

Remembering  
(1)

Understanding  
(2)

Applying  
(3)

Analysing  
(4)

Evaluating  
(5)

Creating  
(6)

NAME:

## OPERATIONS WITH FRACTIONS

Showing your understanding

The purpose of this project is for you to demonstrate your understanding of the different operations with Fractions, in particular the applications of the methods and knowledge you have.

Complete the tasks on a separate sheet of paper and attach it to this booklet. Make sure you show your working out and write out your answers neatly.

# OPERATIONS WITH FRACTIONS

Show your understanding of using the four operations with fractions by completing a mixture of the tasks below. Read each of the tasks before you start and select a variety that will help you complete at least **12** points.

Remembering (1)	1A. Answer the following questions on slide 2. Remember to show working out.	1B. Look at the glossary of words in slide 4. Write down the definition of each word.	1C. Explain in words, how you would complete the calculation in slide 5.	<p><i>Do you have any of your own suggestions?</i></p> <p><i>We can discuss the level and points for it.</i></p>
Understanding (2)	2A. Write an easy, a typical and a hard question for each operation with fractions. [Include your answers!]	2B. Design an A5 revision poster that includes adding, subtracting, multiplying and dividing fractions.	2C. Write down 8 quiz questions on different operations with fractions.	
Applying (3)	3A. Work out the exact value of the calculation on slide 7. Explain how you got your answer. Can you apply this to a harder problem?	3B. Describe two methods that you could use to add 2 mixed numbers together.	3C. Look at slide 6. What fraction of the diagram is shaded? Explain your reason.	
Analysing (4)	4A. Look at slide 3. Explain what is wrong with the fraction.	4B. Complete task 3B (above), then explain why you would only use <b>ONE</b> of the methods for subtraction.	4C. Find the mistakes in the calculations in slide 1 and briefly explain why they are wrong.	
Evaluating (5)	5A. Identify and explain at least 2 jobs in which your fraction knowledge would be needed.	5B. Which is better - fractions, decimals or percentages? Write down your thoughts.	5C. A piece of string measures $\frac{2}{3}$ m. Without the use of any other measuring tools, how would you use the string to measure $\frac{1}{2}$ m?	
Creating (6)	6A. Research Egyptian Fractions. Give a brief explanation of what they are.	6B. Create a poem that explains how you would do all four operations with fractions.	6C. (DIFFICULT!) Explain why the sum of a proper fraction and its reciprocal can never be a whole number.	

# OPERATIONS WITH FRACTIONS

Complete the table below for your own record.

Tasks completed					
No. of points					

<b>Peer Assessment</b>	
Areas of great work	Teacher's comment
Areas of improvement	Teacher's comment

# OPERATIONS WITH FRACTIONS

The following slides may be needed to help you complete some of the tasks set. Do not write your tasks here, complete them on a different sheet of paper.

**Slide 1:** Circle the mistakes and write down the correct answers. Briefly explain the mistake made.

a)  $\frac{2}{5} + \frac{1}{3} = \frac{3}{8}$

b)  $\frac{2}{7} + \frac{1}{3} = \frac{2}{21} + \frac{1}{21} = \frac{3}{21}$

c)  $\frac{3}{8} + \frac{1}{4} = \frac{9}{32} + \frac{8}{32} = \frac{17}{32}$

d)  $\frac{8}{9} + \frac{1}{4} = \frac{32}{36} + \frac{9}{36} = \frac{41}{72}$

**Slide 2:**

### adding fractions

Can you put the missing numbers in the correct place to make these additions true?

$\frac{4}{6}$	$\frac{3}{4}$	$\frac{1}{3}$	$\frac{20}{21}$
$\frac{1}{5}$	$\frac{4}{7}$	$\frac{1}{10}$	

$\frac{1}{2}$	$+$	$\frac{1}{6}$	$=$	
$\frac{2}{5}$	$+$		$=$	$\frac{11}{15}$
$\frac{1}{7}$	$+$		$=$	$\frac{25}{28}$
$\frac{2}{3}$	$+$	$\frac{2}{7}$	$=$	
	$+$	$\frac{4}{5}$	$=$	$\frac{9}{10}$
	$+$		$=$	$\frac{27}{36}$

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**Slide 3:** What's wrong with this fraction? Explain why.

$$\frac{3}{0}$$

**Slide 4:** Look at the glossary of words below. Write down the definition of each word.

FRACTION

NUMERATOR

DENOMINATOR

LOWEST COMMON MULTIPLE

SIMPLIFY

EQUIVALENT

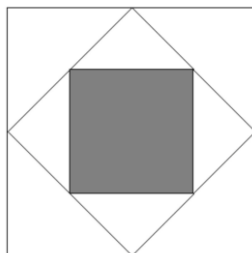
# OPERATIONS WITH FRACTIONS

The following slides may be needed to help you complete some of the tasks set. Do not write your tasks here, complete them on a different sheet of paper.

**Slide 5:** Explain in words, how you would complete the calculation below.

$$2\frac{1}{2} \div 1\frac{3}{4}$$

**Slide 6:** What fraction of the diagram is shaded? Explain your reason.



**Slide 7:**

a) Work out the value of the following calculation:

$$\frac{1}{2} \times \frac{2}{3} \times \frac{3}{4} \times \frac{4}{5} \times \dots \times \frac{9}{10}$$

b) Explain how you got your answer.

c) Apply your knowledge to the calculation below – what is your answer and why?

$$\frac{1}{1} \times \frac{2}{4} \times \frac{3}{9} \times \dots \times \frac{9}{81} \times \frac{10}{100}?$$