

Reasoning and Problem Solving

Step 1: Part Whole Model

National Curriculum Objectives:

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

Mathematics Year 1: (1C2b) [Read, write and interpret mathematical statements involving addition \(+\), subtraction \(-\) and equals \(=\) signs](#)

Differentiation:

Questions 1, 4 and 7 (Reasoning)

Developing Identify the odd one out of three representations; totals within 5.

Expected Identify the odd one out of three representations; totals within 10.

Greater Depth Identify the odd one out of three representations; totals within 20.

Questions 2, 5 and 8 (Problem Solving)

Developing Read a simple word problem and identify the whole number and parts totalling 5.

Expected Read a simple word problem and identify the whole number and parts totalling 10.

Greater Depth Read a simple word problem and identify the whole number and parts totalling 20.

Questions 3, 6 and 9 (Problem Solving)

Developing Sort the images and draw a part whole model to show how they have been sorted, up to a total of 5 objects.

Expected Sort the images and draw a part whole model to show how they have been sorted, up to a total of 10 objects.

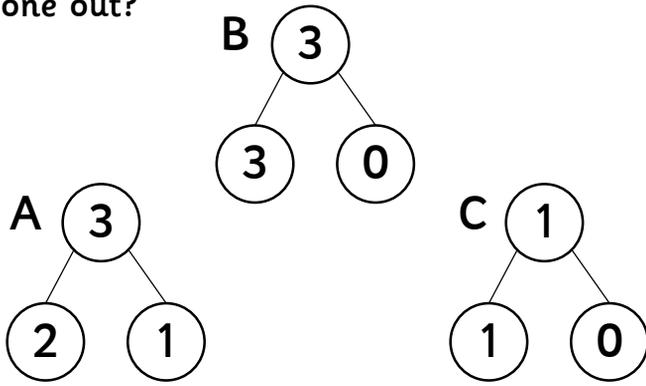
Greater Depth Sort the images and draw a part whole model to show how they have been sorted, up to a total of 20 objects.

More [Year 1 Addition and Subtraction](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Reasoning and Problem Solving – Part Whole Model

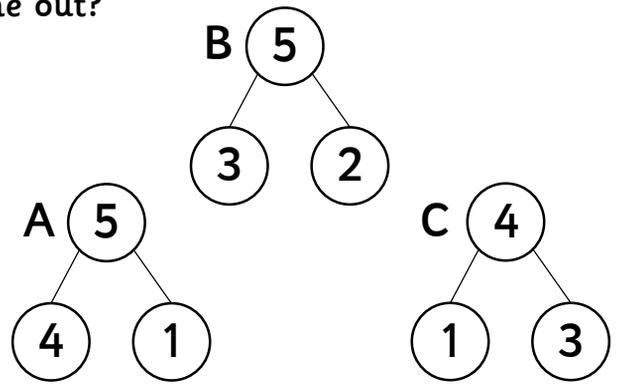
1a. Which of the following is the odd one out?



Explain why.

R

1b. Which of the following is the odd one out?



Explain why.

R

2a. Tina has 5 stickers in total. She gives 3 stickers to Leo. She gives the rest of her stickers to Tom.

What are the parts?

What is the whole?



PS

2b. Pete has 4 pebbles in total. He gives 3 pebbles to Mark. He gives the rest of his pebbles to Louise.

What are the parts?

What is the whole?



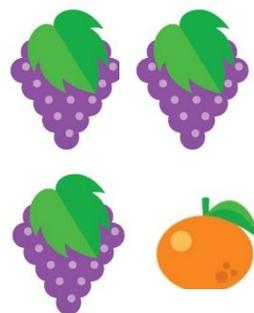
PS

3a. Sort the images and draw a part whole model to show how you have sorted it.



