

Addition, Subtraction, Multiplication and Division

Maths | Year 6 | Steps to Progression Overview

The aim of this overview is to support teachers using PlanIt Maths to show the most logical sequence to teach each area of maths. We also want to fully support teachers who use the **White Rose Maths** scheme of learning to make full use of the resources available within PlanIt Maths. Whenever possible, lesson packs have been matched to each of the small steps on the **White Rose Maths** scheme of learning.

Y6 Yearly Overview

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value		Number: Addition, Subtraction, Multiplication and Division				Fractions				Geometry: Position and Direction	Consolidation
Spring	Number: Decimals	Number: Percentages		Number: Algebra		Measurement: Converting Units	Measurement: Perimeter, Area and Volume		Number: Ratio		Consolidation	
Summer	Geometry: Properties of Shapes		Problem Solving			Statistics		Investigations				Consolidation

Teacher Note:

The White Rose small step **Mental calculations and estimation** appears in more than one sequence of lessons within this unit and is covered within two National Curriculum objectives in our _____ : 'perform mental calculations, including with mixed operations and large numbers' and 'use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy'.

Introduction

In Year 6 Addition, Subtraction, Multiplication and Division, children develop their ability to solve problems demanding efficient written and mental methods of calculation and use estimation to check answers to calculations. Children will build upon previous learning of addition and subtraction written methods and use long and short written methods for multiplication and division. Children will begin to use their knowledge of the order of operations to carry out calculations involving the four operations and identify common multiples, common factors and prime numbers.

Resources

In addition to your standard maths resources, you will need: a beanbag, sports equipment, bottle-top lids or large counters, packs of cards with the Jack, Queen and King cards taken

Assessment Statements

By the end of this unit...

...all children should be able to:

- multiply numbers by a one-digit number using long multiplication;
- solve reasoning questions using the formal method of long multiplication;
- divide numbers by a two-digit number using long division;
- solve one-step division problems, rounding the answer depending on the context;
- divide four-digit numbers by a two-digit number using short division without remainders;
- perform one-step mental calculations with increasingly large numbers;
- solve reasoning questions involving mental addition, subtraction, multiplication and division;
- add and subtract whole numbers using a formal written method;
- correctly use the order of operations to carry out calculations;
- explore the order of operations using brackets;
- find missing numbers using the inverse;
- select the correct operation/s to use and solve a problem, checking the answer using estimation;
- solve one-step problems and check their answer using estimation;
- round numbers to a specified degree of accuracy;
- use rounding to check answers to problems;
- sort one-step problems in a sorting diagram;
- solve two-step problems involving addition and subtraction.

...most children will be able to:

- multiply numbers by a two-digit number using long multiplication;
- divide using a formal written method and use rounding depending on the context;
- solve two-step division problems, rounding the answer depending on the context;
- divide four-digit numbers (with decimals) by a two-digit number using short division;
- practise mental calculations with increasingly large numbers using all four operations;
- perform mental calculations with mixed operations;
- perform two-step mental calculations with increasingly large numbers;
- add and subtract numbers, including decimals, using a formal written method;
- identify missing brackets within a calculation;
- solve two-step problems and check their answer using estimation;
- round a number taking into account the context;
- sort one and two-step problems in a Venn diagram;
- solve multi-step problems involving addition and subtraction.

...some children will be able to:

- solve missing digit problems involving long multiplication;
- divide using a formal written method and use rounding depending on the context in multi-step calculations;
- solve missing digit problems involving long division;
- create comparison sentences involving long division calculations;
- create their own word problems involving addition, subtraction, multiplication and division;
- solve multi-step problems and check their answer using estimation;
- sort and solve one, two and multi-step problems in a Venn diagram;
- solve complex multi-step problems.

Lesson Progression

Addition and Subtraction Multi-Step Problems (1): Pop-Up Shop

NC Statement: solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

White Rose Maths Small Step: Add and subtract whole numbers

Description: Children are introduced to RUCSAC as a method for working through contextual problems requiring them to add and subtract whole numbers. They work through RUCSAC one step at a time, led by the teacher, then decide which operations to use as a class for a range of word problems. Children learn to add and subtract whole numbers.

Addition and Subtraction Multi-Step Problems (2): Open the Box

NC Statement: solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

White Rose Maths Small Step: Add and subtract whole numbers

Description: Using RUSCAC, children are guided through multi-step problems, working out how many steps are required. They then complete differentiated multi-step problems independently. Children learn to add and subtract whole numbers.

Addition and Subtraction Multi-Step Problems (3): Multi-Step Problems Reasoning

NC Statement: solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

White Rose Maths Small Step: Add and subtract whole numbers

Description: As a class, children complete a series of multi-step reasoning problems with increasingly large numbers of steps required to solve them. They move on to complete problems in pairs, where they are required to explain if a given answer is correct through checking each step. Children learn to add and subtract whole numbers.

Long Multiplication (1): Tell a Joke

NC Statement: multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication

White Rose Maths Small Step: Multiply up to a 4-digit by 1-digit number

Description: Children revise the long multiplication method to multiply a 4-digit number by a 1-digit number by identifying incorrect answers from children on the Lesson Presentation. Children then find the punchline to a joke by performing multiplications and using the answers to crack a code. Children learn to multiply up to a 4-digit by 1-digit number.

Long Multiplication (2): Multiplication Battle

NC Statement: multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication

White Rose Maths Small Step: Multiply up to a 4-digit by 1-digit number

Description: Children are introduced to multiplying 3-digit numbers by 2-digit numbers using the formal written method. The method is modelled several times for children to follow and join in with before they move on to work in pairs to practise the method. Children learn to multiply up to a 4-digit by 2-digit number.

Long Multiplication (3): Multiplying Millipede

NC Statement: multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication

White Rose Maths Small Step: Multiply up to a 4-digit by 1-digit number

Description: The teacher models how to multiply a 4-digit number by a 2-digit number and children practise this alongside them. Children then apply their long multiplication skills to complete a set of differentiated loop cards. Children learn to multiply up to a 4-digit by 2-digit number.

Long Multiplication (4): Long Multiplication Reasoning

NC Statement: multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication

White Rose Maths Small Step: Multiply up to a 4-digit by 1-digit number

Description: Children apply their knowledge of how to multiply using the formal method of long multiplication to a variety of reasoning and mastery style questions, both teacher-led and independently. Children learn to multiply up to a 4-digit by 2-digit number.

Long Division (1): Jungle Division

NC Statement: divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context

White Rose Maths Small Step: Long division (1). Long division (2). Long division (3). Long division (4).

Description: Children are introduced to the formal written method of long division. They have the method modelled by the teacher. This lesson requires children to divide 3-digit numbers by 1-digit numbers as a class and individually, then challenges them to answer a reasoning question in the plenary. Children learn to use long division.

Long Division (2): Monster Maths

NC Statement: divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context

White Rose Maths Small Step: Long division (1). Long division (2). Long division (3). Long division (4).

Description: Children begin to divide by 2-digit numbers using the formal written method of long division. They will find decimal remainders to 2 decimal places and are asked to explain their working in the plenary. Children learn to use long division.

Long Division (3): Tic-Tac-Toe Problem Solving

NC Statement: divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context

White Rose Maths Small Step: Long division (1). Long division (2). Long division (3). Long division (4).

Description: This lesson asks children to continue practising long division, with the addition of contexts. They will apply the formal written method to a range of scenarios and decide when to round a remainder up or down as appropriate. Children learn to use long division.

Long Division (4): Long Division Reasoning

NC Statement: divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context

White Rose Maths Small Step: Long division (1). Long division (2). Long division (3). Long division (4).

Description: Children are taken step by step through a variety of reasoning and mastery level long division problems. They will complete an activity sheet, guided by the teacher, then move on to working in a pair. They will be shown how to take relevant information from a longer word problem and decide if they need to find a remainder, decimal remainder or round their answer. Children learn to use **long division**.

Short Division (1): Gone Fishing

NC Statement: divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context

White Rose Maths Small Step:
Short division

Description: Children have short division modelled for them, dividing by single-digit numbers. They are presented with short division problems in context, led by the teacher, then practise their method through playing a fishing game. Children learn to use **short division**.

Short Division (2): Engines Ready

NC Statement: divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context

White Rose Maths Small Step:
Short division

Description: Children have short division modelled for them, dividing 4-digit numbers by 2-digit numbers. They are presented with short division problems in context, led by the teacher. They will also decide whether to round remainders up or down depending on the context, then play a differentiated pairs game. Children learn to use **short division**.

Short Division (3): Inspector Clue

NC Statement: divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context

White Rose Maths Small Step:
Short division

Description: Children are asked to search for clues in contextual division problems to help them decide whether their remainders need rounding up or down. They will be challenged to set their own division problems for a partner. Children learn to use **short division**.

Short Division (4): Short Division Reasoning

NC Statement: divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context

White Rose Maths Small Step:
Short division

Description: Children are asked to solve a variety of reasoning and mastery level questions using short division. They will be taken through problems with a teacher to pick out the relevant information for each context, then complete differentiated word problems independently. Children learn to use **short division**.

Mental Calculations (1): Number Puzzle

NC Statement: perform mental calculations, including with mixed operations and large numbers

White Rose Maths Small Step: Mental calculations and estimation

Description: Children are asked to choose the most appropriate strategies for mentally calculating using increasingly large numbers, before applying them as a class. They are encouraged to explain why they chose a particular method. They use mental calculations and estimation in pairs to complete the Number Puzzle activity. Children learn to perform mental calculations and estimation.

