Reasoning and Problem Solving
Step 1: Fact Families

National Curriculum Objectives:

Mathematics Year 2: (2C1) Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
Mathematics Year 2: (2C3) Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems

Differentiation:

Questions 1, 4 and 7 (Problem Solving)
Developing Find the possible fact families by completing the number sentences using the given number cards. All possible combinations of numbers to 10, where the whole number is given.
Expected Find the possible fact families by completing the number sentences using the given number cards. All possible combinations of numbers to 20, where the whole number is given.
Greater Depth Find the possible fact families by completing the number sentences using the given number cards. All possible combinations of numbers to 20, whole number not provided.

Questions 2, 5 and 8 (Problem Solving)
Developing Identify the fact family and write the number sentences using the images provided. Within 10.
Expected Identify the fact family and write the number sentences using the images provided. Within 20.
Greater Depth Identify the fact family and write the number sentences. No pictorial support. Within 20.

Questions 3, 6 and 9 (Reasoning)
Developing Prove whether three given numbers can be used to write a fact family within 10, using tens frame to support.
Expected Prove whether three given numbers can be used to write a fact family within 20, using tens frame to support.
Greater Depth Prove whether three given numbers in words can be used to write a fact family within 20, using number lines to support.

More Year 2 and Year 3 Addition and Subtraction resources.

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

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Fact Families

1a. Use the number cards below to find two fact families.

4 5 1 8

☐ + ☐ = 9

9 – ☐ = ☐

Write all of the possible number sentences.

D

2 PS

Fact Families

1b. Use the number cards below to find two fact families.

4 2 3 5

☐ + ☐ = 7

7 – ☐ = ☐

Write all of the possible number sentences.

D

2 PS

2a. Amy has collected 5 shells. Use the images to write two addition number sentences.

Using the addition sentences, write the subtraction sentences that would complete the fact family.

D

2 PS

2b. Bob has 6 sweets. Use the images to write two addition number sentences.

Using the addition sentences, write the subtraction sentences that would complete the fact family.

D

2 PS

3a. Ben says,

I can use the numbers 9, 3 and 6 to write a fact family for the 10 frame.

Is he correct? Prove it.

D

2 R

3b. Jon says,

I can use the numbers 7, 3 and 2 to write a fact family for the 10 frame.

Is he correct? Prove it.

D

2 R

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Fact Families

4a. Use the number cards below to find three fact families.

5 8 9 4 6 10

☐ + ☐ = 14

14 – ☐ = ☐

Write all of the possible number sentences.

2 PS

Fact Families

4b. Use the number cards below to find three fact families.

3 4 9 5 8 7

☐ + ☐ = 12

12 – ☐ = ☐

Write all of the possible number sentences.

2 PS

5a. Paul has picked 13 flowers. Use the images to write two addition number sentences.

Using the addition sentences, write the subtraction sentences that would complete the fact family.

2 PS

5b. Seth has 11 balls. Use the images to write two addition number sentences.

Using the addition sentences, write the subtraction sentences that would complete the fact family.

2 PS

6a. Suzie says,

I can use the numbers 15, 7 and 7 to write a fact family for these 10 frames.

Is she correct? Prove it.

2 R

6b. Eric says,

I can use the numbers 13, 6 and 9 to write a fact family for these 10 frames.

Is he correct? Prove it.

2 R

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Fact Families

7a. Use the cards below to find three fact families.

seven | nine | twelve | eight

twelve | thirteen | three

☐ + ☐ = ☐

☐ – ☐ = ☐

Write all of the possible number sentences.

GD

2 PS

Fact Families

7b. Use the cards below to find three fact families.

nine | six | fifteen | fourteen

five | ten | four

☐ + ☐ = ☐

☐ – ☐ = ☐

Write all of the possible number sentences.

GD

2 PS

8a. Mary has 2 jars of sweets. She has 18 sweets altogether. Use the images to write two addition number sentences.

Using the addition sentences, write the subtraction sentences that would complete the fact family.

GD

2 PS

8b. Gran has 2 tins of biscuits. She has 16 biscuits altogether. Use the images to write two addition number sentences.

Using the addition sentences, write the subtraction sentences that would complete the fact family.

GD

2 PS

9a. Ava says,

I can use the numbers 19, 5 and 6 to write a fact family for the number line.

Is she correct? Prove it.

GD

2 R

9b. Finn says,

I can use the numbers 17, 8 and 9 to write a fact family for the number line.

Is he correct? Prove it.

GD

2 R

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Reasoning and Problem Solving
Fact Families

Developing

1a. Fact family using the numbers 9, 5 and 4.
Fact family using the numbers 9, 8, 1.
2a. 2 + 3 = 5; 3 + 2 = 5; 5 – 3 = 2; 5 – 2 = 3
3a. Ben is correct because 3 + 6 = 9; 6 + 3 = 9; 9 – 3 = 6 and 9 – 6 = 3.

Expected

4a. Fact family using the numbers 14, 10 and 4.
Fact family using the numbers 14, 9 and 5.
Fact family using the numbers 14, 8 and 6.
5a. 5 + 8 = 13; 8 + 5 = 13; 13 – 5 = 8; 13 – 8 = 5
6a. Suzie is incorrect. She should use the numbers 14, 7 and 7 to create a fact family.

Greater Depth

7a. Possible sets of numbers: 7, 5 and 12; 8, 4 and 12; 8, 7 and 15 or 8, 5 and 13.
Various answers, for example: 7 + 5 = 12; 5 + 7 = 12; 12 – 5 = 7 or 12 – 7 = 5.
8a. Various answers, for example: 6 + 12 = 18; 12 + 6 = 18; 18 – 6 = 12; 18 – 12 = 6.
9a. Ava is incorrect. She should use the numbers 11, 6 and 5 to create a fact family.

Reasoning and Problem Solving
Fact Families

Developing

1b. Fact family using the numbers 7, 5 and 2.
Fact family using the numbers 7, 4 and 3.
2b. 2 + 4 = 6; 4 + 2 = 6; 6 – 4 = 2; 6 – 2 = 4
3b. Jon is incorrect. He should use the numbers 7, 4 and 3 to create a fact family.

Expected

4b. Fact family using the numbers 12, 9 and 3.
Fact family using the numbers 12, 7 and 5.
Fact family using the numbers 12, 8 and 4.
5b. 6 + 5 = 11; 5 + 6 = 11; 11 – 6 = 5; 11 – 5 = 6
6b. Eric is incorrect. He should use the numbers 15, 9 and 6 to create a fact family.

Greater Depth

7b. Possible sets of numbers: 4, 6 and 10 or 6, 9 and 15.
Various answers, for example: 6 + 9 = 15; 9 + 6 = 15; 15 – 9 = 6; 15 – 6 = 9
8b. Various answers, for example: 6 + 10 = 16; 10 + 6 = 16; 16 – 6 = 10; 16 – 10 = 6.
9b. Finn is correct because 8 + 9 = 17.

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