

Center 1 Handouts (1.4, 1.5, 1.7, 1.9, 2.12, 4.3, 10.3, and 13.8)
Handout 1.4: Secondary Mathematics Content Domain Graphic

MATHEMATICAL GOAL

College Readiness

Students should experience the interplay of number sense; algebra; geometry and measurement; data analysis, probability, and statistics; and calculus, and should be able to successfully apply their understanding of high school mathematics to college math courses in order to be guaranteed access to a broad spectrum of education and career options.

MATHEMATICAL CONTENT

<p>Number Sense and Operations</p> <ul style="list-style-type: none"> ■ Properties of numbers and number systems ■ Vectors and matrices ■ Number theory arguments ■ Meanings of operations and how they relate to one another ■ Computation and estimation (algorithms and problem solving) 	<p>Algebra</p> <ul style="list-style-type: none"> ■ Multiple representations (graphs, charts, words) ■ Proportional reasoning (numerical relationships) ■ Patterns, relations, and functions (if, then) ■ Algebraic symbols (variables, algorithms) ■ Balance (equivalence) ■ Discrete mathematics 	<p>Geometry and Measurement</p> <ul style="list-style-type: none"> ■ Properties, area, volume, and perimeter of two- and three-dimensional geometric shapes ■ Coordinate geometry ■ Transformations and symmetry ■ Visualization, spatial reasoning, and geometric modeling ■ Measurable attributes of objects and the units, systems, and processes of measurement ■ Proofs (inductive and deductive reasoning) 	<p>Data Analysis, Probability, and Statistics</p> <ul style="list-style-type: none"> ■ Collection, organization, and display of data to answer research questions ■ Statistical methods ■ Inferences and predictions ■ Calculating probability 	<p>Calculus</p> <ul style="list-style-type: none"> ■ Derivatives/antiderivatives ■ Limits ■ Functions ■ Correlation/deviation/variance ■ Definite integral ■ Integration ■ Differential equations ■ Inverses

MATHEMATICAL PROCESS

Mathematical Reasoning and Application (taught and practiced across all strands)

Students make and investigate mathematical conjectures; solve problems that arise in mathematics and in other contexts; and communicate their mathematical thinking coherently and clearly to peers, teachers, and others.

Handout 10.3: Mathematical Connections and the Content Domain

Directions: Review the content domain graphic below, looking for connections between the strands. Draw lines between subtopics that you feel are closely connected. Then, complete the sentence stems at the bottom of the page.

MATHEMATICAL CONTENT				
<p>Number Sense and Operations</p> <ul style="list-style-type: none"> Properties of numbers and number systems Vectors and matrices Number theory arguments Meanings of operations and how they relate to one another Computation and estimation (algorithms and problem solving) 	<p>Algebra</p> <ul style="list-style-type: none"> Multiple representations (graphs, charts, words) Proportional reasoning (numerical relationships) Patterns, relations, and functions (if, then) Algebraic symbols (variables, algorithms) Balance (equivalence) Discrete mathematics 	<p>Geometry and Measurement</p> <ul style="list-style-type: none"> Properties, area, volume, and perimeter of two- and three-dimensional geometric shapes Coordinate geometry Transformations and symmetry Visualization, spatial reasoning, and geometric modeling Measurable attributes of objects and the units, systems, and processes of measurement Proofs (inductive and deductive reasoning) 	<p>Data Analysis, Probability, and Statistics</p> <ul style="list-style-type: none"> Collection, organization, and display of data to answer research questions Statistical methods Inferences and predictions Calculating probability 	<p>Calculus</p> <ul style="list-style-type: none"> Derivatives/antiderivatives Limits Functions Correlation/deviation/variance Definite integral Integration Differential equations Inverses

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MATHEMATICAL PROCESS

Mathematical Reasoning and Application (taught and practiced across all strands)

Students make and investigate mathematical conjectures; solve problems that arise in mathematics and in other contexts; and communicate their mathematical thinking coherently and clearly to peers, teachers, and others.

1. I connected _____ to _____ because _____

2. I tried to connect _____ to _____ but was hesitant because _____

3. When I teach _____ I can use _____ as an anchoring topic because _____

4. When I teach _____ I can expand it to include an introduction to _____ because _____
