Reasoning and Problem Solving
Step 3: Add by Making 10

National Curriculum Objectives:

Mathematics Year 1: (1N1a) Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
Mathematics Year 1: (1N2a) Count, read and write numbers to 100 in numerals
Mathematics Year 1: (1N2b) Given a number, identify one more and one less
Mathematics Year 1: (1N4) Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least

Differentiation:

Questions 1, 4 and 7 (Problem Solving)
Developing Use the picture cards to complete the calculation to add by making 10. Cards include pictorial support and numerals only.
Expected Use the digit cards to complete the calculation to add by making 10. Cards include numerals only.
Greater Depth Use the word cards to complete the calculation to add by making 10. Cards include words and statements include numerals and words.

Questions 2, 5 and 8 (Reasoning)
Developing Explain if the representation is correct when adding by making 10. Representation includes part-whole model, number pieces and numerals only.
Expected Explain if the representation is correct when adding by making 10. Representation includes part-whole model and numerals only.
Greater Depth Explain if the representation is correct when adding by making 10. Representation includes part-whole model, numerals and words.

Questions 3, 6 and 9 (Reasoning)
Developing Explain and correct the mistake when adding by making 10. Representation includes counters.
Expected Explain and correct the mistake when adding by making 10. Representation includes Base 10.
Greater Depth Explain and correct the mistake when adding by making 10. Includes incomplete number line.

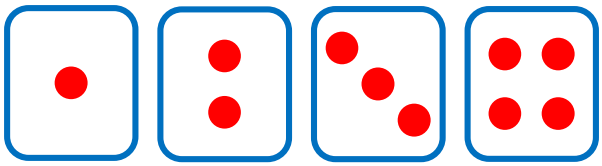
More Year 1 Addition and Subtraction resources.

Did you like this resource? Don't forget to review it on our website.

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Add by Making 10

1a. Choose a picture card to complete the number sentences below.



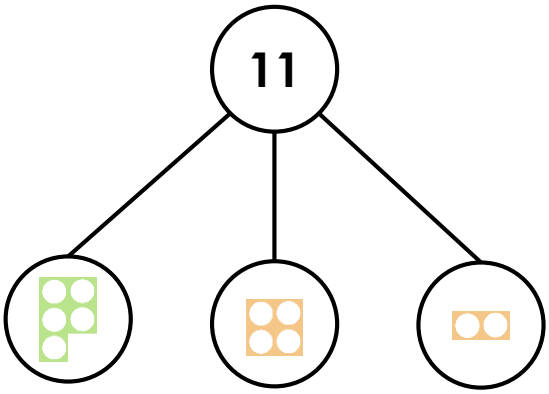
8 + ☐ + 4 = 14

7 + ☐ + 5 = 15

D

PS

2a. Tom has used a part-whole model to show 5 + 6 by making 10.

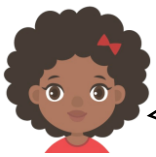


Is he correct? Explain why.

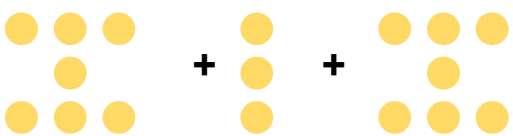
D

R

3a. Jen is solving 7 + 5.



I need to add 3 to make 10 and then I add 5. So 7 + 5 = 15.



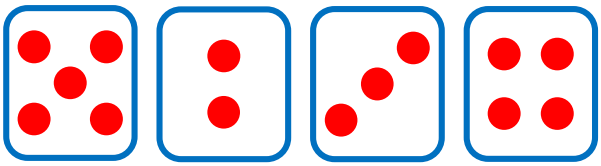
Find and correct her errors. Explain your reasoning.

D

R

Add by Making 10

1b. Choose a picture card to complete the number sentences below.



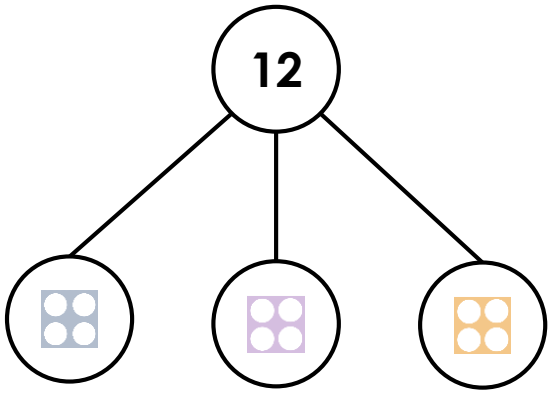
6 + ☐ + 5 = 15

5 + ☐ + 3 = 13

D

PS

2b. Jan has used a part-whole model to show 4 + 8 by making 10.



