

Grade 9-12 Unpacked Core Math Standards – Number Sense

9-12.N.1.1. Students are able to **identify** multiple representations of a real number.

Webb Level: 1

Bloom: Comprehension

Verbs Defined:

Identify: write, classify

Key terms defined:

Multiple representations: equivalent expressions

Real Number: Any number that can be graphed on the number line. This includes rational and irrational numbers.

Teacher Speak:

Students are able to identify (classify) and write multiple representations of a real number.

Student Speak:

- Given a real number (Any number that can be graphed on the number line. This includes rational and irrational numbers), I can write and/or classify (identify) the subset(s) of the real numbers to which it belongs (rational, irrational, integers, whole numbers, natural numbers).
 - I can write (identify) any rational number as a fraction and decimal.
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9-12.N.1.2. Students are able to **apply** the concept of place value, magnitude, and relative magnitude of real numbers.

Webb Level: 1

Bloom: Comprehension

Verbs Defined:

Apply: apply

Key terms defined:

Place Value: The value of a digit based on its position in a number in standard form.

Magnitude: distance from the origin on the number line.

Relative magnitude: comparison of size of subsets of real numbers.

Real Number: Any number that can be graphed on the number line. This includes rational and irrational numbers.

Teacher Speak:

Students are able to apply the concept of place value, magnitude, and relative magnitude of real numbers.

Student Speak:

- Given any two real numbers (Any number that can be graphed on the number line. This includes rational and irrational numbers.), I can find another real number between them.
 - I can arrange real numbers (Any number that can be graphed on the number line. This includes rational and irrational numbers.) in order by criteria.
 - I can compare real numbers (Any number that can be graphed on the number line. This includes rational and irrational numbers) written in a variety of forms.
 - Square roots
 - Decimals
 - Scientific notation
 - Fractions
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9-12.N.2.1. Students are able to **add, subtract, multiply, and divide** real numbers including integral exponents.

Webb Level: 1

Bloom: Comprehension

Verbs Defined:

Key terms defined:

Real Number: Any number that can be graphed on the number line. This includes rational and irrational numbers.

Integral exponents: Powers that are integers.

Teacher Speak:

Students are able to add, subtract, multiply, and divide real numbers including integral exponents.

Student Speak:

- I can add, subtract, multiply and divide:
 - Numerical expressions containing rational numbers.
 - Numerical expressions containing integral exponents (powers that are integers).
- I can evaluate complex fractions.

9-12.N.3.1. Students are able to **use** estimation strategies in problem situations to **predict** results and to **check** the reasonableness of results.

Webb Level: 2

Bloom: Analysis

Verbs Defined:

Use: apply

Predict: conjecture

Check: determine the appropriateness of the result

Key terms defined:

Estimation strategies: methods of approximation

Problem Situation: a setting in which to find an unknown

Reasonableness: appropriateness

Teacher Speak:

Students are able to use (apply) methods of approximation in problem situations to predict (conjecture) results and to check (determine the appropriateness of) results.

Student Speak:

- I can apply rounding as an estimation strategy (methods of approximation).
- I can estimate the answer to a problem to check the reasonableness (appropriateness) of my calculated answer.
- I can find the area and volume of irregular shapes applying (using) estimation strategies (methods of approximation).

9-12.N.3.2. Students are able to **select** alternative computational strategies and **explain** the chosen strategy.

Webb Level: 3

Bloom: Comprehension

Verbs Defined:

Select: choose and apply

Explain: justify

Key terms defined:

Alternative computational strategies: properties of numbers that allow operational shortcuts for computational procedures.

Teacher Speak

Students are able to select (choose and apply) alternative computational strategies and explain (justify) the chosen strategy.

Student Speak

- I can mentally rearrange and group a list of numbers to find the sum.
- I can use the distributive property to compute the product of two numbers.
- I can justify (explain) the operational shortcuts I use for computational procedures.

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