Subject: Maths	Addition, subtraction, multiplication and division	
Class: T8	Teacher: Scott Gillman	Term: 1+2
Key Vocabulary: Addition, subtraction, integers, exchange, regrouping, estimation, factors, multiples, divisibility, primes, long division, and order of operations.	**Alternative Learning Environments** Forest school, walks around local area, local visits.	**Resources:** Power points, worksheets, youtube videos,

Unit Aim:
To develop proficiency in addition and subtraction techniques, including operations with multi-digit numbers, estimation, and efficient strategies to enhance overall mathematical reasoning.

Prior Learning:
Students have previously learned basic addition and subtraction of smaller numbers, as well as foundational strategies for mental calculations.

Future Learning: Students will apply their addition and subtraction skills to solve more complex problems involving multiplication and division, including multi-step word problems.
Unit Expectations: Students are expected to actively participate in lesson activities, demonstrate understanding through practice, complete assignments on time, and engage collaboratively with peers.
Links with other subjects: **ICT:** Research and power point presentations. **Art:** Creating posters **Literacy:** Writing and reading skills

Week	

1
 	
L4
	Lesson 1: Add and Subtract 1s, 10s, 100s, and 1,000s
	- Learning Objectives: Understand how to add and subtract whole numbers involving 1s, 10s, 100s, and 1,000s.
	- Success Criteria:
	  - Demonstrate addition and subtraction using place value understanding.
	  - Solve problems involving adding and subtracting large numbers (up to 1,000).

1
L6
	Lesson 1: Add and Subtract Integers
	- Learning Objectives: Add and subtract positive and negative integers accurately.
	- Success Criteria:
	  - Perform operations with integers and explain the outcomes.
	  - Utilise a number line when necessary to visualise calculations.

2
L4
	Lesson 2: Add Up to Two 4-Digit Numbers - No Exchange
	- Learning Objectives: Add two 4-digit numbers without requiring any exchanges.
	- Success Criteria:
	  - Accurately add two 4-digit numbers where no carrying over occurs.
	  - Show written work and label outputs clearly.

2
L6
	Lesson 2: Common Factors
	- Learning Objectives: Identify common factors of sets of numbers.
	- Success Criteria:
	  - List all factors of given numbers and identify common factors.
	  - Explain the significance of finding common factors.

3 L4	Lesson 3: Add Two 4-Digit Numbers - One Exchange - Learning Objectives: Master addition of two 4-digit numbers that require one exchange. - Success Criteria: - Perform addition accurately by carrying over from one column to the next. - Demonstrate the process step-by-step with written explanations.
3 L6	Lesson 3: Common Multiples - Learning Objectives: Identify common multiples of sets of numbers. - Success Criteria: - Generate a list of multiples for given numbers and pinpoint common multiples. - Justify the importance of common multiples in mathematics.
Week	
4 L4	Lesson 4: Add Two 4-Digit Numbers - More Than One Exchange - Learning Objectives: Add two 4-digit numbers that require multiple exchanges. - Success Criteria: - Successfully carry over across multiple columns and verify accuracy. - Provide explanations for each step in the addition process.

4 L6	Lesson 4: Rules of Divisibility - Learning Objectives: Understand and apply the rules of divisibility for various numbers. - Success Criteria: - Use divisibility rules to determine if numbers can be divided by 2, 3, 5, etc. - Explain how these rules help simplify problems.
5 L4	Lesson 5: Subtract Two 4-Digit Numbers - No Exchange - Learning Objectives: Subtract two 4-digit numbers without any exchanges. - Success Criteria: - Solve subtraction problems involving 4-digit numbers when no borrowing is needed. - Present calculations clearly and check for correctness.
5 L6	Lesson 5: Primes to 100 - Learning Objectives: Identify and list prime numbers up to 100. - Success Criteria: - Create a list of prime numbers and explain the concept of primality. - Recognise prime factors in other numbers.
6 L4	Lesson 6: Subtract Two 4-Digit Numbers - One Exchange - Learning Objectives: Subtract two 4-digit numbers that require one exchange. - Success Criteria: - Execute subtraction with borrowing between columns accurately. - Show workings and articulate the process used to find the answer.

