

2018 - 2019

Homewood Middle School Learning Targets

8th Grade Learning Targets

Writing

1. Use the writing process to plan, organize and compose both formal and informal documents in the narrative, expository, 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 various structural forms (transitions, sentence structure, parallelism, shifts, etc.) to clarify relationships among ideas and concepts/experiences and events.
- 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 routinely over extended and short time frames utilizing the writing process 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 maintain an objective point of view *where appropriate* in my argument.
- c) I can use, introduce, and cite credible sources to support my claim.
- d) I can acknowledge and rebut alternate and opposing claims to strengthen my own logic.

- e) I can formulate a thesis declaring my main points and develop multiple body paragraphs supporting my thesis.
- f) I can develop an introductory paragraph from “hook” to “bridge,” ending with a thesis statement.
- g) I can provide a concluding paragraph that restates the thesis/claim, initiates a “call to action,” and supports the argument presented.
- h) I can show awareness and understanding of my world through my development of a thesis/claim and gathering global, relevant information and evidence in response to an argumentative prompt **.
- i) I can synthesize source material from literary or informational texts with my own evidence to support my thesis **.
- j) I can move beyond the three-part and the five-paragraph structure to compose a more fluid and organic essay **.

Expository/Explanatory/Informational

- a) I can write informative/explanatory texts to examine and express complex ideas and information.
- b) I can use appropriate language and domain-specific vocabulary to inform or explain about my topic.
- c) I can develop an introductory paragraph from “hook” to “bridge,” ending with a thesis statement.
- d) I can maintain an objective point of view and the literary present tense.
- e) I can formulate a thesis declaring my main points and develop multiple body paragraphs supporting my thesis.
- f) I can develop the topic with relevant facts, definitions, concrete details, quotations, definitions, textual details, graphics, or other informational examples.
- g) I can provide a concluding paragraph that restates the thesis/claim and supports the argument presented.
- h) I can compose a literary or passage analysis essay from prose (fiction or non-fiction) or poetry connecting an element of the text with the overall theme of the text **.

- i) I can evaluate and identify which elements (literary or rhetorical strategies) of a passage are most effective in helping the writer achieve his purpose**.
- j) I can properly incorporate quotations from the text into sentences of my own**.
- k) I can move beyond the three-part thesis and the five-paragraph structure to compose a more fluid and organic essay**.

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 organize an event sequence that unfolds naturally and logically through elements of plot (exposition, conflict, rising action, climax, falling action, and resolution).
- c) I can use narrative techniques such as dialogue, pacing, and description to develop experiences, events, and/or characters.
- d) I can use precise words and phrases, relevant descriptive details, sensory details and figurative language to capture action and convey experiences and events.
- e) I can “hook” the reader at the onset of my narrative, establish a context/point of view, and introduce a narrator/character and provide a conclusion that follows from and reflects on the narrated experiences or 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 identify and correctly use reference materials such as dictionary entries, a thesaurus, part(s) of a book to locate information (table of contents, copyright page, index, and glossary, etc.).
- d) I can assess the credibility and accuracy of sources by confirming author’s credentials and examining a resource for potential bias.
- e) I can take notes on research drawing evidence to support analysis, reflection, and research.

- f) I can paraphrase by restating information in my own words.
- g) I can summarize by telling the main idea in my own words.
- h) I can integrate information citing resource materials using MLA format to avoid plagiarism.

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 recognize and use verbs in active and passive voice.
- c) I can recognize and use verbs in the indicative (interrogative), imperative, and subjunctive (conditional) moods to achieve specific effects.
- d) I can recognize inappropriate shifts in verb voice and mood.
- e) I can explain the function of verbals (participles, gerunds, infinitives) and use them in my writing.
- f) I can construct sentences with various structures – simple, compound, complex, and compound-complex - to show relationships among ideas and vary my writing.
- g) I can recognize parallelism in phrases and clauses and construct sentences which contain parallel elements (words, phrases, clauses).
- h) I can develop advanced sentence structures including subject complements.
- i) I can use punctuation (commas, ellipsis, dash) to indicate a pause or break or omission.
- j) I can punctuate the titles of poems and novels correctly.
- k) I can spell correctly.

Reading Comprehension and Application

4. Apply comprehension strategies to fiction, non-fiction, poetry, and visual/print media.

- a) I can read and comprehend grade level text independently and proficiently.
- b) I can apply self-monitoring strategies for understanding text including, but not limited to determining sequence of steps, events, or main idea; distinguishing supporting ideas/subplots; determining problems and solutions; differentiating fact from fiction; comparing predictions with actual context in text; questioning for self-monitoring; and summarizing or paraphrasing.
- c) I can express the main idea or theme as a statement of universal truth.
- d) I can support conclusions, inferences, and analysis citing details from text.