Mental Calculations (2): Players, Are You Ready?

NC Statement: perform mental calculations, including with mixed operations and large numbers

White Rose Maths Small Step: Mental calculations and estimation

Description: Children recap how to choose an appropriate mental method. They use mental calculations and estimation to solve problems involving increasingly large numbers and all four operations. In pairs, children compete with each other to complete a 4-in-a-row game. Children learn to perform mental calculations and estimation.

Mental Calculations (3): Code Busters

NC Statement: perform mental calculations, including with mixed operations and large numbers

White Rose Maths Small Step: Mental calculations and estimation

Description: Children recap how to choose an appropriate mental method. They use the strategies learned in previous lessons to solve problems involving increasingly large numbers and all four operations in context. Children apply RUCSAC to work through word problems which reveal an answer through cracking a code. Children learn to perform mental calculations and estimation.

Mental Calculations (4): Gotta Find Em All!

NC Statement: perform mental calculations, including with mixed operations and large numbers

White Rose Maths Small Step: Mental calculations and estimation

Description: Children look more in depth at the reasons for picking certain strategies when performing mental calculations. In pairs, they will compete in a star grid battleships-style game, performing mental calculations to uncover squares on a grid. As a plenary, they will be asked to explain why an answer is incorrect, drawing on their knowledge of order of operations. Children learn to perform mental calculations and estimation.

Mental Calculations (5): Calcu-late!

NC Statement: perform mental calculations, including with mixed operations and large numbers

White Rose Maths Small Step: Mental calculations and estimation

Description: Children review mental strategies, in particular making notes on the important information in a problem and the order of steps needed. They play a simple board game in pairs that requires them to perform mental calculations and estimation. Children learn to perform mental calculations and estimation.

Mental Calculations (6): Mental Calculations Reasoning

NC Statement: perform mental calculations, including with mixed operations and large numbers

White Rose Maths Small Step: Mental calculations and estimation

Description: Children apply their knowledge of mental calculations and estimation to a variety of reasoning questions. They will work through a number of problems as a class, guided by a teacher, before tackling problems independently. Finally, they will look at the answers as a class and discuss why answers are incorrect or correct. Children learn to perform mental calculations and estimation.

Common Factors, Multiples and Prime Numbers (1): Fun Factory

NC Statement: identify common factors, common multiples and prime numbers

White Rose Maths Small Step: Common factors

Description: Children are introduced to 'factor' as a piece of mathematical vocabulary and are asked to find common factors shared by two numbers and record these in a diagram. Children learn to identify and use common factors.

Common Factors, Multiples and Prime Numbers (2): Marine Multiples

NC Statement: identify common factors, common multiples and prime numbers

White Rose Maths Small Step: Common multiples

Description: Children are reminded of the word 'multiple' and find common multiples of numbers rolled on a dice. They discuss 'lowest common multiple'. In pairs, they will complete a painting-by-numbers-style activity using their knowledge of common multiples before moving on to problems involving common multiples in context. Children learn to identify and use common multiples.

Common Factors, Multiples and Prime Numbers (3): Prime Detectives

NC Statement: identify common factors, common multiples and prime numbers

White Rose Maths Small Step: Primes

Description: Children are introduced to prime numbers and are given a timed task to find as many as they can in five minutes, followed by a whole-class activity where they identify consecutive primes. Detective skills are put into practice to reveal a saboteur using their knowledge of prime numbers. Finally, children generate their own prime numbers using the digits given. Children learn to identify primes.

Common Factors, Multiples and Prime Numbers (4): Common Factors, Common Multiples and Prime Numbers

NC Statement: identify common factors, common multiples and prime numbers

White Rose Maths Small Step: Primes. Common factors. Common multiples

Description: Children work through a range of reasoning and contextual problems led and modelled by a teacher involving primes, factors and common multiples. They try similar problems independently and check their answers as a class. Children learn to apply their knowledge of primes, common factors and common multiples.

Order of Operations (1): Pyramid Puzzles

NC Statement: use their knowledge of the order of operations to carry out calculations involving the 4 operations

White Rose Maths Small Step: Order of operations. Add and subtract whole numbers

Description: Children are reminded of the formal written methods for addition and subtraction. They complete number pyramids, adding or subtracting to find the next tier of the pyramid. Children learn about the order of operations.

Order of Operations (2): Colour Me In

NC Statement: use their knowledge of the order of operations to carry out calculations involving the 4 operations

White Rose Maths Small Step: Order of operations. Add and subtract whole numbers

Description: Children practise using the formal written method for addition and subtraction. They complete calculations with increasingly large numbers to complete a paint-by-numbers-style activity. Children learn about the order of operations.

Order of Operations (3): Monster Multiplication

NC Statement: use their knowledge of the order of operations to carry out calculations involving the 4 operations

White Rose Maths Small Step: Order of operations. Multiply up to a 4-digit by 1-digit number

Description: Children recap long multiplication with a teacher leading, then independently work across a variety of tasks. Children learn about the **order of operations**.

Order of Operations (4): Division Doughnuts

NC Statement: use their knowledge of the order of operations to carry out calculations involving the 4 operations

White Rose Maths Small Step: Order of operations. Long division (1). Long division (2). Long division (3). Long division (4). Short division

Description: Children recap long and short division methods, including contextual word problems, led by a teacher. They move on to a differentiated independent task. Children learn about the **order of operations**.

Order of Operations (5): Bonkers BODMAS

NC Statement: use their knowledge of the order of operations to carry out calculations involving the 4 operations

White Rose Maths Small Step: Order of operations

Description: Children are introduced to the correct order of operations where there are multiple steps to a problem, using BODMAS to remember. They will apply this rule to some practice questions before working independently. Children learn about the **order of operations**.

Order of Operations (6): Bonkers Brackets

NC Statement: use their knowledge of the order of operations to carry out calculations involving the 4 operations

White Rose Maths Small Step: Order of operations

Description: Children are introduced to performing calculations inside brackets first when looking at the order of operations. They work through teacher-led examples and complete similar work independently. In the plenary, children are invited to add operations to make the calculations correct. Children learn about the **order of operations**.

Order of Operations (7): Bonkers Brackets 2

NC Statement: use their knowledge of the order of operations to carry out calculations involving the 4 operations

White Rose Maths Small Step: Order of operations

Description: Children apply their knowledge of brackets from the previous lesson to add missing brackets from multistep calculations to make them correct. As a class, they then consider how the location of brackets can change an answer drastically and use < and > symbols to show this. Children learn about the **order of operations**.

Order of Operations (8): Order of Operations Reasoning

NC Statement: use their knowledge of the order of operations to carry out calculations involving the 4 operations

White Rose Maths Small Step: Order of operations

Description: Children are guided through a selection of contextual problems requiring BODMAS to help solve them. They apply their knowledge of order of operations to a variety of reasoning and mastery questions. Children learn about the **order of operations**.

Solve Problems (1): The Vault

NC Statement: solve problems involving addition, subtraction, multiplication and division

White Rose Maths Small Step:
Reasoning from known facts

Description: Children are reminded of the term 'inverse' and how we can use inverse operations to find missing numbers. They work in pairs to complete a missing number pyramid puzzle, before solving missing number problems to reveal a code to the vault. Children learn about reasoning from known facts.

Solve Problems (2): Problem Sorter

NC Statement: solve problems involving addition, subtraction, multiplication and division

White Rose Maths Small Step:
Reasoning from known facts

Description: Children complete quiz-show-style multiple-choice word problems. They will be asked to identify the operations needed in a range of problems by moving to the correct sign in the classroom, before independently working through a variety of problems. Children learn about reasoning from known facts.

Solve Problems (3): Cupcake Creator

NC Statement: solve problems involving addition, subtraction, multiplication and division

White Rose Maths Small Step:
Reasoning from known facts

Description: Children apply their known facts to a range of baking problems. They will work in pairs to complete problems in context to complete a cake. Children learn about reasoning from known facts.

Solve Problems (4): Games Galore

NC Statement: solve problems involving addition, subtraction, multiplication and division

White Rose Maths Small Step:
Reasoning from known facts

Description: Children briefly review how to apply RUCSAC to a word problem and use estimation to check answers. They quickly match a problem to a correct answer using estimation and move on to playing a problem-solving game in pairs. They are also tasked with writing their own problems to add to the game. Children learn about reasoning from known facts.

Solve Problems (5): Problem Solving Reasoning

NC Statement: solve problems involving addition, subtraction, multiplication and division

White Rose Maths Small Step:
Reasoning from known facts

Description: Children are led by a teacher through a series or longer multi-step problems, each involving more than one operation, some including measures and money. They then independently solve problems and show their working for each one. They are given the opportunity to see the correct answers and working for each on the Lesson Presentation. Children learn about reasoning from known facts.

Estimation (1): Tabletop Olympics

NC Statement: use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

White Rose Maths Small Step:
Mental calculations and estimation

Description: By looking at various pictorial representations, children are asked to estimate values and explain their answers. They are asked to perform mental calculations and use estimation to check their answers to record times and distances in sporting events. Children learn to apply mental calculations and estimation.

Estimation (2): The Dog Chewed My Home Learning

NC Statement: use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

White Rose Maths Small Step:
Mental calculations and estimation

Description: Children discuss the usefulness of rounding numbers when checking answers, as a form of estimation. They use rounding to check answers, choosing an appropriate degree of accuracy. Independently, children perform calculations, explain how they would use rounding and estimation to check their answer and use this information to decide if their answer looks correct. Children learn how to use estimation.

