Planning and Assessment

'Working At'

Pack 1

Session 1	• Generate and describe linear number sequences.
Session 2	• Identify factors, multiples and prime numbers. • Solve problems using knowledge of factors, multiples and square numbers.
Session 3	• Use common factors to simplify fractions. • Use common multiples to express fractions in the same denomination. • Compare and order fractions.
Session 4	• Compare and classify 2D shapes based on their properties and sizes. • Find unknown angles in any triangles, quadrilaterals and regular polygons.
Session 5	• Construct line graphs and use these to solve problems. • Solve comparison, sum and difference problems using information presented in bar charts.

Objectives:	Success Criteria:
Algebra • Generate and describe linear number sequences.	• Can you count forwards or backwards in steps of powers of 10? • Can you count forwards or backwards in multiples? • Can you solve problems involving number sequences?
Key Vocabulary: Term-to-term rule, step, increase, decrease, expression.	Preparation: **Activity Booklet 1** **Superhero Number Cards** **Superhero Place Value Chart**

Talk Maths	Refer to **Activity 1.1** in **Activity Booklet 1**. Practise finding the term-to-term rule in linear number sequences by looking at adjacent numbers. Encourage the children to identify whether the number sequences are increasing or decreasing. Extend by challenging the children to say the next three numbers in the sequence and to create their own example of a linear number sequence. They could also explain the term-to-term rule. **Can the children count forwards and back in multiples and steps of powers of 10?**
Key Skills	Refer to **Activity 1.2** in **Activity Booklet 1**. Play the fun superhero card game to practise generating and describing linear number sequences. You will need the **Superhero Number Cards**. Use the **Superhero Place Value Chart** to support as required. **Can the children count forwards and back in steps of powers of 10?**
Using and Applying	Children complete the superhero maze activities shown in **Activity 1.3** in **Activity Booklet 1** to apply and practise the skills from the previous two activities. **Can the children solve problems involving number sequences?**
Assess and Review	Refer to the incorrectly completed SATs question shown in **Activity 1.4** in **Activity Booklet 1**. Discuss the mistakes that have been made and advice they would give to the child who completed the question. Encourage the children to notice that the child answering the question has identified that the numbers are decreasing but they haven't shown they understand that the sequencing is created by subtracting 11. The correct answer is 506. **Complete the self-assessment activity based on the success criteria.**

Objectives: Number • Identify factors, multiples and prime numbers. • Solve problems using knowledge of factors, multiples and square numbers.	**Success Criteria:** • Can you identify factors and multiples? • Can you identify prime numbers? • Can you solve problems involving the properties of numbers?
Key Vocabulary: Multiple, factor, prime, square, properties.	**Preparation:** **Activity Booklet 1** **Properties of Numbers Visual Aids** Dice

Talk Maths	Refer to **Activity 2.1** in **Activity Booklet 1**. Practise describing properties of two-digit numbers using the key vocabulary. In this open-ended activity, encourage the children to identify: • the prime numbers are 11, 13, 17, 19 and 23; • the square numbers are 9 and 16; • use the language multiple in statements, such as 15 is a multiple of 3; • use the language of factors in statements, such as 4 is a factor of 12. Encourage the children to give as many properties of a number as possible. Extend by challenging the children to see who can give the most facts about a two-digit number of their choice. **Can the children identify prime numbers and describe numbers using their knowledge of multiples, factors and square numbers?**

Key Skills	Refer to **Activity 2.2** in **Activity Booklet 1**.
	
	Play the fun superhero dice game to practise describing the properties of numbers. In this open-ended activity, encourage the children to identify:
	
	• the prime numbers are 23, 29, 31, 37, 41, 43, 47 and 53;
	
	• the square numbers are 25, 36 and 49;
	
	• use the language multiple in statements, such as
	  24 is a multiple of 2, 3, 4, 6, 8, and 12;
	
	• use the language of factors in statements, such as
	  the factors of 20 are 1, 20, 2, 10, 4 and 5.
	
	Use the **Properties of Numbers Visual Aids** to support as required.
	
	Can the children identify prime numbers and describe numbers using their knowledge of multiples, factors and square numbers?

Using and Applying	Children complete the properties of numbers reasoning activities shown in **Activity 2.3** in **Activity Booklet 1** to apply and practise the skills from the previous two activities. **Can the children solve problems involving the properties of numbers?**
Assess and Review	Refer to the incorrectly completed SATs question shown in **Activity 2.4** in **Activity Booklet 1**. Discuss the mistakes that have been made and advice they would give to the child who completed the question. Encourage the children to notice that the child answering the question shows an understanding of factors but has only listed half of the factors of 24. **Complete the self-assessment activity based on the success criteria.**

Objectives: Fractions • Use common factors to simplify fractions. • Use common multiples to express fractions in the same denomination. • Compare and order fractions.	**Success Criteria:** • Can you find equivalent fractions? • Can you use common multiples to express fractions in the same denomination? • Can you order and compare fractions with different denominators?
Key Vocabulary: Numerator, denominator, compare, order, multiple, equivalent.	**Preparation:** **Activity Booklet 1** **Fraction Cards** **Fraction Wall**