5. Analyze and evaluate author style and structures of texts in fiction, non-fiction, poetry, and visual/print media.

- a) I can analyze the effect of specific word choice on meaning and tone.
- b) I can analyze in detail the structure of a specific paragraph including the role of specific sentences in developing and refining a key concept.
- c) I can compare/contrast the structure of two or more texts and analyze how the differing structures contribute to meaning and style.
- d) I can analyze how a poem's form and structure contribute to its meaning.
- e) I can analyze the effects of rhyme and repetition of sounds on a specific aspect of a poem, story, or drama.
- f) I can analyze how an author's choices in structure create mystery, suspense, or surprise.
- g) I can analyze a particular point of view or cultural experience reflected in reading a wide-range of world literature.

6. Analyze and evaluate literary and rhetorical devices in fiction, non-fiction, poetry, and visual/print media.

- a) I can identify, categorize, and analyze characters and characterization.
- b) I can determine point of view (1st, 2nd, 3rd, omniscient).

- c) I can analyze how the differences, understand the purpose, and explain the effects of various points of view including characters, author, reader/audience.
- d) I can acknowledge and respond to conflicting evidence or viewpoints.
- e) I can analyze how an author acknowledges and responds to conflicting evidence.
- f) I can recognize the contributions point of view makes towards irony, suspense, and humor.
- g) I can evaluate the impact of setting to the literature's mood, plot, and characterization.
- h) I can analyze components of plot (exposition, rising action, climax, falling action, and resolution).
- i) I can differentiate between internal and external conflict.
- j) I can construct a theme of universal truth or a central claim and analyze its development throughout the text.
- k) I can explain the relationship of theme to other elements within the text (character, plot, setting, etc).
- l) I can evaluate specific claims in the text (assessing if the reasoning is sound and the evidence is relevant and sufficient and recognizing when irrelevant evidence is introduced).
- m) I can differentiate between mood and tone of the text.
- n) I can analyze the impact of specific word choice on tone.
- o) I can analyze imagery as a literary device.
- p) I can analyze how particular lines of dialogue or events propel the action forward, reveal aspects of character, or provoke a decision.
- q) I can identify rhythm and rhyme scheme in poetry.
- r) I can distinguish among defining characteristics of poems including odes, ballads, epics, lyrics, sonnets, haikus, and limericks.

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 a text.

- b) I can analyze how modern works draw upon themes, patterns, structures, forms, and ideas of the past, describing how the work is rendered new.
- 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 evaluate the advantages and disadvantages of using different mediums to present a particular topic or idea.
- e) I can analyze a case presented with multiple pieces of conflicting textual evidence noting where the texts disagree on fact and interpretation.

Speaking and Listening

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

- a) I can adapt speech to a variety of contexts, formal and informal, recognizing the audience, occasion, and purpose.
- b) I can organize information in order to present a logical oral presentation.
- c) I can present claims and findings in a coherent manner emphasizing main points, relevant evidence, sound reasoning, and/or well-chosen details.
- d) I can engage effectively in grade level discussions, texts, and issues with diverse partners following rules and guidelines for effective discussion (posing a question/idea, connecting ideas, responding to others, providing relevant evidence, acknowledging new ideas, qualifying or justifying viewpoints, refuting bias, and reframing my mindset when new knowledge is presented).
- 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 come prepared to discussions by reading or researching material relevant to class topics.
- g) I can demonstrate active listening skills to evaluate a presentation for appropriate audience, purpose, and effectiveness.
- h) I can identify a speaker's argument/claim.
- i) I can evaluate the soundness of the reasoning and the relevance or irrelevance of the evidence provided by a speaker.

- j) I can use appropriate eye contact, speak in an adequate volume, and pronounce my words clearly.
- k) I can include multimedia components and visual displays to clarify information, strengthen claims, and add interest.

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 clarify the meaning of multi-meaning words based on context.
- c) I can verify the predicted meaning of words and phrases.
- d) 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.
- e) Use common (not all are Greek!) prefixes, roots, and suffixes as clues to determine the meaning of a word or phrase.
- f) 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*, *unwasteful*, *thrifty*) and nuances in word meanings.
- b) I can explain figurative language such as figures of speech in context (e.g., allusions, pun, irony/sarcasm, idioms).
- 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 distinguish among connotations of words with similar denotations.

