Fractions, Decimals and Percentages Prior Assessment Question 3:
Objective: I find equivalent fractions using my knowledge of multiples and factors

NC: NFDP1: use common factors to simplify fractions; use common multiples to express fractions in the same denomination

Teacher Input Ideas:
Either with images or use of cakes show 1/2.Show other ways of making half such as 2/4 or 12/24. Ask the children to explore other ways to make 1/2. Discuss how they did this. Some children may require use of fraction templates or fraction towers to find equivalent fractions.

Now try for 1/5.

Model to the children using knowledge of multiples to find other alternatives alongside fraction towers and fraction templates if children need this. Example: 2/10, 3/15, 5/25

Allow the children to think of other equivalent fractions for 4/5 and then try 1/7.Discuss with the children when equivalent fractions may be useful.

Practice Activities

Purple Practice: Most suited for children that made errors in **Question 3** and demonstrate little understanding of finding equivalent fractions.

This activity provides the opportunity for children to find equivalents for common/popular fractions. Encourage the children to use knowledge of multiples to find equivalent fractions on the activity sheet. However, some children may benefit from practical resources too (such as fraction templates or towers).

Green Practice: Most suited for children that **made errors in Question 3**, however show developed understanding over the lessons.

This activity requires the children to explore equivalent fractions through their knowledge of multiples.

Yellow Practice: most suited for children that show a good understanding of fractions and are beginning to find equivalents using their knowledge of multiples.

This activity also provides the opportunity to find equivalent for improper fractions. You may want to discuss using mixed numbers too. You need to ensure that the child understands that improper fractions are larger than one whole and can explain how they have used their knowledge of this and multiples to find equivalent fractions.

Mastery: You may want to introduce and read aloud this activity to a group or class. Together pick out the key information and establish what the question is asking. Encourage children to identify this independently to help you to assess the children's problem solving skills.

Ask the children where they will start and what will they do. Some children may be able to identify that you need to find a common multiple for 5, 6 and 10. So for example the cake could be cut into 30 small equal pieces. If there were 5 quests they could have 6 slices each etc.

Further support: Some children may need an image to help. You could give some children rectangle cake pictures with 24 slices marked out, 16 marked out, 30 marked out and the children to explore which cake could be shared equally.

The extension provides the opportunity for children to think about how they could deal with a real-life problem. What would they do in that situation in real life? How would they share the pre-cut cake with 8 people?

Answers: Any correct equivalent can be expected. Below are some the children may have chosen.

Purple:

Q1) **2/4, 6/12, 3/6, 4/8, 60/120**

Q2) **2/8, 3/12, 6/ 24, 50/200**

Q3) **6/8, 9/12, 15/20, 75/100**

Q4) **2/20, 3/30, 5/50, 10/100**

Q5) **3/9, 6/18, 4/12, 5/15,**

Q6) **2/10, 3/15, 4/20, 20/100**

Green:

Q1) **4/10, 6/15, 40/100, 8/20**

Q2)**6/9, 12/18, 8/12, 10/15**

Q3) **3/4, 6/8, 15/20, 75/100**

Q4) **10/12, 15/18, 50/60, 25/30**

Q5) **6/16, 9/24, 15/40**

Q6) **21/27, 14/18, 35/45**

Yellow:

Q1) **12/27, 8/18, 20/45,**

Q2) **10/24, 15/36, 20/ 48, 50/120**

Q3) **2/3, 12/18, 18/27**

Q4) **14/22, 21/33, 28/44,**

Q5) **8/6, 12/9, 16/12, 1 1/3**

Q6) **12/10, 18/15, 24/20, 20/100 1 1/5**

Mastery

Possible suggestions:

Cut into 30

5 people = 6/30 = 1/5

6 people = 5/30 = 1/6

10 people = 3/30 = 1/10

Cut into 60 =

5 people = 12/60 = 1/5

6 people = 10/60 = 1/6

10 people = 6/60 = 1/10

You may want to discuss which option would be the most efficient and practical. You could also discuss that option A is the lowest common multiple therefore less slices are needed.

Extension

Children may notice that if the cake has been cut into 30 pieces then 30 is not a multiple of 8. Some children may have noticed that it is quite hard to find a common multiple for 8,6,5 and 10 (the lowest one is 120). This would make a very messy cake. Provide the opportunity for children to discuss what they would do if they really had a cake in front of them. You could also do this practical with an actual cake cut into 30. The pieces could be shared out between 8. Using 24 slices, 3 each. Then 6 would be left over. Discuss how would the children share these? What would they do in real life?