Estimation (3): Estimation Reasoning

NC Statement: use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

White Rose Maths Small Step:
Mental calculations and estimation














Description: In pairs, children practise using estimation in context, then calculate the accurate answer to see if their estimation was close. They independently tackle mastery-style reasoning questions and work through their answers to self-assess after. Children learn how to use estimation.

Addition, Subtraction, Multiplication and Division: The Dog Chewed My Home Learning

Aim: Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. I can use rounding to check answers to problems.	Success Criteria: I can round up or down depending on the digit. I can round to an appropriate degree of accuracy. I can use rounding to help me decide if an answer is correct or incorrect.	Resources: Lesson Pack 0-9 Dice. If these are not available, please use the template provided.
	Key/New Words: Estimate, roughly, close to, exact, exactly, round, nearest, approximate, approximately, context, rounding up, rounding down.	Preparation: 0-9 Dice - as required Home Learning Questions - 1 per child Home Learning Record Sheet - 1 per child Home Learning Activity Sheet - 1 per child Extra Challenge Activity Sheet - as required

Prior Learning: It will be helpful if children have a secure understanding of place value, multiplication facts and corresponding number facts.

Learning Sequence

	On a Roll: Split the class into groups of four. One child rolls three 0-9 Dice at the same time to create a three-digit number. Repeat, creating another three-digit number. The children work together to add the numbers together, sharing any tips on how to quickly find the total, e.g. using pairs to 10 or 100, doubles.	
	Helpful Hint: Ask children in their own words what it means to round numbers. Discuss with children why we round numbers. Explain that rounding can be used to estimate and check answers. Demonstrate using rounding to check the answers to the problems on the Lesson Presentation . Model selecting whether you are going to round to 10, 100 or 1000 and give reasons why.	
	The Goldfish Stole My Home Learning: Show the problems on the Lesson Presentation . On each slide, there are two possible rounded answers (on the left and right side of the slide). Children stand next to the side of the board that they think shows the correct answer. Can children explain their reasons for choosing that answer?	
  Place chairs in a circle and place one of the Home Learning Questions on each chair. Children choose a seat, starting on that question first. They have a certain amount of time to finish before moving on to the next seat. Children use rounding to prove the answer is correct or incorrect , recording their answers on the differentiated Home Learning Record Sheet . Give extra time for children to go back and complete questions at the end.	  In mixed-ability pairs, children complete the Home Learning Activity Sheet , solving word problems and checking answers by rounding. An Extra Challenge Activity Sheet is provided as an extension activity if required.	
	Home Learning Feedback: Go through the answers to the questions. Ask children to explain their methods . Ask the class why it's useful to use estimation and rounding. Discuss their answers.	

Masterit

Useit: Encourage children to use rounding to check their answers in tomorrow's maths lesson.

Watchit: Watch the video [_____](#). Discuss ideas about why it might be necessary to estimate because a calculation would be too difficult or inconvenient.



Maths

Addition, Subtraction,
Multiplication and Division

The Dog Chewed My Home Learning

[Redacted]

[Redacted]

[Redacted]

Aim

- I can use rounding to solve problems.

Success Criteria

- I can round up or down depending on the digit.
- I can round to an appropriate degree of accuracy.
- I can use rounding to help me decide if an answer is correct or incorrect.

On a Roll

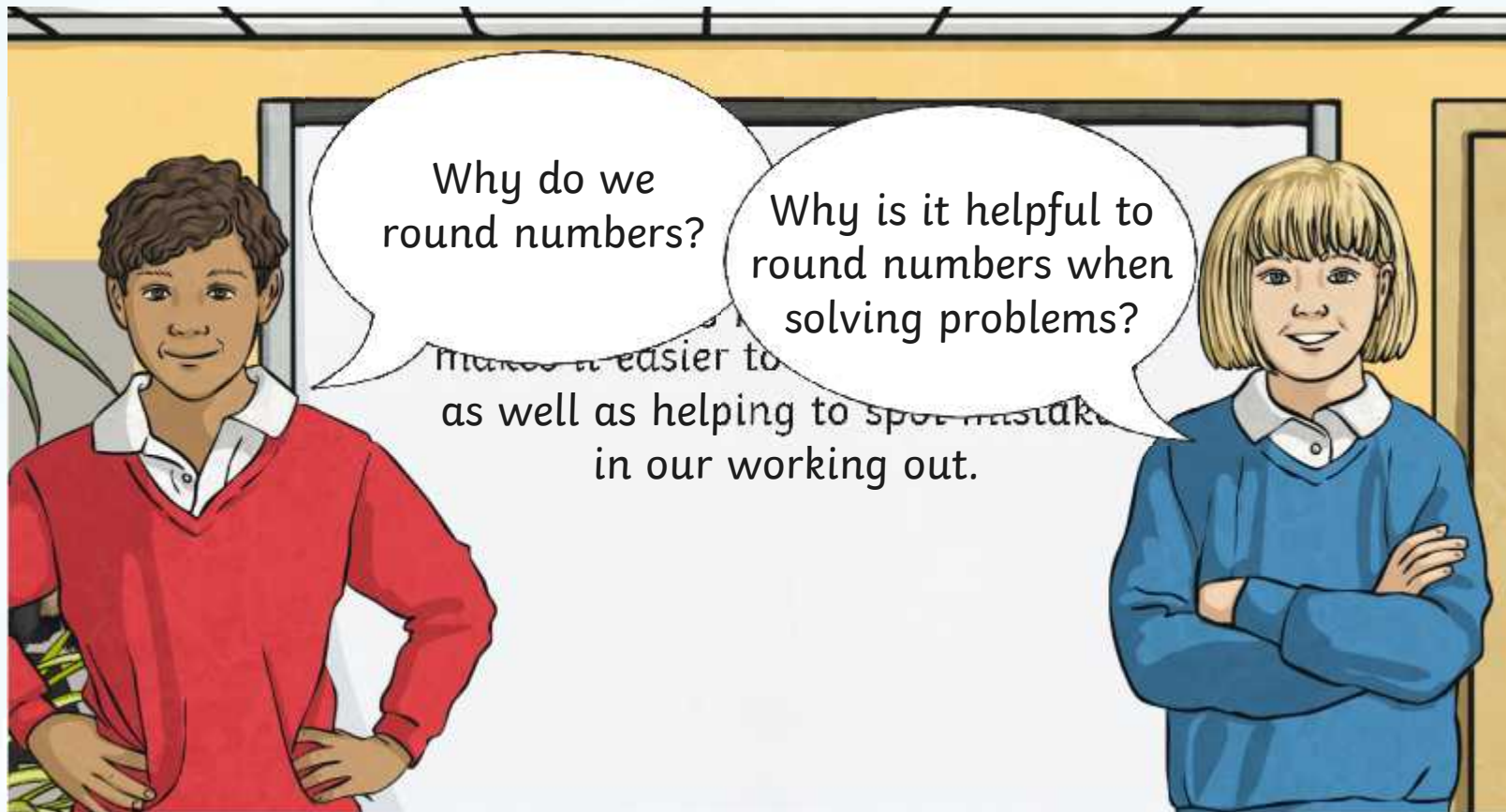


Split into groups of four.



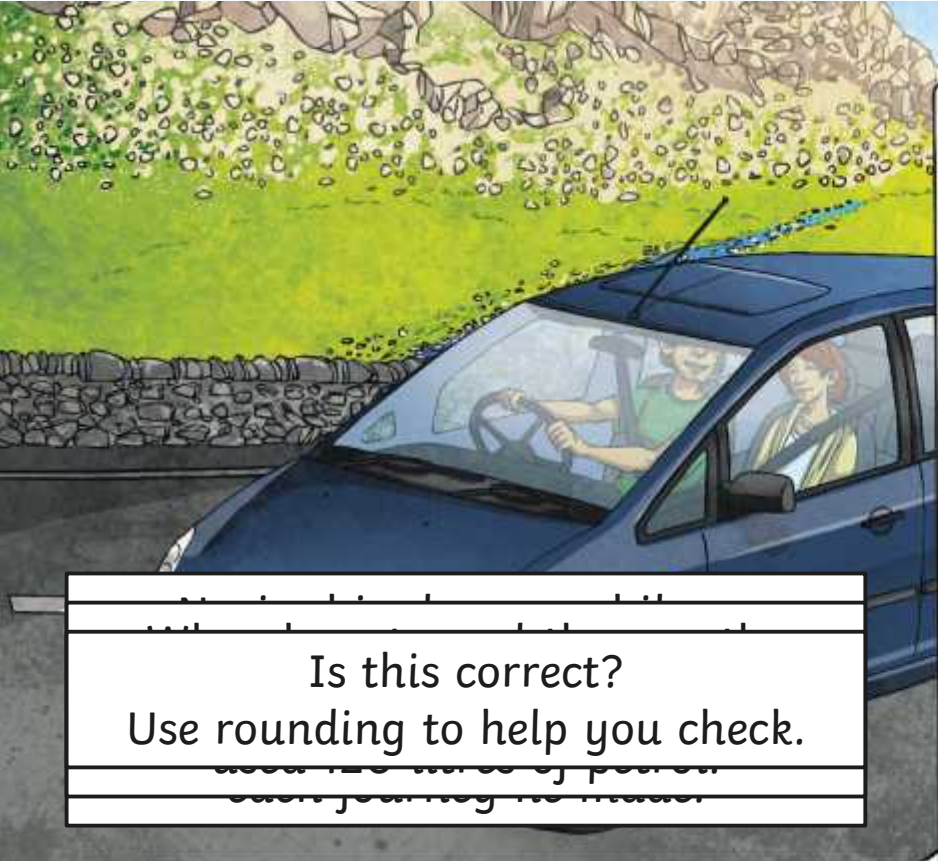
Helpful Hint

What does it mean to round numbers?