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

**** Indicates Pre-AP Learning Targets**

Algebra I 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. Reason Quantitatively and Use Units to Solve Problems.

a.I can use units as a way to understand problems and guide the solution of multi-step problems (dimensional analysis).

b.I can choose and interpret units consistently in formulas.

c.I can choose and interpret the scale and origin in graphs and data displays.

d.I can define appropriate quantities for the purpose of descriptive modeling.

e.I can choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

2. Create and solve equations.

a.I can simplify and evaluate expressions using the Order of Operations.

b.I can translate verbal expressions into algebraic expressions.

c.I can translate verbal sentences into equations or inequalities (don't solve).

d.I can solve two-step equations using inverse operations.

e.I can solve multi-step equations which involve combining like terms.

f.I can solve multi-step equations using the Distributive Property.

g.I can solve multi-step equations with variables on both sides.

h.I can solve proportions using the Cross-product Property.

i.I can write one variable equations to model and solve real-world situations.

*Distance-Rate-Time problems

*Age problems

*Mixture problems

*Cost/Wage/Money/Interest problems

*Consecutive Integer problems

*Geometry/area problems

j.I can solve a literal equation (formula) for a specified variable using inverse operations.

k.I can solve and graph absolute value equations, finding both solutions using inverse operations.

l.I can graph and analyze important characteristics of absolute value functions.

m.I can describe transformations of the parent absolute value function, $f(x)=x$.

*n) I can solve problems that involve defining other "operations." (ex: $a \# b = ab - b^2$)

*o) I can solve a variety of math tournament problems.

3. Apply concepts related to functions.

a.I can identify the domain and range of a relation.

b.I can describe the domain and range of the graph of a function using interval notation.

c.I can determine if a relation is a function from a table of values, a set of ordered pairs, a mapping or a graph.

d.I can evaluate a function using function notation (e.g., $f(x)$).

e.I can write a linear function (equation) from a table.

f.I can sketch a graph to represent a verbal description.

g.I can model real-world situations by writing a linear function (equation).

h.I can identify the appropriate domain and range for given real-world situations.

i.I can identify discrete and continuous functions using graphs, tables, or verbal descriptions from real-world situations.

j.I can identify dependent and independent variables in real-world situations.

4. Create, graph and interpret linear equations.

a.I can describe the graph of a line as the set of all its solutions plotted in the coordinate plane.

b.I can graph a line given a table of values.

c.I can identify linear functions by examining the equation or graph.

d.I can identify key features of graphs and tables (e.g., x-and y-intercepts, end behavior, increasing/decreasing, and slope).

e.I can find the x- and y-intercept of a given equation.

f.I can graph a linear equation using the x- and y-intercept.

g.I can graph a linear equation from slope-intercept form or standard form.

h.I can graph vertical and horizontal lines.

i.I can graph and interpret a piecewise function (not including step functions).

j.I can write a linear equation given a graph.

k.I can write and graph linear equations (including direct variation) from verbal descriptions for real-world situations.

l.I can calculate and interpret the average rate (slope) of change from real-world situations..

m.I can write the equation of a line in point-slope form.

n.I can translate a linear equation written in point-slope to slope intercept form and then to standard form.

o.I can write the equation of a line in slope-intercept form given two points.

p.I can write the equation of a line in standard form given two points.

q.I can write linear equations of parallel and perpendicular lines.

r.I can write the equation of a horizontal or vertical line given a table of values or a graph.

s.I can translate between the different representations of relations. (e.g., graphs, equations, tables, verbal descriptions, and ordered pairs)

*t) I can translate the graphs of lines and relate the shift change to point-slope form [$y = m(x-h) + k$].

t.I can graph and analyze important characteristics of absolute value functions in two variables.

u.I can solve a system of equations by graphing with and without technology.

v.I can solve a system of equations by substitution.

w.I can solve a system of equations by elimination (without multiplication).

x.I can solve a system of equations by elimination (with multiplication).

y.I can model and solve real-world situations using systems of equations.

*Wind and Current problems

5. Create, graph and interpret inequalities in one and two variables.

a. I can graph linear inequalities in one variable on a number line.

b. I can solve one-step linear inequalities in one variable using inverse operations.

c. I can solve multi-step linear inequalities in one variable using inverse operations.

d. I can write inequalities and use them to solve real-world situations.

e. I can solve and graph inequalities in one variable involving absolute values.

f. I can solve and graph compound inequalities in one variable on a number line.

g. I can graph a linear inequality in two variables from slope-intercept or standard form.

h. I can create linear inequalities to solve real-world situations.

i. I can describe and write appropriate constraints and interpret their meaning in the context of real-world situations involving linear inequalities.

j. I can graph systems of linear inequalities.

k. I can model and solve real-world situations using systems of linear inequalities.

l.I can recognize a system of linear inequalities as having no solution, one solution, or infinitely many solutions (both graphically and algebraically).

m. I can graph and interpret step functions.

