

Catholic Identity Standards

6.0 The student understands and integrates the content of what is learned into their faith and daily life.

- 6.0A recognize that every human life is sacred because each person is created and loved by God
- 6.0B describe ways to take part in/be responsible to the community by discerning and using our God-given gifts
- 6.0C recognize and oppose unjust social structures and work toward justice for all
- 6.0D see God at work in all things and as expressed in the sacraments
- 6.0E connect scripture, tradition, and the models of Mary and the saints to guide, grow, and deepen faith

Mathematical Process Standards

6.1 The student uses mathematical processes to acquire and demonstrate mathematical understanding.

- 6.1A apply mathematics to problems arising in everyday life, society, and the workplace
- 6.1B use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution
- 6.1C select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems
- 6.1D communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate
- 6.1E create and use representations to organize, record, and communicate mathematical ideas
- 6.1F analyze mathematical relationships to connect and communicate mathematical ideas
- 6.1G display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication
- 6.GS2* develop lines of inquiry (as developmentally appropriate) to understand why things are true and why they are false
- 6.GS3* recognize the power of the human mind as both a gift from God and a reflection of Him in whose image and likeness we are made
- 6.GS4* survey the truths about mathematical objects that are interesting in their own right and independent of human opinions
- 6.DS1* display a sense of wonder about mathematical relationships as well as confidence in mathematical certitude
- 6.DS2* respond to the beauty, harmony, proportion, radiance, and wholeness present in mathematics
- 6.DS3* show interest in the pursuit of understanding for its own sake
- 6.DS4* exhibit joy at solving difficult mathematical problems and operations

Number and Operations

6.2 The student applies mathematical process standards to represent and use rational numbers in a variety of forms.

- 6.2A classify whole numbers, integers, and rational numbers using a visual representation such as a Venn diagram to describe relationships between sets of numbers
- 6.2B identify a number, its opposite, and its absolute value
- 6.2C locate, compare, and order integers and rational numbers using a number line
- 6.2D order a set of rational numbers arising from mathematical and real-world contexts
- 6.2E extend representations for division to include fraction notation such as a/b represents the same number as $a \div b$ where $b \neq 0$

Number and Operations

6.3 The student applies mathematical process standards to represent addition, subtraction, multiplication, and division while solving problems and justifying solutions.

- 6.3A recognize that dividing by a rational number and multiplying by its reciprocal result in equivalent values
- 6.3B determine, with and without computation, whether a quantity is increased or decreased when multiplied by a fraction, including values greater than or less than one
- 6.3C represent integer operations with concrete models and connect the actions with the models to standardized algorithms
- 6.3D add, subtract, multiply, and divide integers fluently
- 6.3E multiply and divide positive rational numbers fluently

Proportionality

6.4 The student applies mathematical process standards to develop an understanding of proportional relationships in problem situations.

- 6.4A compare two rules verbally, numerically, graphically, and symbolically in the form of $y = ax$ or $y = x + a$ in order to differentiate between additive and multiplicative relationships
- 6.4B apply qualitative and quantitative reasoning to solve prediction and comparison of real-world problems involving ratios and rates
- 6.4C give examples of ratios as multiplicative comparisons of two quantities describing the same attribute
- 6.4D give examples of rates as the comparison by division of two quantities having different attributes, including rates as quotients
- 6.4E represent ratios and percents with concrete models, fractions, and decimals
- 6.4F represent benchmark fractions and percents such as 1%, 10%, 25%, $33 \frac{1}{3}\%$, and multiples of these values using 10 by 10 grids, strip diagrams, number lines, and numbers
- 6.4G generate equivalent forms of fractions, decimals, and percents using real-world problems, including problems that involve money
- 6.4H convert units within a measurement system, including the use of proportions and unit rates

Proportionality

6.5 The student applies mathematical process standards to solve problems involving proportional relationships.

- 6.5A represent mathematical and real-world problems involving ratios and rates using scale factors, tables, graphs, and proportions
- 6.5B solve real-world problems to find the whole given a part and the percent, to find the part given the whole and the percent, and to find the percent given the part and the whole, including the use of concrete and pictorial models
- 6.5C use equivalent fractions, decimals, and percents to show equal parts of the same whole

Expressions, Equations, and Relationships

6.6 The student applies mathematical process standards to use multiple representations to describe algebraic relationships.

