2018-2019

Homewood Middle School Learning Targets

7th Grade Learning Targets

Writing

1. Use the writing process to plan, organize and compose both formal and informal documents in the narrative, explanatory, and argumentative modes.

a) I can produce coherent writing with focused development, organization, and style appropriate to task, purpose, and audience.

b) I can develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.

c) I can use technology to produce and publish writing, link and cite sources, and to collaborate with others.

d) I can use a variety of appropriate transitions to create unity and clarify the relationships among ideas and concepts or to convey sequence and signal shifts from one time frame or setting to another.

e) I can establish and maintain a formal style appropriate for each mode of writing.

f) I can use precise language and topic-specific vocabulary.

g) I can write within a short time frame or extended time frame for discipline-specific tasks, purposes, and audiences.

ARGUMENT

a) I can write arguments that support claims using clear reasoning and meaningful evidence.

b) I can introduce claims and acknowledge alternate and opposing claims.

c) I can use logical reasoning and relevant evidence to support and organize a claim.

d) I can provide a concluding statement that follows from and supports the argument presented.

EXPOSITORY/EXPLANATORY/INFORMATIONAL

a) I can write informative/explanatory texts to examine and express complex ideas and information.

b) I can introduce my topic clearly and preview what follows.

c) I can develop the topic with relevant facts, definitions, concrete details, quotations, or other informational examples.

d) I can organize ideas, concepts, and information using definition, classification, comparison/contrast, and/or cause/effect strategies.

e) I can provide a concluding statement or section that follows from and supports the information or explanation presented.

NARRATIVE

a) I can write narratives to develop real or imagined experiences or events using effective techniques, relevant descriptive details, and well-structured plot.

b) I can establish context and point of view.

c) I can organize an event sequence that unfolds naturally and logically.

d) I can use dialogue, pacing, and description to develop experiences, events, and/or characters.

e) I can use relevant descriptive details and sensory language to capture action and convey experiences and events.

2. Use the research process to support a thesis on a literary or non-literary topic.

a) I can conduct research projects based on focused questions, demonstrating understanding of the subject under investigation.

b) I can gather relevant information from multiple print and digital sources.

c) I can assess the credibility and accuracy of sources.

d) I can integrate information while avoiding plagiarism.

e) I can draw evidence from literary or informational texts to support analysis, reflection, and research.

Language

3. Demonstrate command of the conventions of Standard English grammar, capitalization, punctuation, and spelling in writing and/or speaking.

a) I can make subjects and verbs agree in sentences with prepositional phrase interrupters and inverted word order, with indefinite pronouns or collective nouns as subjects, with compound subjects joined by correlative or coordinating conjunctions, and with collective nouns when verb form depends on the rest of the sentence.

b) I can explain the function of phrases and clauses in general and in specific sentences.

c) I can use phrases and clauses in a sentence, recognizing and correcting misplaced and dangling modifiers.

d) I can correctly choose to use simple, compound, or compound-complex sentences in order to show the differing relationships among ideas.

e) I can use a comma to separate coordinate adjectives.

f) I can use knowledge of language and its conventions when reading, writing, speaking, and listening.

g) I can choose language that expresses ideas precisely and concisely, and recognize and eliminate wordiness and redundancy.

Reading Comprehension and Application

4. Apply reading strategies to materials for comprehension, main idea, tone, propaganda, and argument.

Literature

a) I can determine theme(s)/central idea(s) of a text and analyze their development.

b) I can provide an objective summary of the text in both literary and informational text.

c) I can read and comprehend text on grade level, proficiently.

d) I can cite several pieces of textual evidence to support analysis of explicit text and inferences drawn from the text.

e) I can determine two or more central ideas in an informational text and analyze their development.

f) I can trace and evaluate the argument and specific claims in an informational text.

g) I can assess whether the reasoning is sound, the evidence is relevant, and the evidence is sufficient to support the claims in an informational text.

5. Identify and interpret author style and structures of texts used in world literature, informational texts, and media.

a) I can analyze the effect of specific word choice on meaning and tone.

b) I can determine figurative and connotative meanings of words and phrases as they are used in a text.

c) I can analyze how a text's form and structure contribute to its meaning.

d) I can analyze how an author develops and contrasts the points of view of different characters or narrators in a text.

e) I can analyze how a poem's form and structure contribute to its meaning.

f) I can analyze the effects of rhyme and repetition of sounds on a specific aspect of a poem, story, or drama.

g) I can analyze the organization of text structure. including headings, subheadings, bolded/highlighted /italicize words, captions, graphs, illustrations in an informational text.

h) I can analyze author structure: how major sections contribute to the development of ideas and to the whole in an information text.

i) I can determine an author's purpose and point of view and how an author develops or contrasts different points of view in an informational text.

j) I can analyze how an author distinguishes his or her position from that of others in an informational text.

k) I can analyze how two or more authors, writing about the same topic, shape their presentations of key information by emphasizing different evidence or advancing different interpretations of an informational text.