6. Construct and compare linear and exponential models and solve problems.

a.I can evaluate exponential expressions using the Product of Powers Property.

b.I can evaluate exponential expressions using the Power of a Power Property.

c.I can evaluate exponential expressions using the the Power of a Product Property.

d.I can evaluate exponential expressions using the Quotient of Powers Property.

e.I can evaluate exponential expressions using the Power of a Quotient Property.

f.I can evaluate expressions with zero and negative exponents.

g.I can identify and interpret parts of an exponential function (starting amount, growth or decay factor).

h.I can write and solve real-world situations using exponential functions.

i.I can interpret the key features of graphs and tables representing exponentials functions (end behavior, increasing/decreasing, domain/range).

j.I can graph exponential functions.

k.I can compare linear and exponential functions using graphs, tables, equations and real-world situations.

l.I can recognize that arithmetic sequences are linear functions and geometric sequences are exponential functions.

m.I can identify and write equations for arithmetic and geometric sequences.

n.I can describe transformations of the parent exponential function, $f(x)=ab^x$.

7.Apply arithmetic operations to polynomials.

a.I can interpret parts of an expression, such as terms, factors, and coefficients.

b.I can add and subtract polynomials.

c.I can multiply polynomials.

d.I can multiply binomials with special products (difference of two squares, perfect square trinomials)

e.I can divide polynomials by monomials.

*f) I can divide polynomials by binomials using long division.

8. Factoring and solving polynomials.

a.I can factor polynomials by identifying the greatest common factor.

b.I can factor polynomials using the grouping method.

c.I can identify and factor the difference of two squares.

d.I can identify and factor perfect square trinomials.

e.I can factor polynomials of the form x^2+bx+c .

f.I can factor polynomials of the form ax^2+bx+c .

g.I can completely factor polynomials using any method(s) for factoring.

h.I can solve real-world quadratic functions by factoring.

i.I can solve quadratic functions by factoring and applying the Zero Product Property to reveal the zeros of the function.

j.I can solve quadratic functions using the square root method (no "b" term).

k.I can solve quadratic functions by completing the square.

l.I can derive the Quadratic Formula from $ax^2 + bx + c = 0$ by completing the square and solving for x .

m.I can determine the number of roots using the discriminant.

n.I can solve quadratic functions using the quadratic formula.

o. I can solve and interpret quadratic functions resulting from real-world situations (approximating irrational solutions).

*p) I can solve "special factoring" problems.

*q) I can simplify algebraic fractions by factoring

9.Explore and analyze quadratic functions and graphs.

a.I can graph quadratic functions by creating a table of input and output values.

b.I can identify important characteristics of quadratic functions by analyzing their equations (standard and vertex forms).

c.I can graph quadratic functions using important characteristics; including roots, y -intercepts, axis of symmetry, and vertex point (from standard and vertex forms).

d.I can identify important characteristics of quadratic functions given their graphs.

e.I can write a quadratic function in standard form when given its graph or its roots.

f.I can write the equation of a quadratic function in vertex form given the vertex and a single point.

g.I can transform the equation of a quadratic function from standard to vertex form by completing the square.

h.I can solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically.

i.I can compare linear, exponential, and quadratic functions using graphs, tables, equations and real-world situations.

j.I can describe transformations on the parent quadratic function, $f(x)=x^2$.

10. Apply arithmetic operations to rational expressions.

a) I can evaluate and simplify rational expressions.

b) I can multiply and divide rational expressions.

c) I can add and subtract rational expressions.

*d) I can solve equations with rational coefficients.

*e) I can solve fractional equations.

11. Apply arithmetic operations to radicals.

a.I can approximate irrational square roots with and without technology.

b.I can evaluate and simplify radical expressions.

c.I can multiply radical expressions.

d.I can simplify an algebraic quotient by rationalizing an irrational monomial denominator.

e.I can graph and interpret a square root function.

f.I can graph and interpret a cubed root function.

g.I can apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems. [8th grade]

h.I can apply the Pythagorean Theorem to find the distance between two points on a coordinate system (Distance Formula). [8th grade]

*i) I can derive the Distance formula from the Pythagorean Theorem.

