



An **Algebra I** student in the Littleton Public Schools will engage with the following big ideas in **Mathematics**:

Mathematically Proficient Students:

- **Make sense of problems and persevere in solving them**
- **Reason abstractly and quantitatively**
- **Construct viable arguments and critique the reasoning of others**
- **Model with mathematics**
- **Use appropriate tools strategically**
- **Attend to precision**
- **Look for and make use of structure**
- **Look for and express regularity in repeated reasoning**

- Use properties of rational and irrational numbers
- Reason quantitatively and use units to solve problems*
- Interpret the structure of expressions
- Write expressions in equivalent forms to solve problems
- Perform arithmetic operations on polynomials
- Understand the relationship between zeros and factors of polynomials*
- Create equations that describe numbers or relationships
- Understand solving equations as a process of reasoning and explain the reasoning*
- Solve equations and inequalities in one variable*
- Solve systems of equations*
- Represent and solve equations and inequalities graphically*
- Understand the concept of a function and use function notation*
- Interpret functions that arise in application in terms of the context*
- Analyze functions using different representations*
- Build a function that models a relationship between two quantities*
- Build new functions from existing functions*
- Construct and compare linear, quadratic, and exponential models and solve problems* Interpret expressions for functions in terms of the situation they model*

Mathematically Proficient Students:

- **Make sense of problems and persevere in solving them**
- **Reason abstractly and quantitatively**
- **Construct viable arguments and critique the reasoning of others**
- **Model with mathematics**
- **Use appropriate tools strategically**
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[21st Century Skills](#)

- Interpret expressions for functions in terms of the situation they model*
- Summarize, represent, and interpret data on two categorical and quantitative variables*
- Interpret linear models

*Indicates that this cluster heading appears in both the Algebra I and the Algebra II standards document. The focus of instruction is progressive and simply falls under the same cluster heading.

Link to Additional Resource:

[Colorado Academic Standards](#)



A **Geometry** student in the Littleton Public Schools will engage with the following big ideas in **Mathematics**:

Mathematically Proficient Students:

- **Make sense of problems and persevere in solving them**
- **Reason abstractly and quantitatively**
- **Construct viable arguments and critique the reasoning of others**
- **Model with mathematics**
- **Use appropriate tools strategically**
- **Attend to precision**
- **Look for and make use of structure**
- **Look for and express regularity in repeated reasoning**

[21st Century Skills](#)

- Experiment with transformations in the plane
- Understand congruence in terms of rigid motions
- Prove geometric theorems
- Make geometric constructions
- Understand similarity in terms of similarity transformations
- Prove theorems using similarity
- Define trigonometric ratios and solve problems involving right triangles
- Understand and apply theorems about circles
- Find arc lengths and areas of sectors of circles
- Translate between the geometric description and the equation of a conic section
- Use coordinates to prove simple geometric theorems algebraically
- Explain volume formulas and use them to solve problems
- Visualize relationships between two-dimensional and three-dimensional objects
- Apply geometric concepts in modeling situations

Links to Additional Resources:

[Colorado Academic Standards](#)



An **Algebra II** student in the Littleton Public Schools will engage with the following big ideas in **Mathematics**:

Mathematically Proficient Students:

- **Make sense of problems and persevere in solving them**
- **Reason abstractly and quantitatively**
- **Construct viable arguments and critique the reasoning of others**
- **Model with mathematics**
- **Use appropriate tools strategically**
- **Attend to precision**
- **Look for and make use of structure**
- **Look for and express regularity in repeated reasoning**

- Extend the properties of exponents to rational exponents
- Reason quantitatively and use units to solve problems*
- Perform arithmetic operations with complex numbers
- Use complex numbers in polynomial identities and equations
- Interpret the structure of expressions*
- Write expressions in equivalent forms to solve problems*
- Understand the relationship between zeros and factors of polynomials*
- Use polynomial identities to solve problems
- Rewrite rational expressions
- Create equations that describe numbers or relationships
- Understand solving equations as a process of reasoning and explain the reasoning*
- Solve equations and inequalities in one variable*
- Solve systems of equations*
- Represent and solve equations and inequalities graphically*
- Understand the concept of a function and use function notation*
- Interpret functions that arise in application in terms of the context*
- Analyze functions using different representations*
- Build a function that models a relationship between two quantities*
- Build new functions from existing functions*
- Construct and compare linear, quadratic, and exponential models and solve problems*

Mathematically Proficient Students:

- **Make sense of problems and persevere in solving them**
- **Reason abstractly and quantitatively**
- **Construct viable arguments and critique the reasoning of others**
- **Model with mathematics**
- **Use appropriate tools strategically**
- **Attend to precision**
- **Look for and make use of structure**
- **Look for and express regularity in repeated reasoning**

[21st Century Skills](#)

- Interpret expressions for functions in terms of the situation they model*
- Extend the domain of trigonometric functions using the unit circle
- Model periodic phenomena with trigonometric functions
- Prove and apply trigonometric identities
- Translate between the geometric description and the equation for a conic section

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Link to Additional Resource:

[Colorado Academic Standards](#)