Correlation of Pearson Mathematics Makes Sense Grade 9

to

The Curriculum

Number

General Outcome:

- Develop number sense.

It is expected that students will:

Specific Outcomes	*Pearson Mathematics Makes Sense 9*
1. Demonstrate and understanding of powers with integral bases (excluding base 0) and whole number exponents by: - representing repeated multiplication using powers - using patterns to show that a power with an exponent of zero is equal to one - solving problems involving powers.	Unit 2, Lesson 2.1, pp. 52–57; Unit 2, Lesson 2.2, pp. 58–62; Unit 2, Unit Problem, p. 91
2. Demonstrate an understanding of operations on powers with integral bases (excluding base 0) and whole number exponents.	Unit 2, Lesson 2.4, pp. 73–78; Unit 2, Lesson 2.5, pp. 79–85
3. Demonstrate an understanding of rational numbers by: - comparing and ordering rational numbers - solving problems that involve arithmetic operations on rational numbers.	Unit 3, Lesson 3.1, pp. 94–103; Unit 3, Lesson 3.2, pp. 106–113; Unit 3, Lesson 3.3, pp. 114–120; Unit 3, Game, p. 122; Unit 3, Lesson 3.4, pp. 123–129; Unit 3, Lesson 3.5, pp. 130–136; Unit 3, Unit Problem, p. 147
4. Explain and apply the order of operations, including exponents, with an without technology.	Unit 2, Lesson 2.3, pp. 63–68; Unit 2, Game, p. 72; Unit 3, Lesson 3.6, pp. 137–142; Unit 3, Unit Problem, p. 147
5. Determine the square root of positive rational numbers that are perfect squares.	Unit 1, Lesson 1.1, pp. 6–13; Unit 1, Game, p. 24

Specific Outcomes	*Pearson Mathematics Makes Sense 9*
6. Determine an approximate square root of positive rational numbers that are non-perfect squares.	Unit 1, Lesson 1.2, pp. 14–20; Unit 1, Game, p. 24

Patterns and Relations (Patterns)

General Outcome:

- Use patterns to describe the world and solve problems.

It is expected that students will:

Specific Outcomes	*Pearson Mathematics Makes Sense 9*
1. Generalize a pattern arising from a problem-solving context using linear equations and verify by substitution.	Unit 4, Lesson 4.1, pp. 154–162; Unit 4, Unit Problem, p. 205
2. Graph linear relations, analyze the graph and interpolate or extrapolate to solve problems.	Unit 4, Technology Lesson, p. 163; Unit 4, Lesson 4.2, pp. 164–173; Unit 4, Lesson 4.3, pp. 174–180; Unit 4, Game, p. 182; Unit 4, Lesson 4.4, pp. 183–190; Unit 4, Lesson 4.5, pp. 191–198; Unit 4, Technology Lesson, p. 199; Unit 4, Unit Problem, p. 205

Patterns and Relations (Variables and Equations)

General Outcome:
- Represent algebraic expressions in multiple ways.

It is expected that students will:

Specific Outcomes	*Pearson Mathematics Makes Sense 9*
3. Model and solve problems using linear equations of the form: • $ax = b$ • $\frac{x}{a} = b, a \neq 0$ • $ax + b = c$ • $\frac{x}{a} = c, a \neq 0$ • $ax = b + cx$ • $a(x + b) = c$ • $ax + b = cs + d$ • $a(bx + c) = d(ex + f)$ • $\frac{a}{x} = b, x \neq 0$ where *a*, *b*, *c*, *d*, *e* and *f* are rational numbers.	Unit 6, Lesson 6.1, pp. 266–274; Unit 6, Lesson 6.2, pp. 275–283; Unit 6, Game, p. 287; Unit 6, Unit Problem, p. 311
4. Explain and illustrate strategies to solve single variable linear inequalities with rational coefficients within a problem-solving context.	Unit 6, Lesson 6.3, pp. 288–293; Unit 6, Lesson 6.4, pp. 294–299; Unit 6, Lesson 6.5, pp. 300–306; Unit 6, Unit Problem, p. 311
5. Demonstrate an understanding of polynomials (limited to polynomials of degree less than or equal to 2).	Unit 5, Lesson 5.1, pp. 210–216; Unit 5, Lesson 5.2, pp. 217–224; Unit 5, Game, p. 240
6. Model, record and explain the operations of addition and subtraction of polynomial expressions, concretely, pictorially and symbolically (limited to polynomials of degree less than or equal to 2)	Unit 5, Lesson 5.3, pp. 225–230; Unit 5, Lesson 5.4, pp. 231–236; Unit 5, Unit Problem, p. 263