12. Compare various methods of data recording to make inferences, predictions, and to estimate probabilities.

a.I can represent data with dot plots, histograms, and box-and-whisker plots.

b.I can use statistics to compare center (median and mean) and spread (standard deviation) of two or more data sets.

c.I can interpret differences in shape, center, and spread to determine possible effects of extreme data points (outliers).

d.I can interpret and summarize data in two-way frequency tables in order to recognize possible trends in the data.

e.I can construct and interpret scatter plots using the line of best fit to investigate patterns of association between the two quantities [8th grade].

f.I can use the equation of a linear model to solve problems, interpreting the slope and intercept in context of data [8th grade].

g.I can construct and interpret a two-way table summarizing the data on two variables [8th grade].

h.I can represent data of two variables on a scatter plot and describe how the variables are related (emphasize linear, exponential, and quadratic models).

i.I can interpret the slope (rate of change) and intercept (constant term/starting point) of a linear model in the context of the data.

j.I can distinguish between independent and dependent events.

k.I can calculate the probability of two events occurring together by multiplying their probabilities.

Algebra I Learning Targets

1. Reason Quantitatively and Use Units to Solve Problems.

a.I can use units as a way to understand problems and guide the solution of multi-step problems (dimensional analysis).

b.I can choose and interpret units consistently in formulas.

c.I can choose and interpret the scale and origin in graphs and data displays.

d.I can define appropriate quantities for the purpose of descriptive modeling.

e.I can choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

2. Create and solve equations.

a.I can simplify and evaluate expressions using the Order of Operations.

b.I can translate verbal expressions into algebraic expressions.

c.I can translate verbal sentences into equations or inequalities (don't solve).

d.I can solve two-step equations using inverse operations.

e.I can solve multi-step equations which involve combining like terms.

f.I can solve multi-step equations using the Distributive Property.

g.I can solve multi-step equations with variables on both sides.

h.I can solve proportions using the Cross-product Property.

i.I can write one variable equations to model and solve real-world situations.

j.I can solve a literal equation (formula) for a specified variable using inverse operations.

k.I can solve and graph absolute value equations, finding both solutions using inverse operations.

- l.I can graph and analyze important characteristics of absolute value functions.
- m.I can describe transformations of the parent absolute value function, $f(x)=x$.

3. Apply concepts related to functions.

- a.I can identify the domain and range of a relation.
- b.I can determine if a relation is a function from a table of values, a set of ordered pairs, a mapping or a graph.
- c.I can evaluate a function using function notation (e.g., $f(x)$).
- d.I can write a linear function (equation) from a table.
- e.I can sketch a graph to represent a verbal description.
- f.I can model real-world situations by writing a linear function (equation).
- g.I can identify the appropriate domain and range for given real-world situations.
- h.I can identify discrete and continuous functions using graphs, tables, or verbal descriptions from real-world situations.
- i.I can identify dependent and independent variables in real-world situations.

4. Create, graph and interpret linear equations.

- a.I can describe the graph of a line as the set of all its solutions plotted in the coordinate plane.
- b.I can graph a line given a table of values.
- c.I can identify linear functions by examining the equation or graph.
- d.I can identify key features of graphs and tables (e.g., x-and y-intercepts, end behavior, increasing/decreasing (positive/negative), and slope).
- e.I can calculate the x- and y-intercept of a given equation.
- f.I can graph a linear equation using the x- and y-intercept.
- g.I can graph a linear equation from slope-intercept form or standard form.
- h.I can graph vertical and horizontal lines.

- i.I can graph and interpret a piecewise function (not including step functions).
- j.I can write a linear equation given a graph.
- k.I can write and graph linear equations (including direct variation) from verbal descriptions for real-world situations.
- l.I can calculate and interpret the average rate of change (slope) from real-world situations.
- m.I can write the equation of a line in point-slope form.
- n.I can translate a linear equation written in point-slope form to slope-intercept form and then to standard form.
- o.I can write the equation of a line in slope-intercept form given two points.
- p.I can write the equation of a line in standard form given two points.
- q.I can write linear equations of parallel and perpendicular lines.
- r.I can write the equation of a horizontal or vertical lines given a table of values or a graph.
- s.I can translate between the different representations of relations. (e.g., graphs, equations, tables, verbal descriptions, and ordered pairs)
- t.I can graph and analyze important characteristics of absolute value functions in two variables.
- u.I can solve a system of equations by graphing with and without technology.
- v.I can solve a system of equations by substitution.
- w.I can solve a system of equations by elimination (without multiplication).
- x.I can solve a system of equations by elimination (with multiplication).
- y.I can model and solve real-world situations using systems of equations.

5. Create, graph and interpret inequalities in one and two variables.

- a.I can graph linear inequalities in one variable on a number line.
- b.I can solve one-step linear inequalities in one variable using inverse operations.
- c.I can solve multi-step linear inequalities in one variable using inverse operations.

