

National Mathematics Standards

Grades 5-8

As Addressed by Challenger Learning Center's

e-Mission: Space Station Alpha



Number and operations

Students in grade 5 should:

- Understand the place-value structure of the base-10 number system and be able to represent and compare whole numbers and decimals.
- Recognize equivalent representations for the same number and generate them by decomposing and composing numbers.
- Recognize and generate equivalent forms of commonly used fractions, decimals, and percentages.

Students in grades 6-8 should:

- Work flexibly with fractions, decimals, and percentages to solve problems.
- Develop meaning for integers and represent and compare quantities with them.

Understand meanings of operations and how they relate to one another

Students in grade 5 should:

- Understand various meanings of multiplication and division.
- Understand the effects of multiplying and dividing whole numbers.
- Identify and use relationships between operations, such as division as the inverse of multiplication, to solve problems.
- Understand and use properties of operations, such as the distributive property of multiplication over addition.

Students in grades 6-8 should:

- Understand the meaning and effects of arithmetic operations with fractions, decimals, and integers.
- Use the associative and commutative properties of addition and multiplication and the distributive property of multiplication over addition to simplify computations with integers, fractions, and decimals.

Compute fluently and make reasonable estimates

Students in grade 5 should:

- Develop fluency with basic number combinations for multiplication and division and use these combinations to mentally compute related problems, such as 30×50 .
- Develop fluency in adding, subtracting, multiplying, and dividing whole numbers.
- Select appropriate methods and tools for computing with whole numbers from among mental computation, estimation, calculators, and paper and pencil according to the context and nature of the computation and use the selected method or tools.

Students in grades 6-8 should:

- Select appropriate methods and tools for computing with fractions and decimals from among mental computation, estimation, calculators or computers, and paper and pencil, depending on the situation, and apply the selected methods.