6. Analyze genre, tone, and plot, literary devices and elements and author's point of view and purpose in short stories, drama, poetry, informational texts and media.

a) I can compare/contrast characteristics that define various genre and media.

b) I can analyze how particular elements of a story or drama interact, including interactions among individuals, events, and ideas.

c) I can identify and analyze literary devices and elements in informational texts.

d) I can determine an author's purpose and point of view.

7. Acknowledge different perspectives and make contemporary connections to world literature, informational documents, and media.

a) I can analyze the interactions between individuals, events, and ideas in an informational text.

b) I can compare/contrast a fictional portrayal with a historical account of the same period and understand how authors of fiction use or alter history.

c) I can compare and contrast a written story, drama, or poem to its audio, filmed, staged, or multimedia version, analyzing the effects of techniques unique to each medium (e.g., lighting, sound, color, or camera focus and angles in a film).

d) I can compare/contrast a written text to an alternate version to analyze the effects of techniques unique to each medium.

e) I can compare/contrast a text to an alternate version to analyze each medium's portrayal of the subject.

Speaking and Listening

8. Present information in a clear, concise, and logical manner appropriate for the task, audience, and purpose.

a) I can engage effectively in grade level discussions, texts, and issues with diverse partners.

b) I can come prepared to discussions by reading or researching material relevant to class topics.

c) I can refer to evidence on a topic, text, or issue by drawing from prior material and experience to probe and reflect on ideas under discussion.

d) I can acknowledge new information expressed by others, build on those ideas, and express my own ideas clearly, as well as modify my views when appropriate.

e) I can define individual roles as needed, track progress towards specific goals and deadlines, and bring discussions back on topic as needed.

f) I can pose questions that require elaboration, and respond to others' questions and comments with relevant observations and ideas.

g) I can present claims and findings while emphasizing main points using pertinent descriptions, facts, details, and examples.

h) I can use appropriate eye contact, speak in an adequate volume, and pronounce my words clearly.

i) I can include multimedia components and visual displays, effectively and when appropriate.

j) I can adapt speech to a variety of contexts and tasks, and demonstrate command of formal English when indicated and appropriate.

Vocabulary

9. Determine the meaning of unknown and/or multiple-meaning words, and phrases in grade-level texts.

a) I can use context (e.g., the overall meaning of a sentence, paragraph, or text; a word's position or function in a sentence) as a clue to the meaning of a word or phrase and the relationship between words.

b) I can consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation, meaning, part of speech, etymology, or to determine or clarify the word.

c) Use Greek or Latin prefixes and roots as clues to the meaning of a word.

d) I can demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

10. Expand vocabulary to increase reading comprehension and strengthen communication.

a) I can demonstrate understanding of word relationships (e.g., *stingy, scrimping, economical, thrifty*) and nuances in word meanings.

b) I can explain figurative language such as figures of speech in context.

c) I can gather and accurately use a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level (e.g. hyperbole, quadrilateral, hypothesis, anarchy, Bloom's Taxonomy).

d) I can analyze a word's connotation and denotation and distinguish connotations of words with similar denotations.

e) I can gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Pre-Algebra Learning Targets

1. **Add, subtract, factor and expand expressions (numerical and variable)**

a) I can add, subtract, multiply, and divide integers.

b) I can apply order of operations.

c) I can apply distributive property, commutative property, associative property, and the identity property.

d) I can simplify variable expressions (also involving distributive property).

e) I can use distributive property and combine like terms to calculate area of rectangles and triangles with variable expressions.

2. **Solve multi-step linear equations and inequalities in one variable to solve problems (Construct inequalities on a number line.) (2nd 9-weeks Rational numbers)**

a) I can solve linear equations/inequalities in one variable with one solution.

b) I can solve linear equations in one variable with infinitely many solutions.

c) I can solve linear equations in one variable with no solution.

d) I can solve linear equations/inequalities with rational number coefficients.

e) I can solve linear equations/inequalities that require expanding expressions using the distributive property.

f) I can solve linear equations/inequalities whose solutions require collecting like terms.

g) I can solve linear equations/inequalities with variables on both sides.

h) I can use equations/inequalities to solve word problems.

i) I can graph solutions of inequalities on a number line.