- d.I can write inequalities and use them to solve real-world situations.
- e.I can solve and graph inequalities in one variable involving absolute values.
- f.I can solve and graph compound inequalities in one variable on a number line.
- g.I can graph a linear inequality in two variables from slope-intercept or standard form.
- h.I can create linear inequalities to solve real-world situations.
- i.I can describe and write appropriate constraints and interpret their meaning in the context of real-world situations involving linear inequalities.
- j.I can graph systems of linear inequalities.
- k.I can model and solve real-world situations using systems of linear inequalities.
- l.I can recognize a system of linear inequalities as having no solution, one solution, or infinitely many solutions (both graphically and algebraically).
- m.I can graph and interpret step functions.

6. Construct and compare linear and exponential models and solve problems.

- a.I can evaluate exponential expressions using the Product of Powers Property.
- b.I can evaluate exponential expressions using the Power of a Power Property.
- c.I can evaluate exponential expressions using the the Power of a Product Property.
- d.I can evaluate exponential expressions using the Quotient of Powers Property.
- e.I can evaluate exponential expressions using the Power of a Quotient Property.
- f.I can evaluate expressions with zero and negative exponents.
- g.I can identify and interpret parts of an exponential function (starting amount, growth or decay factor).
- h.I can write and solve real-world situations using exponential functions.
- i.I can interpret the key features of graphs and tables representing exponentials functions (end behavior, increasing/decreasing, domain/range).
- j.I can graph exponential functions.
- k.I can compare linear and exponential functions using graphs, tables, equations and real-world situations.

l.I can recognize that arithmetic sequences are linear functions and geometric sequences are exponential functions.

m.I can identify and write equations for arithmetic and geometric sequences.

n.I can describe transformations of the parent exponential function, $f(x)=ab^x$.

7.Apply arithmetic operations to polynomials.

a.I can interpret parts of an expression, such as terms, factors, and coefficients.

b.I can add and subtract polynomials.

c.I can multiply polynomials.

d.I can multiply binomials with special products (difference of two squares, perfect square trinomials)

e.I can divide polynomials by monomials.

8. Factoring and solving polynomials.

a.I can factor polynomials by identifying the greatest common factor.

b.I can factor polynomials using the grouping method.

c.I can identify and factor the difference of two squares.

d.I can identify and factor perfect square trinomials.

e.I can factor polynomials of the form x^2+bx+c .

f.I can factor polynomials of the form ax^2+bx+c .

g.I can completely factor polynomials using any method(s) for factoring.

h.I can solve real-world quadratic situations by factoring.

i.I can solve quadratic functions by factoring and applying the Zero Product Property to reveal the zeros of the function.

j.I can solve quadratic functions using the square root method (no "b" term).

k.I can solve quadratic functions by completing the square.

l.I can recognize that the Quadratic Formula can be derived from $ax^2 + bx + c = 0$ by completing the square and solving for x .

m.I can determine the number of roots using the discriminant.

n.I can solve quadratic functions using the quadratic formula.

o.I can solve and interpret quadratic functions resulting from real-world situations (approximating irrational solutions).

9.Explore and analyze quadratic functions and graphs.

a.I can graph quadratic functions by creating a table of input and output values.

b.I can identify important characteristics of quadratic functions by analyzing their equations (standard and vertex forms).

c.I can graph quadratic functions using important characteristics; including roots, y -intercepts, axis of symmetry, and vertex point (from standard and vertex forms).

d.I can identify important characteristics of quadratic functions given their graphs.

e.I can write a quadratic function in standard form when given its graph or its roots.

f.I can write the equation of a quadratic function in vertex form given the vertex and a single point.

g.I can transform the equation of a quadratic function from standard to vertex form by completing the square.

h.I can solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically.

i.I can compare linear, exponential, and quadratic functions using graphs, tables, equations and real-world situations.

j.I can describe transformations on the parent quadratic function, $f(x) = x^2$.

10.Apply arithmetic operations to rational expressions.

a.I can evaluate and simplify rational expressions.

b.I can multiply and divide rational expressions.

c.I can add and subtract rational expressions.

