

## How to Prepare for the NCC

The best way to prepare for the contest is to look at the contests from the previous years. You will be given 3 contest sections, depending on your year of birth. Please see the “Rules for Writing the NCC16” page for details.

The following is a partial list of topics that students of different ages may need to know. It is important to remember not to take this list too seriously. Not everything on the list will show up on the contest, and there may be topics on the contest that are not on the list.

### List of Topics to Know

Consult the heading corresponding to your year of birth.

#### 2008 or 2007

- Addition, subtraction, multiplication, division. Meaning of the words sum, difference, product, quotient, and remainder.
- The conventional order of operations. How brackets work.
- Triangles, squares, rectangles, and circles. Areas and perimeters of triangles, squares, and rectangles (but not circles).
- Divisibility. What a prime number is.

#### 2006 or 2005

All of the above, plus:

- Prime factorization, GCD, LCM.
- Adding, subtracting, multiplying, and dividing fractions. Positive exponents.
- Trapezoids, rhombi, and parallelograms. Equilateral, isosceles, and scalene triangles.
- Angles. Area and circumference of a circle. The Pythagorean theorem.
- Reading data from a graph. Mean, median, and mode. Basic probability.

#### 2004 or 2003

All of the above, plus:

- Three-dimensional objects. Volume and surface area.  $\pi$ .
- Probability. Percentages. Knowing about “choose” and “permute” may be useful.

#### 2002 or 2001

All of the above, plus:

- Using variables, solving linear equations.
- Factorials. Rational and irrational numbers.