Reasoning and Problem Solving
Step 2: Find and Make Number Bonds

National Curriculum Objectives:

Mathematics Year 1: (1C1) Represent and use number bonds and related subtraction facts within 20

Differentiation:

Questions 1, 4 and 7 (Problem Solving)
Developing Investigate the different ways of completing the part-whole model. Representation includes pictorials.
Expected Investigate the different ways of completing the part-whole model. Representation includes numerals only.
Greater Depth Investigate the different ways of completing the two-step part-whole model. Representation includes numerals only.

Questions 2, 5 and 8 (Problem Solving)
Developing Complete the statements using the picture cards. Statement includes use of numbers only.
Expected Complete the statements using the digit cards. Statement includes use of numerals only.
Greater Depth Complete the statements using two numbers only. Statement includes use of numerals and words.

Questions 3, 6 and 9 (Reasoning)
Developing Explain if the statement is correct. Statement written in numerals only and counters displayed for pictorial support.
Expected Explain if the statement is correct. Statement written in numerals only and Base 10 displayed for pictorial support.
Greater Depth Explain and prove, using Base 10, if the statement is correct. Statement written in words only and conventionally partitioned numbers.
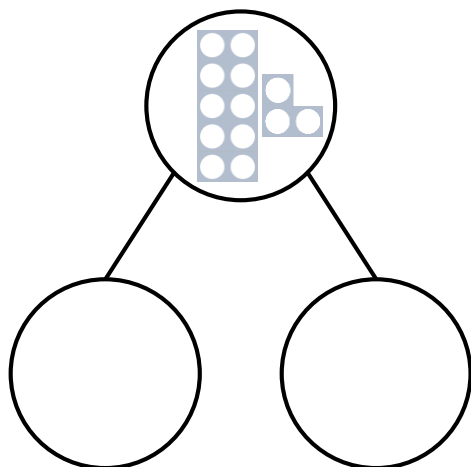
More Year 1 Addition and Subtraction resources.

Did you like this resource? Don't forget to review it on our website.
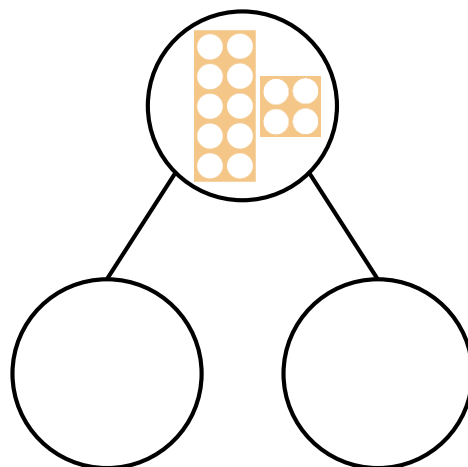
Find and Make Number Bonds

Find and Make Number Bonds
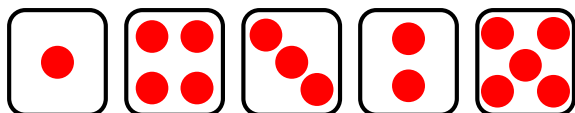
1a. Find 4 ways to complete the part-whole model.

D

PS

1b. Find 4 ways to complete the part-whole model.

D

PS

2a. Use the picture cards to complete the number sentences.

$2 + \boxed{} = 3$

$\boxed{} + 11 = 13$

$2 + \boxed{} = 6$

$\boxed{} + 14 = 16$

D

PS

2b. Use the picture cards to complete the number sentences.

$\boxed{} + 13 = 14$

$1 + \boxed{} = 4$

$\boxed{} + 13 = 17$

$4 + \boxed{} = 7$

D
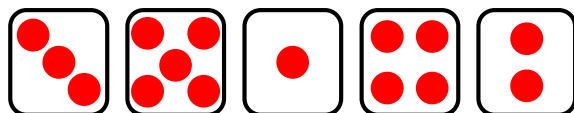
PS

3a. Lily says,

> I know 5 + 5 = 10, so 5 + 15 = 20.

Is she correct? Explain how you know.