3. **Perform operations on rational numbers with variable expressions**

a) I can find Greatest Common Factor (GCF) of monomials.

b) I can find Least Common Multiple (LCM) of monomials.

c) I can find the prime factorization of numbers and variable expressions.

d) I can estimate and use mental math.

4. **Understand properties of positive and negative exponents including scientific notation**

a) I can use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities.

b) I can use scientific notation to compare and order different quantities.

c) I can perform multiplication with numbers expressed in scientific notation.

5. **Simplify ratios and calculate rates and unit rate.**

a) I can compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units.

b) I can set up proportions or conversions to compute unit rates measured in different units.

c) I can identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.

d) I can identify similar and congruent figures and find unknown side lengths of similar figures.

Ø I can find the ratio of corresponding side lengths of similar figures.

Ø I can find measures of angles or sides of congruent figures.

6. **Write and solve proportions (including scale drawings)**

a) I can represent proportional relationships by equations.

b) I can solve problems involving scale drawings of geometric figures.

c) I can set up proportions to calculate lengths and areas from scale drawings.

d) I can reproduce scale drawing on a different scale (example – comic strip).

7. **I can apply understandings of operations of fractions and decimals**

a) I can convert from fractions to decimals to percent and vice-versa.

b) I can add, subtract, multiply and divide fractions.

c) I can determine whether rational numbers terminate or repeat.

d) I can determine whether a number is rational or irrational.

e) I can solve real world problems involving operations with fractions and decimals.

8. **Solve percent problems including simple interest with account balance, mark ups, discounts, sales tax and tips, and percent of change.**

a) I can solve simple interest problems.

b) I can solve mark up and mark down problems.

c) I can solve gratuities, commission, and fee problems.

d) I can solve percent increase and decrease problems.

e) I can solve tax problems.

9. **Write and graph linear equations in two variables including using slope and y-intercept**

a) I can graph proportional relationships, interpreting the unit rate as the slope of the graph.

b) I can decide whether two quantities are in a proportional relationship by testing for equivalent rations in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.

Ø Example (6, 30) means – working 6 hours would earn $30 in this situation

c) I can derive the equation y = mx for a line through the origin.

d) I can derive the equation y=mx + b for a line intercepting the vertical axis at b.

10. **Solve real world and mathematical problems involving area, surface area, and volume of two-and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, cylinders, spheres and right prisms**

a) I can describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.

Ø I can name three-dimensional figures and distinguish the properties between them.

Ø I can name and define characteristics of two-dimensional shapes.

Ø I can determine the 2D shape created when a 3D shape is sliced.

b) I can use the formulas for area and circumference of a circle to solve problems.

Ø I can calculate area and circumference of a circle.

Ø I can use area and circumference to solve problems.

Ø I can understand how circumference and area relate to each other.

c) I can define area, volume, and surface area of 2D and 3D objects.

d) I can calculate area, volume, and surface area of 2D and 3D objects (surface area of prisms, pyramids and cylinders; volume of prisms, pyramids, cones, spheres and cylinders).

e) I can solve real world problems involving 2D and 3D objects.

11. **Solve real-world problems involving angle measure**

a) I can use informal arguments to establish facts about the sum of the interior angles of a triangle.

b) I can write and solve simple equations for an unknown side in a triangle using perimeter.

c) I can use facts about supplementary, complementary, vertical, and adjacent angles in a multistep problem to write and solve simple equations for an unknown angle in a figure.

Ø I can define supplementary, complementary, vertical and adjacent angles.

Ø I can write and solve simple equations for an unknown angle in a figure (example: x and 3x are two complementary angles so find x, OR 3x and 5x+2 are vertical angles so find x).

d) I can identify special angle pairs and angles created when a transversal intersects two other lines.

e) I can use informal arguments to establish facts about the angles created when parallel lines are cut by a transversal (corresponding angles, alternate interior angles, alternate exterior angles, and vertical angles).

f) I can calculate measures of interior and exterior angles of polygons.

12. **Describe the effect of translations, rotations, reflections, and dilations on two-dimensional figures**

a) I can understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations.

b) I can describe a sequence that exhibits the similarity between two similar two-dimensional figures.