Is she correct? Explain why.

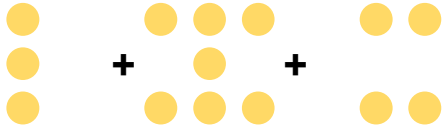
D

R

3b. Ben is solving 3 + 8.



I need to add 7 to make 10 and then I add 4. So 3 + 8 = 14.



Find and correct his errors. Explain your reasoning.

D

R

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Add by Making 10

4a. Choose a digit card to complete the number sentences below.

9	2	8	4

6 + ☐ + 8 = 18

8 + ☐ + 7 = 17

E PS

Add by Making 10

4b. Choose a digit card to complete the number sentences below.

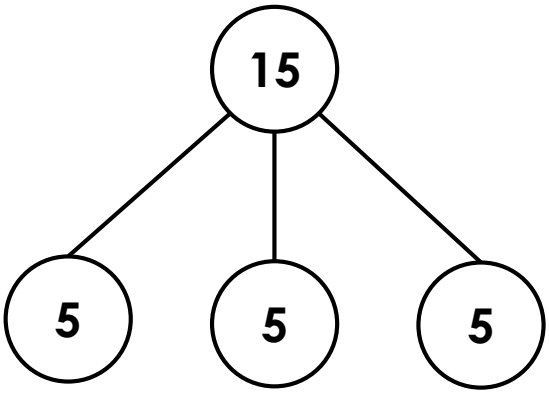
5	1	7	3

3 + ☐ + 1 = 11

9 + ☐ + 7 = 17

E PS

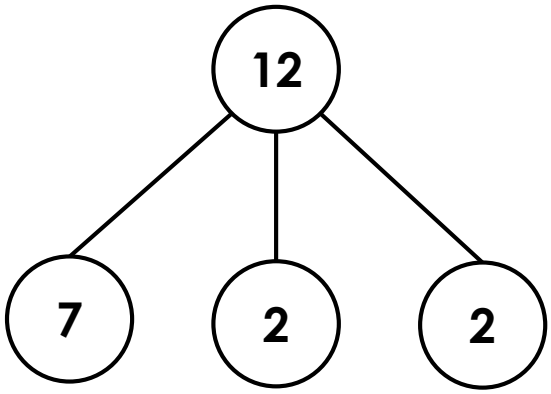
5a. Rob is using the part-whole model to calculate 5 + 9 by making 10.



Is he correct? Explain why.

E R

5b. Macy is using the part-whole model to calculate 7 + 4 by making 10.



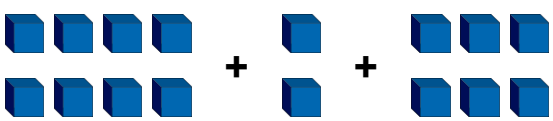
Is she correct? Explain why.

E R

6a. Eric is solving 8 + 6.



I need to add 2 to make 10 and then I add 6. So 8 + 6 = 16.



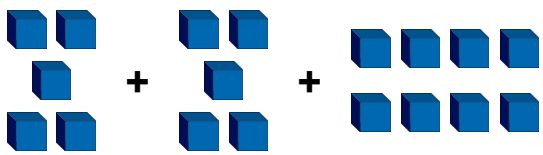
Find and correct his errors. Explain your reasoning.

E R

6b. Riya is solving 5 + 8.



I need to add 5 to make 10 and then I add 8. So 5 + 8 = 18.



Find and correct her errors. Explain your reasoning.

E R

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Add by Making 10

Add by Making 10

7a. Choose a digit card to complete the number sentences below. You can use the digit card more than one.

four | two | six | seven

eight + ☐ + ☐ = 17

six + ☐ + ☐ = twelve

GD

PS

7b. Choose a digit card to complete the number sentences below. You can use the digit card more than one.

eight | one | two | six

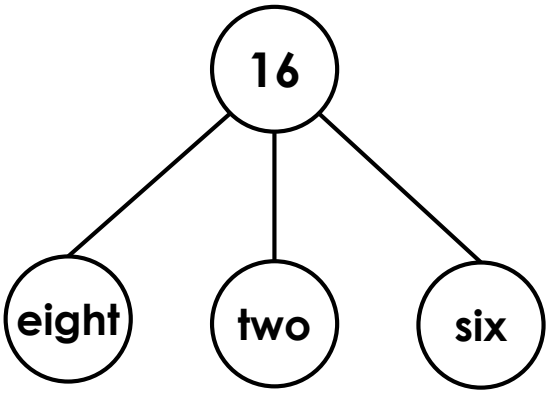
two + ☐ + ☐ = eleven

9 + ☐ + ☐ = sixteen

GD

PS

8a. Hardin has used a part-whole model to calculate 8 + seven by making 10.

