

Mathematical Communicating: Representing Numbers

Learning outcomes in focus

Students should be able to:

U.3 recognise that equality is a relationship in which two mathematical expressions have the same value

U.4 represent a mathematical situation in a variety of different ways, including: numerically, algebraically, graphically, physically, in words; and to interpret, analyse, and compare such representations

U.13 communicate mathematics effectively: justify their reasoning, interpret their results, explain their conclusions, and use the language and notation of mathematics to express mathematical ideas precisely

N.1 investigate the representation of numbers and arithmetic operations

Learning intentions

We are learning to:

- flexibly translate between different representation of numbers
- correctly use the order of arithmetic and index operations including the use of brackets
- use the equals symbol correctly
- communicate mathematical ideas

Teaching and learning context

First year students were investigating the representation of numbers and arithmetic operations, exploring index notation and the correct order of operations, interpreting factors and prime numbers. **They were given 30 mins to complete the task.**

Task

Demonstrate how many ways you can show the number 24. You can use any of the types of numbers you have learned about (natural, integers and rational), a visual (a diagram or picture), brackets, powers (index notation).

Success Criteria

I can

- SC1** correctly use the equals symbol
- SC2** represent numbers in different ways
- SC3** represent my ideas using the language of mathematics
- SC4** correctly use the order of operations using brackets

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First year Assessment Test 1

Represent the number 24 in as many ways as possible. Make use of all we have learned so far for this year and throughout your years in National School.

- Natural numbers
- Factors
- Integers
- BIMDAS
- Rational Numbers

6 is the magic number

$4 \times 6 = 4 + 4 + 4 + 4 + 4 + 4 = 24$

$6 \times 4 = 6 + 6 + 6 + 6 = 24$

$12 \times 2 = 12 + 12 = 24$

$3 \times 8 = 3 + 3 + 3 + 3 + 3 + 3 = 24$

$2 \times 12 = 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 24$

$18 \div 2 = 24$

$2 \times 6 \times 2 = 24$

$22 + 2 = 24$

$15 \times 16 = 24$

$1000 \div 40 = 24$

$6 + 6 + 12 = 24$

$0.5 \times 48 = 24$

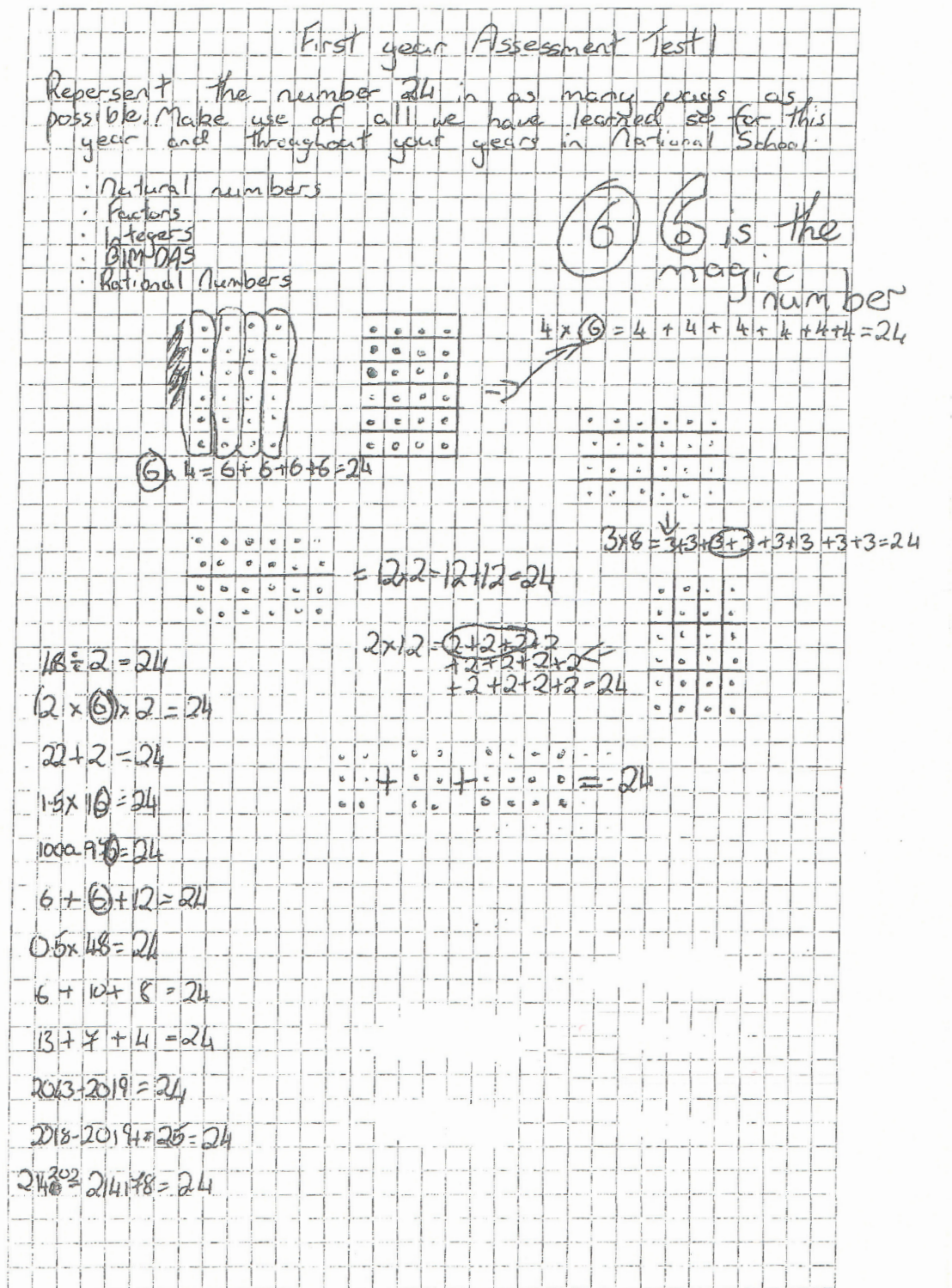
$6 + 10 + 8 = 24$

$13 + 7 + 4 = 24$

$2013 - 2019 = 24$

$2018 - 2019 + 25 = 24$

$24 \times 10^2 = 2400 = 24 \times 100 = 24$



SC4: Attempts to use the order of operations by correctly using brackets

SC2: Represents 24 in different ways

SC1: Correctly uses equals symbol

SC3: Uses the language of mathematics to represent ideas

Overall judgement:  In line with expectations