PS

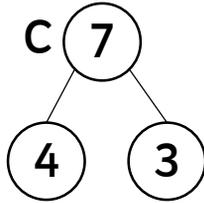
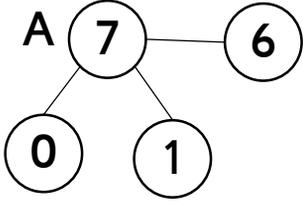
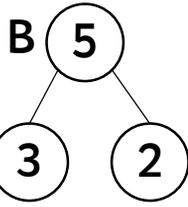
3b. Sort the images and draw a part whole model to show how you have sorted it.



PS

Reasoning and Problem Solving – Part Whole Model

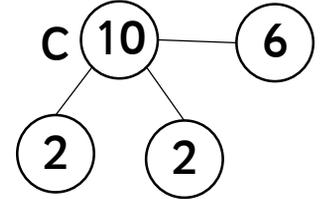
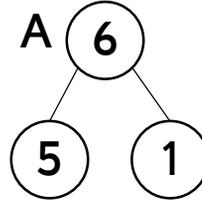
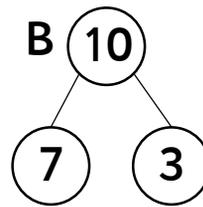
4a. Which of the following is the odd one out?



Explain why.

R

4b. Which of the following is the odd one out?



Explain why.

R

5a. Maria has 8 lolly pops in total. She gives 3 lolly pops to Nia. She gives the rest of her lolly pops to Sam.

What are the parts?

What is the whole?



PS

5b. Lee has 9 dinosaurs in total. He gives 3 dinosaurs to Ross. He gives the rest of his dinosaurs to Tim.

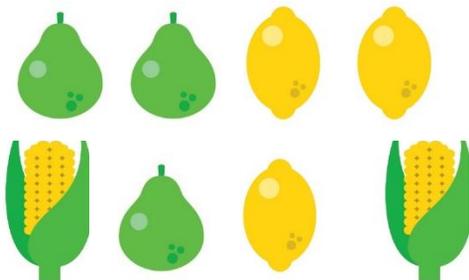
What are the parts?

What is the whole?



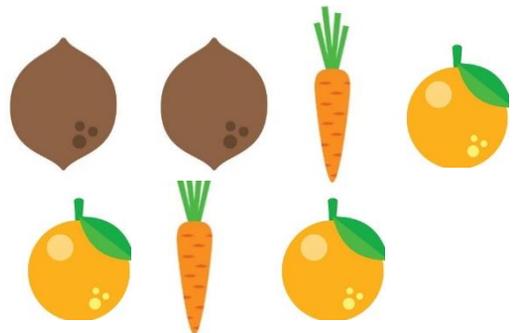
PS

6a. Sort the images and draw a part whole model to show how you have sorted it.



PS

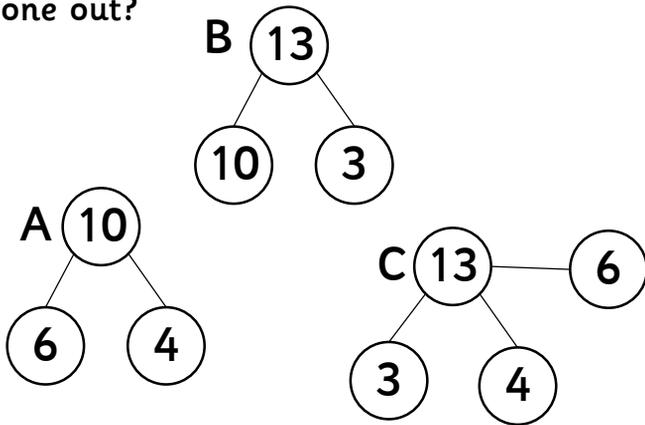
6b. Sort the images and draw a part whole model to show how you have sorted it.