Helpful Hint

We are going to use rounding to check the answer to this question.

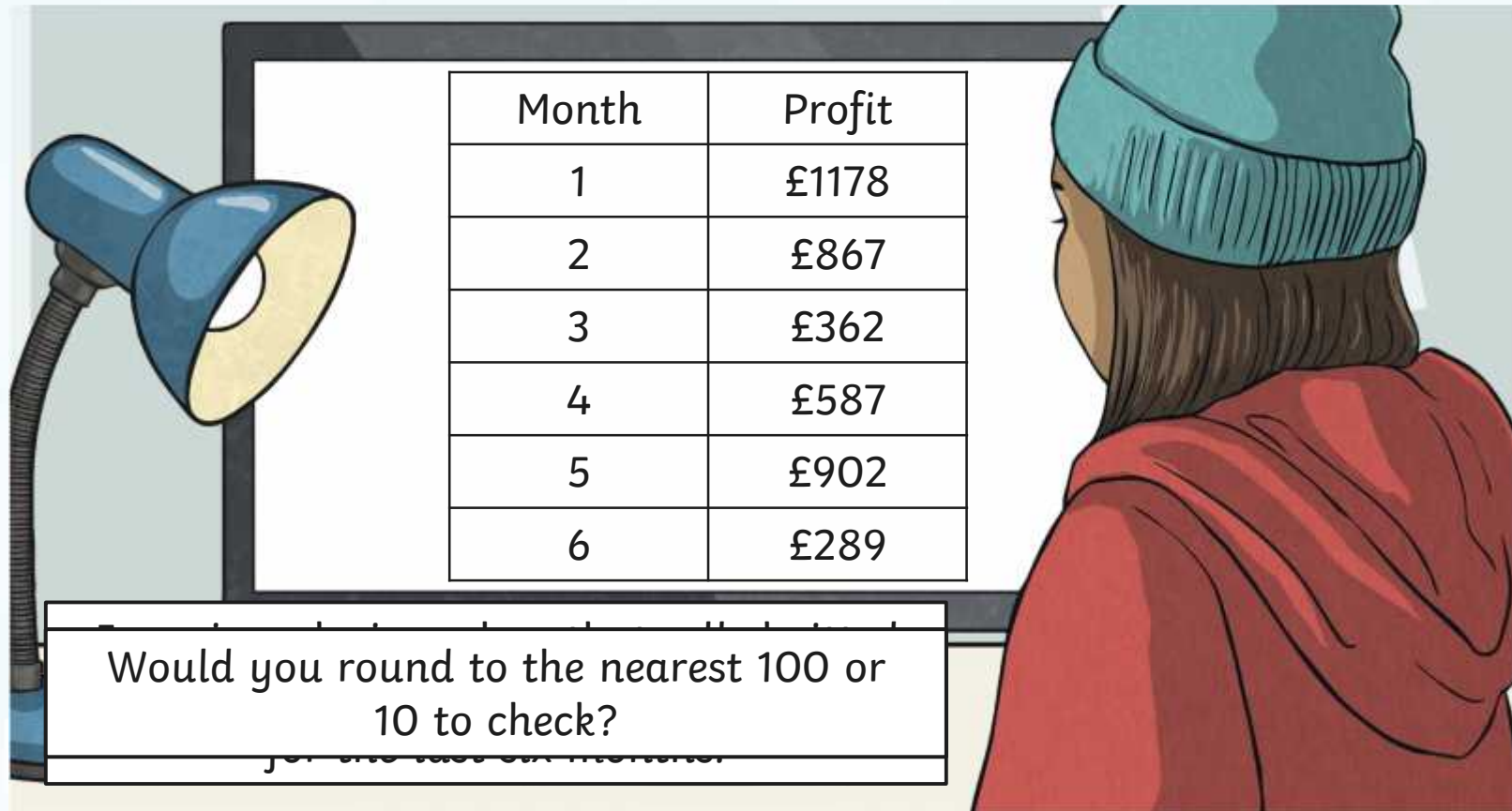


Is this correct?
Use rounding to help you check.

<i>Journey</i>	<i>Litres Used</i>
1	8
2	13
3	1
4	18
5	9
6	21

Helpful Hint

We are going to use rounding to check the answer to this question.



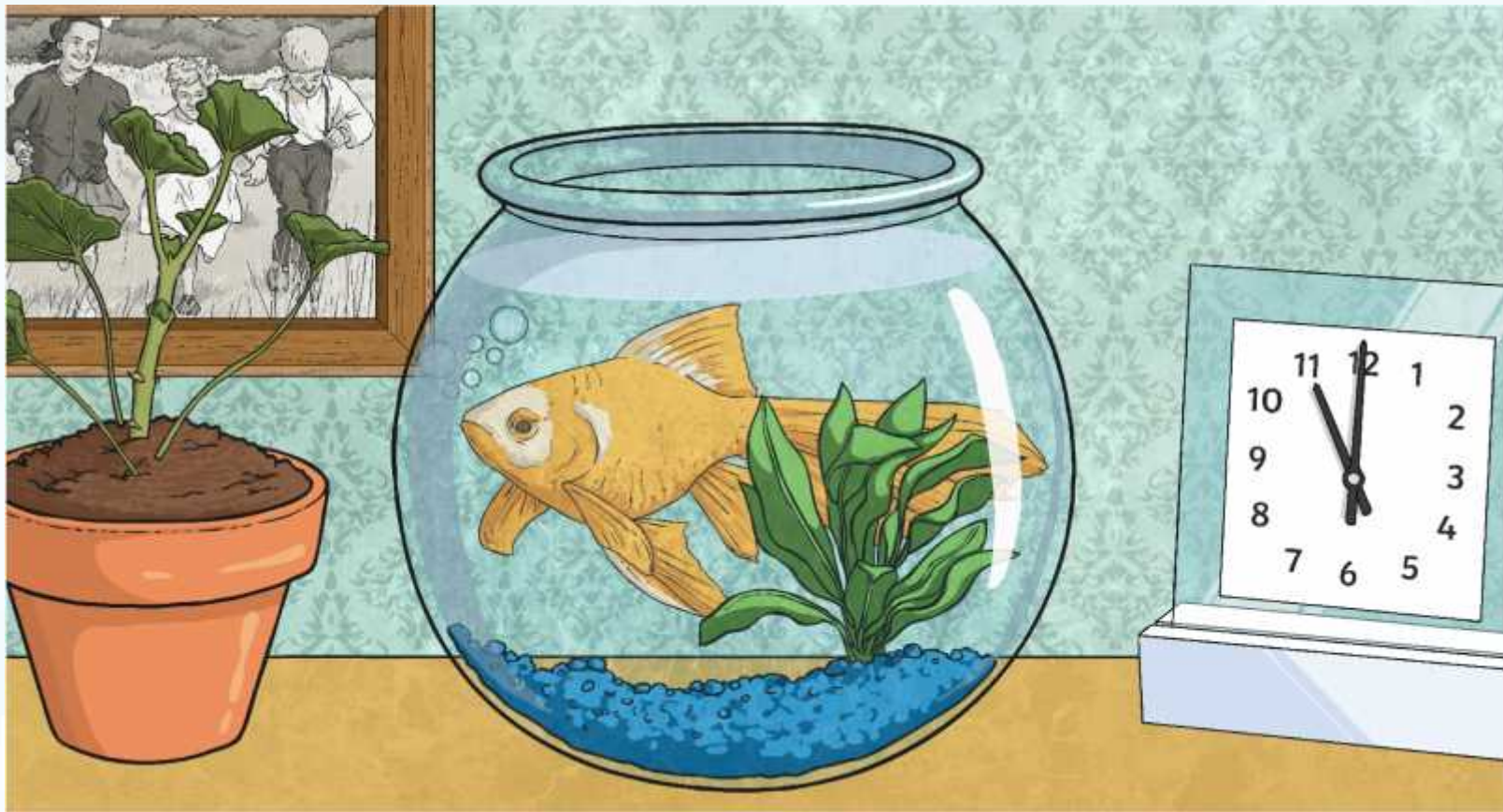
Month	Profit
1	£1178
2	£867
3	£362
4	£587
5	£902
6	£289

Would you round to the nearest 100 or 10 to check?

