



SPRINGFIELD PUBLIC SCHOOLS
ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY GLOBAL SKILLS

Springfield Public Schools
Springfield, New Jersey 07081

Math 6
Grade 6

Curriculum Guide

2024

This curriculum may be modified through varying materials, techniques, and strategies as per an individual student's IEP.

Springfield Board of Education
Approved August 26, 2024



Springfield Public Schools
Springfield, New Jersey

Rachel Goldberg
Superintendent of Schools

Erica Scudero
Asst. Superintendent of Curriculum and Instruction

Curriculum Developed By:
Gregory Salmon ~ STEM Supervisor
Shari Scheckman ~ 6th grade math



Unit Overview Template

Content Area: Mathematics **Grade Level:** 6 **Unit Title:** The Statistical Student

Unit Summary: Students will apply Data Analysis and Representation to real-life scenarios, and further engage in developing concepts of Data Analysis.

Primary Interdisciplinary Connections: *Data Collection & Representation*

21st Century Themes ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ ICT Literacy
☐ Information Literacy ☒ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy

Unit Rationale: To apply data collection and representation to middle school data.

Career Readiness (Standard 9):

9.4.8.IML.2: Identify specific examples of distortion, exaggeration, or misrepresentation of information.

9.4.8.IML.3: Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping (e.g., 6.SP.B.4, 7.SP.B.8b).

9.4.8.IML.4: Ask insightful questions to organize different types of data and create meaningful visualizations.

9.4.8.TL.1: Construct a spreadsheet in order to analyze multiple data sets, identify relationships, and facilitate data-based decision-making.

9.4.8.TL.2: Gather data and digitally represent information to communicate a real-world problem (e.g., MS-ESS3-4, 6.1.8.EconET.1, 6.1.8.CivicsPR.4).

Learning Targets

Standards: 6. SP

Content Statements: Develop an understanding of statistical variability; Summarize and describe distributions

CPI#:	Cumulative Progress Indicator (CPI):
6.SP.A.1	Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. For example, “How old am I?” is not a statistical question, but “How old are the students in my school?” is a statistical question because one anticipates variability in students’ ages.
6.SP.A.2	Understand that a set of data collected to answer a statistical question has a distribution that can be described by its center, spread, and overall shape.
6.SP.A.3	Recognize that a measure of center for a numerical data set summarizes all of its values with a single number. In contrast, a measure of variation describes how its values vary with a single number.
6.SP.B.4	Display numerical data on a number line plot, including dot plots, histograms, and box plots.
6.SP.B.5	Summarize numerical data sets about their context, such as by: a. Reporting the number of observations.



	b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. c. Give quantitative measures of center (median and mean) and variability (interquartile range and mean absolute deviation), as well as describe any overall pattern and any striking deviations from the overall pattern concerning the context in which the data were gathered. d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.
SEL.PK-12.3.2	Demonstrate an awareness of the differences among individuals, groups, and others' cultural backgrounds.
SEL.PK-12.3.3	Demonstrate an understanding of the need for mutual respect when viewpoints differ.
SEL.PK-12.4.1	Develop, implement, and model effective problem-solving, and critical thinking skills.
SEL.PK-12.5.2	Utilize positive communication and social skills to interact effectively with others.

Unit Essential Questions:

- How can the collection, organization, interpretation, and display of data be used to answer questions?
- How can measures of central tendency be interpreted?
- What are some ways data can be displayed?

Unit Enduring Understandings:

- The message conveyed by the data depends on how the data is collected, represented, and summarized.
- The results of a statistical investigation can be used to support or refute an argument.

Unit Learning Targets:

Students will:

collect, generate, organize, interpret, and display data generated from surveys.

Climate Change Example: Students may display numerical data related to deforestation and increasing livestock farming as contributors to climate change in plots on a number line, including dot plots, histograms, and box plots.



Evidence of Learning

Summative Assessment: 8 weeks

Equipment Needed: Surveys, laptops, textbooks, calculators, smart board, video tutorials

Teacher Resources: Textbook, Online Textbook

Formative Assessments:

- IDE project and rubric
- Quizzes
- Tests
- Google Slides
- Worksheets
- i-Ready Diagnostic



Lesson Plans

Lesson	Time Frame
Lesson 1 Collection	5 days
Lesson 2 Interpretation	5 days
Lesson 3 Representation	5 days

Teacher Notes: It will be successful because the students are connected with the data.

Curriculum Development Resources/Technology Resources:

Click the links below to access additional resources used to design this unit:

<http://sites.google.com/site/fmg6thgrademath/data-about-us>

<http://www.ixl.com>

<https://tasks.illustrativemathematics.org/content-standards>

<https://www.desmos.com/>

<https://nj.digitalitemlibrary.com/home>

<https://resources.newmeridiancorp.org/released-items/>

<https://nj.mypearsonsupport.com/practice-tests/math/>



Lesson Plan 1 Template

Content Area: Mathematics Lesson Title: Data Collection Time Frame: 5 days

Lesson Components

21st Century Themes

- ☐ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy
☐ Civic Literacy ☒ Health Literacy

21st Century Skills

- ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Information Literacy
☒ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections:

Survey creation, Question techniques, Survey conduction

Integration of Technology:

Video tutorials, Big Ideas Math Online textbook, Teacher websites, IXL

Equipment Needed:

Student-created survey, Laptop

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Collect numerical data using surveys. - Generate survey questions resulting in numerical data. - Identify measures of central tendency. - Interpret line plots, bar graphs, stem and leaf plots, and scatter plots.	Lesson Sequence - Numerical vs. Categorical data. - Brainstorm numerical questions relevant to middle school students. - Interpret graphs. - Identify measures of central tendency. - Conduct a survey of peers.	- Quiz - Peer edit
Differentiation: IDE rubric		
Resources Provided: - Website - Rubric - Survey sheets		



Lesson Plan 2 Template

Content Area: Mathematics Lesson Title: Data Interpretation Time Frame: 5 days

Lesson Components

21st Century Themes

- ☐ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy
☐ Civic Literacy ☒ Health Literacy

21st Century Skills

- ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Information Literacy
☒ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections:

Actuary

Integration of Technology:

Video tutorials, Big Ideas Math Textbook online, Teacher websites

Equipment Needed:

Laptop, Google Slides, Google Sheets, Calculator

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: • Compute the mean, median, mode, and range of a data set. • Determine which measure of central tendency best describes the data.	Lesson Sequence • Compute measures of central tendency using data in numerical form. • Compute measures of central tendency using data from graphs. • Infer from data which measure of central tendency best describes data.	• Quiz • Peer assessment of data representation and measures of central tendency.
Differentiation: IDE rubric		
Resources Provided: • Teacher website • Laptops • Smartboard • Video tutorials		



Lesson Plan 3 Template

Content Area: Mathematics Lesson Title: Data Representation Time Frame: 5 days

Lesson Components

21st Century Themes

- ☐ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy
☐ Civic Literacy ☒ Health Literacy

21st Century Skills

- ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Information Literacy
☒ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections:

Actuary

Integration of Technology:

Google Sheets, Video tutorials, Big Ideas Math Textbook online, Teacher websites

Equipment Needed:

Laptop, Google Slides, Google Sheets, Calculator

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: Read, interpret, select, construct, and draw inferences from data displays.	Lesson Sequence - Line plot (create, interpret, select). - Bar graph (create, interpret, select). - Scatter plot (create, interpret, select). - Stem and leaf plots (create, interpret, select). - Venn diagram comparing measures of central tendency.	- Quizzes on a line plot and bar graph. - Quizzes on scatter plots and stem and leaf plots. - Google Slides displaying data and graphs. - Presentation of Google Slides.
Differentiation: IDE Rubric		
Resources Provided: - Teacher website - Laptops - Big Ideas Math Textbook online		



Lesson Reflection

Reflect on the lesson you have developed and rate the degree to which the lesson *Strongly*, *Moderately*, or *Weakly* meets the criteria below.