If children cut the cake into 60, they may have noticed that each child could have 6 slices each (= 56) and then 4 would be left over, therefore they could split the leftover pieces in half.

Discuss with the children that this is not a straight forward problem and that in everyday situations we are often faced with challenges such as this, so we should explore the best possible compromise.

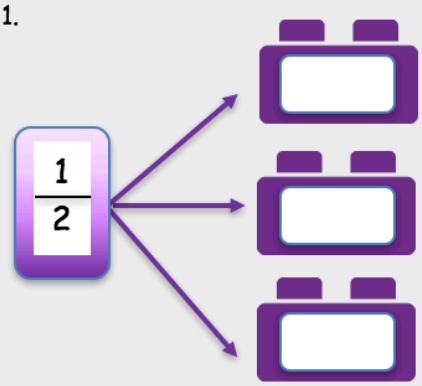
BRICKWORK mathematics

Purple Practice

Lo: To find equivalent fractions using my knowledge of multiplication.

Look at the fractions below and find three equivalent fractions for each.

1.



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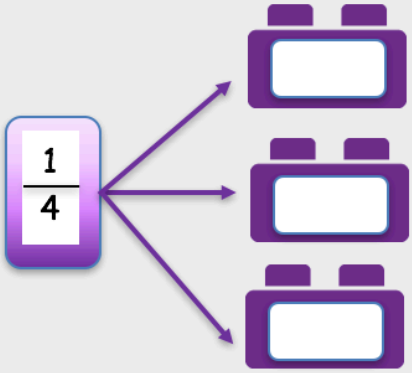

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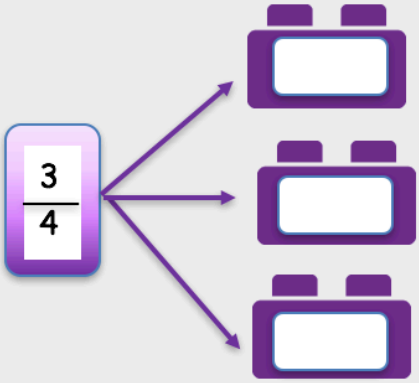

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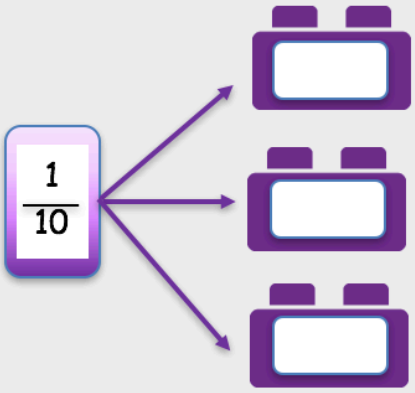

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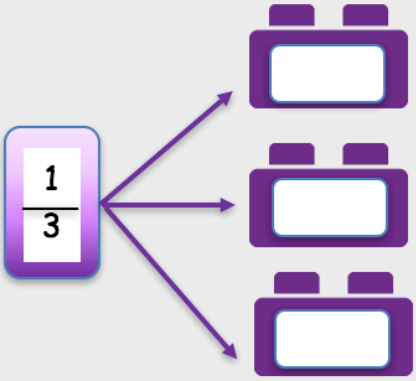

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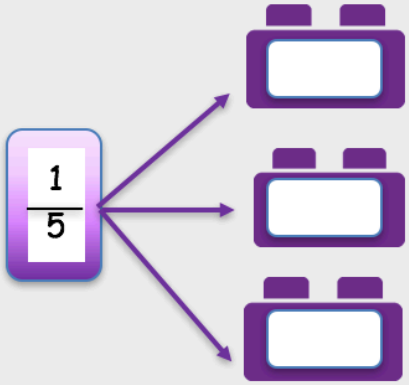


BRICKWORK
Mathematics

Green Practice

Lo: To find equivalent fractions using my knowledge of multiplication.

Look at the fractions below and find three equivalent fractions for each.