The Goldfish Stole My Home Learning



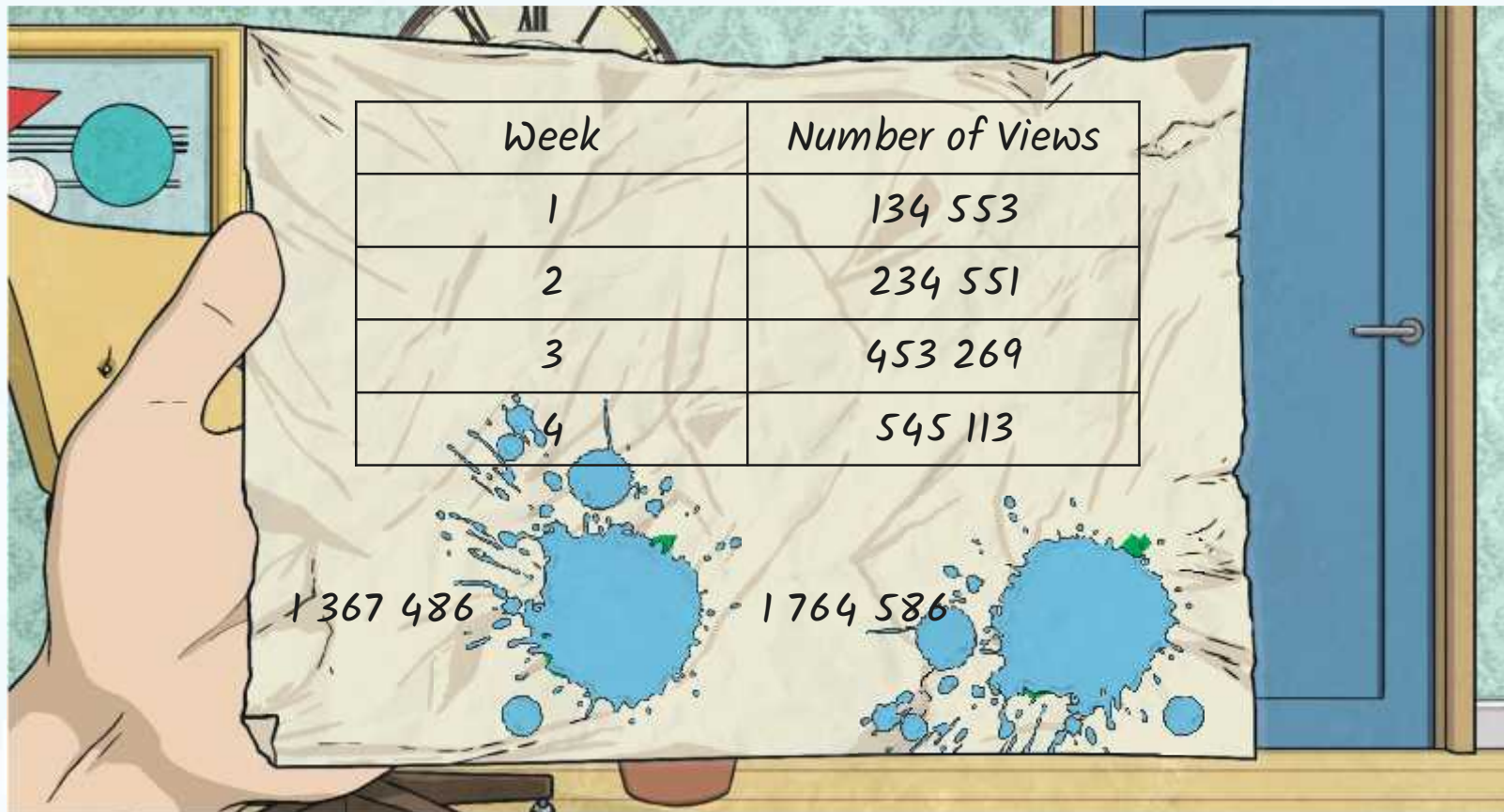
Help! The goldfish stole my home learning again and the water has smeared the answers.



The Goldfish Stole My Home Learning



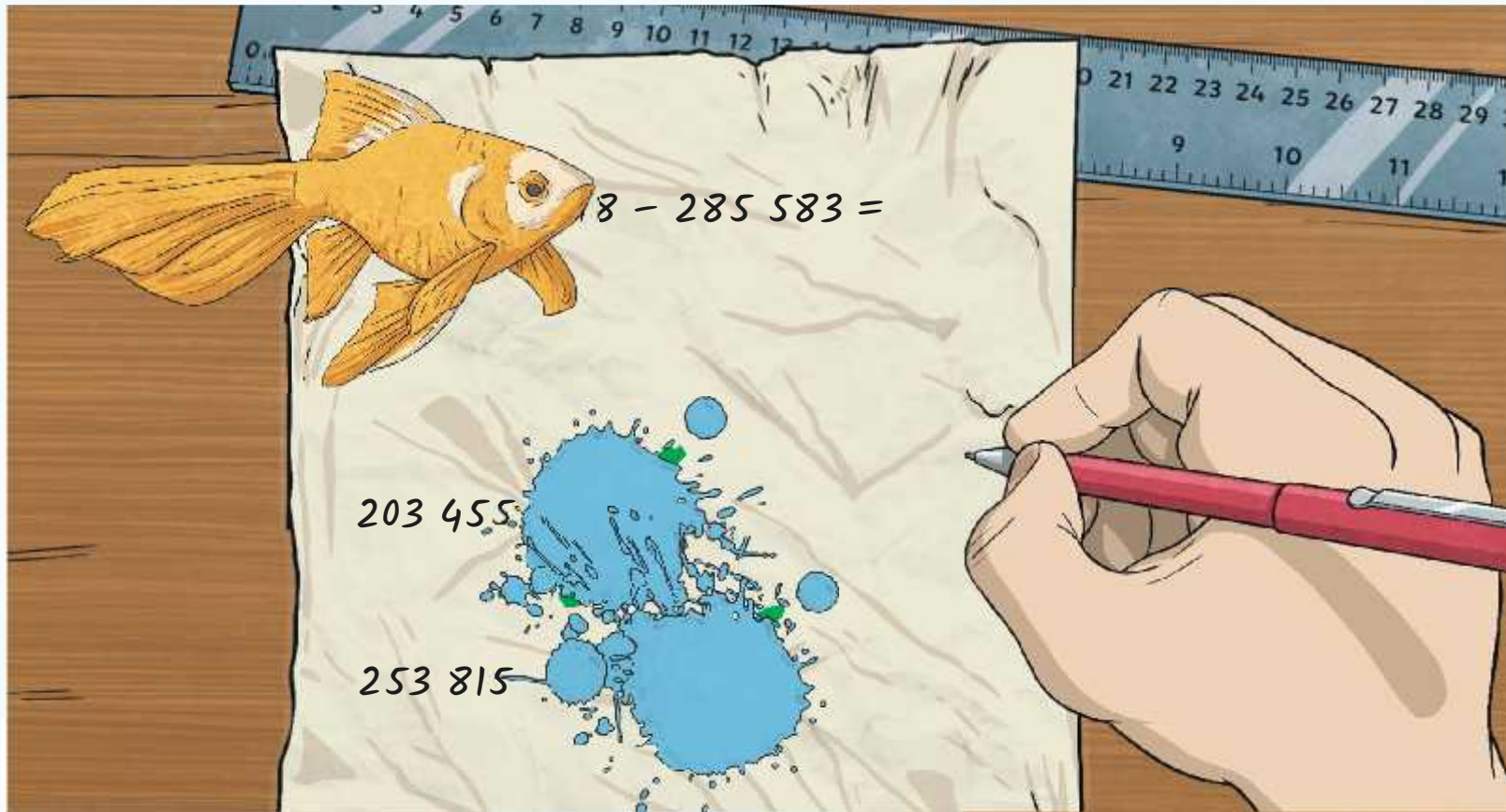
The chart below shows the number of views a video on YouTube has received over four weeks. Using estimation, which do you think is the total number of views that it might have received over four weeks?



The Goldfish Stole My Home Learning



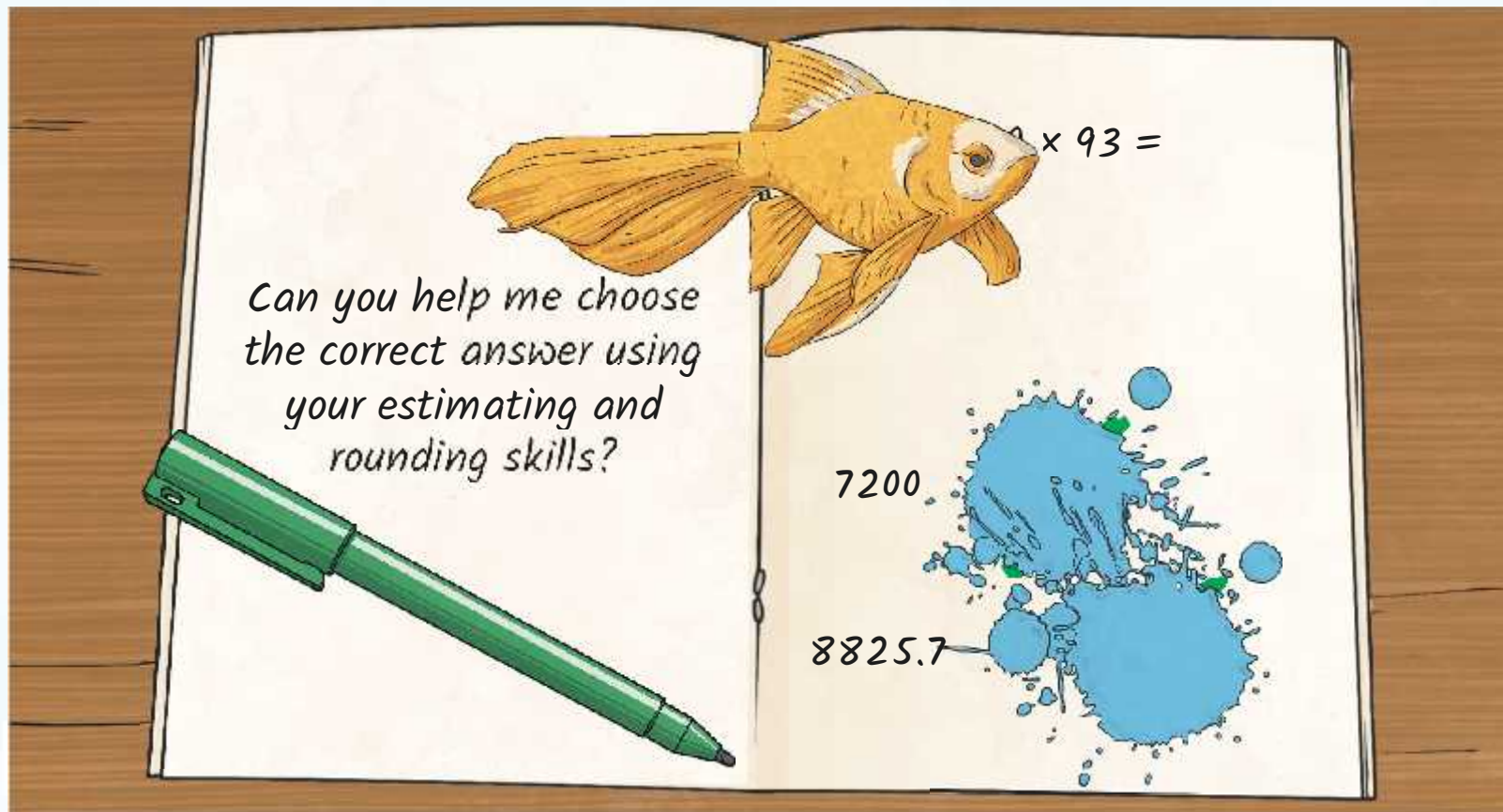
Help! The goldfish stole my home learning and now my water has
estimated my reading and writing skills?



