

### Year 6 Booster Booklet - Fractions

My intention for these 'Year 6 Booster Booklets' is to create a set of resources which can be used with small groups of children, either by a TA or teacher, and which will require minimal preparation time on your part. They are aimed at the children who could achieve the expected standard with a little extra support.

I would recommend you begin each strand by assessing your children and use the results to determine which sessions are required by which children.

There are two assessments for each strand of the Y6 curriculum. They are all free to download. The assessments for Y6 Fractions (including decimals and percentages) are here:

http://mathsframe.co.uk/en/resources/category/377

Alternatively, you can browse all assessments and worksheets (there are more than 130 designed around the Year 6 curriculum) here:

http://mathsframe.co.uk/en/resources/worksheets

use the drop down boxes to help you navigate. Please note there are also 2 assessments for each Year 5 strand (and all other year groups) and these might be a more appropriate place to start when looking for gaps with some of your children.

The following sessions are available for this strand:

FDP1 - compare and order fractions whose denominators are all multiples of the same number (Y5 objective) - page 2 to page 4

FDP2 - use common multiples to express fractions in the same denomination and compare and order fractions - page 5 to 6

FDP3 - add and subtract fractions with different denominators - page 7 to page 9

Each session will involve suggested activities, key questions, worksheets and interactive games to play. Some of the games may require a subscription to mathsframe.

Feedback from teachers is always welcome - Ted Burch 27/01/17

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## FDP1 - compare and order fractions whose denominators are all multiples of the same number

- Discuss the meaning of equivalent fractions they have the same value. Look at fraction wall on p3 identify some fractions that have the same value
- Work through the first questions on p3. Use the fraction wall to help. Discuss the function that is done to both top and bottom of the fractions (numerator and denominator)
- For the final row of questions, if stuck, ask children 'What has been done to 5 to turn it into 10? (x2).... or 15 into 5 (÷3) '. Children may need reminding that the numbers can be scaled up and down using multiplication and division (not addition and subtraction) using the fraction wall can help make this point.

#### Games to practise the skill

http://mathsframe.co.uk/en/resources/resource/132/equivalent\_fractions

(search for 'mathsframe 132') -



#### Independent activity

Worksheet p4 - look at the first question together, discuss how we can compare fractions with different denominators - by converting to the same denominator. If stuck on the number line questions get the children to think about the value of each divisions (1/10) and convert to equivalent fractions.

# MATHSFRAME 8



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## **FDP2** - use common multiples to express fractions in the same denomination and compare and order fractions

- Ask the children to write 2 lists the first ten multiples of 3 (3,6,9,12...etc) and the first ten multiples of 4. Discuss which numbers are on both lists. (12 and 24) These are numbers are <u>common multiples</u> of 3 and 4. What would be the next common multiple? (36) The next? (48)What have they got in common? (multiples of 12)
- Explain you can always find a common multiple of two numbers by multiplying them together, eg a common multiple of 4 and 5 is 20 (4 x 5).
- Ask children which is bigger 2/3 or 3/5 can they explain? Model using a common multiple of the denominators (15) to convert into equivalent fractions eg



so we can see that 2/3 is bigger as 10/15 > 9/15

#### Independent activity

p6 worksheet

#### Game to practise the skill

http://mathsframe.co.uk/en/resources/resource/139/ order\_fractions\_decimals\_and\_percentages

or search for 'mathsframe 139' - untick decimals and percentages and choose level 4. Get children to work out equivalents on whiteboards and then order.

| Order fractions, decimals  | Change<br>level Order fractions, decimals   |
|--|---|
| Level 1: Multiples of 1/10 and numbers with 1 decimal place                  |   |
| Level 2: Multiples of 1/100 and numbers with 2 decimal places                | Order the numbers from smallest to biggest. |
| Level 3: Unit fractions and numbers with 1 decimal place                     |   |
| Level 4: Easier multi-part fractions and numbers with up to 2 decimal places |   |
| Level 5: Random multi-part fractions and numbers with up to 2 decimal places |   |
| Level 6: Improper fractions and numbers with up to 2 decimal places          | 3 3 4 9 7                                   |
| Fractions Decimals Percentages   | 5 4 5 10 10                                 |



| 1 | Write a number that is:  | <sup>2</sup> Adam is thinking of a number.<br>His number is a multiple of 4 and a multiple | le of |
|---|--|--|-------|
| ł | b) a multiple of 4 <u>and</u> a multiple of 10                           | 6.<br>What is the smallest number Adam could thinking of?                                  | be    |
| ¢ | c) a multiple of 3 <u>and</u> a multiple of 4 <u>and</u> a multiple of 8 |  |       |
|   |  |  |       |









Every child will need: a whiteboard and pen, worksheet (p8)

#### NPV3 - add and subtract fractions with different denominators

Go to http://mathsframe.co.uk/en/resources/resource/239/Add\_and\_Subtract\_Fractions or search 'Mathsframe 239' and choose level 3 and level 4 and press play



Work through a couple of questions on the game together. Discuss the need for having a common denominator, and how to use common multiples to find that denominator.

#### **Independent activity**

p8 worksheet

#### **Extension into mixed numbers**

If children are confident in adding and subtracting within 1 then move on to mixed numbers, ask:

1 2/3 + 3/4 = ?

model turning into equivalent fractions using common multiples:

1 8/12 + 9/12

Ask how we can add them - explore adding the fractions as improper fractions

eg 1 8/12 + 9/12 = 1 17/12 = 2 5/12



Ask children which method they prefer and why. Ask them to work out:

1 3/5 + 3/4 2 1/3 - 4/5 4 1/2 + 7/10 3 - 1 3/7

| Add and subtract fractions with different denominators.                       |   |  |
|---|---|--|
| $\frac{3}{5} + \frac{1}{3} = ?$   | To add or subtract a pair of fractions we must<br>first convert them to the same denominator.<br>We begin by finding a number which is a<br>multiple of both denominators.                                  |  |
| $\frac{9}{15} + \frac{5}{15} = \frac{?}{15}$                                  | 15 is a multiple of 3 and 5 so we convert both fractions to fifteenths.<br>$\frac{3}{5} = \frac{9}{15} \qquad \frac{1}{3} = \frac{3}{15}$ We can then add.<br>$\frac{9}{15} + \frac{5}{15} = \frac{14}{15}$ |  |
| E.g. $\frac{1}{4} + \frac{1}{5} = \frac{5}{20} + \frac{4}{20} = \frac{9}{20}$ | $1  \frac{1}{5} + \frac{2}{3} =$  |  |
| $2  \frac{1}{6} + \frac{3}{5} =$  | 3 $\frac{1}{3} - \frac{1}{4} =$   |  |
| $4  \frac{2}{3} + \frac{3}{10} =$   | $5  \frac{3}{4} - \frac{3}{5} =$  |  |
| $6  \frac{1}{2} + \frac{3}{8} =$  | 7 $\frac{21}{25} - \frac{3}{4} =$   |  |
| $8  \frac{4}{5} + \frac{1}{8} =$  | 9 $\frac{9}{10} - \frac{1}{3} =$  |  |
| $10  \frac{3}{5} + \frac{2}{7} =$   | $11  \frac{5}{6} - \frac{2}{5} =$   |  |

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