PS

Reasoning and Problem Solving – Part Whole Model

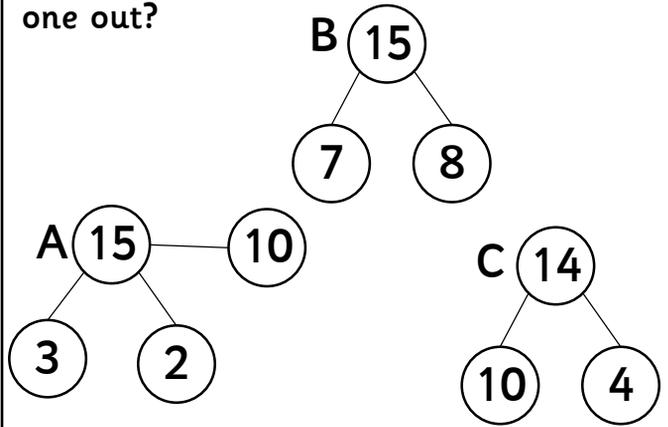
7a. Which of the following is the odd one out?



Explain why.

R

7b. Which of the following is the odd one out?



Explain why.

R

8a. Harry has 17 sweets in total. He gives 13 sweets to Claire. He gives the rest of his sweets to Kim.

What are the parts?

What is the whole?



PS

8b. Patty has 20 straws in total. She gives 11 straws to Matt. She gives the rest of her straws to Anna.

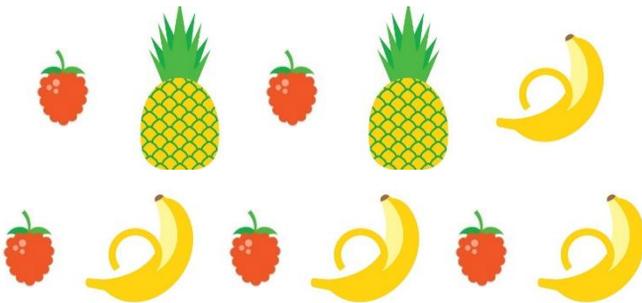
What are the parts?

What is the whole?



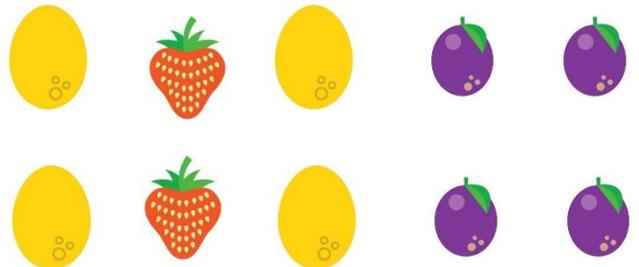
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9a. Sort the images and draw a part whole model to show how you have sorted it.



PS

9b. Sort the images and draw a part whole model to show how you have sorted it.



PS

Reasoning and Problem Solving – Part Whole Model

Developing

- 1a. C is the odd one out because it represents 1. A and B represent 3.
- 1b. C is the odd one out because it represents 4. A and B represent 5.
- 2a. The whole is 5, the parts are 3 and 2.
- 2b. The whole is 4, the parts are 3 and 1.
- 3a. 2 apples and 1 pear. The whole is 3, the parts are 2 and 1.
- 3b. 3 grapes and 1 orange. The whole is 4, the parts are 3 and 1.

Expected

- 4a. B is the odd one out because it represents 5. A and C represent 7.
- 4b. A is the odd one out because it represents 6. B and C represent 10.
- 5a. The whole is 8, the parts are 3 and 5.
- 5b. The whole is 9, the parts are 3 and 6.
- 6a. Various answers, for example: 2 corns, 3 pears and 3 lemons. The whole is 8, the parts are 2, 3 and 3.
- 6b. Various answers, for example: 2 coconuts, 2 carrots and 3 oranges. The whole is 7, the parts are 2, 2 and 3.

Greater Depth

- 7a. A is the odd one out because it represents 10. B and C represent 13.
- 7b. C is the odd one out because it represents 14. A and B represent 15.
- 8a. The whole is 17, the parts are 13 and 4.
- 8b. The whole is 20, the parts are 11 and 9.
- 9a. Various answers, for example: 5 raspberries, 2 pineapples and 4 bananas. The whole is 11, the parts are 5, 2 and 4.
- 9b. Various answers, for example: 4 melons, 2 strawberries and 4 grapes. The whole is 10, the parts are 4, 2 and 4.