D

R

3b. Tom says,

> I know 5 + 2 = 7, so 6 + 12 = 17.
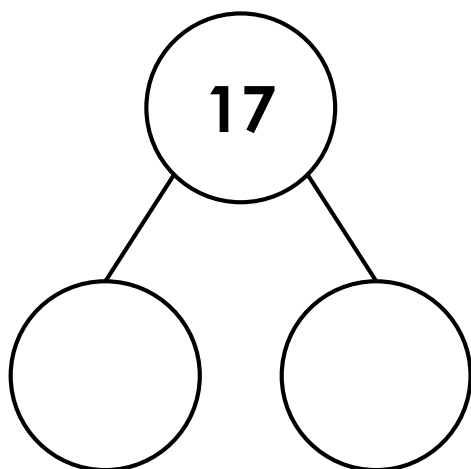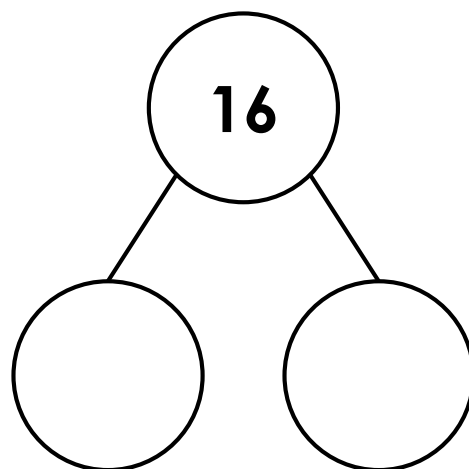
Is he correct? Explain how you know.

D

R

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Reasoning and Problem Solving – Find and Make Number Bonds – Year 1 Developing

Find and Make Number Bonds

4a. Find 5 ways to complete the part-whole model.

(17)

( ) ( )

4b. Find 5 ways to complete the part-whole model.

(16)

( ) ( )

5a. Use the digit cards to complete the number sentences.

| 5 | 13 | 7 | 14 | 4 |

7 + ☐ = 20

☐ + 3 = 10

4 + ☐ = 9

☐ + 15 = 19

5b. Use the digit cards to complete the number sentences.

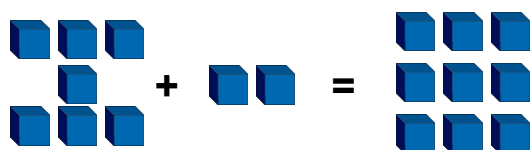| 12 | 6 | 3 | 13 | 2 |

6 + ☐ = 18

☐ + 2 = 15

☐ + 3 = 5

2 + ☐ = 8

6a. Amir says,

> I know 7 + 2 = 9 so 17 + 2 = 18.
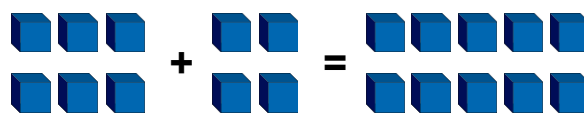
Is he correct? Explain how you know.

6b. Freya says,

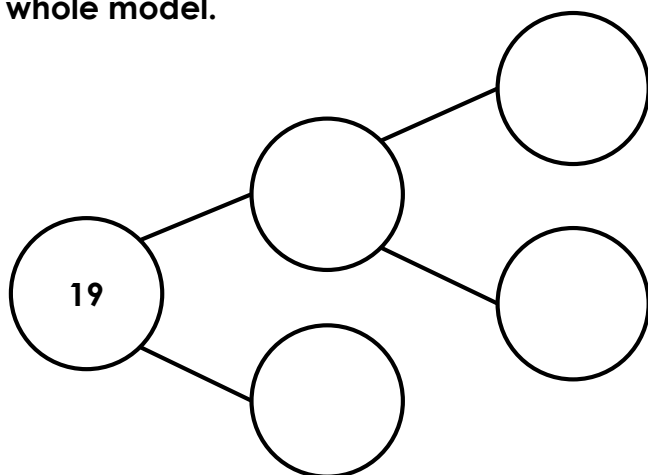> I know 6 + 4 = 10 so 16 + 3 = 20.
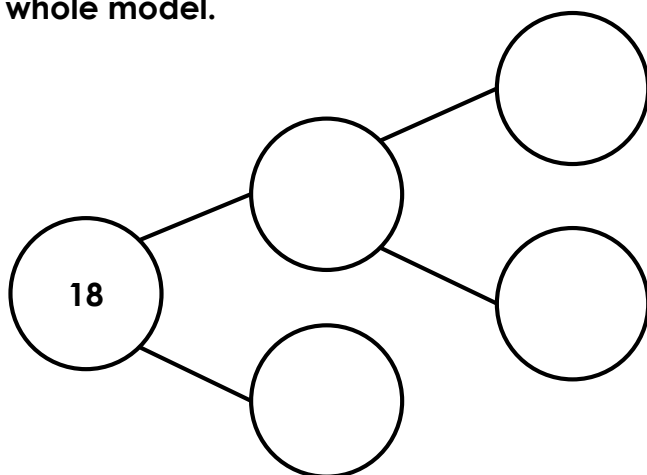
Is she correct? Explain how you know.

