NCCA

Primary Mathematics Toolkit – Support material

Number: Sets and operations – Suggestions for children's learning

The child has opportunities to...

Understand and connect

- 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 x 3 is the same as 12+12+12.*
- use known facts to recall more complex facts, e.g., *6 x 12 = 6 x 10 (60) + 6 x 2 (12) = 72.*

Communicate

- 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.

Reason

- 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 x 6 = 24 so 24 ÷ 6 = 4 and 24 ÷ 4 = 6.*

Apply and problem-solve

- 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.

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