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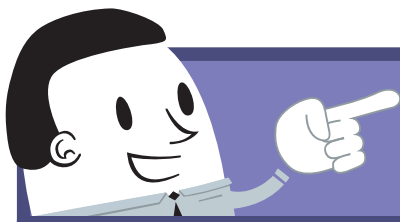


Fractions & Percentages

Numeracy

- Pharaoh's Fractions
 - Canopic Jars
- Queen Anka's Jewels

Resource code: 27052097



Pharaoh's Fractions

During excavations in Egypt, a remarkable discovery was a document dating back to 1650 BCE, revealed that Egyptians utilised fractions to solve mathematical problems.

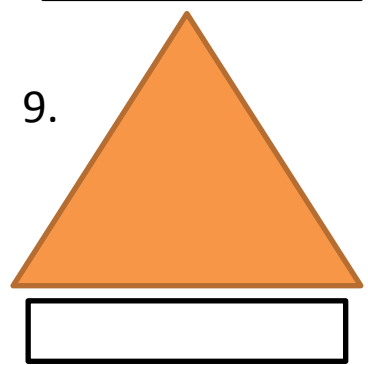
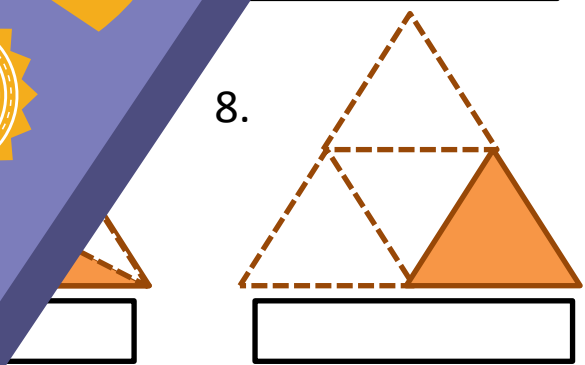
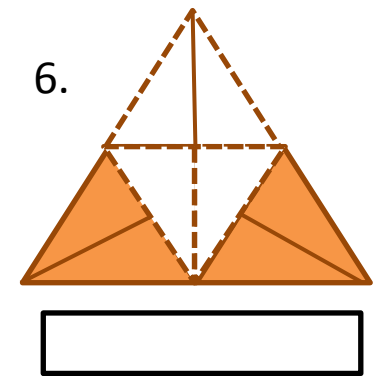
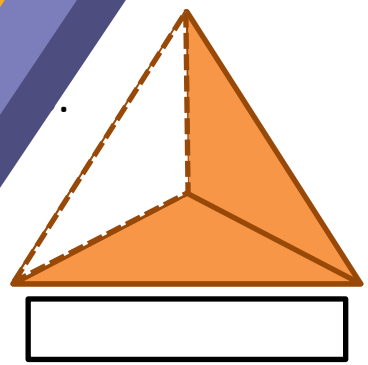
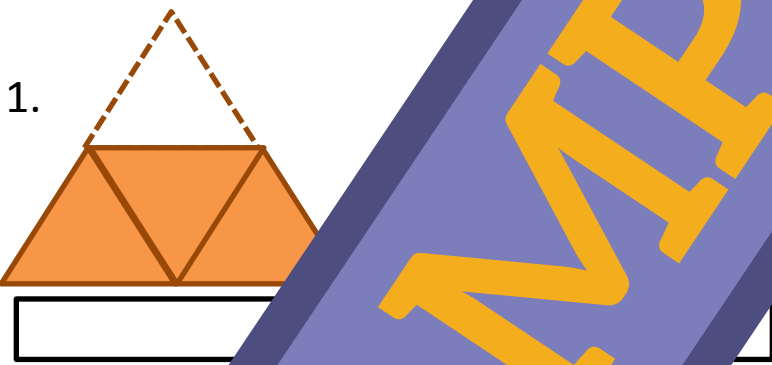


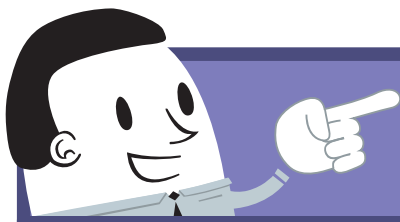
Q1

Using the Siamun's diagrams of the nine pyramids and the fraction of each pyramid which belongs to who and write their name in the box below.

