indicating that 11 is the answer. Responses that focuses on 11 being the answer to the addition problem typically focus on the equal sign as an operator rather than a symbol that indicates relationships. Students may show that two sets, one containing five items and one containing six items, can be combined to have a set of eleven items.

11. Amy wrote, "18 < 28." Larry asked, "What does the '<' mean in your statement or expression?" What should Amy tell Larry?

Responses should indicate that 18 represents a lesser amount or quantity than 28. Encourage students to generalize or make statements about the use of the inequality signs to show unequal amounts.

12. Seth said, "I can draw two sets of blocks that are equal in length." Jena said, "I can draw two sets of blocks where one set is longer in length than the other one." Draw a set of blocks that Seth has described. Show how they are equal. Draw another set of blocks that Jena has described. Show how they are not equal.

Answers will vary. Their drawings can be used to discuss greater than, less than, and equal to in reference to the symbols used to show those relationships and to using length as a way to show equality and inequality.

13. Josh said, "I was fifth in line and I was also last in line." Can this be true? Why or why not?

It can be true if there are only five people in line. Students may explain this with a drawing. The numbers can be changed to reflect other contexts. Students can explore the idea of being first AND last in line.

14. "Can you draw a picture that shows you are the eighth person in line?" asked Dori. What picture would you draw? Show how you know where the eighth person is in line.

Answers will vary. A drawing should show at least 8 people in line.

15. Jenny said, "I have seven coins that equal 25¢." What coins to you think Jenny has? Draw the coins and show why they equal 25¢.

Jenny has five pennies and two dimes. Students' responses may show a drawing of the seven coins but they should also indicate why they equal 25¢.

16. Sam said, "I have 10 coins." Sal said, "I have 12 coins." "Well," said Sam. "I have more money than you do." Can Sam be correct? Why or why not?

Answers will vary. For example, Sal could have 12 pennies while Sam has 10 dimes. Students should notice that the number of coins does not indicate the value or amount of money.

17. "I will pay you to make a word," said Trina. "Every consonant is worth 50¢ and every vowel is worth 10¢. CAT would be worth $1.10 or 110¢." Make any word and show how much you will be paid. Then, make a word worth 120¢.

Answers will vary. For example, students could make the word PLAY, which would be worth $1.60 or 160¢. For 120¢, accept any word with that total. One example is FEET.

18. Write a word problem that uses money and has a solution of 28¢. Show how to solve the problem.

Answers will vary. Check the problem's context for appropriate use of money concepts. Share particularly good problems with the class as a problem-solving task.

19. "I have counted all my money," said Erin. "I have two quarters, one dime, three nickels, and 11 pennies." How can Erin trade her money so that she has the least number of coins? Explain your answer.

Erin can trade her money into three quarters, one nickel, and one penny. She has 86¢ total. Students should show the process they used to arrive at their answer. Many ways are possible such as adding up all amounts first and then finding the coins needed. Or students may "trade as they go," showing how the trades are done.

20. Mr. I. M. Money has decided to give $100.00 to a student who can spend it wisely. Write a letter to Mr. Money and explain how you would spend the money. Be sure to explain why you would spend it that way.

Answers will vary. Make sure that responses are reasonable. This activity can be expanded to language arts class. The prompt can be changed to have students draw a picture of how they would spend the money if you are working with a lower-elementary class.

21. Glen made a riddle about a coin.

I have a coin that can be traded for 25 pennies. What coin is it?

Make a riddle or a puzzle about a coin or coins. Show the answer.

Answers will vary. This is a good prompt to use in class. Students can share with other groups or individuals.

22. Pat asked, "What is a fraction?" What do you think? Support your answer with examples of fractions.

Answers will vary depending on how your class has discussed fractions. Some students may draw an area region and show it divided into equal-sized parts. Others may talk about the symbolic representation of a fraction. Watch student responses for an indication of a relation of parts to wholes.

