

Curriculum Basics Year 3

Algebra:

Die ganzen Zahlen $\mathbb{Z}$ – Integers $\mathbb{Z}$

- definition and properties of integers
- simple inequalities involving integers
- absolute value, inequalities involving the absolute value sign
- addition, subtraction, multiplication and division involving integers
- combining all four operations in $\mathbb{Z}$, text problems involving integers
- simple equations using integers

Die rationalen Zahlen $\mathbb{Q}$ – the rational numbers $\mathbb{Q}$

- review on the number sets $\mathbb{N}$, $\mathbb{Z}$; introducing and defining the set of the rational numbers $\mathbb{Q}$
- the absolute value of a rational number
- order of rational numbers
- simple inequalities with rational numbers
- addition, subtraction, multiplication, and division involving rational numbers - combining all four operations in $\mathbb{Q}$
- simple equations involving rational numbers
- rechnen mit periodischen und gemischt periodischen Dezimalzahlen
- umwandeln von gemischt periodischen Zahlen in Brüche

Algebraic Expressions - Terme

- what are algebraic expressions? – definition and terminology
- removing grouping symbols and simplifying algebraic expressions
- Primfaktorzerlegung von großen Zahlen und Anschreiben des Ergebnisses in der Potenzschreibweise
- multiplying (expanding) and simplifying algebraic expressions (removing grouping symbols)
- factorizing and simplifying algebraic expressions
- special binomial products: perfect squares and difference of perfect squares

Exponents - Potenzschreibweise

- definitions and terminology
- applying the laws for natural exponents
- definition of negative powers, simple examples involving negative powers
- scientific notation, changing notation, word problems involving scientific notation

Equations and Formulae– Gleichungen und Formeln

- solving equations by changing into equivalent simpler equations (Äquivalenzumformungen)
- three possible cases when solving equations (one solution, no solution, infinite number of solutions)
- solving equations with fractions and binomial products

Geometry:

Das Koordinatensystem – The coordinate system

- extending the coordinate system – using all 4 quadrants
- reflections of figures about a line

Flächeninhalte von Dreiecken und Vierecken – Area of triangles and quadrilaterals

- area of: rectangle, square, parallelogram, triangle, rhombus, kite and trapezium
- word problems involving areas of quadrilaterals