Lesson Activities	Strongly	Moderately	Weakly
Are challenging and require higher-order thinking and problem-solving skills	☒	☐	☐
Allow for student choice.	☐	☒	☐
Provide scaffolding for acquiring targeted knowledge/skills.	☒	☐	☐
Integrate global perspectives	☐	☒	☐
Integrate 21st-century skills	☒	☐	☐
Provide opportunities for interdisciplinary connection and transfer of knowledge and skills.	☐	☒	☐
Foster student use of technology as a tool to develop critical thinking, creativity, and innovation skills	☒	☐	☐
Are varied to address different student learning styles and preferences	☒	☐	☐
Are differentiated based on student needs	☒	☐	☐
Are student-centered, with the teacher acting as a facilitator and co-learner during the teaching and learning process	☒	☐	☐
Provide means for students to demonstrate knowledge and skills and progress in meeting learning goals and objectives.	☒	☐	☐
Provide opportunities for student reflection and self-assessment.	☐	☒	☐
Provide data to inform and adjust instruction to meet the varying needs of learners better.	☒	☐	☐

Curriculum Design Template

Content Area: Mathematics	Grade Level: 6	Unit Title: The Statistical Student
Created: Spring 2024	Board Approved on:	



Unit Overview Template

Content Area: Mathematics **Grade Level:** 6 **Unit Title:** The Number System

Unit Summary: Students will apply fraction concepts and computations to a variety of applications and real-life problems.

Primary Interdisciplinary Connections: *Measurement, Design*

21st Century Themes ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ ICT Literacy
☐ Information Literacy ☒ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy

Unit Rationale: To make fraction computation applicable to real-life situations.

Career Readiness (Standard 9):

9.4.8.IML.3: Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping (e.g., 6.SP.B.4, 7.SP.B.8b).

9.4.8.IML.4: Ask insightful questions to organize different types of data and create meaningful visualizations.

9.4.8.TL.1: Construct a spreadsheet in order to analyze multiple data sets, identify relationships, and facilitate data-based decision-making.

9.4.8.TL.2: Gather data and digitally represent information to communicate a real-world problem (e.g., MS-ESS3-4, 6.1.8.EconET.1, 6.1.8.CivicsPR.4).

Learning Targets

Standards: 6. NS

Content Statements: Apply and extend previous understandings of multiplication and division to divide fractions by fractions; Compute fluently with multi-digit numbers & find common factors & multiples; Apply and extend previous understandings of numbers to the system of rational numbers

CPI#:	Cumulative Progress Indicator (CPI):
6.NS.A.1	1. Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. For example, create a story context for $(2/3) \div (3/4)$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $(2/3) \div (3/4) = 8/9$ because $(2/3)$ of $(8/9)$ is $(3/4)$. (In general, $(a/b) \div (c/d) = ad/bc$). How much chocolate will each person get if 3 people share $1/2$ lb. of chocolate equally? How many $3/4$ cup servings are in $2/3$ of a cup of yogurt? How wide is a rectangular strip of land with a length of $3/4$ mi and an area of $1/2$ square mi?
6.NS.B.2	With accuracy and efficiency, divide multi-digit numbers using the standard algorithm.
6.NS.B.3	With accuracy and efficiency, add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.
6.NS.B.4	Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to



	12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express $36 + 8$ as $4(9 + 2)$.
6.NS.C.5	Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.
6.NS.C.6	Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of a number is the number itself, e.g., $-(-3) = 3$ and that 0 is its own opposite. b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.
6.NS.C.7	Understand the ordering and absolute value of rational numbers. a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. For example, interpret $-3 > -7$ as a statement that -3 is located to the right of -7 on a number line oriented from left to right. b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express the fact that -3°C is warmer than -7°C . c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. For example, for an account balance of -30 dollars, write $ -30 $ to describe the size of the debt in dollars. d. Distinguish comparisons of absolute value from statements about order. For example, recognize that an account balance of less than -30 dollars represents a debt greater than 30 dollars.
6.NS.C.8	Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include the use of coordinates and absolute values to find distances between points with the same first coordinate or the same second coordinate.
9.1.8.A.1	Explain the meaning and purpose of taxes and tax deductions and why fees for various benefits (e.g., medical benefits) are taken out of pay.



9.1.8.E.1	Explain what it means to be a responsible consumer and the factors to consider when making consumer decisions.
9.1.8.B.2	Construct a simple personal savings and spending plan based on various sources of income.
SEL.PK-12.3.2	Demonstrate an awareness of the differences among individuals, groups, and others' cultural backgrounds.
SEL.PK-12.3.3	Demonstrate an understanding of the need for mutual respect when viewpoints differ.
SEL.PK-12.4.1	Develop, implement and model effective problem-solving, and critical thinking skills.
SEL.PK-12.5.2	Utilize positive communication and social skills to interact effectively with others.

Unit Essential Questions:

- What makes a computational strategy both effective and efficient? (6 NS 1)?
- How do operations affect numbers?
- How do mathematical representations reflect the needs of society? (6 NS 5)
- How are negative numbers used in everyday life? (6NS 5)

Unit Enduring Understandings:

- Computation fluency includes understanding the meaning and the appropriate use of numerical operations.
- The magnitude of numbers affects the outcome of operations on them.
- In many cases, there are multiple algorithms for finding mathematical solutions.
- Fluency with operations with fractions and decimals.
- The applications of negative numbers.

Unit Learning Targets:

Students will...

Construct, use, and explain procedures for performing calculations with fractions with pencil and paper, mental math, and a calculator.



Evidence of Learning

Summative Assessment: 8 weeks

Equipment Needed: Cardboard, tape, rulers, laptops, scissors, textbooks, calculators, blueprints, smart board, video tutorials

Teacher Resources: Textbook

Formative Assessments:

- IDE project and rubric
- Quizzes
- Tests
- Worksheets
- i-Ready Diagnostic



Lesson Plans

Lesson	Time Frame
Lesson 1 Fraction Concepts	10 days
Lesson 2 Fraction Computation	8 days
Lesson 3 Fraction Application	5 days

Teacher Notes: Heavier emphasis on concept development.

Curriculum Development Resources/Technology Resources:

Click the links below to access additional resources used to design this unit:

www.ixl.com

Big Ideas Textbook online

<https://tasks.illustrativemathematics.org/content-standards>

<https://www.desmos.com/>

<https://nj.digitalitemlibrary.com/home>

<https://resources.newmeridiancorp.org/released-items/>

<https://nj.mypearsonsupport.com/practice-tests/math/>



Lesson Plan 1 Template

Content Area: Mathematics Lesson Title: Fraction Concepts Time Frame: 10 days

Lesson Components

21st Century Themes

- ☐ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy
☐ Civic Literacy ☐ Health Literacy

21st Century Skills

- ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ Information Literacy
☒ Life and Career Skills ☐ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections:

Architecture, measurement, and design.