Pharaoh Siamun has commissioned his slaves to build nine pyramids but he can't remember which pyramid is which! Fortunately, he has written down the fraction of each person's pyramid that is complete.

Siamun	$\frac{1}{2}$	Queen Anka	$\frac{1}{3}$
Hori	$\frac{3}{4}$	Tepi	$\frac{2}{3}$
Aye	$\frac{2}{4}$	Ahmose	$\frac{1}{4}$





Canopic Jars

Canopic jars were used by ancient Egyptians to store organs of mummified. A different jar was used for each of the major organs. These organs would be needed in the afterlife.




Q1

Pharaoh Siamun has six canopic jars in preparation for his mummification. Complete the following table for each character by filling in the fraction (or decimal percentage to one decimal place or diagram). The jars are shown in the diagram.

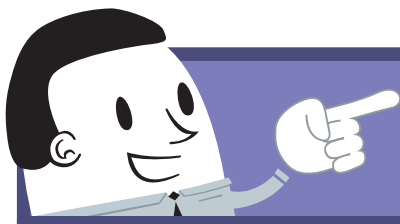
a) 	Fraction:	$\frac{1}{6}$	$\frac{1}{10}$
	Percentage:	$\frac{1}{6} \times 100$	Percentage:

c) 	Fraction:		Fraction:
	Percentage:		Percentage: 20%

f) 	Fraction:	
	Percentage:	



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Queen Anka's Jewels

Many ancient artefacts dating back to ancient Egyptian times have been discovered. Some of these include jewellery, which was often found on mummies.

Q1

Thieves have stolen Queen Anka's jewels! To find them, you need to work according to the following instructions.



ages of:

$\frac{4}{8}$	$\frac{50}{100}$	50%		$\frac{10}{20}$	$\frac{40}{80}$	$\frac{7}{14}$	$\frac{200}{400}$
$\frac{1}{3}$	$1 \div 2$	$\frac{5}{15}$	$\frac{9}{18}$	$\frac{2}{50}$	$1 \div 2$	$\frac{6}{12}$	
$\frac{5}{10}$	$2 \div 6$	$\frac{1}{2}$		50%	$\frac{40}{80}$	$\frac{4}{8}$	$\frac{500}{1000}$
33.3%	$\frac{4}{8}$				$1 \div 2$	$\frac{3}{6}$	$\frac{1}{2}$
50%				$\frac{3}{4}$	$\frac{3}{4}$	$4 \div 8$	50%
$\frac{1}{2}$				$\frac{6}{8}$	$\frac{9}{12}$	$\frac{6}{8}$	$\frac{1}{2}$
				$\frac{75}{100}$	$\frac{3}{4}$	$\frac{75}{100}$	$\frac{4}{8}$
		$\frac{3}{4}$	$\frac{6}{8}$	$\frac{3}{4}$	75%	$\frac{12}{16}$	$\frac{1}{2}$
		$\frac{3}{4}$	$\frac{3}{4}$	$\frac{9}{12}$	$\frac{2}{3}$	$\frac{3}{4}$	$\frac{9}{12}$
		$3 \div 4$	75%	$\frac{9}{12}$	$\frac{4}{6}$	66.6%	$\frac{6}{8}$
							$\frac{3}{4}$
							75%
							$\frac{5}{20}$
		$\frac{1}{4}$	$\frac{2}{8}$	$\frac{4}{16}$	$\frac{200}{800}$	$\frac{6}{24}$	$\frac{6}{24}$
		$\frac{3}{12}$					$\frac{30}{120}$
						$\frac{1}{4}$	25%
						$\frac{1}{4}$	





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Mighty Minds Lesson Installs

'Fundamentals' Lesson



Firstly, thank you for your support of Mighty Minds and our resources. We are proud to provide quality resources that are both educational and engaging, and we hope you enjoy using our works.