The Goldfish Stole My Home Learning



Help! The goldfish stole my home learning again and the water has smeared the answers.



Can you help me choose the correct answer using your estimating and rounding skills?

$$9 \times 93 =$$

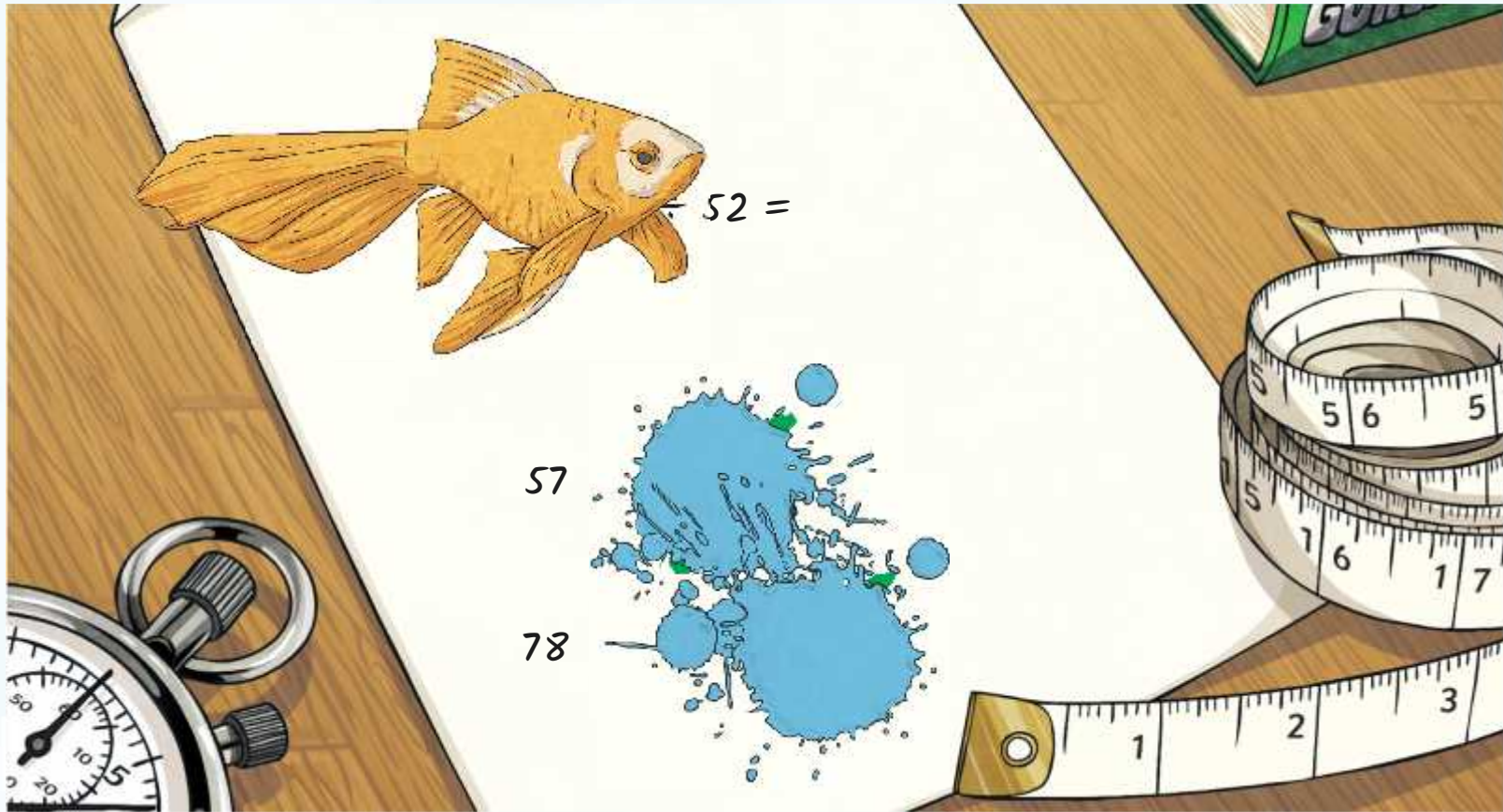
7200

8825.7

The Goldfish Stole My Home Learning



Help! The goldfish stole my home learning and now my water has
estimated through diving skills?



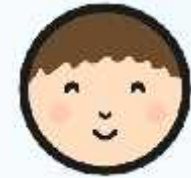
The Dog Chewed My Home Learning



Oh no! Bruce has chewed my home learning again!



The Dog Chewed My Home Learning



Use your marvellous maths skills to complete these activities:

Home Learning Record Sheet

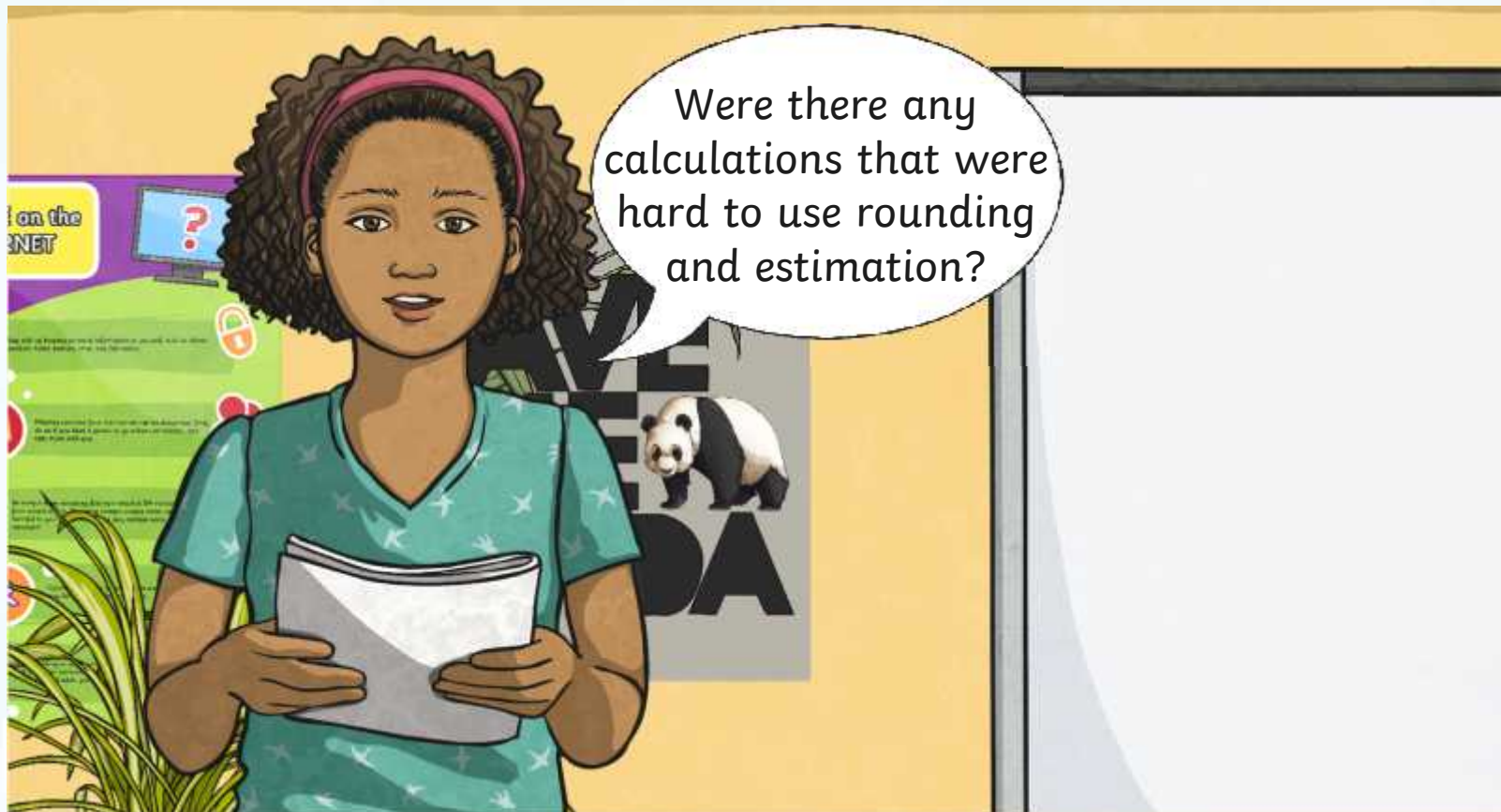
Use your marvellous maths skills to solve the problems.

