

## 7<sup>th</sup> grade Ohio Mathematics Benchmarks “Batter Up”

### Mathematics

#### Number, Number Sense and Operations

4. Use order of operations and properties to simplify numerical expressions involving integers, fractions and decimals.
5. Explain the meaning and effect of adding, subtracting, multiplying and dividing integers, fractions and decimals.
6. Simplify numerical expressions involving integers and use integers to solve real-life problems.
7. Solve problems using the appropriate form of a rational number (fraction, decimal or percent).

#### Measurement

4. Solve problems involving proportional relationships and scale factors.
5. Analyze problem situations involving measurement concepts, select appropriate strategies and use an organized approach to solve narrative and increasingly complex problems.

#### Patterns, Functions and Algebra

8. Use formulas in problem-solving situations.
9. Recognize a variety of uses for variables.

#### Data Analysis and Probability

6. Identify misuses of statistical data in articles, advertisements, and other media.

#### Mathematical Processes Benchmarks

- A. Clarify problem-solving situations and identify potential solution processes; e.g., consider different strategies and approaches to a problem, restate problem from various perspectives.
- B. Apply and adapt problem-solving strategies to solve a variety of problems, including unfamiliar and non-routine problem situations.

C. Use more than one strategy to solve a problem, and recognize there are advantages associated with various methods.

D. Recognize whether an estimate or an exact solution is appropriate for a given problem situation.

E. Use deductive thinking to construct informal arguments to support reasoning and to justify solutions to problems.

F. Use inductive thinking to generalize a pattern of observations for particular cases, make conjectures, and provide supporting arguments for conjectures.

G. Relate mathematical ideas to one another and to other content areas.

H. Use representations to organize and communicate mathematical thinking and problem solutions.

I. Select, apply and translate among mathematical representations to solve problems; e.g., representing a number as a fraction, decimal or percent as appropriate for a problem.

J. Communicate mathematical thinking to others and analyze the mathematical thinking and strategies of others.

K. Recognize and use mathematical language and symbols when reading, writing and conversing with others.