11. Apply arithmetic operations to radicals.

a.I can approximate irrational square roots with and without technology.

b.I can evaluate and simplify radical expressions.

c.I can multiply radical expressions.

d.I can simplify an algebraic quotient by rationalizing an irrational monomial denominator.

e.I can graph and interpret a square root function.

f.I can graph and interpret a cubed root function.

g.I can apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems. [8th grade]

h.I can apply the Pythagorean Theorem to find the distance between two points on a coordinate system (Distance Formula). [8th grade]

12. Compare various methods of data recording to make inferences, predictions, and to estimate probabilities.

a.I can represent data with dot plots, histograms, and box-and-whisker plots.

b.I can summarize numerical data sets in relation to their context by giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation).

c.I can use statistics to compare center (median and mean) and spread (standard deviation) of two or more data sets.

d.I can interpret differences in shape, center, and spread to determine possible effects of extreme data points (outliers).

e.I can interpret and summarize data in two-way frequency tables in order to recognize possible trends in the data.

f.I can construct and interpret scatter plots using the line of best fit to investigate patterns of association between the two quantities [8th grade].

g.I can use the equation of a linear model to solve problems, interpreting the slope and intercept in context of data [8th grade].

h.I can construct, interpret, and summarize data in two-way frequency tables in order to recognize trends in the data. [8th grade].

i.I can represent data of two variables on a scatter plot and describe how the variables are related (emphasize linear, exponential, and quadratic models).

j.I can interpret the slope (rate of change) and intercept (constant term/starting point) of a linear model in the context of the data.

k.I can distinguish between independent and dependent events.

l.I can calculate the probability of two independent or dependent events.

8th Grade Science Learning Targets

Matter and Its Interactions

1. Analyze patterns within the periodic table to construct models that illustrate the structure, composition, and characteristics of atoms, molecules, and ionic compounds.

a) I can identify the charge, relative mass, and significance of protons, neutrons, and electrons in an atom.

b) I can analyze the location of an element on the periodic table to determine the number of protons, neutrons, and electrons, and valence electrons in an atom.

c) I can classify elements as metals, nonmetals, or metalloids.

d) I can predict which elements on the periodic table will form either ionic or covalent bonds.

e) I can create a Lewis structure to demonstrate the role of valence electrons in the formation of covalent and ionic bonds.

f) I can differentiate among atoms, molecules and ionic compounds.

g) I can evaluate the chemical and physical properties of families of the periodic table.

2. Plan and carry out investigations to generate evidence supporting the claim that one pure substance can be distinguished from another based on characteristic properties.

- a) I can investigate characteristic properties, and use evidence and reasoning to identify a substance.
- b) I can interpret a phase change graph and evaluate the melting point and boiling point of various unknown substances to make predictions about its identity.
- c) I can recognize a pure substance as a substance that cannot be separated physically.
- d) I can distinguish between an element and a compound.
- e) I can perform an investigation to separate a compound chemically.
- f) I can evaluate characteristic properties of various pure substances, including density, melting point, boiling point, and solubility.
- g) I can construct graphs to illustrate characteristic properties (ex. mass v. volume).
- h) investigate the solubility of various solutes - solubility as a characteristic property that varies with temperature.
- i) I can analyze and interpret data on characteristic properties of substances (e.g., odor, density, solubility, flammability, melting point, boiling point) before and after the substances combine to determine if a chemical reaction has occurred.

3. Construct explanations based on evidence from investigations to differentiate between pure substances and mixtures.

- a) I can classify mixtures as homogeneous or heterogeneous.
- b) I can compare and contrast the three types of mixtures: solutions, colloids and suspensions.
- c) I can identify the parts of a solution: solute and solvent.
- d) I can utilize a variety of physical means to separate a mixture into its component parts
- e) I can investigate various physical properties (such as particle size, texture, distribution) to categorize unknown substances according to mixture type.
- f) I can collect and analyze information to illustrate how synthetic materials (e.g., medicine, food additives, alternative fuels, and plastics) are derived from natural resources and how they impact society.

4. Design and conduct an experiment to determine changes in particle motion, temperature, and state of a pure substance when thermal energy is added to or removed from a system.

- a) I can interpret a phase change graph (temperature v. time) and explain how the transfer of energy to a substance affects its kinetic and potential energy.
- b) I can distinguish between heat and temperature.
- c) I can apply concepts of the transfer of thermal energy that takes place when two substances with different temperatures come in contact with one another.
- d) I can compare the Celsius (SI), Kelvin (SI), and Fahrenheit temperature scales and determine the temperature for melting and boiling points of water, room temperature, body temperature, and absolute zero for each scale.
- e) I can model the three states of matter (particles and their arrangement and motion), compare their densities and amount of energy, and classify their shape and volume.
- f) I can investigate, describe and give examples of boiling, melting, freezing, condensation, evaporation, sublimation and deposition, and classify each as endothermic or exothermic.

5. Create a model, diagram, or digital simulation to describe conservation of mass in a chemical reaction and explain the resulting differences between products and reactants.