To assist you in using this resource, we have compiled some information for you.

About this resource

This Mighty Minds 'Fundamentals' Lesson focuses on a specific skill (in this case, Maps and Plans) and presents this skill through a theme from the Australian Curriculum (in this case, Geography). This lesson is also targeted at a certain skill level (in this case, Year 5) and is designed for completing work that is suited to them.

How to use this resource

Our 'Fundamentals' Lessons are split into two parts: a Teacher's Copy and a Student Workbook. Each contain different types of resources.

The student workbook contains:

- The main title page; and
- The blank student workbook pages.

The teacher resources contain:

- This set of instructions for using the resources;
- The Teacher's Copy of the lesson, which includes the lesson plan, the lesson content, and any resources that will be needed to teach the lesson;
- The Item Description, which includes the lesson's aims, the lesson's objectives, and any extension ideas;
- The student model responses, which are provided as examples of student responses on the student worksheets to ensure that answers are clear and easy to understand;
- The teacher's copy of the student model responses, which provides a more detailed explanation of the model responses and any additional resources that may be needed to teach the lesson;
- The final version of the student workbook.

We recommend that you use the Student Workbook (the first set of pages) for the students. If students are struggling with the lesson, you may also like to provide them with the student answer key.

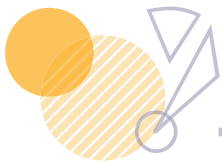


Helping us

We would love to hear from you. If you have any feedback or suggestions that if you email us with suggested changes to any lesson, we will be happy to consider them. We will send you the revised lesson – free of charge.

You can email us at resources@mightyminds.com.au and we'll get back to you as soon as we can.





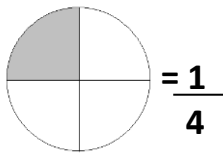
Fractions and Percentages



Students often have trouble remembering how to work with fractions and percentages. These are fundamental skills, so it is essential that they are explicitly taught and practised. The following worksheets include a range of activities to help students to independently practise them. An important part of the learning experience for students is comparing their answers with others and discussing which is the right answer and why the others are wrong.

Explaining Fractions

A fraction is part of a whole. For example, the shaded part of the circle below represents one part of a possible four parts that could be shaded. It is written as $\frac{1}{4}$. The number 1 is the numerator and 4 is the denominator, i.e. $\frac{1}{4}$. Similarly, $\frac{11}{8}$ means one and three eighths.



$$\frac{1}{8}$$

Fractions must be reduced to their simplest form. To do this, divide the numerator and the denominator by their highest common factor. The highest common factor is the greatest possible number that goes into both numbers. For example, the highest common factor of 60 and 100 is 20. 60 divided by 20 is 3 and 100 divided by 20 is 5. So $\frac{60}{100}$ simplifies to $\frac{3}{5}$. (The highest common factor you will find will be the highest common factor of the numerator and denominator after you have simplified the fraction. You can keep simplifying a fraction until you reach its simplest form.)

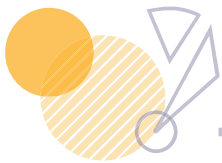
It is easy to convert a mixed number to an improper fraction. To convert a mixed number to an improper fraction, multiply the denominator and add the numerator, then place this over the denominator.

When adding or subtracting fractions, they need to have the same denominator. To do so, find the lowest common multiple of the denominators. This means the lowest possible number that both denominators go into. For example, the lowest common multiple of 3 and 4 is 12. Multiply each fraction's numerator and denominator to the lowest common multiple. For example, the lowest common multiple of 3 and 4 is 12, which means that $\frac{1}{3} + \frac{2}{4}$ becomes $\frac{(1 \times 4)}{(3 \times 4)} + \frac{(2 \times 3)}{(4 \times 3)} = \frac{4}{12} + \frac{6}{12} = \frac{10}{12} \rightarrow \frac{5}{6}$.