13. **I can solve problems using Pythagorean theorem, distance, midpoint and slope formulas**

a) I can explain a proof of the Pythagorean Theorem and its converse.

b) I can apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.

c) I can plug in coordinate points into the midpoint formula to determine the midpoint of those two points.

d) I can apply the Pythagorean Theorem to find the distance between two points in a coordinate system.

14. **Use random sampling to draw inferences about a population**

a) I can understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population.

b) I can understand that random sampling tends to produce representative samples and support valid inferences.

c) I can use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples of the same size to gauge the variation in estimates or predictions. Example – 5% of all tires produced are defective. How many defective tires would there be if 20,000 were produced?

15. **Calculate theoretical and experimental probability and create area models, tree diagrams and charts**

a) I can understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around ½ indicates and event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.

b) I can identify independent and dependent events.

c) I can create a tree diagram and apply the multiplication principal to determine the number of possible outcomes of an event.

d) I can calculate odds in favor and odds against.

e) I can analyze and display data using plots, tables and graphs.

Ø I can construct and analyze a single and double box and whisker plot.

Ø I can construct and analyze a frequency table and histogram.

Ø I can construct and analyze a stem and leaf plot.

Pre-Algebra Math Team Learning Targets

Student targets will be mastered at a faster pace and at increased depth in this math team course.

**denotes additional learning targets that are not part of the Alabama Algebra I Course of Study.*

1. **Add, subtract, factor and expand expressions (numerical and variable).**

a) I can add, subtract, multiply, and divide integers.

b) I can apply order of operations.

c) I can apply distributive property, commutative property, associative property, and the identity property.

d) I can simplify variable expressions (also involving distributive property).

e) I can use distributive property and combine like terms to calculate area of rectangles and triangles with variable expressions.

f) * I can convert base 10 numbers to other base numbers.

g) * I can convert a number in any base to a base number.

h) * I can solve problems involving defining other "operations." (ex: a#b = ab – b)

i) * I can model and solve consecutive integer problems.

j) * I can add, subtract, multiply and divide radical expressions.

2. **Solve multi-step linear equations and inequalities in one variable to solve problems. (Construct inequalities on a number line.) (2nd 9-weeks Rational numbers)**

a) I can solve linear equations/inequalities in one variable with one solution.

b) I can solve linear equations in one variable with infinitely many solutions.

c) I can solve linear equations in one variable with no solution.

d) I can solve linear equations/inequalities with rational number coefficients.

e) I can solve linear equations/inequalities that require expanding expressions using the distributive property.

f) I can solve linear equations/inequalities whose solutions require collecting like terms.

g) I can solve linear equations/inequalities with variables on both sides.

h) I can use equations/inequalities to solve word problems.

i) I can graph solutions of inequalities on a number line.

j) *I can solve radical equations.

3. **Perform operations on rational numbers with variable expressions.**

a) I can find Greatest Common Factor (GCF) of monomial.

b) I can find Least Common Multiple (LCM) of monomials.

c) I can find the prime factorization of numbers and variable expressions.

d) I can estimate and use mental math.

4. **Understand properties of positive and negative exponents including scientific notation.**

a) I can use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities.

b) I can use scientific notation to compare and order different quantities.

c) I can perform multiplication with numbers expressed in scientific notation.

d) * I can simplify exponential expressions with negative exponents.

5. **Simplify ratios and calculate rates and unit rate.**

a) I can compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units.

b) I can set up proportions or conversions to compute unit rates measured in different units.

c) I can identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.

d) I can identify similar and congruent figures and find unknown side lengths of similar figures.

Ø I can find the ratio of corresponding side lengths of similar figures.

Ø I can find measures of angles or sides of congruent figures.

6. **Write and solve proportions (including scale drawings).**

a) I can represent proportional relationships by equations.

b) I can solve problems involving scale drawings of geometric figures.

c) I can set up proportions to calculate lengths and areas from scale drawings.

d) I can reproduce scale drawing on a different scale (example – comic strip).

e) * I can solve proportions involving rational expressions.

7. **I can apply understandings of operations of fractions and decimals.**

a) I can convert from fractions to decimals to percent and vice-versa.

b) I can add, subtract, multiply and divide fractions.

c) I can determine whether rational numbers terminate or repeat.

d) I can determine whether a number is rational or irrational.

e) I can solve real world problems involving operations with fractions and decimals.