Specific Outcomes	*Pearson Mathematics Makes Sense 9*
7. Model, record and explain the operations of multiplication and division of polynomial expressions (limited to polynomials of degree less than or equal to 2) by monomials, concretely, pictorially and symbolically.	Unit 5, Lesson 5.5, pp. 241–248; Unit 5, Lesson 5.6, pp. 249–257

Shape and Space (Measurement)

General Outcome:
- Use direct or indirect measurement to solve problems

It is expected that students will:

Specific Outcomes	*Pearson Mathematics Makes Sense 9*
1. Solve problems and justify the solution strategy using circle properties including: - the perpendicular from the centre of a circle to a chord bisects the chord - the measure of the central angle is equal to twice the measure of the inscribed angle subtended by the same arc - the inscribed angles subtended by the same arc are congruent - a tangent to a circle is perpendicular to the radius at the point of tangency.	Unit 8, Lesson 8.1, pp. 384–391; Unit 8, Lesson 8.2, pp. 392–399; Unit 8, Technology Lesson, pp. 400, 401; Unit 8, Game, p. 402; Unit 8, Lesson 8.3, pp. 404–412; Unit 8, Technology Lesson, pp. 413, 414; Unit 8, Unit Problem, p. 421

Shape and Space (3-D Objects and 2-D Shapes)

General Outcome:
- Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.

It is expected that students will:

Specific Outcomes	*Pearson Mathematics Makes Sense 9*
2. Determine the surface area of composite 3-D objects to solve problems.	Unit 1, Lesson 1.3, pp. 25–32; Unit 1, Lesson 1.4, pp. 33–43; Unit 1, Unit Problem, p. 49
3. Demonstrate an understanding of similarity of polygons.	Unit 7, Lesson 7.3, pp. 334–342; Unit 7, Lesson 7.4, pp. 343–351

Shape and Space (Transformations)

General Outcome:
- Describe and analyze position and motion of objects and shapes.

It is expected that students will:

Specific Outcomes	*Pearson Mathematics Makes Sense 9*
4. Draw and interpret scale diagrams of 2-D shapes.	Unit 7, Lesson 7.1, pp. 318–324; Unit 7, Lesson 7.2, pp. 325–331; Unit 7, Technology Lesson, pp. 332, 333; Unit 7, Unit Problem, p. 381
5. Demonstrate an understanding of line and rotation symmetry.	Unit 7, Lesson 7.5, pp. 353–359; Unit 7, Game, p. 360; Unit 7, Lesson 7.6, pp. 361–367; Unit 7, Lesson 7.7, pp. 368–375; Unit 7, Unit Problem, p. 381

Statistics and Probability (Data Analysis)

General Outcome:
- Collect, display and analyze data to solve problems.

It is expected that students will:

Specific Outcomes	*Pearson Mathematics Makes Sense 9*
1. Describe the effect of: - bias - use of language - ethics - cost - time and timing - privacy - cultural sensitivity on the collection of data.	Unit 9, Lesson 9.2, pp. 431–436; Unit 9, Technology Lesson, pp. 442, 443
2. Select and defend the choice of using either a population or a sample of a population to answer a question.	Unit 9, Lesson 9.3, pp. 437–441; Unit 9, Lesson 9.4, pp. 445–449
3. Develop and implement a project plan for the collection, display and analysis of data by: - formulating a question for investigation - choosing a data collection method that includes social considerations - selecting a population or a sample - collecting the data - displaying the collected data in an appropriate manner - drawing conclusions to answer the question.	Unit 9, Technology Lesson, pp. 442, 443; Unit 9, Technology Lesson, pp. 450, 451; Unit 9, Lesson 9.5, pp. 454–456; Unit 9, Unit Problem, p. 461

Statistics and Probability (Chance and Uncertainty)

General Outcome:
- Use experimental or theoretical probabilities to represent and solve problems involving uncertainty.

It is expected that students will:

Specific Outcomes	*Pearson Mathematics Makes Sense 9*
4. Demonstrate an understanding of the role of probability in society.	Unit 9, Lesson 9.1, pp. 424–429; Unit 9, Game, p. 430