Talk Maths	Refer to **Activity 3.1** in **Activity Booklet 1**. Practise finding equivalent fractions using common multiples. Encourage the children to use their known multiplication and division facts to help. Extend by challenging the children to give a different equivalent fraction for each fraction. **Can the children find equivalent fractions?**
Key Skills	Refer to **Activity 3.2** in **Activity Booklet 1**. Play the fun fractions card game to practise comparing fractions. You will need the **Fraction Cards**. Use the **Fraction Wall** to support as required. **Can the children compare fractions with different denominators?**
Using and Applying	Children complete the reasoning problems shown in **Activity 3.3** in **Activity Booklet 1** to apply and practise the skills from the previous two activities. Use the **Fraction Wall** to support as required. **Can the children order and compare fractions with different denominators?**
Assess and Review	Refer to the incorrectly completed SATs question shown in **Activity 3.4** in **Activity Booklet 1**. Discuss the mistakes that have been made and advice they would give to the child who completed the question. Encourage the children to notice that the child answering the question has only compared the numerators of the fractions. Encourage the children to explain how the child who has answered the question needs to make the denominators equal before comparing them. When the fractions have equal denominators, the statement actually says $\frac{9}{15} > \frac{10}{15}$ which is incorrect. **Complete the self-assessment activity based on the success criteria.**

Objectives:	**Success Criteria:**
Properties of Shapes • Compare and classify 2D shapes based on their properties and sizes. • Find unknown angles in any triangles, quadrilaterals and regular polygons.	• Can you describe the properties of different triangles and quadrilaterals? • Can you calculate missing angles in triangles and quadrilaterals? • Can you draw 2D shapes using given dimensions and angles?
Key Vocabulary: Triangle, quadrilateral, angle, degree, vertices, rhombus, kite, parallelogram, trapezium, isosceles, scalene, right-angled.	**Preparation:** **Activity Booklet 1** **Quadrilateral Jigsaw Cards**

Talk Maths	Refer to **Activity 4.1** in **Activity Booklet 1**. Practise naming and describing the properties of different triangles and quadrilaterals. Encourage the children to talk about the size of angles and lengths of sides using the vocabulary of acute, obtuse, right angle, parallel, perpendicular and congruent. Extend by challenging the children to identify a triangle or quadrilateral by asking yes/no questions. **Can the children describe the properties of different triangles and quadrilaterals?**
Key Skills	Refer to **Activity 4.2** in **Activity Booklet 1**. Play the fun jigsaw game to practise identifying and describing quadrilaterals. You will need the **Quadrilateral Jigsaw Cards**. Extend by asking children to add a fact to the big jigsaw pieces relating to the line symmetry of the quadrilateral.
Using and Applying	Children complete the reasoning activities shown in **Activity 4.3** in **Activity Booklet 1** to apply and practise the skills from the previous two activities. **Can the children calculate missing angles in triangles and quadrilaterals?** **Can the children draw the 2D shapes using given dimensions and angles?**
Assess and Review	Refer to the incorrectly completed SATs question shown in **Activity 4.4** in **Activity Booklet 1**. Discuss the mistakes that have been made and advice they would give to the child who completed the question. Encourage the children to discuss whether they think the child has correctly identified that all triangles have angles that total 180°. Encourage the children to realise that the child hasn't used this knowledge as the three angles total 173°. Also, draw attention to the fact that an isosceles triangle should have two equal angles. The correct missing angle is 47°. **Complete the self-assessment activity based on the success criteria.**

Objectives:	Success Criteria:
Statistics • Construct line graphs and use these to solve problems. • Solve comparison, sum and difference problems using information presented in bar charts.	• Can you interpret bar charts? • Can you interpret line graphs? • Can you ask and answer questions about data?

Key Vocabulary:	Preparation:
Data, discrete, continuous, scale, axis, interpret, bar chart, line graph.	**Activity Booklet 1** Dice

Talk Maths	Refer to **Activity 5.1** in **Activity Booklet 1**. Discuss what the grouped bar chart is showing and its features. Practise answering questions about the data. Challenge the children to ask their own questions about the data for a friend to answer. **Can the children interpret, ask and answer questions about data presented in a bar chart?**
Key Skills	Refer to **Activity 5.2** in **Activity Booklet 1**. Complete the fun superhero line graph activity to practise collecting data and representing it as a frequency table and a line graph. Ensure children understand that this line graph shows data measured over time. **Can the children collect data and construct a line graph?**
Using and Applying	Children complete **Activity 5.3** in **Activity Booklet 1** and answer questions about the line graph created in the previous activity. During this activity, correct any misconceptions in answering comparison, sum and difference problems as they arise. **Can the children interpret, ask and answer questions about data presented in a line graph?**
Assess and Review	Refer to the incorrectly completed SATs question shown in **Activity 5.4** in **Activity Booklet 1**. Discuss the mistakes that have been made and advice they would give to the child who completed the question. Encourage the children to notice that the child answering the question hasn't identified the correct difference between the numbers. The difference between 19 emeralds and 13 rubies is 6 jewels. **Complete the self-assessment activity based on the success criteria.**

National Curriculum Objective	Children's Names					
Generate and describe linear number sequences.						
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Solve problems using knowledge of factors, multiples and square numbers.						
Use common factors to simplify fractions.						
Use common multiples to express fractions in the same denomination.						
Compare and order fractions.						
Compare and classify 2D shapes based on their properties and sizes.						
Find unknown angles in any triangles, quadrilaterals and regular polygons.						
Construct line graphs and use these to solve problems.						
Solve comparison, sum and difference problems using information presented in bar charts.						

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