8. **Solve percent problems including simple interest with account balance, mark ups, discounts, sales tax and tips, and percent of change.**

a) I can solve simple interest problems.

b) I can solve mark up and mark down problems.

c) I can solve gratuities, commission, and fee problems.

d) I can solve percent increase and decrease problems.

e) I can solve tax problems.

f) * I can solve compound interest problems.

g) * I can model and solve distance-rate-time problems.

9. **Write and graph linear equations in two variables including using slope and y-intercept.**

a) I can graph proportional relationships, interpreting the unit rate as the slope of the graph.

b) I can decide whether two quantities are in a proportional relationship by testing for equivalent rations in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.

Ø Example (6, 30) means – working 6 hours would earn $30 in this situation

c) I can derive the equation y = mx for a line through the origin.

d) I can derive the equation y=mx + b for a line intercepting the vertical axis at b.

e) * I can describe a linear pattern by writing an equation in slope-intercept form, standard form, and point slope form.

f) * I can write the equation of a pattern given two points, a point and the slope, a table, a graph, or a set of ordered pairs.

g) * I can model and solve a system of linear equations and inequalities graphically or algebraically.

10. **Solve real world and mathematical problems involving area, surface area, and volume of two-and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, cylinders, spheres and right prisms.**

a) I can describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.

Ø I can name three-dimensional figures and distinguish the properties between them.

Ø I can name and define characteristics of two-dimensional shapes.

Ø I can determine the 2D shape created when a 3D shape is sliced.

b) I can use the formulas for area and circumference of a circle to solve problems.

Ø I can calculate area and circumference of a circle.

Ø I can use area and circumference to solve problems.

Ø I can understand how circumference and area relate to each other.

c) I can define area, volume, and surface area of 2D and 3D.

d) I can calculate area, volume, and surface area of 2D and 3D objects (surface area of prisms, pyramids and cylinders; volume of prisms, pyramids, cones, spheres and cylinders).

e) I can solve real world problems involving 2D and 3D objects.

f) * I can apply the Pythagorean theorem to regular polygons to calculate the apothem (perpendicular segment from center of polygon to midpoint of a side).

g) * I can find the area of regular polygons once the apothem has been calculated.

h) * I can find the area, surface area, and volume of composite figures.

11. **Solve real-world problems involving angle measure.**

a) I can use informal arguments to establish facts about the sum of the interior angles of a triangle.

b) I can write and solve simple equations for an unknown sides in a triangle using perimeter.

c) I can use facts about supplementary, complementary, vertical, and adjacent angles in a multistep problem to write and solve simple equations for an unknown angle in a figure.

Ø I can define supplementary, complementary, vertical and adjacent angles.

Ø I can write and solve simple equations for an unknown angle in a figure (example: x and 3x are two complementary angles so find x, OR 3x and 5x+2 are vertical angles so find x).

d) I can identify special angle pairs and angles created when a transversal intersects two other lines.

Ø I can use informal arguments to establish facts about the angles created when parallel lines are cut by a transversal (corresponding angles, alternate interior angles, alternate exterior angles, and vertical interior angles) I can calculate measures of interior and exterior angles of polygons.

e) * I can calculate angle measures when given a ratio to compare the angles.

f) * Ican apply properties of special right triangles in real world situations.

g) * I can develop and apply the formula for calculating the number of diagonals in a figure.

h) * I can identify, calculate, and apply the trigonometric ratios (sine, cosine and tangent) to real world problems.

12. **Describe the effect of dilations, translations, rotations, reflections, and dilations on two-dimensional figures.**

a) I can understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations.

b) I can describe a sequence that exhibits the similarity between two similar two-dimensional figures.

13. **I can solve problems using Pythagorean theorem, distance, midpoint and slope formulas.**

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b) I can apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.

c) I can plug in coordinate points into the midpoint formula to determine the midpoint of those two points.

d) I can apply the Pythagorean Theorem to find the distance between two points in a coordinate system.

14. **Use random sampling to draw inferences about a population.**

a) I can understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population.

b) I can understand that random sampling tends to produce representative samples and support valid inferences.

c) I can use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples of the same size to gauge the variation in estimates or predictions. Example – 5% of all tires produced are defective. How many defective tires would there be if 20,000 were produced?

15. **Calculate theoretical and experimental probability and create area models, tree diagrams and charts.**

a) I can understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood A probability near 0 indicates an unlikely event, a probability around ½ indicates and event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.

b) I can identify independent and dependent events.

c) I can create a tree diagram and apply the multiplication principal to determine the number of possible outcomes of an event.

d) I can calculate odds in favor and odds against.

e) I can analyze and display data using plots, tables and graphs.

