Children’s Day maths puzzle challenge for CBSE Class 9 and 10: Beyond school

CBSE Math Revision · Beyond school: for adults and maths fans · 14 November · Student sheet

Name _____ Class _____ Date _____

No calculator needed. Every answer works out exactly.

Starter (5 minutes)

1. Find $1 + 2 + 3 + \ldots + 100$.

2. What is the last digit of 3^{100}?

3. How many positive divisors does 100 have?

4. How many two-digit numbers are multiples of 7?

Main activity (30 minutes)

Task A: Round 1: puzzles for 14 November

The number 14 everywhere.

a. In how many ways can 14 identical sweets be shared between 3 children so that each gets at least one?

b. What is the smallest whole number with exactly 14 positive divisors?

c. How many zeros are at the end of 14! (14 factorial)?

Task B: Round 2: chance

A group of 14 children: 7 boys and 7 girls.

a. Two children are picked at random. What is the probability that one is a boy and one is a girl?

b. A fair die is rolled 14 times. What is the expected number of sixes?

c. A fair die is rolled 3 times. What is the probability of at least one six?

Extension

1. In how many ways can 14 be written as a sum of different positive whole numbers, ignoring order (14 on its own counts)?