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When multiplying fractions simply multiply both numerators by each other and both denominators by each other to get the result obtained when multiplying both denominators together.

e.g. $\frac{1}{3} \times \frac{2}{4} = \frac{(1 \times 2)}{(3 \times 4)} = \frac{2}{12} \rightarrow \frac{1}{6}$.

When dividing fractions, flip the second fraction around (invert) and multiply both numerators by each other and place them over the product of both denominators.

E.g. $\frac{3}{7}$ divided by $\frac{5}{8} = \frac{3}{7} \times \frac{8}{5} = \frac{(3 \times 8)}{(7 \times 5)} = \frac{24}{35}$

Explaining Percentages

Percentages are used in shops to show how much a product is reduced. They are also used to show the amount of body fat they have compared to their overall weight. Banks use them to show interest or loan rates; schools use them to calculate how well students are doing. Scientists use them to predict the likelihood of rain or snow. A percentage represents the number as a portion of 100. For example, 1% represents 1 out of 100. $2.5\% = \frac{2.5}{100}$, which equals 0.025 as a decimal.

Converting between fractions and percentages

To transform a score into a percentage, divide the score by the total score and multiply by 100. For instance, a score of 18 out of 20 is $(18 \div 20) \times 100 = 90\%$. This is also true of fractions. For example, $\frac{18}{20} = \frac{9}{10} = 90\%$. Commonly used fractions and the percentages they represent are: $\frac{1}{2} = 50\%$.

Compound

Fractions can be used to represent probability, i.e. the chance of an event occurring. For example, if a coin is tossed, there is a one in two chance of it landing on heads. This can be used to calculate the likelihood of a series of independent events, i.e. events that can happen simultaneously, the chance of each event must be multiplied together. For example, if a coin is tossed three times, to determine the probability of getting three heads, $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = \frac{1}{8}$. When calculating the likelihood of mutually exclusive events (events that cannot happen at the same time, calculate the likelihood of either one of them happening) add their probabilities together. For example, if there were 8 jellybeans in a bag, 2 green, 2 blue and 4 yellow, the chance of picking a green or yellow jellybean is $\frac{2}{8} + \frac{4}{8} = \frac{6}{8} = \frac{3}{4}$.





Item Description

Please note: any activity that is not completed during class time undertaken at a later date.



'Pharaoh's Fractions', 'Canopic Jewels'

Activity Description:

- This lesson has been designed to improve understanding between fractions and percentages in an Egyptian context.
 - In the first activity, 'Pharaoh's Fractions', students are asked to match fractions to their corresponding pyramids and identify which people they belong to.
 - The second activity, 'Canopic Jewels', involves using one piece of information to complete a table by using other information and completing a diagram.
 - In the third activity, 'The Great Pyramid', students must use their knowledge of equivalent fractions to identify the correct pyramid in a given picture.

Purpose:

- Students will be able to calculate and convert fractions and percentages.

Key Concepts:

- Equivalent fractions
- Conversion of fractions to another (α7)
- Use of calculators (Φ16)

Support:

- Approximately one hour to complete – 20 minutes per activity.



coloured pencils. It would be a good homework activity shown in class.

Discussion Questions:

How much do you know about ancient Egyptian culture and customs? Have they heard of

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Item Description – continued

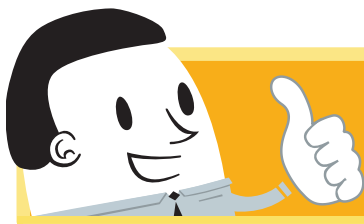
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‘Pharaoh’s Fractions’, ‘Canopic Jewels’

- **Follow Up/ Class Discussion Questions**
 - How are fractions used in everyday life?
 - When was the last time students shared one of their own? How did they use it?



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Pharaoh's Fractions

During excavations in Egypt, a remarkable discovery was a document dating back to 1650 BCE, revealed that Egyptians utilised fractions to solve mathematical problems.