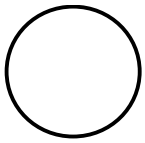
23. Mason dropped spaghetti sauce on his math paper. What do you think is under the sauce he dropped? Why?

32 – [spaghetti sauce] = 14

Students should indicate that 18 must be under the spaghetti sauce. Their reasoning can vary. Intuitively, students may say that the number under the spaghetti sauce has to be 14 less than 32. Thus one solution method is to subtraction 14 from 32 to get 18. Fact teams or families could be used to get the missing number. Other students may work backwards to find the subtrahend. Manipulatives may also be used to find the answer.

24. Garth cut a chocolate pie so that he and three friends could each have an equal-sized piece. Draw how he cut the pie.

Answers will vary. Allow responses that show four equal-sized pieces as well as responses that show more than four pieces. Regardless of the number of pieces, all of the pieces should be the same size.



25. Darron's calculator is broken. It doesn't always add correctly. He has difficulty deciding if a problem is done correctly. He added 43 + 113. His calculator showed a sum of 543. Do you agree? Why or why not?

Students should disagree because an estimate of the sum is closer to 150. Some students may show you how to solve the problem or they may use an estimation strategy such as front-end or compatible numbers. Others may note that one addend is 43 and the other is over 100. Thus the sum must be smaller than 200.

26. Beau asked, "How are addition and subtraction related?" Eli said, "I can show you how they are related." What do you think Eli showed Beau? Be specific.

Answers will vary. Some students may comment on the 'inverseness' of the two operations with the example that addition can undo subtraction, or vice versa. Others may indicate that you can use addition to solve subtraction problems. For example, in the problem 8 – 5, you can ask yourself, 'what added to 5 will give you 8?' as a means to solve the problem. Other students may show a fact team or a fact family as part of their response. Be sure they explain their answers.

27. Write a word problem that uses or shows one-half of something.

Answers will vary. Check problems for an appropriate context for one-half of a thing or a group of things. As an extension, you can ask students to share their word problem with the class. Have other students or the class solve the problem. For another extension, have students explain what one half of something means. Students' models may present different representations of one-half.

28. Jessica looked at the equation and said, "What number should go in the blank?"

6 + _____ = 15

Find the missing number. Describe how you found the answer. Or draw a picture that shows how you found the answer.

The missing number is 9. Students should describe or show their process. Watch for responses that use inverse operations, counting on or counting up, counting down, or a fact family. Their processes would be interesting to discuss in class. Other numbers can be substituted in the number sentence to fit the level of your class.

29. Emily had to find the missing number in this number sentence:

17 – _____ = 9.

Find the missing number. Describe how you found the answer. Or draw a picture that shows how you found the answer.

The missing number is 8. Students should describe or show their process. Watch for responses that use inverse operations, counting on or counting up, counting down, or a fact family. Their processes would be interesting to discuss in class. Other numbers can be substituted in the number sentence to fit the level of your class.

30. Ella asked "What does addition mean?" What would you tell Ella? Use specific examples or drawings to show what addition means.

Answers will vary. Responses should describe one of the models for addition such as combining sets to form one large set.

31. "I don't have enough M&Ms to share with all of my seven friends," said Chuck. "I have 25 M&Ms." How many more M&Ms does Chuck need so that all 8 people will get an equal amount? Explain your answer.

Chuck needs seven more M&Ms. Students should explain their answer and process.

32. Brad asked, "What's the largest number of digits possible in the sum of a one-digit number and a two-digit number?" What would you tell Brad? Be sure to provide an argument that is convincing.

Students should indicate that the maximum number of digits in the sum can be three. They may provide multiple ways of giving a rationale for their response. One way is to use 99 + 9 as a means to determine the maximum number of digits. This prompt can be changed in terms of the number of digits and the operation.

33. Noni asked, "What does the digit 2 represent in the number 26?" What would you say to Noni? Describe.

The 2 represents 20. Some students may say it represents 2 tens. As you move to multi-digit numbers, the focus on the value of the digits in specific place values is important.