# Alberta Curriculum Correlation: Grade 8

# JUMP Math

## Contents



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MULTIPLYING POTENTIAL.

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Toronto, Ontario
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**Notes**

To ensure that the curriculum is fully covered, use the worksheets with the lesson plans in the Teacher's Guide.

Underlined lesson numbers indicate relevant preparatory exercises.

Alberta Abbreviations:

| | |
|---|---|
| [C] | Communication |
| [CN] | Connections |
| [ME] | Mental Mathematics and Estimation |
| [PS] | Problem Solving |
| [R] | Reasoning |
| [T] | Technology |
| [V] | Visualization |
| [ICT] | Information and Communication Technology |

JUMP Math workbook units are represented by:

| | |
|---|---|
| NS | Number Sense |
| PA | Patterns and Algebra |
| ME | Measurement |
| G | Geometry |
| PDM | Probability and Data Management |

# Number

## General Outcome

Develop number sense.

## Develop Number Sense

It is expected that students will:

| ALBERTA CURRICULUM | JUMP MATH LESSONS | | |
|---|---|---|---|
| **Specific Outcomes** | **Part** | **Unit** | **Lesson** |
| 1. Demonstrate an understanding of perfect squares and square roots, concretely, pictorially and symbolically (limited to whole numbers).<br>[C, CN, R, V] | 1<br>1 | 1:NS<br>3:NS | 1, 3, 4<br>58–61 |
| 2. Determine the approximate square root of numbers that are not perfect squares (limited to whole numbers).<br>[C, CN, ME, R, T]<br>[ICT: P2–3.4] | 1 | 3:NS | 62, 63 |
| 3. Demonstrate an understanding of percents greater than or equal to 0%, including greater than 100%.<br>[CN, PS, R, V] | 2<br>2 | 1:NS<br>2:PDM | 82–96, 98, 99<br>9 |
| 4. Demonstrate an understanding of ratio and rate.<br>[C, CN, V] | 1<br>2 | 6:ME<br>1:NS | 1–4<br>96, 100–103 |
| 5. Solve problems that involve rates, ratios and proportional reasoning.<br>[C, CN, PS, R] | 1<br>2 | 6:ME<br>1:NS | 3, 4<br>88–103 |
| 6. Demonstrate an understanding of multiplying and dividing positive fractions and mixed numbers, concretely, pictorially and symbolically.<br>[C, CN, ME, PS] | 1 | 1:NS | 9–13, 23–33 |
| 7. Demonstrate an understanding of multiplication and division of integers, concretely, pictorially and symbolically.<br>[C, CN, PS, R, V] | 1 | 7:NS | 71–74 |

# Patterns and Relations

## General Outcomes

- Patterns: Use patterns to describe the world and to solve problems.
- Variables and Equations: Represent algebraic expressions in multiple ways.

## Patterns

It is expected that students will:

| ALBERTA CURRICULUM | JUMP MATH LESSONS | | |
|---|---|---|---|
| **Specific Outcomes** | **Part** | **Unit** | **Lesson** |
| 1. Graph and analyze two-variable linear relations.<br>[C, ME, PS, R, T, V]<br>[ICT: P2–3.3] | 2 | 4:PA | 17, 20, 25–29 |

## Variables and Equations

It is expected that students will:

| ALBERTA CURRICULUM | JUMP MATH LESSONS | | |
|---|---|---|---|
| **Specific Outcomes** | **Part** | **Unit** | **Lesson** |
| 2. Model and solve problems, concretely, pictorially and symbolically, using linear equations of the form:<br>• $ax = b$<br>• $\frac{x}{a} = b, a \neq 0$<br>• $ax + b = c$<br>• $\frac{x}{a} + b = c, a \neq 0$<br>• $a(x + b) = c$<br>where $a$, $b$ and $c$ are integers.<br>[C, CN, PS, V] | 1<br><br><br><br><br><br>2 | 2:PA<br><br><br><br><br><br>4:PA | 5, 6, 7–9, 11, 13–15<br><br><br><br><br><br>16, 17–19, 21, 22, 24, 25, 29, 30 |

# Shape and Space

## General Outcomes

- Measurement: Use direct and indirect measurement to solve problems.
- 3-D Objects and 2-D Shapes: Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.
- Transformations: Describe and analyze position and motion of objects and shapes.

## Measurement

It is expected that students will:

| ALBERTA CURRICULUM | JUMP MATH LESSONS | | |
|---|---|---|---|
| **Specific Outcomes** | **Part** | **Unit** | **Lesson** |
| 1. Develop and apply the Pythagorean theorem to solve problems.<br>[CN, PS, R, T, V]<br>[ICT: P2–3.4] | 1<br>1 | 5:G<br>6:ME | 3–7<br>5, 8 |
| 2. Draw and construct nets for 3-D objects.<br>[C, CN, PS, V] | 2 | 6:ME | 9, 10, 17 |
| 3. Determine the surface area of:<br>• right rectangular prisms<br>• right triangular prisms<br>• right cylinders<br>to solve problems.<br>[C, CN, PS, R, V] | 1<br>2 | 6:ME<br>6:ME | 6<br>10, 16–18 |
| 4. Develop and apply formulas for determining the volume of right rectangular prisms, right triangular prisms and right cylinders.<br>[C, CN, PS, R, V] | 1<br>2 | 6:ME<br>6:ME | 7<br>11–16, 18 |

## 3-D Objects and 2-D Shapes

It is expected that students will:

| ALBERTA CURRICULUM | JUMP MATH LESSONS | | |
|---|---|---|---|
| **Specific Outcomes** | **Part** | **Unit** | **Lesson** |
| 5. Draw and interpret top, front and side views of 3-D objects composed of right rectangular prisms.<br>[C, CN, R, T, V]<br>[ICT: C6–3.4] | 2<br>2 | 6:ME<br>7:G | 9<br>42–46 |

## Transformations

It is expected that students will:

| ALBERTA CURRICULUM | JUMP MATH LESSONS | | |
|---|---|---|---|
| **Specific Outcomes** | **Part** | **Unit** | **Lesson** |
| 6. Demonstrate an understanding of the congruence of polygons.<br>[CN, R, V] | 1 | 8:G | 9, 10, 11, 12, 14 |

# Statistics and Probability

## General Outcomes

- Data Analysis: Collect, display and analyze data to solve problems.
- Chance and Uncertainty: Use experimental or theoretical probabilities to represent and solve problems involving uncertainty.

## Data Analysis

It is expected that students will:

| ALBERTA CURRICULUM | JUMP MATH LESSONS | | |
|---|---|---|---|
| **Specific Outcomes** | **Part** | **Unit** | **Lesson** |
| 1. Critique ways in which data is presented in circle graphs, line graphs, bar graphs and pictographs.<br>[C, R, T, V]<br>[ICT: C7–3.1, C7–3.2, F4–3.3] | 1<br>2<br>2 | 4:PDM<br>2:PDM<br>8:PDM | 1, 3, 5<br>7, 9, 14<br>28 |

## Chance and Uncertainty

It is expected that students will:

| ALBERTA CURRICULUM | JUMP MATH LESSONS | | |
|---|---|---|---|
| **Specific Outcomes** | **Part** | **Unit** | **Lesson** |
| 2. Solve problems involving the probability of independent events.<br>[C, CN, PS, T]<br>[ICT: P2–3.4] | 2 | 8:PDM | 22–24 |