Ø I can construct and analyze a frequency table and histogram.

Ø I can construct and analyze a single and double box and whisker plot.

Ø I can construct and analyze a stem and leaf plot.

f) * I can identify the number of permutations and combinations that can be made from a group of objects.

g) * I can apply Pascal's triangle to solve problems involving probability.

16. **Math Team Targets**

a) * I can identify vocabulary associated with sets, including union and intersection.

b) * I can identify and describe, verbally and algebraically, at least three different patterns found in Pascal's Triangle.

c) * I can develop and apply formulas for special patterns. (finding the sum of "n" odd integers or "n" even integers, finding the number of factors of given number)

d) * I can identify if there is a greatest common factor (GCF) in any polynomial.

e) * I can multiply polynomials using the distributive property.

f) * I can solve combined work problems.

Science Learning Targets

From Molecules to Organisms: Structures and Processes

1. Gather and synthesize information to support claims of the cell theory and explain how cells differ in structure and function.

a) I can distinguish between living and non-living things.

b) I can argue the claims about of the cell theory.

c) I can differentiate between prokaryotic and eukaryotic cells.

d) I can contrast the methods of sexual and asexual reproduction with prokaryotic and eukaryotic cells.

e) I can develop a cell model to demonstrate cell structures (e.g. nucleus, cell membrane, cell wall, ribosomes, mitochondria, chloroplasts, and vacuoles) and functions.

f) I can construct an explanation of how specific organelles in eukaryotic cells are used for maintaining a stable environment.

2. Construct models and representations of organ systems to demonstrate how multiple interacting organs and systems work together to accomplish specific functions.

a) I can describe connections between the levels of organization (cells, tissues, organs, organ systems).

b) I can explain the basic function of each system (e.g., circulatory, digestive, muscular, respiratory, skeletal, and nervous) and identify the main organs involved.

c) I can construct models supporting how the body systems function together.

Ecosystems: Interactions, Energy, and Dynamics

3. Examine the cycling of matter between abiotic and biotic parts of ecosystems to explain the flow of energy and the conservation of matter.

a) I can identify abiotic and biotic factors a given environment.

b) I can construct a model to demonstrate energy flow in a food web between producers consumers and decomposers.

c) I can evaluate biogeochemical cycles (e.g. carbon, nitrogen) and explain how atoms in an ecosystem are cycled between the living and nonliving parts of the ecosystem.

d) I can generate a scientific explanation based on evidence for the role of photosynthesis and cellular respiration in the cycling of matter and flow of energy into and out of organisms.

4. Analyze and interpret data to provide evidence regarding how resource availability impacts individual organisms, as well as populations of organisms, within an ecosystem.

a) I can list the hierarchy of an ecosystem.

b) I can analyze the impact of limited resources on a population.

c) I can justify competition based on resource availability.

d) I can use data to provide evidence of the impact of resource availabilities.

5. Construct an explanation to predict consistent patterns of interactions in different ecosystems in terms of the relationships between and among organisms.

a) I can define and give examples of interspecies interactions such as competition, predation, mutualism, commensalism, and parasitism.

b) I can determine the impacts of interspecies interactions on population growth.

c) I can predict patterns of interactions among organisms across different ecosystems.

6. Use empirical evidence from patterns and data to demonstrate how changes to an ecosystem can lead to shifts in populations and design a solution which maintains biodiversity and ecosystem services.

a) I can investigate the impact of disruptions (e.g. deforestation, succession, drought, fire, disease, human activities, and invasive species) on an ecosystem.

b) I can construct an argument based on empirical evidence to support or refute that changes to physical or biological components of an ecosystem can lead to shifts in populations.

c) I can predict how changes to biodiversity can affect an ecosystem.

d) I can explain how an ecosystem directly or indirectly supports humans' survival and the quality of life.

e) I can engage in an argument to defend the effectiveness of a designsolution which maintains biodiversity and ecosystem services.(e.g., using scientific, economic, and social considerations regarding purifying water, recycling nutrients, preventing soil erosion).