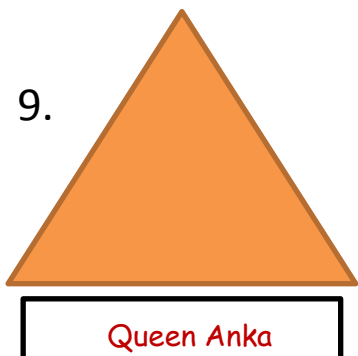
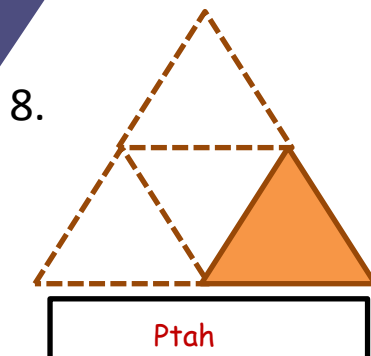
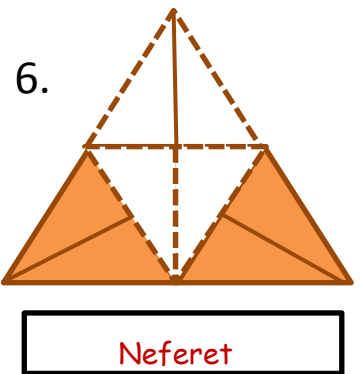
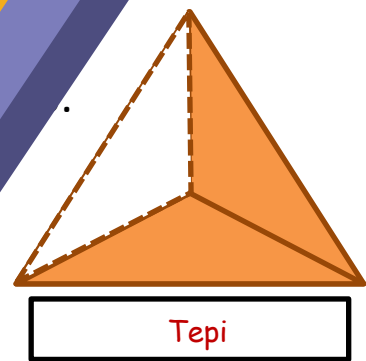
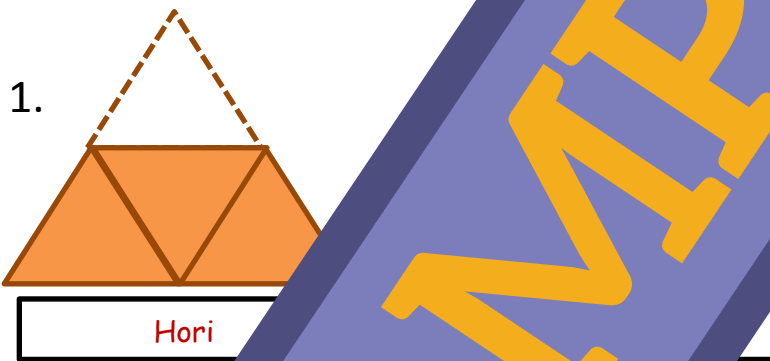


Q1

Using the Siamun's diagrams of the nine pyramids and the fractions which pyramid belongs to who and write their name.

Pharaoh Siamun has commissioned his slaves to build nine pyramids but he can't remember which pyramid is which! Fortunately, he has the fraction of each person's pyramid that is complete.

Siamun	$\frac{1}{2}$	Queen Anka	
Hori	$\frac{3}{4}$	Tepi	$\frac{2}{3}$
Aye	$\frac{2}{4}$	Ahmose	$\frac{1}{4}$



Pharaoh's Fractions

Question One:

In this question, students were required to determine the own their completion. They were provided with a table that had a complete the question, and students simply had to match the corresponding name.

1. There are three parts shaded and four parts of the pyramid is complete. This pyramid belongs to *Hor*.
2. There are seven parts shaded and seven parts of the pyramid is complete. This pyramid belongs to *Queen Anka*.
3. There are two parts shaded, two parts of the pyramid is complete. This pyramid belongs to *Pharaoh Ankh*.
4. There are two parts shaded, two parts of the pyramid is complete. This pyramid belongs to *Pharaoh Ankh*.
5. There are two parts shaded, two parts of the pyramid is complete. This pyramid belongs to *Pharaoh Ankh*.
6. There are four parts shaded, four parts of the pyramid is complete. Therefore, $\frac{4}{8}$ of the pyramid is complete.
7. There is one part shaded, one part of the pyramid is complete. Therefore, $\frac{1}{3}$ of the pyramid is complete.
8. There are two parts shaded, two parts of the pyramid is complete. Therefore, $\frac{1}{4}$ of the pyramid is complete.
9. There are eight parts shaded, eight parts of the pyramid is complete. Therefore, the pyramid is complete and is a whole (1). This pyramid belongs to *Queen Anka*.







