

Sets and operations – Suggestions for children’s learning experiences

The child has opportunities to...

Understanding and connecting

- Sort a variety of materials into sets according to specific criteria e.g. Today we are sorting the toy vehicles by type of vehicle
- Subitise (i.e. look at a small number of objects and recognise how many there are without counting) the number of objects in a set e.g. *How many dots can you see on my paper plate?*
- Identify and represent numbers in different ways e.g. dot representations of prime/ composite numbers
- Make links between the four operations e.g. *Multiplication and repeated addition: 12×3 is the same as $12 + 12 + 12$*
- Use known facts to recall more complex facts e.g. $6 \times 12 = 6 \times 10 (60) + 6 \times 2 (12) = 72$



- Describe the process of sorting and justify selection criteria using appropriate language e.g. *all the rectangles go in this set because they are thin*
- Listen to, compare and discuss other children’s mathematical descriptions of Sets and Operations
- Represent their understanding of Sets and Operations in different ways e.g. *division as sharing*
- Explain the rules governing prime and composite numbers and illustrate understanding.
- Model and/or describe a variety of ways to generate multiples and factors.



Communicating

Reasoning

- Differentiate between sets based on their quantity e.g. *the red set has more in it than the blue set*
- Use estimation to calculate sums, differences, products and quotients of whole numbers
- Evaluate the efficiency of their mental strategies for operations and rank in terms of efficiency
- Create conjectures based on their investigations e.g. *when you add two even numbers together, the answer is even*
- Express generalisations using words and symbols, e.g. $4 \times 6 = 24$ so $24 \div 6 = 4$ and $24 \div 4 = 6$



- Demonstrate an awareness of objects being introduced or taken away from a set
- Order sets of objects according to their quantity
- Explore calculations in which the ideas developed for whole-number calculation do not apply e.g., fraction and decimal computation
- Apply and use mental strategies and procedures for carrying out tasks e.g. *using known facts, rounding and estimating etc.*
- Apply knowledge of the four operations to real-world situations



Applying and problem-solving