Question	What is the calculation?	Answer and explanation	Does the calculation look correct?
What is the sum of 490 and 100?	$490 + 100 =$		
What is the sum of 200 and 100?	$200 + 100 =$		
What is the sum of 500 and 100?	$500 + 100 =$		
What is the sum of 700 and 100?	$700 + 100 =$		
What is the sum of 800 and 100?	$800 + 100 =$		
What is the sum of 900 and 100?	$900 + 100 =$		
What is the sum of 1000 and 100?	$1000 + 100 =$		

Home Learning Feedback



What was useful to do when checking the calculations?



Aim

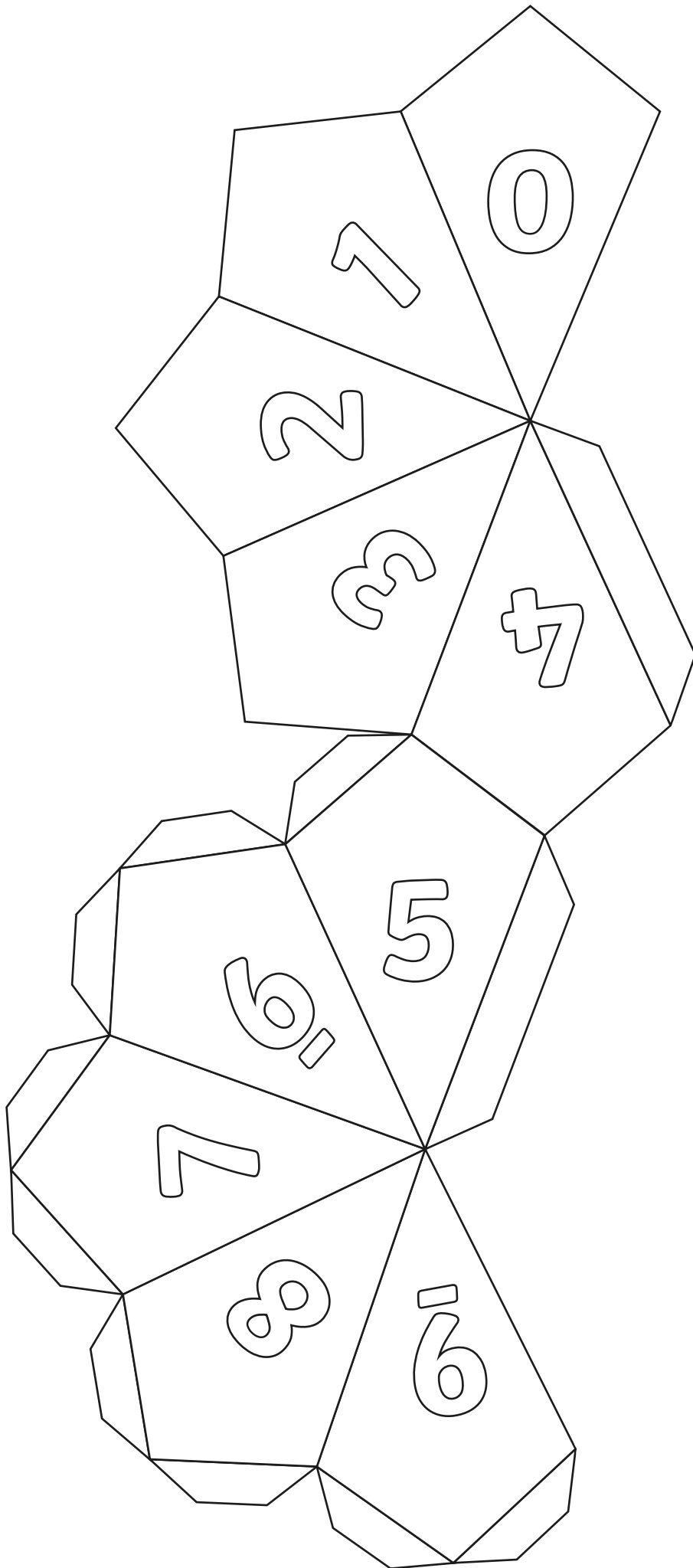


- I can use rounding to solve problems.

Success Criteria

- I can round up or down depending on the digit.
- I can round to an appropriate degree of accuracy.
- I can use rounding to help me decide if an answer is correct or incorrect.







Extra Challenge

I can use rounding to check answers to problems.



- 1) If the rounded answer is 560, what could the question be? Give three different examples.
 - a. _____
 - b. _____
 - c. _____

- 2) If the rounded answer is 1200, what could the question be? Give three different examples.
 - a. _____
 - b. _____
 - c. _____

- 3) Use rounding and estimation to match the calculation to the answer.

$$(4.6 \times 5.7) + 52.59$$

$$4692 \div 46$$

$$672 \div 3.5$$

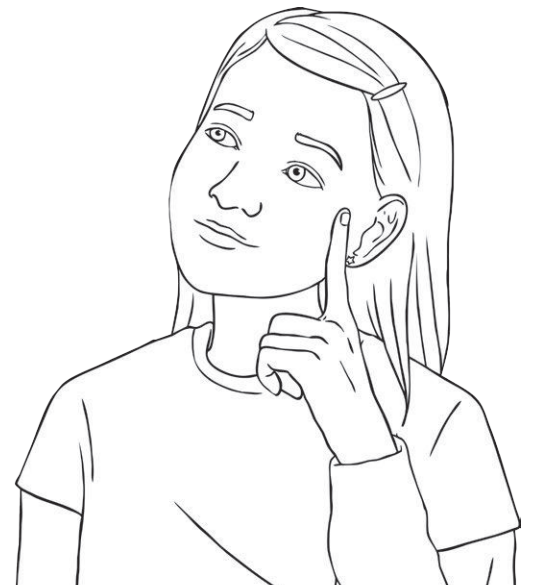
$$182.25 - 142.58$$

192

78.81

39.67

102





Extra Challenge Answers

Question	Answer												
1.	If the rounded answer is 560, what could the question be? Give three different examples.												
<i>Various answers</i>													
2.	If the rounded answer is 1200, what could the question be? Give three different examples.												
<i>Various answers</i>													
3.	Use rounding and estimation to match the calculation to the answer.												
<table border="0"><tbody><tr><td data-bbox="248 817 743 891">$(4.6 \times 5.7) + 52.59$</td><td data-bbox="743 817 1002 891"></td><td data-bbox="1002 817 1501 891">192</td></tr><tr><td data-bbox="248 920 743 994">$4692 \div 46$</td><td data-bbox="743 920 1002 994"></td><td data-bbox="1002 920 1501 994">78.81</td></tr><tr><td data-bbox="248 1023 743 1097">$672 \div 3.5$</td><td data-bbox="743 1023 1002 1097"></td><td data-bbox="1002 1023 1501 1097">39.67</td></tr><tr><td data-bbox="248 1126 743 1200">$182.25 - 142.58$</td><td data-bbox="743 1126 1002 1200"></td><td data-bbox="1002 1126 1501 1200">102</td></tr></tbody></table>		$(4.6 \times 5.7) + 52.59$		192	$4692 \div 46$		78.81	$672 \div 3.5$		39.67	$182.25 - 142.58$		102
$(4.6 \times 5.7) + 52.59$		192											
$4692 \div 46$		78.81											
$672 \div 3.5$		39.67											
$182.25 - 142.58$		102											



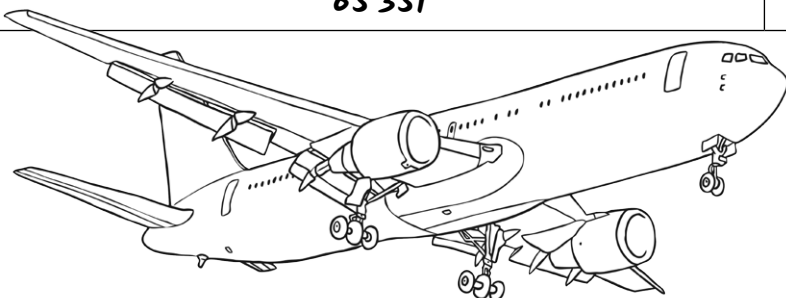
Home Learning

I can use rounding to check answers to problems.



Check the answers on the home learning task using rounded approximation. Are the calculations correct? If not, correct the answer.