Integration of Technology:

Website practice and Blogging

Equipment Needed:

Textbook, laptop

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: • Interpret fractions as part of a whole. • Examine the relationship between fractions and decimals. • Conclude that a fraction bar symbolizes division. • Determine equivalent fractions. • Convert mixed numbers to and from improper fractions. • Compare fractions.	Lesson Sequence • Fraction strip creation and interpretation. • Conversion of fractions to decimals with paper, pencil, and calculator. • Illustration of part of a whole to fraction bar. • Website practice of fraction comparison. • Practice converting improper numbers to mixed numbers and vice versa.	• Quizzes • Tests • Homework Practice • Website games • Recipe application • IXL
Differentiation: • IXL practice • Mini-lessons for extra support • Video tutorial • Extra help sessions • IDE		



Resources Provided:

- Laptop
- Calculator
- Textbook
- Online textbook



Lesson Plan 2 Template

Content Area: Mathematics Lesson Title: Fraction computation Time Frame: 8 days

Lesson Components

21st Century Themes

- ☐ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy
☐ Civic Literacy ☐ Health Literacy

21st Century Skills

- ☐ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ Information Literacy
☒ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections:

Cooking, measurement, construction, Two and Three-dimensional problems

Integration of Technology:

Laptop, smart board, website tutorials, online practice and quizzing of computation skills

Equipment Needed:

Laptop, textbook

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: • Add, subtract, multiply, and divide fractions, whole numbers, and mixed numbers. • Recognize the operations necessary to solve word problems. • Create equations based on word problems.	Lesson Sequence • Addition • Subtraction • Multiplication • Division • Word problems that incorporate writing fractions.	• Quizzes • Tests • Website practice • IXL
Differentiation: IXL, IDE, test, quiz, and time modification		
Resources Provided: • Laptop • IXL • Textbook • Online Textbook		



Lesson Plan 3 Template

Content Area: Mathematics Lesson Title: Fraction applications Time Frame: 5 days

Lesson Components

21st Century Themes

- ☐ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy
☐ Civic Literacy ☐ Health Literacy

21st Century Skills

- ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ Information Literacy
☒ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections:

Construction, measurement, application of area and perimeter formulas, design, construction

Integration of Technology:

Laptops, blogging, Teacher website, smart board

Equipment Needed:

Laptops, rulers, scissors, cardboard, blueprints, duct tape, accessories

	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Utilize floor plans to create a mini model. - Use measurement for accuracy. - Construct a three-dimensional structure. - Compute the area, perimeter, and volume of model sides.	Lesson Sequence - Use a floor plan to create a model. - Measure and construct the model. - Find dimensions necessary for area, perimeter, and volume.	- Quizzes - Test - Rubric - Architectural datasheet
Differentiation: IDE, IXL, extended time, and assignment modification		
Resources Provided: - Textbook - Notes - Video tutorials - Cardboard - Construction paper - Scissors - Tape and stapler		



Lesson Reflection

Reflect on the lesson you have developed and rate the degree to which the lesson *Strongly*, *Moderately*, or *Weakly* meets the criteria below.

Lesson Activities	Strongly	Moderately	Weakly
Are challenging and require higher-order thinking and problem-solving skills	☒	☐	☐
Allow for student choice	☒	☐	☐
Provide scaffolding for acquiring targeted knowledge/skills	☐	☒	☐
Integrate global perspectives	☐	☒	☐
Integrate 21st-century skills	☒	☐	☐
Provide opportunities for interdisciplinary connection and transfer of knowledge and skills	☒	☐	☐
Foster student use of technology as a tool to develop critical thinking, creativity, and innovation skills	☐	☒	☐
Are varied to address different student learning styles and preferences	☒	☐	☐
Are differentiated based on student needs	☒	☐	☐
Are student-centered with the teacher acting as a facilitator and co-learner during the teaching and learning process	☒	☐	☐
Provide means for students to demonstrate knowledge and skills and progress in meeting learning goals and objectives	☐	☒	☐
Provide opportunities for student reflection and self-assessment	☐	☒	☐
Provide data to inform and adjust instruction to better meet the varying needs of learners	☒	☐	☐

Curriculum Design Template

Content Area: Mathematics	Grade Level: 6	Unit Title: The Number System
Created: Spring 2024	Board Approved on:	



Unit Overview Template

Content Area: Mathematics **Grade Level:** 6 **Unit Title:** Expressions and Equations

Unit Summary: Variables and Patterns: develop students' ability to explore a variety of situations in which change occurs. Students will collect, organize, and represent data in charts, graphs, and formulas. Students will be able to use these concepts in everyday real-world situations.

Primary Interdisciplinary Connections: *Algebra*

21st Century Themes ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ ICT Literacy
☒ Information Literacy ☒ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy

Unit Rationale: To discover order, analyze, construct, and predict how and why we use patterns and variables using data and their uses in everyday real-world and mathematical situations. Learning to observe, describe, and record changes is the first step in analyzing and searching for patterns in a real-world situation. We will be reviewing several concepts that students have had over the last few years organizing and using data and graphing patterns.

Career Readiness (Standard 9):

9.4.8.IML.2: Identify specific examples of distortion, exaggeration, or misrepresentation of information.

9.4.8.IML.3: Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping (e.g., 6.SP.B.4, 7.SP.B.8b).

9.4.8.IML.4: Ask insightful questions to organize different types of data and create meaningful visualizations.

9.4.8.TL.2: Gather data and digitally represent information to communicate a real-world problem (e.g., MS-ESS3-4, 6.1.8.EconET.1, 6.1.8.CivicsPR.4).

Learning Targets

Standards: 6. RP; 6. EE

Content Statements: Apply and extend previous understandings of arithmetic to algebraic expressions; Reason about and solve one-variable equations and inequalities; Represent and analyze quantitative relationships between dependent and independent variables; Understand ratio concepts and use ratio reasoning to solve problems

CPI#:	Cumulative Progress Indicator (CPI):
6.RP.A.1	Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1 because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."
6.RP.A.2	Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $\frac{3}{4}$ -cup of flour for each cup of sugar." "We paid \$75 for 15 hamburgers, which is a rate of \$5



	per hamburger.” (Clarification: Expectations for unit rates in this grade are limited to non-complex fractions.)
6.RP.A.3	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. a. Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. b. Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed? c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part, and the percent. d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.
6.EE.A.1	Write and evaluate numerical expressions involving whole-number exponents.
6.EE.A.2	Write, read, and evaluate expressions in which letters stand for numbers. a. Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation “Subtract y from 5” as $5 - y$. b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression $2(8 + 7)$ as a product of two factors; view $(8 + 7)$ as both a single entity and a sum of two terms. c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). For example, use the formulas $V = 6s^3$ and $A = 6s^2$ to find the volume and surface area of a cube with sides of length $s = \frac{1}{2}$.
6.EE.A.3	Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$. Apply the distributive property to the expression $24x + 18y$ to produce the equivalent expression $6(4x + 3y)$; apply properties of operations to $y + y + y$ to produce the equivalent expression $3y$.
6.EE.A.4	Identify when two expressions are equivalent (i.e. when the two expressions name the same number regardless of which value is substituted into them). For example, the expressions $y + y + y$ and $3y$ are equivalent because they name the same number regardless of which number y stands for.
6.EE.B.5	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or



	inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
6.EE.B.6	Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.
6.EE.B.7	Solve real-world and mathematical problems by writing and solving equations of the form $x + p$ and $px = q$ for cases in which p , q , and x are all nonnegative rational numbers.
6.EE.B.8	Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.
6.EE.C.9	Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times and write the equation $d = 65t$ to represent the relationship between distance and time.
SEL.PK-12.3.2	Demonstrate and awareness of the differences among individuals, groups, and others' cultural backgrounds.
SEL.PK-12.3.3	Demonstrate an understanding of the need for mutual respect when viewpoints differ.
SEL.PK-12.4.1	Develop, implement and model effective problem-solving, and critical thinking skills.
SEL.PK-12.5.2	Utilize positive communication and social skills to interact effectively with others.