1. $\frac{2}{5}$ = $\frac{\square}{\square}$ = $\frac{\square}{\square}$ = $\frac{\square}{\square}$

2. $\frac{2}{3}$ = $\frac{\square}{\square}$ = $\frac{\square}{\square}$ = $\frac{\square}{\square}$

3. $\frac{9}{12}$ = $\frac{\square}{\square}$ = $\frac{\square}{\square}$ = $\frac{\square}{\square}$

4. $\frac{5}{6}$ = $\frac{\square}{\square}$ = $\frac{\square}{\square}$ = $\frac{\square}{\square}$

5. $\frac{3}{8}$ = $\frac{\square}{\square}$ = $\frac{\square}{\square}$ = $\frac{\square}{\square}$

6. $\frac{7}{9}$ = $\frac{\square}{\square}$ = $\frac{\square}{\square}$ = $\frac{\square}{\square}$

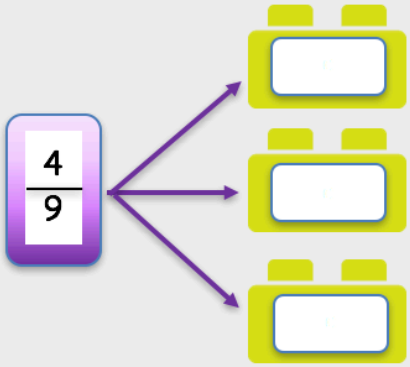
BRICKWORK Mathematics

Yellow Practice

Lo: To find equivalent fractions using my knowledge of multiplication.

Look at the fractions below and find three equivalent fractions for each.

1.



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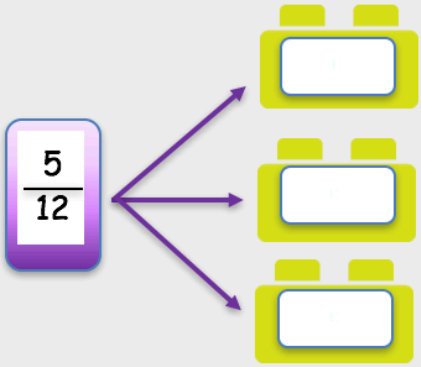

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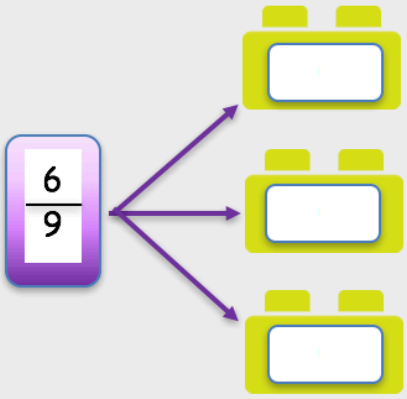

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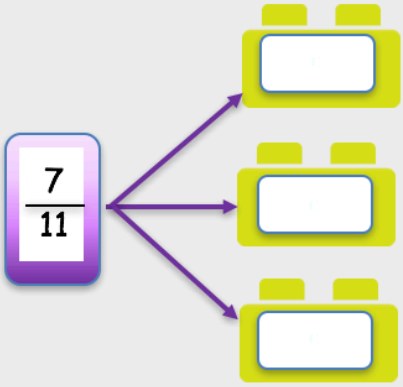

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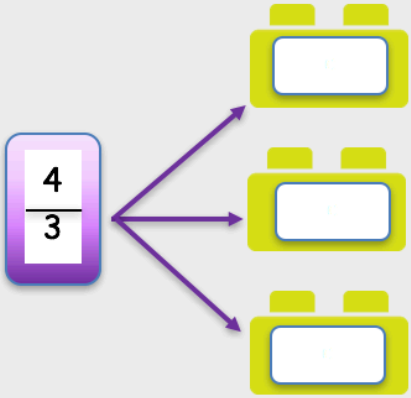

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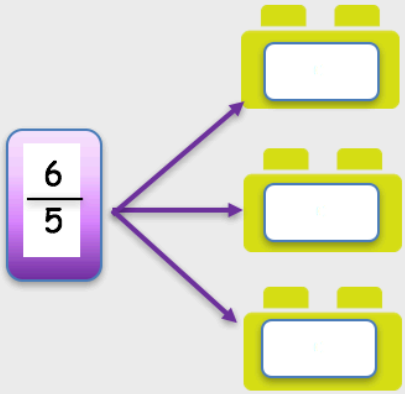

BRICKWORK Mathematics

Mastery

Problem solving and reasoning

It's Sophie's birthday and she has got a birthday cake for her party. She is unsure whether 5, 6 or 10 guests are attending. How could the cake be cut in advance so that there are enough slices no matter what the number of guests and all of the cake could be shared out equally.

Work out how many slices the cake should be cut into and the fraction of the cake for each possibility.

Extension: 8 guests arrive. What would you do? How would you share the pre-cut cake?

How can you prove that you have the best suggestion? What resources would you use to support your view?