Reasoning and Problem Solving – Find and Make Number Bonds – Year 1 Expected

7a. Find 5 ways to complete the part-whole model.

19

7b. Find 5 ways to complete the part-whole model.

18

8a. Complete the number sentences using only 2 numbers.

☐ + 4 = six

12 + 4 = ☐

6 + ☐ = eight

☐ + ☐ = 18

8b. Complete the number sentences using only 2 numbers.

☐ + four = 7

13 + 4 = ☐

7 + ☐ = ten

☐ + ☐ = 20

9a. Robin says,

> I know that one plus nine ones equals ten, so eleven ones plus nineteen must equal two tens.

Is he correct? Prove it by drawing Base 10.

9b. Nadia says,

> I know that two plus seven ones equals nine, so two ones plus sixteen ones must equal nineteen ones.

Is she correct? Prove it by drawing Base 10.

Reasoning and Problem Solving
Find and Make Number Bonds

Developing

1a. Various answers, for example: 9 + 4 = 13; 10 + 3 = 13 ; 11 + 2 = 13; 12 + 1 = 13

2a. 2 + <u>1</u> = 3; <u>2</u> + 11 = 13; <u>2</u> + <u>4</u> = 6; <u>2</u> + 14 = 16

3a. Yes, Lily is correct because 5 + 15 = 20

Expected

4a. Various answers, for example: 10 + 7 = 17; 11 + 6 = 17; 12 + 5 = 17; 13 + 4 = 17; 14 + 3 = 17

5a. 7 + <u>13</u> = 20; <u>7</u> + 3 = 10; 4 + <u>5</u> = 9; <u>4</u> + 15 = 19

6a. No, Amir is incorrect because 17 + 2 does not equal 18. The correct number bonds are: 17 + 2 = 19 or 7 + 12 = 19

Greater Depth

7a. Various answers, for example: (7 + 7 = 14) + 5 = 19; (5 + 6 = 11) + 8 = 19; (8 + 8 = 16) + 3 = 19; (10 + 3 = 13) + 6 = 19; (9 + 9 = 18) + 1 = 19

8a. <u>2</u> + 4 = six; 12 + 4 = <u>16</u>; 6 + <u>2</u> = eight; <u>2</u> + <u>16</u> = 18 or <u>16</u> + <u>2</u> = 18

9a. No, Robin is incorrect because eleven ones and nineteen equals thirty. Eleven ones plus nine ones equal twenty or one ten and nine ones plus one equals twenty. Accept correct partitioning and number bonds of 20

Developing

1b. Various answers, for example: 7 + 7 = 14; 8 + 6 = 14; 9 + 5 = 14; 10 + 4 = 14

2b. <u>1</u> + 13 = 14; 1 + <u>3</u> = 4; <u>4</u> + 13 = 17; 4 + <u>3</u> = 7

3b. No, Tom is incorrect because 6 + 12 does not equal 17. The correct number bonds are: 5 + 12 = 17 or 15 + 2 = 17

Expected

4b. Various answers, for example 9 + 7 = 16; 10 + 6 = 16; 11 + 5 = 16; 12 + 4 = 16; 13 + 3 = 16

5b. 6 + <u>12</u> = 18; <u>13</u> + 2 = 15; <u>2</u> + 3 = 5; 2 + <u>6</u> = 8

6b. No, Freya is incorrect because 16 + 3 does not equal 20. The correct number bonds are: 16 + 4 = 20 or 6 + 14 = 20

Greater Depth

7b. Various answers, for example: (3 + 7 = 10) + 8 = 18; (5 + 9 = 14) + 4 = 18; (6 + 6 = 12) + 6 = 18; (2 + 9 = 11) + 7 = 18; (1 + 14 = 15) + 3 = 18

8b. <u>3</u> + four = 7; 13 + 4 = <u>17</u>; 7 + <u>3</u> = ten; <u>17</u> + <u>3</u> = 20 or 3 + <u>17</u> = 20

9b. No Nadia, is incorrect because two ones plus sixteen equals eighteen. Two ones plus seventeen equals nineteen or one ten and two ones plus seven ones equals nineteen. Accept correct partitioning and number bonds of 19

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