Unit Essential Questions:

- How or when can one use variables and/or patterns to make decisions and solve real-world problems?
- What is the relationship between variables and patterns?
- How can we use the relationship between patterns and variables with data we have collected or with data we are provided?

Unit Enduring Understandings:

- What did you learn today about variables and patterns and how could you explain or show someone at home what you learned?
- How could you explain the relationship of variables and patterns to someone at home in the future if you needed to?
- How can you show someone at home the relationship between variables and patterns with data you collect or with data that is provided?



Unit Learning Targets:

Students will...

solve multi-step real-life and mathematical problems posed with positive and negative rational numbers, use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning.

Climate Change Example: Students may solve real-world problems by writing and solving one-variable equations related to deforestation and/or increasing livestock farming as contributors to climate change.

Climate Change Example: Students may analyze and use variables to represent the relationship between greenhouse emissions and livestock farming when representing relationships among contributors to climate change.



Evidence of Learning

Summative Assessment: 16 days

Equipment Needed: Laptop, textbook, video tutorials, calculators, graph paper

Teacher Resources: Textbook, laptop

Formative Assessments:

- Informal observations
- Daily homework and review
- Classwork/review
- Daily warm-up and review
- Pre-quiz and review
- i-Ready Diagnostic



Lesson Plans

Lesson	Time Frame
Lesson 1 Variables and Coordinate Graphs	4 days
Lesson 2 Graphing Change	4 days
Lesson 3 Patterns and Rules	4 days

Teacher Notes:

Utilize i-Ready diagnostic data for grouping.

Curriculum Development Resources/Technology Resources:

Click the links below to access additional resources used to design this unit:

www.braingeine.com

www.ixl.com

www.kahoot.com

<https://tasks.illustrativemathematics.org/content-standards>

<https://www.desmos.com/>

<https://nj.digitalitemlibrary.com/home>

<https://resources.newmeridiancorp.org/released-items/>

<https://nj.mypearsonsupport.com/practice-tests/math/>



Lesson Plan 1 Template

Content Area: Mathematics Lesson Title: Variables and Coordinate Graphs Time Frame: 4 days
 hours/days

Lesson Components

21st Century Themes

- ☒ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy
☐ Civic Literacy ☐ Health Literacy

21st Century Skills

- ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ Information Literacy
☒ Life and Career Skills ☐ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections:

Algebra

Integration of Technology:

Laptops, Google Sheets

Equipment Needed:

Laptop

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Collect experimental data and organize it in a table. - Create a coordinate graph of data in a table. - Identify patterns and relationships between variables using information in a graph.	Lesson Sequence - Relate this activity to real-life sports experiences, and then challenge the students to a competition within the class. - Have students complete a timed jumping jack experiment in groups of 4.	- Homework quizzes - Reinforcement sheets - Online support - Tests
Differentiation: Students will be allowed to use calculators if needed.		
Resources Provided: - Classroom websites - Books - Kahoot - Braingenie - Video tutorials - IXL		



Lesson Plan 2 Template		
Content Area: Mathematics	Lesson Title: Graphing Change	Time Frame: 4 days
Lesson Components		
<u>21st Century Themes</u>		
☐ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy ☐ Civic Literacy ☒ Health Literacy		
<u>21st Century Skills</u>		
☐ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ Information Literacy ☒ Life and Career Skills ☐ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy		
Interdisciplinary Connections: Algebra		
Integration of Technology: Google Sheets		
Equipment Needed: Graph paper, iPads/laptop		

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: • Compare data sets given in tables and graphs. • Use patterns in data to make predictions about values between and beyond given data values. • Make a graph from a table, choosing the variable and scale for each axis. • Predict the pattern in the graph of a relationship between variables.	Lesson Sequence • Students will compare bike-rental cost for two companies. One company provides a graph of rental costs, and the other provides a table. • Students will graph and analyze information from a survey. • Students are given descriptions of pairs of variables. They match each description with the graph that best tells the "story" of the relationship between the variables.	• Homework quizzes • Reinforcement sheets • Online support • Test
Differentiation: Students will be given calculators. In addition, they will be given different scenarios to solve.		



Resources Provided:

- Calculators
- Graph paper
- Desmos



Lesson Plan 3 Template

Content Area: Mathematics Lesson Title: Patterns and Rules Time Frame: 4 days

Lesson Components

21st Century Themes

- ☒ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy
☐ Civic Literacy ☐ Health Literacy

21st Century Skills

- ☐ Creativity and Innovation ☐ Critical Thinking and Problem Solving ☐ Information Literacy
☒ Life and Career Skills ☐ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections:

Algebra

Integration of Technology:

Google Sheets

Equipment Needed:

Laptops

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Write equations to represent relationships between variables and describe how the pattern of change shows up in a table, a graph, or an equation. - Use tables, graphs, and equations to answer questions.	Lesson Sequence - Students are introduced to several basic conventions for writing simple one-step equations and formulas in symbolic form. - Students write equations for the distance traveled at different speeds. - Students write rules and equations involving two arithmetic operations (two steps). - Write rules and equations for the revenue, expenses, and profit for the bike tour.	- Homework - Reinforcement sheets - Online support - Test - Quizzes
Differentiation: Lessons along the way provide ample time for those who need support while those who don't can continue on the problems given.		



Resources Provided:

- Classroom websites
- Textbooks
- Kahoot
- Braingenie
- IXL



Lesson Reflection

Reflect on the lesson you have developed and rate the degree to which the lesson *Strongly*, *Moderately*, or *Weakly* meets the criteria below.

Lesson Activities	Strongly	Moderately	Weakly
Are challenging and require higher order thinking and problem-solving skills	☒	☐	☐
Allow for student choice	☐	☒	☐
Provide scaffolding for acquiring targeted knowledge/skills	☒	☐	☐
Integrate global perspectives	☒	☐	☐
Integrate 21st-century skills	☒	☐	☐
Provide opportunities for interdisciplinary connection and transfer of knowledge and skills	☒	☐	☐
Foster student use of technology as a tool to develop critical thinking, creativity, and innovation skills	☐	☒	☐
Are varied to address different student learning styles and preferences	☒	☐	☐
Are differentiated based on student needs	☒	☐	☐
Are student-centered, with teacher acting as a facilitator and co-learner during the teaching and learning process	☒	☐	☐
Provide means for students to demonstrate knowledge and skills and progress in meeting learning goals and objectives	☒	☐	☐
Provide opportunities for student reflection and self-assessment	☒	☐	☐
Provide data to inform and adjust instruction to meet the varying needs of learners better	☒	☐	☐

Curriculum Design Template

Content Area: Mathematics	Grade Level: 6	Unit Title: Expressions and Equations
Created: Spring 2024	Board Approved on:	



Unit Overview Template

Content Area: Mathematics **Grade Level:** 6 **Unit Title:** Geometry

Unit Summary: Students will explore the characteristics of two-dimensional polygons and then explore three-dimensional polygons using nets.