Question													
<p>The table below shows the number of passengers flying to Dublin during four days.</p> <table border="1"> <thead> <tr> <th>Day</th> <th>Number of passengers</th> </tr> </thead> <tbody> <tr> <td>Monday</td> <td>384 592</td> </tr> <tr> <td>Tuesday</td> <td>483 271</td> </tr> <tr> <td>Wednesday</td> <td>25 483</td> </tr> <tr> <td>Thursday</td> <td>47 184</td> </tr> </tbody> </table> <p>What was the total number of passengers? 940 530</p>		Day	Number of passengers	Monday	384 592	Tuesday	483 271	Wednesday	25 483	Thursday	47 184	Rounded approximation	Does the answer look correct?
Day	Number of passengers												
Monday	384 592												
Tuesday	483 271												
Wednesday	25 483												
Thursday	47 184												
		Correct answer if required											
<p>During September, the following in-flight meals were ordered.</p> <table border="1"> <thead> <tr> <th>Food</th> <th>Number of dishes ordered</th> </tr> </thead> <tbody> <tr> <td>Cottage Pie</td> <td>32 544</td> </tr> <tr> <td>Chicken Sandwich</td> <td>3636</td> </tr> <tr> <td>Snack Pack</td> <td>15 795</td> </tr> <tr> <td>Soup</td> <td>3356</td> </tr> </tbody> </table> <p>What was the total number of dishes ordered? 65 351</p>		Food	Number of dishes ordered	Cottage Pie	32 544	Chicken Sandwich	3636	Snack Pack	15 795	Soup	3356	Rounded approximation	Does the answer look correct?
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Cottage Pie	32 544												
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Snack Pack	15 795												
Soup	3356												
		Correct answer if required											





The airline decided to give information to its passengers on its latest destination, Iceland:

Place	Population
Reykjavik	258 894
Akureyri	75 785
Egilsstadir	46 948

What is the combined population of the three cities?
1 434 679

Rounded approximation

Does the answer look correct?

Correct answer if required

A passenger wants to buy some teddy bears on a flight. Each teddy costs £9.67.

How much would it cost for 17 teddy bears?
£164.39

Rounded approximation

Does the answer look correct?

Correct answer if required

The table shows the number of films viewed during flights to America.

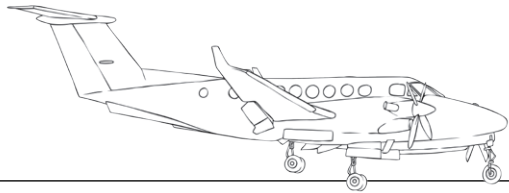
Destination	Films watched
Los Angeles	54 495
New York	437 934
Boston	145 349

How many films were viewed altogether?
637 778

Rounded approximation

Does the answer look correct?

Correct answer if required



The airline mascot has been travelling around the country to promote the company. The table shows the distance travelled on each journey.

Journey	Distance travelled (km)
1	9495
2	15 374
3	16 312
4	38 356

What is the average distance travelled?
79 537km

Rounded approximation	Does the answer look correct?
Correct answer if required	

The table below shows the total number of flights scheduled and the number of flights that had to be cancelled due to bad weather.

Total number of flights	Flights that had to be cancelled
946 402	174 593

How many flights managed to take off?
771 809

Rounded approximation	Does the answer look correct?
Correct answer if required	

The table below shows the number of passengers flying to Edinburgh during four days.

Day	Number of Passengers
Monday	543
Tuesday	983
Wednesday	1390
Thursday	540

Each passenger donated £3 to the airline's chosen charity. How much money was raised?
£12 000

Rounded approximation	Does the answer look correct?
Correct answer if required	



Home Learning Answers

Question	Answer	
Check the answers on the home learning task using rounded approximation. Are the calculations correct? If not, correct the answer.		
<p>The table below shows the number of passengers flying to Dublin during four days.</p> <p>What was the total number of passengers?</p> <p>940 530</p>	Rounded approximation	Does the answer look correct?
	<i>Child's own calculation</i>	Yes
	Correct answer if required	
<p>During September, the following in-flight meals were ordered.</p> <p>What was the total number of dishes ordered?</p> <p>65 351</p>	Rounded approximation	Does the answer look correct?
	<i>Child's own calculation</i>	No
	Correct answer if required	
	55 331	
<p>The airline decided to give information to its passengers on its latest destination, Iceland:</p> <p>What is the combined population of the three cities?</p> <p>1 434 679</p>	Rounded approximation	Does the answer look correct?
	<i>Child's own calculation</i>	No
	Correct answer if required	
	381 627	
<p>A passenger wants to buy some teddy bears on a flight. Each teddy costs £9.67.</p> <p>How much would it cost for 17 teddy bears?</p> <p>£164.39</p>	Rounded approximation	Does the answer look correct?
	<i>Child's own calculation</i>	Yes
	Correct answer if required	
<p>The table shows the number of films viewed during flights to America.</p> <p>How many films were viewed altogether?</p> <p>637 778</p>	Rounded approximation	Does the answer look correct?
	<i>Child's own calculation</i>	Yes
	Correct answer if required	



<p>The airline mascot has been travelling around the country to promote the company. The table shows the distance travelled on each journey.</p> <p>What is the average distance travelled?</p> <p>79 537km</p>	Rounded approximation	Does the answer look correct?
	<i>Child's own calculation</i>	No
	Correct answer if required	
	19 884.25km	
<p>The table below shows the total number of flights scheduled and the number of flights that had to be cancelled due to bad weather.</p> <p>How many flights managed to take off?</p> <p>771 809</p>	Rounded approximation	Does the answer look correct?
	<i>Child's own calculation</i>	Yes
	Correct answer if required	
<p>The table below shows the number of passengers flying to Edinburgh during four days.</p> <p>Each passenger donated £3 to the airline's chosen charity. How much money was raised?</p> <p>£12 000</p>	Rounded approximation	Does the answer look correct?
	<i>Child's own calculation</i>	No
	Correct answer if required	
	£10 368	

What is the sum of 4 294 469,
482 949 and 38 495?

$$\begin{array}{r} 4\ 2\ 9\ 4\ 4\ 6\ 9 \\ +\ 4\ 8\ 2\ 9\ 4\ 9 \\ +\ 3\ 8\ 4\ 9\ 5 \\ =\ 3\ 8\ 1\ 5\ 9\ 1\ 3 \end{array}$$



What is 592 582 less
than 1 238 531?

$$\begin{array}{r} 1\ 2\ 3\ 8\ 5\ 3\ 1 \\ -\ 5\ 9\ 2\ 5\ 8\ 2 \\ =\ 6\ 4\ 5\ 9\ 4\ 9 \end{array}$$



What is the total of 27 lots
of 4703?

$$\begin{array}{r} 2\ 7 \\ \times\ 4\ 7\ 0\ 3 \\ =\ 1\ 2\ 9\ 6\ 8\ 1 \end{array}$$



A store had 5 828 582 comics.
3 489 588 comics were sold
throughout September.
How many were left in the store
at the end of September?

$$\begin{array}{r} 5\ 8\ 2\ 8\ 5\ 8\ 2 \\ -\ 3\ 4\ 8\ 9\ 5\ 8\ 8 \\ =\ 2\ 3\ 3\ 8\ 9\ 9\ 4 \end{array}$$



$$4400 \div 50 =$$

$$4400$$

$$\div 50$$

$$= 102$$



What is the total of 48 929
and 49 284?

$$48929$$

$$+ 49284$$

$$108213$$



$$79 \times 5 =$$

$$79$$

$$\times 5$$

$$= 395$$



$$198 \times 22 =$$

$$198$$

$$\times 22$$

$$= 4356$$





Home Learning Answers

Question	Answer		
Check the answers on the card using a rounded approximation. Are the calculations correct?			
Question	What is the calculation?	Rounded approximation	Does the calculation look correct?
What is the sum of 4 294 469, 482 949 and 38 495?	$4\,294\,469 + 482\,949 + 38\,495 = 3\,815\,913$	<i>Child's own calculation</i>	<i>Incorrect</i>
What is 592 582 less than 1 238 531?	$1\,238\,531 - 592\,582 = 645\,949$	<i>Child's own calculation</i>	<i>Correct</i>
What is the total of 27 lots of 4703?	$27 \times 4703 = 129\,681$	<i>Child's own calculation</i>	<i>Incorrect</i>
A store had 5 828 582 comics. 3 489 588 comics were sold throughout September. How many were left in the store at the end of September?	$5\,828\,582 - 3\,489\,588 = 2\,338\,994$	<i>Child's own calculation</i>	<i>Correct</i>
$4400 \div 50 =$	$4400 \div 50 = 102$	<i>Child's own calculation</i>	<i>Incorrect</i>
What is the total of 48 929 and 49 284?	$48\,929 + 49\,284 = 108\,213$	<i>Child's own calculation</i>	<i>Incorrect</i>
$79 \times 5 =$	$79 \times 5 = 395$	<i>Child's own calculation</i>	<i>Correct</i>
$198 \times 22 =$	$198 \times 22 = 4356$	<i>Child's own calculation</i>	<i>Correct</i>



Home Learning Record Sheet

I can use rounding to check answers to problems.



Check the answers on the card using a rounded approximation. Are the calculations correct?

Question	What is the calculation?	Rounded approximation	Does the calculation look correct?
What is the sum of 4 294 469, 482 949 and 38 495?			
What is 592 582 less than 1 238 531?			
What is the total of 27 lots of 4703?			
A store had 5 828 582 comics. 3 489 588 comics were sold throughout September. How many were left in the store at the end of September?			
$4400 \div 50 =$			
What is the total of 48 929 and 49 284?			
$79 \times 5 =$			
$198 \times 22 =$			

Addition, Subtraction, Multiplication and Division |
The Dog Chewed My Home Learning

I can use rounding to check answers to problems.		
I can round up or down depending on the digit.		
I can round to an appropriate degree of accuracy.		
I can use rounding to help me decide if an answer is correct or incorrect.		

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