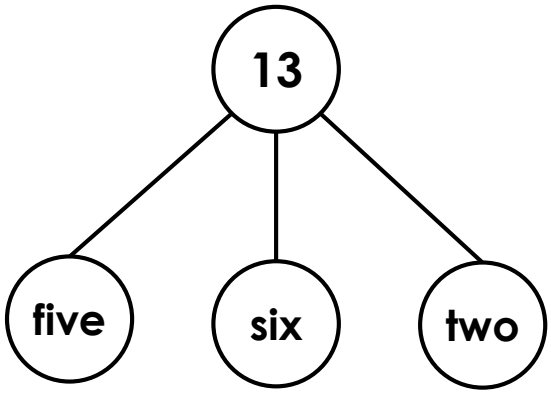


Is he correct? Explain why.

GD

R

8b. Freya has used a part-whole model to calculate five + 9 by making 10.



Is she correct? Explain why.

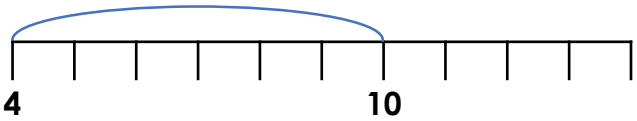
GD

R

9a. Belle is solving 4 + 8.



I need to add six to make ten and then I add four. So 4 + 8 = 14.



Find and correct her errors. Explain your reasoning.

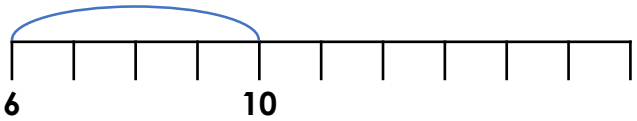
GD

R

9b. Tariq is solving 6 + 7.



I need to add four to make ten and then I add five. So 6 + 7 = 15.



Find and correct his errors. Explain your reasoning.

GD

R

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Reasoning and Problem Solving
Add by Making 10

Developing

1a. 8 + 2 + 4 = 14; 7 + 3 + 5 = 15

2a. No, Tom is incorrect because he has not partitioned 6 correctly to make 10. The correct number sentence is: 5 + 5 + 1 = 11.

3a. Jen has partitioned 5 incorrectly. The correct partitioning for 5 is: 3 and 2; 7 + 3 + 2 = 12

Expected

4a. 6 + 4 + 8 = 18; 8 + 2 + 7 = 17.

5a. No, Rob is incorrect because he has not partitioned 9 correctly to make 10. The correct number sentence is 5 + 5 + 4 = 14.

6a. Eric has partitioned 6 incorrectly. The correct partitioning for 6 is: 2 and 4; 8 + 2 + 4 = 14

Greater Depth

7a. eight + two + seven = 17; six + four + two = twelve.

8a. No, Hardin is incorrect because he has not partitioned seven correctly to make 10. The correct number sentence is: eight + two + five = 15.

9a. Belle has partitioned 8 incorrectly. The correct partitioning for 8 is: 6 and 2; 4 + 6 + 2 = 12

Reasoning and Problem Solving
Add by Making 10

Developing

1b. 6 + 4 + 5 = 15; 5 + 5 + 3 = 13

2b. No, Jan is incorrect because she has not partitioned 8 correctly to make 10. The correct number sentence is: 4 + 6 + 2 = 12.

3b. Ben has partitioned 8 incorrectly. The correct partitioning for 8 is: 7 and 1; 3 + 7 + 1 = 11

Expected

4b. 3 + 7 + 1 = 11; 9 + 1 + 7 = 17.

5b. No, Macy is incorrect because she has not partitioned 4 correctly to make 10. The correct number sentence is: 7 + 3 + 1 = 11.

6b. Riya has partitioned 8 incorrectly. The correct partitioning for 8 is: 5 and 3; 5 + 5 + 3 = 13

Greater Depth

7b. Two + eight + one = eleven; 9 + one + six = sixteen.

8b. No, Freya is incorrect because she has not partitioned 9 correctly to make 10. The correct number sentence is: five + five + four = 14.

9b. Tariq has partitioned 7 incorrectly. The correct partitioning for 7 is: 4 and 3; 6 + 4 + 3 = 13

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