Canopic Jars


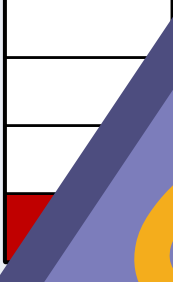
Canopic jars were used by ancient Egyptians to store organs of the deceased. A different jar was used for each of the major organs. These organs would be needed in the afterlife.


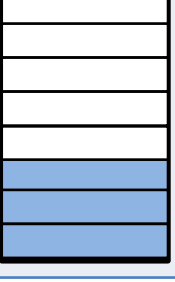


Q1

Pharaoh Siamun has six canopic jars in preparation for his afterlife. Complete the following table for each character by filling in the fraction (or decimal percentage to one decimal place or diagram). The jars are shown in the diagram.

a)  	Fraction:	$\frac{1}{6}$	$\frac{3}{10}$
	Percentage:	$\frac{1}{6} \times 100 = 16.7\%$	$\frac{3}{10} \times 100 = 30\%$

c)  	Fraction:	$\frac{1}{5}$	$\frac{2}{10}$
	Percentage:	$\frac{1}{5} \times 100 = 20\%$	$\frac{2}{10} \times 100 = 20\%$

f)  	Fraction:	$\frac{3}{8}$	$\frac{3}{8}$
	Percentage:	$\frac{3}{8} \times 100 = 37.5\%$	$\frac{3}{8} \times 100 = 37.5\%$



SAMPLE

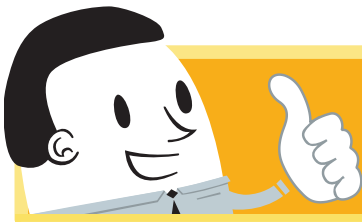
Canopic Jars

Question One:

In this question, students were required to use one piece of information or diagram – to work out two other pieces of information.

- a) There is one part shaded and six parts altogether. Therefore, the fraction of the jar filled is $\frac{1}{6}$. The percentage is calculated by: $1 \div 6 \times 100 = 16.6\%$
- b) The fraction is $\frac{3}{10}$, therefore *three* parts are coloured in on the jar. The percentage is calculated by: $3 \div 10 \times 100 = 30\%$
- c) 25% is the same as $\frac{25}{100}$ and $\frac{1}{4}$. Therefore, *one* part is coloured in on the jar. The fraction is simplified to $\frac{1}{4}$ by dividing both 25 and 100, so the fraction is simplified to $\frac{1}{4}$ and *one* part is coloured in on the jar.
- d) 20% is the same as $\frac{20}{100}$ and $\frac{1}{5}$. Therefore, *two* parts are coloured in on the jar. The fraction is simplified to $\frac{1}{5}$ by dividing both 20 and 100 so the fraction is simplified to $\frac{1}{5}$ and *two* parts are coloured in on the jar.
- e) The fraction is $\frac{1}{3}$, therefore *one* part is coloured in on the jar. The percentage is calculated by: $1 \div 3 \times 100 = 33.3\%$
- f) Three parts are shaded and eight parts altogether. Therefore, the fraction of the jar filled is $\frac{3}{8}$. The percentage is calculated by: $3 \div 8 \times 100 = 37.5\%$





Queen Anka's Jewels

Many ancient artefacts dating back to ancient Egyptian times have been discovered. Some of these include jewellery, which was often found on mummies.

