## Curriculum Map: Math 7

Course: MATH 7 Sub-topic: General
Grade(s): None specified

Course Students will use problem solving skills to think critically and solve real life applications Description: involving all seventh grade curricular content. Students will apply appropriate tools to solve real-world and mathematical problems involving number systems, ratios and proportional relationships, expressions and equations, as well as probability and statistics.

## Unit: Unit 1 - Operations with Integers

This Curriculum Map Unit has no Topics to display

## Unit: Unit 2-Operations with Rational Numbers

This Curriculum Map Unit has no Topics to display

## Unit: Unit 3 - Expressions <br> STANDARDS: STANDARDS

## STATE: PA Core Anchors and Eligible Content (2014)

M07.B-E.1.1.1 Apply properties of operations to add, subtract, factor, and \  (Advanced) expand linear expressions with rational coefficients. Example 1: The expression $1 / 2 \bullet(x+6)$ is equivalent to $1 / 2 \bullet x+3$. Example 2: The expression $5.3-y+4.2$ is equivalent to $9.5-$ $y$ (or $-y+9.5$ ). Example 3: The expression $4 w-10$ is equivalent to $2(2 w-5)$.
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# Topic: Lesson 3.1 - Parts of Algebraic Expressions 

## STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)
M07.B-E.1.1.1 (Advanced) Apply properties of operations to add, subtract, factor, and expand linear expressions with rational coefficients. Example 1: The expression $1 / 2 \cdot(x+6)$ is equivalent to $1 / 2 \cdot x+3$. Example 2: The expression $5.3-y+4.2$ is equivalent to $9.5-\mathrm{y}$ (or $-\mathrm{y}+9.5$ ). Example 3: The expression $4 \mathrm{w}-10$ is equivalent to $2(2 \mathrm{w}-5$ ).

## Topic: Lesson 3.2 - Writing Expressions STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)
M07.B-E.1.1.1 (Advanced)
Apply properties of operations to add, subtract, factor, and expand linear expressions with rational coefficients. Example 1: The expression $1 / 2 \cdot(x+6)$ is equivalent to $1 / 2 \cdot x+3$. Example 2: The expression $5.3-y+4.2$ is equivalent to $9.5-y$ (or $-y+9.5$ ). Example 3: The expression $4 w-10$ is equivalent to $2(2 w-5)$.

## Topic: Lesson 3.3 - Evaluating Expressions <br> STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)
M07.B-E.1.1.1 (Advanced) Apply properties of operations to add, subtract, factor, and expand linear expressions with rational coefficients. Example 1: The expression $1 / 2 \cdot(x+6)$ is equivalent to $1 / 2 \cdot x+3$. Example 2: The expression $5.3-y+4.2$ is equivalent to $9.5-\mathrm{y}$ (or $-\mathrm{y}+9.5$ ). Example 3: The expression $4 \mathrm{w}-10$ is equivalent to $2(2 \mathrm{w}-5)$.

Topic: Lesson 3.4 - Simplifying Expressions

## STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)
M07.B-E.1.1.1 (Advanced) Apply properties of operations to add, subtract, factor, and expand linear expressions with rational coefficients. Example 1: The expression $1 / 2 \cdot(x+6)$ is equivalent to $1 / 2 \bullet x+3$. Example 2: The expression $5.3-y+4.2$ is equivalent to $9.5-\mathrm{y}$ (or $-\mathrm{y}+9.5$ ). Example 3: The expression $4 \mathrm{w}-10$ is equivalent to $2(2 \mathrm{w}-5)$.

## Unit: Unit 4 - Equations

Topic: Lesson 4.1 - One-Step Equations
Topic: Lesson 4.2 - Two-Step Equations
Topic: Lesson 4.3 - Multi-Step Equations
Topic: Lesson 4.4-Solving Equations with the Variable on Both Sides

## Unit: Unit 5 - Inequalities <br> STANDARDS: STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)
M07.B-E.2.2.2 Solve word problems leading to inequalities of the form $\mathrm{px}+\mathrm{q}$ \ 
(Advanced) $\quad>\mathrm{r}$ or $\mathrm{px}+\mathrm{q}$
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## Topic: Lesson 5.1 - Writing and Graphing Inequalities

 STANDARDSSTATE: PA Core Anchors and Eligible Content (2014)
M07.B-E.2.2.2 (Advanced) Solve word problems leading to inequalities of the form $p x+q>r$ or $p x+q<r$, where $p, q$, and $r$ are specific rational numbers, and graph the solution set of the inequality. Example: A salesperson is paid $\$ 50$ per week plus $\$ 3$ per sale. This week she wants her pay to be at least $\$ 100$. Write an inequality for the number of sales the salesperson needs to make and describe the solutions.

## Topic: Lesson 5.2 - One-Step Inequalities

## STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)
M07.B-E.2.2.2 (Advanced) Solve word problems leading to inequalities of the form $\mathrm{px}+\mathrm{q}>\mathrm{r}$ or $\mathrm{px}+\mathrm{q}<\mathrm{r}$, where $p, q$, and $r$ are specific rational numbers, and graph the solution set of the inequality. Example: A salesperson is paid $\$ 50$ per week plus $\$ 3$ per sale. This week she wants her pay to be at least $\$ 100$. Write an inequality for the number of sales the salesperson needs to make and describe the solutions.