6
L6
	Lesson 6: Square and Cube Numbers
	- Learning Objectives: Understand square and cube numbers and their relevance.
	- Success Criteria:
	  - Identify square and cube numbers up to 100 or 64, respectively.
	  - Solve problems involving squares and cubes in practical contexts.

7
L4
	Lesson 7: Subtract Two 4-Digit Numbers - More Than One Exchange
	- Learning Objectives: Subtract two 4-digit numbers that require multiple exchanges.
	- Success Criteria:
	  - Perform multi-column subtraction involving several exchanges with precision.
	  - Write the steps and check for mistakes in the calculations.

7
L6
	Lesson 7: Multiply Up to a 4-Digit Number by a 2-Digit Number
	- Learning Objectives: Multiply 4-digit numbers by 2-digit numbers accurately.
	- Success Criteria:
	  - Demonstrate understanding of long multiplication and show all workings.
	  - Verify calculations through estimation or inverse operations.

8 L4	Lesson 8: Efficient Subtraction - Learning Objectives: Explore and apply efficient strategies for subtraction. - Success Criteria:

	- Use mental math techniques or strategies to solve subtraction problems faster. - Assess and share efficient methods with classmates.
8 L6	Lesson 8: Solve Problems with Multiplication - Learning Objectives: Apply multiplication skills to solve word problems. - Success Criteria: - Use multiplication to solve real-life problems and interpret results correctly. - Present solutions clearly and logically.
9 L4	Lesson 9: Estimate Answers - Learning Objectives: Develop estimation skills for addition and subtraction. - Success Criteria: - Estimate answers by rounding numbers to the nearest ten or hundred. - Explain reasoning behind estimations and check against exact answers.
9 L6	Lesson 9: Short Division - Learning Objectives: Use short division for dividing larger numbers. - Success Criteria: - Perform short division accurately and explain the process. - Identify remainders and interpret their meanings.
10 L4	Lesson 10: Checking Strategies - Learning Objectives: Utilize strategies to check calculations for accuracy. - Success Criteria: - Apply inverse operations to verify results of addition and subtraction. - Demonstrate the ability to check work effectively through peer review or self-assessment.
10 L6	Lesson 10: Division Using Factors - Learning Objectives: Use factors to simplify division problems. - Success Criteria: - Break down division problems into simpler parts using known factors.

	- Explain how identifying factors aids in solving division problems.
11 L6	Lesson 11: Introduction to Long Division - Learning Objectives: Understand and apply long division techniques. - Success Criteria: - Perform long division for larger numbers and show all workings. - Check answers by multiplying quotient by divisor.
12 L6	Lesson 12: Long Division with Remainders - Learning Objectives: Solve long division problems that yield remainders. - Success Criteria: - Calculate long division and express results with remainders clearly. - Understand how to interpret remainders in context.
13 L6	Lesson 13: Solve Problems with Division - Learning Objectives: Apply division skills to solve practical problems. - Success Criteria: - Utilize division in solving word problems and explain reasoning. - Present solutions with clarity and logical reasoning.
14 L6	Lesson 14: Solve Multi-Step Problems - Learning Objectives: Approach and solve multi-step mathematical problems. - Success Criteria: - Identify necessary operations to solve multi-step problems. - Clearly outline each step taken to reach the final answer.
15 L6	Lesson 15: Order of Operations - Learning Objectives: Understand and apply the order of operations in calculations. - Success Criteria: - Demonstrate correct use of parentheses, multiplication, and division.

	- Solve expressions using the order of operations accurately.
16 L6	Lesson 16: Mental Calculations and Estimation - Learning Objectives: Develop mental calculation strategies and estimation techniques. - Success Criteria: - Use mental math to solve problems quickly and accurately. - Assess and refine estimation strategies for better accuracy.
17 L6	Lesson 17: Reason from Known Facts - Learning Objectives: Use known facts to reason and solve mathematical problems. - Success Criteria: - Apply known mathematical principles to derive new information and solutions. - Clearly articulate reasoning based on established mathematical facts.