Primary Interdisciplinary Connections: *Euclidean Space*

21st Century Themes ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ ICT Literacy
☐ Information Literacy ☐ Life and Career Skills ☐ Communication and Collaboration ☐ Media Literacy

Unit Rationale: Exploration and application of two and three-dimensional polygons.

Career Readiness (Standard 9):

9.4.8.IML.3: Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping (e.g., 6.SP.B.4, 7.SP.B.8b).

9.4.8.IML.4: Ask insightful questions to organize different types of data and create meaningful visualizations.

9.4.8.TL.2: Gather data and digitally represent information to communicate a real-world problem (e.g., MS-ESS3-4, 6.1.8.EconET.1, 6.1.8.CivicsPR.4).

Learning Targets

Standards: 6.G

Content Statements: Solve real-world and mathematical problems involving area, perimeter, surface area and volume.

CPI#:	Cumulative Progress Indicator (CPI):
6.G.A.1	Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.
6.G.A.2	Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = lwh$ and $B = Bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.
6.G.A.3	Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.
6.G.A.4	Represent three-dimensional figures (e.g., pyramid, triangular prism, rectangular prism) using nets made up of rectangles and triangles, and use the



	nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.
SEL.PK-12.3.2	Demonstrate and awareness of the differences among individuals, groups, and others' cultural backgrounds.
SEL.PK-12.3.3	Demonstrate an understanding of the need for mutual respect when viewpoints differ.
SEL.PK-12.4.1	Develop, implement and model effective problem-solving, and critical thinking skills.
SEL.PK-12.5.2	Utilize positive communication and social skills to interact effectively with others.

Unit Essential Questions:

- What are the characteristics of triangles and quadrilaterals?
- How can the formulas for the area and perimeter of polygons be applied to real-world applications?
- Using nets, how can formulas for surface area and volume be created?
- Can formulas for three-dimensional shapes be applied to a real-world application?

Unit Enduring Understandings:

- Calculate the area and perimeter of two-dimensional polygons.
- Understand the characteristics of certain polygons.
- Calculate the volume and surface area of three-dimensional shapes.
- Understand transformations on a coordinate plane.

Unit Learning Targets:

Students will...

create and apply formulas for finding the area, perimeter, surface area, and volume of two and three-dimensional shapes.



Evidence of Learning

Summative Assessment: 25 days

Equipment Needed: Laptop, textbook, video tutorials, calculators, protractors, angle rulers

Teacher Resources: Textbook, Laptop

Formative Assessments:

- IDE Rubrics for applying formulas to room project
- Homework
- Quizzes
- Assessments
- Algorithm sheets
- Reinforcement sheets
- Nets
- Project for transformations/Totally Ten
- i-Ready Diagnostic



Lesson Plans

Lesson	Time Frame
Lesson 1 Characteristics of Polygons	5 days
Lesson 2 Room Project	5 days
Lesson 3 Three-Dimensional Geometry	5 days

Teacher Notes: Using the IDE project to apply formulas in a real-world application made the connection for the students.

Curriculum Development Resources/Technology Resources:

Click the links below to access additional resources used to design this unit:

<https://www.phschool.com>

<https://www.ixl.com>

<https://kahoot.com>

<https://tasks.illustrativemathematics.org/content-standards>

<https://www.desmos.com/>

<https://nj.digitalitemlibrary.com/home>

<https://resources.newmeridiancorp.org/released-items/>

<https://nj.mypearsonsupport.com/practice-tests/math/>



Lesson Plan 1 Template

Content Area: Mathematics Lesson Title: Characteristics of Polygons Time Frame: 5 Days

Lesson Components

21st Century Themes

- ☐ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy
☐ Civic Literacy ☐ Health Literacy

21st Century Skills

- ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ Information Literacy
☐ Life and Career Skills ☐ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections:

Euclidean space

Integration of Technology:

Laptops, Google Sheets, Wiki page

Equipment Needed:

Shapes, poly strips, angle rulers, protractors

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Explore angles when a transversal cuts parallel lines. - Create formulas for angle sums of polygons based on a number of sides. - Exterior angle sum for all polygons. - Understand side length sums for all polygons. - Benchmark angle measurement.	Lesson Sequence - Discuss angle measurement and benchmark using angle rulers and protractors. - Explore the unique characteristics of angles when parallel lines are cut by a transversal. - Explore angle sums of polygons and create formulas. - Measure exterior angles of polygons and create a theorem. - Using polystrips, find which side lengths determine a polygon and which don't and create a theorem based on the findings.	- Homework - Quizzes - Angle measurement - Reinforcement sheets - Online support with Khan, IXL and Wiki references - Test



Differentiation:

Pairings will assist in the creation of theorems. The rubric provides embedded differentiation.

Resources Provided:

- Video tutorials
- Classroom websites
- Textbooks
- Skill practice sheets
- IXL



Lesson Plan 2 Template

Content Area: Mathematics Lesson Title: Room Project Time Frame: 5 days

Lesson Components

21st Century Themes

- ☐ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy
☐ Civic Literacy ☐ Health Literacy

21st Century Skills

- ☐ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ Information Literacy
☒ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections:

Architecture

Integration of Technology:

Classroom website, word, Google Sheets, IXL

Equipment Needed:

Laptops, angle rulers (protractors), tape measures

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: • Create formulas for the area and perimeter of quadrilaterals. • Create formulas for the area and perimeter of triangles. • Create formulas for the area and circumference of circles and hexagons. • Measure the classroom and apply similar triangles for height. • Apply formulas created by measuring the area, and perimeter, of classroom walls and floor. • Create a persuasive essay for the principal showing the budget of room to redo.	Lesson Sequence • Use cereal box to create formulas for the area, the perimeter of quadrilaterals and triangles. • Explore the area and circumference of circles vs. hexagons to see which would have more area for a desk. • Measure the walls, floor, and perimeter of the room. • Apply formulas for finding the area of walls for paint, and the area and perimeter of flooring for carpet. • Use Google Sheets to show the budget for materials needed.	• Rubric • Quizzes • Tests • Homework • Skill Sheets



- | | | |
|--|--|--|
| | <ul style="list-style-type: none">• Write a persuasive letter to the principal to redo the room. | |
|--|--|--|

Differentiation:

The rubric provides levels that students strive for and is therefore differentiated. Mini lessons along the way provide ample time for those who need support while those who don't continue to work independently on their projects.

Resources Provided:

- Classroom websites
- Online textbook-Big Ideas Math
- Video tutorials
- IXL



Lesson Plan 3 Template

Content Area: Mathematics Lesson Title: Three-Dimensional Geometry Time Frame: 5 days

Lesson Components

21st Century Themes

- ☐ Global Awareness ☒ Financial, Economic, Business and Entrepreneurial Literacy
☐ Civic Literacy ☐ Health Literacy

21st Century Skills

- ☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☐ Information Literacy
☐ Life and Career Skills ☒ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections:

Euclidean space

Integration of Technology:

Video tutorials, classroom websites, IXL

Equipment Needed:

Laptops, nets, ruler

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: • Use nets to create formulas to find the surface area and volume of rectangular prisms. • Use nets to create formulas for the surface area and volume of cylinders. • Explore the volume of cones using hands-on three-dimensional shapes and videos. • Explore the volume of spheres using videos and hands-on experimentation. • Apply formulas to other three-dimensional shapes such as triangular prisms.	Lesson Sequence • Introduce nets of rectangular prisms and create formulas for volume and surface area. • Introduce nets of cylinders and create formulas for volume and surface area. • Explore the formula for cones through videos and hands-on shapes. • Explore the formula for spheres using videos and hands-on shapes. • Apply knowledge to other three-dimensional shapes such as triangular prisms.	• Skill sheets • Homework • Rubrics • Quizzes • Tests • Formula creation sheet
Differentiation:		



The rubric provides built-in differentiation, mini-lessons given to students needing a bit more support allowing others to move at their own pace.