7. Use evidence and scientific reasoning to explain factors affecting the probability of successful reproduction in both animals in plants, and interpret data to predict how various factors will affect the growth of organisms.

a) I can identify and describe the function of the specialized plant structures which contribute to reproductive success.

b) I can identify animal behaviors which affect the probability of reproduction (e.g., nest building to protect young from cold, herding of animals to protect young from predators, vocalization of animals, and colorful plumage to attract mates from breeding).

c) I can use scientific reasoning to determine how specialized plant structures and animal behaviors impact the success of reproduction.

d) I can use data to predict the impact of environmental conditions (e.g., drought decreasing plant growth, fertilizers increasing plant growth, different varieties of plant seeds growing at different rates in different weather conditions, fish growing larger in large ponds than in small ponds) on the growth of organisms.

e) I can analyze the impact of genetic factors (e.g., selective breeding of cattle, grafting of plants) on the growth of organisms.

Heredity: Inheritance and Variation of Traits

8. Construct and use models to explain that genetic variations between parent and offspring occur as a result of genetic differences in randomly inherited genes, and that additional variations may arise from alteration of genetic information.

a) I can define genetic variations, alleles, mutations, Punnett Squares, heterozygous, and homozygous.

b) I can define chromosomes and identify their location in both prokaryotic and eukaryotic cells.

c) I can develop a model to demonstrate the impact of genes on chromosomes.

d) I can create models, such as punnett squares and pedigrees, which explain genetic differences in randomly inherited genes.

e) I can construct an explanation from evidence to describe how genetic mutations result in harmful, beneficial, or neutral effects to the structure and function of an organism.

9. Engage in argument from evidence to evaluate the impact of genetic technologies on the inheritance of desired traits in organisms.

a) I can explain technologies (e.g., forced pollination, selective breeding, genetic engineering, genetic modification, gene therapy) used in genetics.

b) I can argue the benefits or cons of genetic technology being used to produce the desired traits in animals.

Unity and Diversity

10 **Analyze and interpret data which supports the evolution of organisms including embryological, anatomical and fossil evidence.**

a) I can explain how the fossil record documents the existence, diversity, extinction and change of life forms throughout the history of the earth.

b) I can use fossils and their chronological appearance in rock layers to interpret patterns of change in the level of complexity of anatomical structures.

c) I can construct an explanation (e.g., cladogram, phylogenetic tree) based on evidence for the anatomical similarities and differences among modern organisms and between modern and fossil organisms, including living fossils (e.g., alligator, horseshoe crab, nautilus, coelacanth).

d) I can use pictorial data to identify patterns in embryo development across multiple species and predict relationships which are not evident in adult anatomy.

11. Construct an explanation from evidence that natural selection may lead to the predominance of certain traits that support successful survival and reproduction of a population and to the suppression of other traits.

a) I can define natural selection.

b) I can explain how adaptations lead to natural selection over time.

c) I can use mathematical models to demonstrate the support of natural selection.

d) I can support with evidence how traits have supported or inhibited the survival rate.

Social Studies Learning Targets

Citizenship

Reading and Writing in Social Studies

1. **Demonstrate proficiency in reading in the content area.**

a) I can determine the central idea, accurately summarize, and cite textual evidence using primary and secondary sources.

b) I can analyze the relationship between a primary and secondary source on the same topic.

c) I can describe how a text presents information and identify key steps in a text's description of a social studies process.

d) I can determine the meaning of social studies vocabulary words and phrases as they are used in a text.

e) I can identify aspects of a text that reveal an author's point of view and distinguish among fact, opinion and reasoned judgment in a text.

f) I can integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.

2. **Explain individual and civic responsibilities of citizens of the United States.**

a) I can identify the criteria for a person to be considered a citizen, including the steps of the naturalization process.

b) I can differentiate between the rights, social responsibilities, and personal duties of citizens.

Economics

3. **Demonstrate how the principles of the U.S. economy influence the decisions of individuals, governments, and businesses.**

a) I can apply the principles of opportunity cost and scarcity to personal economic decisions.

b) I can create a monthly budget by applying the principles of scarcity, fixed expenses, and variable expenses.

Government

4. **Explain the structure, powers, and functions of the legislative, executive, and judicial branches of the federal, state, and local governments.**

a) I can classify powers as belonging to the federal government, the state government, or as powers they share.

b) I can explain the structure of the federal and state legislative, executive, and judicial branches.

c) I can compare and contrast the functions of state and federal branches of government.

d) I can explain the Congressional process of creating a law.

e) I can explain the differences between criminal and civil court cases.

f) I can explain the differences between juvenile and adult court cases.

g) I can explain how the electoral college is used to elect the president of the United States.

h) I can explain the federal system of checks and balances and provide accurate examples.