Q1

Thieves have stolen Queen Anka's jewels! To find the jewels, you need to follow the instructions according to the following instructions.



ages of:

$\frac{4}{8}$	$\frac{50}{100}$	50%						$\frac{40}{80}$	$\frac{7}{14}$	$\frac{200}{400}$
$\frac{1}{3}$	$1 \div 2$	$\frac{5}{15}$	$\frac{9}{18}$	$\frac{10}{20}$						$1 \div 2$
$\frac{5}{10}$	$2 \div 6$						$\frac{40}{80}$	$\frac{4}{8}$	$\frac{500}{1000}$	$\frac{6}{12}$
	$\frac{1}{2}$									
33.3%	$\frac{4}{10}$							$1 \div 2$	$\frac{3}{6}$	$\frac{1}{2}$
50%							$\frac{3}{4}$	$\frac{3}{4}$	$4 \div 8$	50%
$\frac{1}{2}$							$\frac{6}{8}$	$\frac{9}{12}$	$\frac{6}{8}$	$\frac{1}{2}$
							$\frac{75}{100}$	$\frac{3}{4}$	$\frac{75}{100}$	$\frac{1}{2}$
			$\frac{3}{4}$	$\frac{6}{8}$			$\frac{3}{4}$	75%		$\frac{12}{16}$
			$\frac{3}{4}$	$\frac{9}{12}$			$\frac{3}{4}$	$\frac{2}{3}$	$\frac{3}{4}$	$\frac{9}{12}$
			$3 \div 4$	75%			$\frac{4}{6}$	66.6%	$\frac{6}{8}$	$\frac{3}{4}$
									$\frac{6}{8}$	75%
									$\frac{5}{20}$	
	$\frac{1}{4}$	$\frac{2}{8}$	$\frac{4}{16}$	$\frac{200}{800}$	$\frac{6}{24}$		25%		$\frac{6}{24}$	$\frac{30}{120}$
	$\frac{3}{12}$						$\frac{1}{4}$	25%	$\frac{1}{4}$	



Queen Anka's Jewels

Question One:

In this question, students were required to colour in the grid using equivalent fractions.



$\frac{4}{8}$	$\frac{50}{100}$	50%		$\frac{6}{12}$	$\frac{12}{24}$	$\frac{3}{6}$	$\frac{10}{100}$
$\frac{1}{3}$	$1 \div 2$	$\frac{5}{15}$	$\frac{9}{18}$	$\frac{1}{3}$		$1 \div 2$	
$\frac{5}{10}$	$2 \div 6$	33.3%	5%			$\frac{500}{1000}$	$\frac{6}{12}$
$\frac{1}{2}$		$\frac{1}{3}$	$\frac{6}{18}$	$2 \div 4$		2	$\frac{3}{6}$
33.3%	$\frac{4}{12}$					$\frac{1}{2}$	
50%		$\frac{2}{3}$		$\frac{3}{4}$	$4 \div 8$	50%	
$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{2}$		$\frac{9}{12}$	$\frac{6}{8}$	$\frac{1}{2}$	$\frac{9}{18}$
$2 \div 4$	66%			$\frac{3}{4}$	$\frac{75}{100}$	$\frac{4}{8}$	
$\frac{10}{20}$	$2 \div 4$			75%		$\frac{12}{16}$	$\frac{1}{2}$
			$\frac{9}{12}$	$\frac{2}{3}$	$\frac{3}{4}$	$\frac{9}{12}$	$\frac{6}{8}$
			$\frac{4}{6}$	66.6%		$\frac{6}{8}$	$\frac{3}{4}$
							75%
	$\frac{4}{16}$	$\frac{200}{800}$	$\frac{6}{24}$	25%	$\frac{5}{20}$	$\frac{6}{24}$	$\frac{30}{120}$
			$\frac{1}{4}$	25%	$\frac{1}{4}$		





End of Learning

Please

If you feel there are any issues with this booklet for you to use in your class, you may contact us via email or phone. We offer a variety of activities (whole worksheets, half worksheets, and worksheets) for

Alternative activities for the entire worksheet to be used at a later date.

SAMPLE