Resources Provided:

- Nets
- Rulers
- Video tutorials
- Classroom websites
- IXL



Lesson Reflection

Reflect on the lesson you have developed and rate the degree to which the lesson *Strongly*, *Moderately* or *Weakly* meets the criteria below.

Lesson Activities	Strongly	Moderately	Weakly
Are challenging and require higher order thinking and problem solving skills	☒	☐	☐
Allow for student choice	☒	☐	☐
Provide scaffolding for acquiring targeted knowledge/skills	☒	☐	☐
Integrate global perspectives	☐	☒	☐
Integrate 21st century skills	☒	☐	☐
Provide opportunities for interdisciplinary connection and transfer of knowledge and skills	☒	☐	☐
Foster student use of technology as a tool to develop critical thinking, creativity and innovation skills	☐	☒	☐
Are varied to address different student learning styles and preferences	☒	☐	☐
Are differentiated based on student needs	☒	☐	☐
Are student-centered with teacher acting as a facilitator and co-learner during the teaching and learning process	☒	☐	☐
Provide means for students to demonstrate knowledge and skills and progress in meeting learning goals and objectives	☒	☐	☐
Provide opportunities for student reflection and self- assessment	☐	☒	☐
Provide data to inform and adjust instruction to better meet the varying needs of learners	☒	☐	☐

Curriculum Design Template

Content Area: Mathematics	Grade Level: 6	Unit Title: Geometry
Created: Spring 2024	Board Approved on:	



SPRINGFIELD PUBLIC SCHOOLS

ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY
GLOBAL SKILLS

IEP AND 504 ACCOMMODATIONS AND MODIFICATIONS FOR EARLY CHILDHOOD AND ELEMENTARY SCHOOL STUDENTS:

Large print textbooks
Textbooks for at-home use
Additional time for assignments
Review of directions
Use of mnemonics
Have student restate information
Concrete examples
Adaptive writing utensils
Support auditory presentations with visuals
Use of a study carrel
Assistance in maintaining uncluttered space
Weekly home-school communication tools (notebook, daily log, phone calls or email messages)
Space for movement or breaks
Study sheets and teacher outlines
Extra visual and verbal cues and prompts
Math sheets with highlighted instructions
Graph paper to assist in organizing or lining up math problems
Use of computers and calculators
Books on tape
Graphic organizers
Quiet corner or room to calm down and relax when anxious
Preferential seating
Alteration of the classroom arrangement
Reduction of distractions
Answers to be dictated
Hands-on activities
Use of manipulatives
No penalty for spelling errors or sloppy handwriting
Follow a routine/schedule
Alternate quiet and active time
Teach time management skills
Rest breaks
Verbal and visual cues regarding directions and staying on task
Agenda book and checklists
Adjusted assignment timelines
Visual daily schedule



SPRINGFIELD PUBLIC SCHOOLS

**ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY
GLOBAL SKILLS**

Varied reinforcement procedures
Immediate feedback
Work-in-progress check
Personalized examples

TESTING AND ASSESSMENT ACCOMMODATIONS AND MODIFICATIONS:

Answers to be dictated
Frequent rest breaks
Additional time
Oral testing
Untimed tests
Choice of test format (multiple-choice, essay, true-false)
Alternate ways to evaluate (projects or oral presentations instead of written tests)
Accept short answers
Open-book tests
Read test and directions to student
Provide study outline prior to tests
Highlight key directions
Test in alternative site
Use of calculator
Extra credit option
Preview test procedures
Simplified test wording; rephrased test questions and/or directions

GENERAL ACCOMMODATIONS AND MODIFICATIONS:

Use of alternative books or materials on the topic being studied
Computerized spell-check support
Word bank of choices for answers to test questions
Provision of calculator and/or number line for math tests
Reworded questions in simpler language
Projects instead of written reports
Highlighting important words or phrases in reading assignments
Modified workload or length of assignments/tests
Modified time demands
Modified grades based on IEP

BEHAVIOR ACCOMMODATIONS MODIFICATIONS:



SPRINGFIELD PUBLIC SCHOOLS

**ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY
GLOBAL SKILLS**

Breaks between tasks
Cue expected behavior
Daily feedback to student
Have contingency plans
Use de-escalating strategies
Use positive reinforcement
Use proximity/touch control
Use peer supports and mentoring
Model expected behavior by adults
Have parent sign homework
Have parent sign behavior chart
Set and post class rules
Chart progress and maintain data



SPRINGFIELD PUBLIC SCHOOLS

ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY
GLOBAL SKILLS

IEP AND 504 ACCOMODATIONS AND MODIFICATIONS FOR MIDDLE AND HIGH SCHOOL STUDENTS:

Large print textbooks
Textbooks for at-home use
Additional time for assignments
A locker with adapted lock
Review of directions
Review sessions
Use of mnemonics
Have student restate information
Provision of notes or outlines
Concrete examples
Adaptive writing utensils
Support auditory presentations with visuals
Weekly or bi-weekly home-school communication
Space for movement or breaks
Study sheets and teacher outlines
Extra visual and verbal cues and prompts
Lab and math sheets with highlighted instructions
Graph paper to assist in organizing or lining up math problems
Use of tape recorder for lectures
Use of Interactive notebook
Use of a scribe
Use of computers and calculators
Books on tape
Graphic organizers
Quiet corner or room to calm down and relax when anxious
Preferential seating
Alteration of the classroom arrangement
Reduction of distractions
Answers to be dictated
Hands-on activities
Ability to type all assignments
Follow a routine/schedule
Teach time management and organizational skills
Rest breaks
Verbal and visual cues regarding directions and staying on task
Agenda book and checklists
Daily check-in with case manager or special education teacher
Adjusted assignment timelines
Visual daily schedule



SPRINGFIELD PUBLIC SCHOOLS

**ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY
GLOBAL SKILLS**

Varied reinforcement procedures
Immediate feedback
Work-in-progress check
Personalized examples

TESTING AND ASSESSMENT ACCOMMODATIONS AND MODIFICATIONS:

Answers to be dictated
Frequent rest breaks
Additional time
Oral testing
Choice of test format (multiple-choice, essay, true-false)
Alternate ways to evaluate (projects or oral presentations instead of written tests)
Accept short answers
Open-book or open-note tests
Read test and directions to student
Provide study guides prior to tests
Highlight key directions
Test in alternative site
Use of calculator
Extra credit option
Pace long-term projects
Preview test procedures
Simplified test wording; rephrased test questions and/or directions

GENERAL ACCOMMODATIONS AND MODIFICATIONS:

Allow outlining, instead of writing for an essay or major project
Use of alternative books or materials on the topic being studied
Computerized spell-check support
Word bank of choices for answers to test questions
Provision of calculator for math tests
Film or video supplements in place of reading text
Reworded questions in simpler language
Projects instead of written reports
Highlighting important words or phrases in reading assignments
Modified workload or length of assignments/tests
Modified time demands



SPRINGFIELD PUBLIC SCHOOLS

**ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY
GLOBAL SKILLS**

Pass/no pass option

Modified grades based on IEP

BEHAVIOR ACCOMMODATIONS FOR STUDENTS:

- Breaks between tasks
- Cue expected behavior
- Daily feedback to student
- Have contingency plans
- Use de-escalating strategies
- Use positive reinforcement
- Use proximity/touch control
- Use peer supports and mentoring
- Model expected behavior by adults
- Have parent sign homework
- Set and post class rules
- Chart progress and maintain data



SPRINGFIELD PUBLIC SCHOOLS

ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY
GLOBAL SKILLS

Accommodations and Modifications for ESL Students

- Give tests orally
- Give instructions/directions in writing and orally
- Assign a peer tutor, same language or English speaking
- Allow use of bilingual/translation dictionary
- Provide summaries of text or study guides of particular chapters
- Allow errors in speaking
- Allow errors in writing
- Accept writing in first language
- Highlight key vocabulary
- Reduce amount of work required
- Assess comprehension through demonstration or other alternative means (gestures, drawings)
- Rephrase questions, directions, and explanations
- Reduce multiple choices on assessments
- Provide study guides and/ or outlines
- Shorten reading assignments
- Allow extended time for test/project completion
- Use of audio books
- Use of graphic organizers
- Use reduced text, so that print is not dense
- Use visuals/pictures throughout lesson/unit/assignment
- Adapt homework to reflect language proficiency/home support
- Adapt homework to reflect home support
- Provide hands-on activities and explanations
- Allow extended time to answer questions, and permit drawing, as an explanation
- Use of translation dictionaries to locate words in the native language
- Use anecdotal records and portfolio of work as forms of assessment
- Use story retellings to assess comprehension

What Does the Gifted and Talented Experience Look Like? *Springfield Public Schools*

Mission Statement

The Gifted and Talented Program of the Springfield Public Schools aims to provide a meaningful and rigorous education that instills the value of lifelong learning and empowers all students to reach their full potential and become self-fulfilled creative leaders in accordance with the comprehensive standards of our state. We accomplish this by offering challenging, real-world experiences in a student-centered environment.

We recognize that students come from diverse socioeconomic, cultural, and ethnic backgrounds, and the mission of the gifted and talented program is to provide opportunities for students to explore their intellectual, creative, and artistic gifts and talents within the classroom and with beyond-the-classroom experiences. It is essential to provide diverse, appropriate, and ongoing learning experiences and environments that incorporate students' academic, psychological, and social needs. Our responsibility is to provide students with educational alternatives that teach, challenge, and expand their knowledge, while simultaneously stressing the development of independent and self-directed learners who continuously generate questions, analyze, synthesize, and evaluate information and ideas.

New Jersey Administrative Code 6A:8-3.1 defines students who are gifted and talented as those students who possess or demonstrate high levels of ability in one or more content areas when compared to their chronological peers in the local district and who require modification of their educational program if they are to achieve in accordance with their capabilities.

Goals:

To support our mission, we have established the following goals to guide our work:

- To infuse into the general education program a broad range of activities for high-level learning that will challenge all students to perform at advanced levels, and provide extended opportunities, resources, and support in particular areas where student interest or talent is demonstrated.
- To provide a continuum of gifted education services that will strengthen the total school program, offer enriching and challenging learning opportunities for all students, and provide specialized learning experiences
- To promote achievement of students' best potentials and increased ability.

Through a productive and collaborative relationship among the building principals, classroom teachers, and the Gifted and Talented teacher, our schools can create programming that will enhance the learning experience for every student and serve the unique and specialized needs of students currently demonstrating gifted behaviors.

Elements of the Schoolwide Enrichment Model, W.I.N (What I Need), differentiated instruction, advanced classes, or individual programs into a student's regular instruction program are integral to this overarching framework for gifted education in the Springfield School District.

Reference Board Policy and Regulation 2464 – Gifted and Talented Pupils (M)

Early Childhood Center **Edward V. Walton**

Schoolwide Virtual Enrichment

All first and second grade students have access to the [Gifted and Talented Virtual Classroom](#). This virtual classroom is a space for students to complete various challenges and enrichment opportunities at their own pace. Students can receive feedback and additional adaptable resources to meet their individual learning needs. The virtual classroom design expands accessibility to enrichment resources and allows students to choose learning activities according to their unique interests and abilities. The purpose of the activities is to encourage problem-solving, develop critical thinking

skills, and expand curiosity and imagination. Activities are aligned to the New Jersey Student Learning Standards.

Gifted and Talented Teacher as a Resource

The Gifted and Talented teacher serves as a resource to all teachers within Edward V. Walton School. Teachers seeking resources for their high-ability learners will receive additional support from the Gifted and Talented teacher in various ways. This support may include additional units of study, challenging resources, and student projects.

Elementary Schools **James Caldwell** **Thelma L. Sandmeier**

The goal is to engage small groups of students in intensive learning experiences through standards-based, rigorous, and relevant units of study that supplement, not supplant, the grade-level curriculum and support students' unique learning needs.

Enrichment Experience Grade 3

Beginning in third grade, the G&T teacher will cycle through all classrooms to work on problem-solving and enrichment tasks with students. Driven by assessment data, academic performance, student interest, and teacher observation, small groups of students will meet with the G&T teacher during W.I.N. (What I Need) periods throughout the week that the teacher is assigned to their classroom teacher. Groupings will be flexible and monitored to best meet each student's needs throughout the school year. Activities will include brain teasers, puzzles, strategic thinking, problem-solving, and STEM challenges.

Targeted Gifted and Talented Programing Grades 4-5

Students may become identified as Gifted and Talented in fourth grade. Students that are identified may receive support from the G&T Teacher for up to five periods (200 minutes) a week during W.I.N. (What I Need) periods. Identified students will meet to explore grade-level content while incorporating depth and complexity in a student-centered, problem-based environment. The Gifted and Talented Program aims to provide students with various advanced and challenging learning experiences across content areas to promote independent thinking skills, refine critical thinking and communication skills, cultivate joy in learning, and expand student interests through problem-solving. The instruction that students receive incorporates 21st Century Skills and advanced content that is challenging, hands-on, and relevant to the real world.

Strategies and Practices that Support Gifted and Talented Students

- Adjusted Pace of Lessons
- Inquiry-Based Instruction
- Higher-Order Thinking Activities
- Interest-Based Content
- Real World Problem Solving/Problem Based Learning
- Independent Study/Passion Projects
- Units of Study with Like-Minded Peers

Schoolwide Virtual Enrichment

All JCS and TLS students have access to grade level-specific [Gifted and Talented Virtual Classrooms](#). These virtual classrooms are a space for students to complete various challenges and enrichment opportunities at their own pace. Students are able to receive feedback and additional opportunities based on their needs. The virtual classrooms have expanded the accessibility of enrichment resources directly to the students and allows for students to choose opportunities according to their interests and abilities. The purpose of the activities is to encourage problem solving, develop critical thinking skills, and expand curiosity and imagination in conjunction with the New Jersey Student Learning Standards.

Gifted and Talented Teacher as a Resource

In addition to classroom support, the Gifted and Talented teacher also serves as a resource to all teachers in the building. Teachers that are seeking resources for their high ability learners will receive additional support from the Gifted and Talented teacher in various ways. This may include additional units of study, challenging resources, student projects, and meeting with the G&T teacher as needed.