History

5. **Identify essential characteristics of and ideals embedded in the Declaration of Independence, the Constitution, and the Bill of Rights.**

a) I can identify the critical events leading up to the creation of the Declaration of Independence, the Constitution, and the Bill of Rights.

b) I can describe the purpose and content of the Declaration of Independence.

c) I can identify the influence of writers, philosophers, and past societies on the founding principles of the American government.

d) I can explain the weaknesses of the Articles of Confederation.

e) I can identify the key components of the New Jersey and Virginia Plans.

f) I can describe compromises made during the drafting of the Constitution.

g) I can contrast the opinions of the Federalists and Anti-Federalists regarding the balance of power in the American government.

h) I can describe the structure of the Constitution including the Preamble, 7 Articles, and the Amendments.

i) I can understand protections given by the Bill of Rights and the relevance to citizens today.

j) I can compare and contrast the U.S. system of democracy with other forms of government such as monarch, dictatorship, etc.

Physical Geography

6. **Use maps, globes, and geographic technology to locate and describe physical characteristics of select regions of the Eastern Hemisphere and Europe.**

a) I can locate a place using latitude and longitude.

b) I can determine how location affects climate and vegetation.

c) I can describe the differences between climate regions.

d) I can analyze types of maps for their appropriate use.

e) I can explain how the earth's tilt causes seasons.

f) I can identify the parts of a map and describe their purposes.

g) I can identify Earth's hemispheres, continents, and oceans.

h) I can differentiate between absolute and relative location.

i) I can identify cardinal and intermediate directions.

Human Geography

7. **Explain how the physical geography affects selected regions of the Eastern Hemisphere and Europe.**

a) I can explain the earth's population distribution based on earth's physical geography.

b) I can give examples of how physical geography influences agriculture, housing, transportation, economy and vegetation.

8. **Identify the cultural, political, and economic characteristics of selected regions of the Eastern Hemisphere and Europe.**

a) I can identify and label political divisions of Europe, Africa, Asia, and Oceania.

b) I can identify and label major physical features of Europe, Africa, Asia and Oceania.

c) I can explain how development impacts a nation's demography.

d) I can explain the economic effects of population growth and/or decline.

e) I can identify the cultural, political, and economic characteristics of regions of Africa.

f) I can identify cultural, political, and economic characteristics of regions of Asia.

g) I can identify cultural, political, and economic characteristics of Europe.

Environmental Change

9. **Analyze change in the environment due to natural phenomena and human activity.**

a) I can identify changes in the environment due to natural phenomenon such as hurricanes, volcanoes, earthquakes, etc.

b) I can identify causes and affects of desertification and deforestation.

c) I can explain possible detrimental effects of human activity on the environment and possible solutions.

d) I can identify the ways that humans change the environment to accommodate their needs such as terracing mountains to create farm land, building dams to produce hydroelectric power, and building oil rigs in the ocean to produce petroleum.

e) I can categorize natural resources into renewable and non-renewable resources.

f) I can identify how the use of natural resources impacts a nation's human development index ranking.

Conflict

10. **Identify reoccurring sources of conflict within and between countries of the Eastern Hemisphere, including all of Europe.**

a) I can identify sources of historical and present conflict in selected regions and between selected countries in the Eastern Hemisphere and Europe.

b) I can analyze sources of conflicts to identify reoccurring themes.

Literacy Skills

11. **Demonstrate proficiency in writing in the content area.**

a) I can write arguments focused on discipline-specific content.

b) I can write informative/explanatory texts, including the narration of historical events or technical processes.

c) I can produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose and audience.

d) I can draw evidence from informational texts to support analysis, reflection and research.

e) I can use technology, as well as multiple print and digital resources, to conduct research, gather relevant information, and produce and publish writing that presents the relationship between information and ideas clearly and efficiently.

12. **Implement argument, research and interpretations of content throughout the Social Studies Curriculum.**

a) I can interpret primary and secondary documents through multiple print and digital resources.

b) I can assess leadership qualities and their influences on society.

c) I can evaluate sources of information to identify opinion, bias, and prejudice.

d) I can determine argument based on central questions and evidence.

e) I can defend multiple points of view based on central questions and evidence and draw conclusions through writing.

f) I can compose an informative/explanatory piece of writing that displays my understanding of a historical event.

g) I can identify characteristics of an informed and responsible citizen.

h) I can make connections between the past and modern worlds.

i) I can analyze content through charts, graphs and maps.

There will be an emphasis on the use of current events in order to address the reading, writing, and content standards listed above.