## Topic: Lesson 5.3 - Two-Step Inequalities

## STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)
M07.B-E.2.2.2 (Advanced) Solve word problems leading to inequalities of the form $p x+q>r$ or $p x+q<r$, where $p, q$, and $r$ are specific rational numbers, and graph the solution set of the inequality. Example: A salesperson is paid $\$ 50$ per week plus $\$ 3$ per sale. This week she wants her pay to be at least $\$ 100$. Write an inequality for the number of sales the salesperson needs to make and describe the solutions.

## Topic: Lesson 5.4-Multi-Step Inequalities STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)
M07.B-E.2.2.2 (Advanced) Solve word problems leading to inequalities of the form $\mathrm{px}+\mathrm{q}>\mathrm{r}$ or $\mathrm{px}+\mathrm{q}<\mathrm{r}$, where $p, q$, and $r$ are specific rational numbers, and graph the solution set of the inequality. Example: A salesperson is paid $\$ 50$ per week plus $\$ 3$ per sale. This week she wants her pay to be at least $\$ 100$. Write an inequality for the number of sales the salesperson needs to make and describe the solutions.

## Unit: Unit 6 - Rates, Ratios, and Proportions STANDARDS: STANDARDS

|  | $1 / 2$ mile in each $1 / 4$ hour, compute the unit rate as the complex fraction $1 / 2$ / $1 / 4$ miles per hour, equivalently 2 miles per hour. |
| :---: | :---: |
|  | Alternate Eligible Content Code M07AR1.1.1a: Find the unit rate in a real-world problem |
| M07.A-R.1.1.2 (Advanced) | Determine whether two quantities are proportionally related \  (e.g., by testing for equivalent ratios in a table, graphing on a coordinate plane and observing whether the graph is a straight line through the origin). |
| M07.A-R.1.1.3 (Advanced) | Identify the constant of proportionality (unit rate) in tables, \  graphs, equations, diagrams, and verbal descriptions of proportional relationships. |
|  | Alternate Eligible Content Code M07AR1.1.3a: Represent a proportional relationship on a line graph |
| M07.A-R.1.1.4 (Advanced) | Represent proportional relationships by equations. Example: If \  total cost t is proportional to the number n of items purchased at a constant price $p$, the relationship between the total cost and the number of items can be expressed as $t=p n$. |
| M07.A-R.1.1.5 (Advanced) | Explain what a point ( $\mathrm{x}, \mathrm{y}$ ) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0,0)$ and $(1, r)$, where $r$ is the unit rate. |
|  | Alternate Eligible Content Code M07AR1.1.5a: Interpret an ordered pair in a real-world problem |
| \ (* standards consolidated from Topic level) \  |  |
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## Topic: Lesson 6.1 - Ratios and Rates

## STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)
M07.A-R.1.1.1 (Advanced) Compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units. Example: If a person walks $1 / 2$ mile in each $1 / 4$ hour, compute the unit rate as the complex fraction $1 / 2$ / $1 / 4$ miles per hour, equivalently 2 miles per hour.

Alternate Eligible Content Code M07AR1.1.1a: Find the unit rate in a real-world problem

## Topic: Lesson 6.2 - Identifying Proportions

## Topic: Lesson 6.3 - Solving Proportions

Topic: Lesson 6.4-Similar Figures and Proportions

## Topic: Lesson 6.5 - Constant of Proportionality

 STANDARDS
## STATE: PA Core Anchors and Eligible Content (2014)

M07.A-R.1.1.2 (Advanced) Determine whether two quantities are proportionally related (e.g., by testing for equivalent ratios in a table, graphing on a coordinate plane and observing whether the graph is a straight line through the origin).
M07.A-R.1.1.3 (Advanced) Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.

Alternate Eligible Content Code M07AR1.1.3a: Represent a proportional relationship on a line graph
M07.A-R.1.1.4 (Advanced) Represent proportional relationships by equations. Example: If total cost t is proportional to the number $n$ of items purchased at a constant price $p$, the relationship between the total cost and the number of items can be expressed as $t=$ pn.
M07.A-R.1.1.5 (Advanced) Explain what a point ( $\mathrm{x}, \mathrm{y}$ ) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0,0)$ and $(1, r)$, where $r$ is the unit rate.

Alternate Eligible Content Code M07AR1.1.5a: Interpret an ordered pair in a realworld problem

Topic: Lesson 6.7-Writing Linear Equations (Algebra Tracking Classes Only)
Topic: Lesson 6.8-Graphing Linear Equations (Algebra Tracking Classes Only)
Topic: Lesson 6.9 - Linear Equations Word Problems (Algebra Tracking Classes Only)

## Unit: Unit 7 - Percents

Topic: Lesson 7.1 - Percents, Decimals, and Fractions
Topic: Lesson 7.2 - Percent Problems (Part, Whole, Percent)

Unit: Unit 8 - Probability
This Curriculum Map Unit has no Topics to display

Unit: Unit 9 - Data and Statistics
This Curriculum Map Unit has no Topics to display