Additional Enrichment Opportunities

Across all grade levels 3-5, as recommended by the classroom teacher, students exhibiting a need for additional enrichment may have the opportunity to meet with the G&T teacher as the schedule allows. Groupings will be flexible and monitored to best meet the students' needs throughout the school year. Activities will include, brain teasers, puzzles, strategic thinking activities, problem-solving challenges, and STEM challenges. Students engage in an extended process of asking questions, using resources, and developing answers that lead to thinking about what and how they are learning. Students are held accountable for how they work and use their time by demonstrating their learning through products or presentations.

Students self-select to participate in individual and/or group projects based on interest and commitment. The classroom teacher and/or the enrichment teacher will help guide and monitor student exploration of chosen topics, facilitating their learning with resources and teaching of needed skills.

Secondary Schools
Florence M. Gaudineer Middle School
Jonathan Dayton High School

Grades 6-12: Access to specific content programs with higher levels of academic challenges (i.e. Pre-Algebra, Accelerated Communication Arts, and Advanced Placement Classes)

Dual Credit Courses provide students the opportunity to obtain high school credit, and college credit, simultaneously through partnerships with several institutions.

Project Lead the Way (PLTW) students become builders of technology by engaging in real world activities. Students are empowered as design thinkers collaborating on real world projects.

Gifted and Talented Identification Criteria

The Springfield Schools Gifted and Talented Program recognizes that students require differentiated learning experiences beyond the core curriculum being taught because of their advanced abilities in one or more content areas. These students may also have other cognitive qualities such as curiosity, creativity, motivation, leadership, and passion that require modifications to their academic experience.

Multiple Measures of Eligibility

Kindergarten through grade twelve identification process for gifted and talented students includes multiple measures. Multiple measures may include but are not limited to: achievement test scores; grades; student performance or products; intelligence testing; parent, student, and/or teacher recommendation; and other appropriate measures. The identification methodology is developmentally appropriate, non-discriminatory, and related to the programs and services offered by the Springfield School District. The identification procedures are reviewed annually.

According to N.J.A.C. 6A:8-3.1, all public school districts must have a board-approved gifted and talented identification process and provide services for identified students enrolled in the grades of that school district. The regulations require that identification and services be made available to students in grades K-12.

When students are recommended for the Gifted and Talented Program there are multiple measures that are considered to determine if services are necessary and appropriate. The assessments used are as follows:

- Cognitive Abilities Test (CogAT)
- Classroom Performance/Student Portfolios
- DRA2 Level
- iReady Diagnostic Scores
- Gifted Indicators Checklist
- Start Strong/NJSLA Assessment Data

The N.J.A.C. requires that students be compared to their chronological peers in the local school district. The New Jersey Department of Education has not established state-level criteria for identifying students who are gifted, such as mandated tests or assessments, grade point averages, or IQ scores. Local school districts must use multiple measures to identify students.

Procedures

<https://www.straussesmay.com/seportal/Public/DistrictPolicy.aspx?policyid=2464&id=b8a33a9f505e4998a6db3fb8e1de778b>

Gifted and Talented Program Identification Matrix

Minimum Score Required for Consideration: 14 Points

1 Point	2 Points	3 Points
Cogat Assessment Overall Stanine Score of a 7	Cogat Assessment Overall Stanine Score of an 8	Cogat Assessment Overall Stanine Score of a 9
iReady Math Assessment Just Below Current Grade Level	iReady Math Assessment On Grade Level	iReady Math Assessment ½ Year + Above Current Level
iReady ELA On Grade Level	iReady ELA ½ Year Above Current Level	iReady ELA One Full Grade Level + Above Current Level
NJSLA Math Approaching Expectations	NJSLA Math Met Expectations	NJSLA Math Exceed Expectations
NJSLA ELA Approaching Expectations	NJSLA ELA Met Expectations	NJSLA ELA Exceed Expectations
HOPE Teacher Rating Scale Raw Score: 11 - 29	HOPE Teacher Rating Scale Raw Score: 30 - 49	HOPE Teacher Rating Scale Raw Score: 50-66

Team meetings present the opportunity to review data and assess the educational needs of all students. Teacher provides examples of student work exhibiting above and beyond grade level expectations, creativity, leadership, critical and abstract thinking. Programs for gifted and talented students will be periodically evaluated for their continuing efficacy and adjusted accordingly. The parent of any student identified as gifted or talented shall be consulted regarding any program designed to address the student's particular needs.

Resource Links

https://riversideinsights.com/cognitive_abilities_test

<https://www.curriculumassociates.com/programs/i-ready-learning>

<https://www.nj.gov/education/assessment/resources/>

<https://www.routledge.com/HOPE-Teacher-Rating-Scale-Involving-Teachers-in-Equitable-Identification/Gentry-Pereira-Peters-McIntosh-Fugate/p/book/9781618214522#:~:text=The%20HOPE%20Teacher%20Rating%20Scale,making%20it%20easy%20to%20use.>

Gifted and talented student: The “*[Strengthening Gifted and Talented Education Act](#)*” defines a gifted and talented student as a “student who possesses or demonstrates a high level of ability in one or more content areas when compared to their chronological peers in the school district and who require modifications of their educational program if they are to achieve in accordance with their capabilities.”

Twice-exceptional (2E) students: A twice-exceptional (2E) student is defined as “a student who is both gifted and a student with a disability. These students may also be referred to as having dual exceptionalities or as being gifted with learning disabilities (GT/LD). This also applies to students who are gifted with ADHD or gifted with autism” (New Jersey Association for Gifted Children, www.nagc.org).

Instructional adaptation: An adjustment or modification to instruction enabling a student who is gifted and talented to participate in, benefit from, and demonstrate knowledge and application of the New Jersey Student Learning Standards in one or more content areas at the instructional level of the student, not just the student's grade level.

Identifying gifted and talented students: The focus of identification is to provide programming and services in which students' specific learning needs and potential are appropriately addressed and met. In every New Jersey school district, there are students who require modifications to the general education curriculum if they are to achieve in accordance with their abilities. By identifying a student's general intellectual ability, creativity, or specific academic area aptitudes, we are acknowledging that they need programming and services outside of the general education/grade level curriculum to advance their learning.

NJDOE Fast Facts

<https://www.nj.gov/education/standards/gifted/>

<https://www.nj.gov/education/standards/gifted/legislation.shtml>

Supplemental Resources/Programming for Gifted Students

Edward V. Walton

- PETS Program – Primary Education Thinking Skills
- Group Solutions/Group Solutions 2 – Cooperative Logic Activities
- Lollipop Logic
- Beginning Thinking Skills
- AIMS Education Programming

James Caldwell and Thelma L. Sandmeier

Math/ELA

- Project M3: Mentoring Mathematical Minds
- Junior Great Books
- AIMS Education Programming
- Borenson Hands on Equations
- BizWorld
- Perplexors
- Advanced Math Explorations grade 3-5
- Challenging Units for Gifted Learners (ELA and Math)
- Creative Curriculum Extenders
- Differentiated Lessons & Projects
- Challenge Math Grades 4+
- Differentiating Instruction with Menus (All Content Areas)
- Jacob's Ladder
- Genius Hour/Passion Project
- Spatial Reasoning
- Logic Puzzles, Brain Games, Analogies

STEM

- Engineering is Elementary
- Engineer Throughout the Year
- PBS Design Squad
- DefinedSTEM
- Project Lead the Way (PLTW)

Enrichment Events

Experience for all students to be enriched through events related to the curricular or extracurricular activities. Examples include after school clubs, PTA-sponsored events, leadership opportunities, visual and performing arts, and community service opportunities.