- 6.6A identify independent and dependent quantities from tables and graphs
- 6.6B write an equation that represents the relationship between independent and dependent quantities from a table
- 6.6C represent a given situation using verbal descriptions, tables, graphs, and equations in the form $y = kx$ or $y = x + b$

Expressions, Equations, and Relationships

6.7 The student applies mathematical process standards to develop concepts of expressions and equations.

- 6.7A generate equivalent numerical expressions using order of operations, including whole number exponents and prime factorization
- 6.7B distinguish between expressions and equations verbally, numerically, and algebraically
- 6.7C determine if two expressions are equivalent using concrete models, pictorial models, and algebraic representations
- 6.7D generate equivalent expressions using the properties of operations: inverse, identity, commutative, associative, and distributive properties

Expressions, Equations, and Relationships

6.8 The student applies mathematical process standards to use geometry to represent relationships and solve problems.

- 6.8A extend previous knowledge of triangles and their properties to include the sum of angles of a triangle, the relationship between the lengths of sides and measures of angles in a triangle, and determining when three lengths form a triangle
- 6.8B model area formulas for parallelograms, trapezoids, and triangles by decomposing and rearranging parts of these shapes
- 6.8C write equations that represent problems related to the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers
- 6.8D determine solutions for problems involving the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers

Expressions, Equations, and Relationships

6.9 The student applies mathematical process standards to use equations and inequalities to represent situations.

- 6.9A write one-variable, one-step equations and inequalities to represent constraints or conditions within problems
- 6.9B represent solutions for one-variable, one-step equations and inequalities on number lines
- 6.9C write corresponding real-world problems given one-variable, one-step equations or inequalities

Expressions, Equations, and Relationships

6.10 The student applies mathematical process standards to use equations and inequalities to solve problems.

- 6.10A model and solve one-variable, one-step equations and inequalities that represent problems, including geometric concepts
- 6.10B determine if the given value(s) make(s) one-variable, one-step equations or inequalities true

Measurement and Data

6.11 The student applies mathematical process standards to use coordinate geometry to identify locations on a plane.

- 6.11A graph points in all four quadrants using ordered pairs of rational numbers

Measurement and Data

6.12 The student applies mathematical process standards to use numerical or graphical representations to analyze problems.

- 6.12A represent numeric data graphically, including dot plots, stem-and-leaf plots, histograms, and box plots
- 6.12B use the graphical representation of numeric data to describe the center, spread, and shape of the data distribution
- 6.12C summarize numeric data with numerical summaries, including the mean and median (measures of center) and the range and interquartile range (IQR) (measures of spread), and use these summaries to describe the center, spread, and shape of the data distribution
- 6.12D summarize categorical data with numerical and graphical summaries, including the mode, the percent of values in each category (relative frequency table), and the percent bar graph, and use these summaries to describe the data distribution

Measurement and Data

6.13 The student applies mathematical process standards to use numerical or graphical representations to solve problems.

- 6.GS1* demonstrate the mental habits of precise, determined, careful, and accurate questioning, inquiry, and reasoning
- 6.13A interpret numeric data summarized in dot plots, stem-and-leaf plots, histograms, and box plots
- 6.13B distinguish between situations that yield data with and without variability

Personal Financial Literacy

6.14	The student applies mathematical process standards to develop an economic way of thinking and problem solving useful in one's life as a knowledgeable consumer and investor.
6.DS5*	show interest in how the mental processes evident within the discipline of mathematics (such as order, perseverance, and logical reasoning) help us with the development of the natural virtues (such as self-discipline and fortitude)
6.14A	compare the features and costs of a checking account and a debit card offered by different local financial institutions
6.14B	distinguish between debit cards and credit cards
6.14C	balance a check register that includes deposits, withdrawals, and transfers
6.14D	explain why it is important to establish a positive credit history
6.14E	describe the information in a credit report and how long it is retained
6.14F	describe the value of credit reports to borrowers and to lenders
6.14G	explain various methods to pay for college, including through savings, grants, scholarships, student loans, and work-study
6.14H	compare the annual salary of several occupations requiring various levels of post-secondary education or vocational training and calculate the effects of the different annual salaries on lifetime income