- a) I can distinguish between an atom and a molecule.
- b) I can predict how an atom of that element will interact with an atom of another element (e.g., what types of bond(s) will it form?).
- c) I can construct a model to illustrate how an atom of the element bonds with other atoms of other elements (using Lewis dot structures).
- d) I can determine the number of atoms in a molecule or an ionic compound.
- e) I can determine the number of molecules in a chemical formula.
- f) I can determine and compare the total number of atoms in the reactants of a chemical reaction to the total number of atoms in the products.
- g) I can compare and contrast the properties of the reactants and products.

- h) I can compare what happens to substances (and their atoms) in a chemical reaction to what happens to substances (and their atoms) in a physical change.
- i) I can explain why a chemical equation must be balanced, and why this must be done using coefficients, not subscripts.
- j) I can balance a chemical equation using coefficients.
- k) I can investigate chemical reactions and draw conclusions about the properties of the reactants and the products. (ex: electrolysis of water, ionic vs. covalent bond lab)
- l) I can construct an explanation based on evidence to describe the properties of ionic and covalent compounds.
- m) I can use evidence from the Conservation of Mass lab (Alka-Seltzer) to support the claim that chemical equations must be balanced.
- n) I can design, construct, and test a device that either releases or absorbs thermal energy by chemical reactions .

Motion and Stability: Forces and Interactions

6. Use Newton's first law to demonstrate and explain that an object is either at rest or moves at a constant velocity unless acted upon by a net force (e.g., model car on a table remaining at rest until pushed).

- a) I can design and carry out investigations to determine the effects of various conditions on forces by manipulating one variable at a time. (e.g., weight and friction, stretching distance and elastic force, mass and weight...)
- b) I can describe harmful and helpful examples of friction.
- c) I can analyze a physical scenario and determine the forces acting upon the object and make predictions about the object's motion.
- d) I can determine the net force acting on an object and evaluate whether they are balanced or unbalanced.
- e) I can define inertia and state Newton's first law.
- f) I can distinguish between the concepts of mass and weight.
- g) I can relate an object's mass to its inertia.
- h) I can explain how an object can be in motion with NO forces acting on it.

- i) I can apply Newton's first law to the importance of wearing a seat belt.

7. Use Newton's second law to demonstrate and explain how changes in an object's motion depend on the sum of the external forces on the object and the mass of the object.

- a) I can distinguish between speed, velocity, and acceleration (including definitions, formulas, and units).
- b) I can solve for speed, velocity, and acceleration when given appropriate information.
- c) I can use dimensional analysis to solve for time or distance in a speed problem.
- d) I can calculate the acceleration of an object.
- e) I can calculate the magnitude of an individual force and resulting net forces.
- f) I can interpret a distance or position v. time graph.
- g) I can create a distance or position v. time graph and use it to analyze the motion of an object.
- h) I can interpret a speed or velocity v. time graph.
- i) I can create a speed or velocity v. time graph and use it to analyze the motion of an object.
- j) I can utilize Newton's second law equation to algebraically solve for an unknown quantity - acceleration, net force, or mass.
- k) I can identify the forces acting upon an object and relate the net force of an object to the acceleration of the object.
- l) I can plan and carry out investigations to evaluate how various factors affect the strength of electric and magnetic forces.
- m) I can construct an argument from evidence explaining that fields exist between objects exerting forces on each other even when the objects are not in contact.
- n) I can draw and interpret a model of the forces acting on an object in various situations (e.g. free fall, terminal velocity...).

8. Use Newton's third law to design a model to demonstrate and explain the resulting motion of two colliding objects.

- a) I can identify action-reaction force pairs for any physical situation.
- b) I can compare the magnitudes of action-reaction force pairs and describe the effect (and the non-effect) of action-reaction force pairs on the two interacting objects.

Energy

9. Use models to construct an explanation of how a system of objects may contain varying types and amounts of potential energy.

- a) I can differentiate types of potential energy such as gravitational and elastic potential energy.
- b) I can determine the relative amounts of potential energy stored in the system based on the arrangement of objects.

10. Apply the law of conservation of energy to develop arguments supporting the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.

- a) I can create and analyze graphical displays of data to illustrate the relationships of kinetic energy to the mass and speed of an object.
- b) I can analyze data from investigations to determine factors that affect the amount of kinetic energy.
- c) I can construct and interpret a graph to demonstrate the relationship between kinetic energy and mass.
- d) I can construct and interpret a graph to demonstrate the relationship between kinetic energy and speed.

Waves and Their Applications in Technologies for Information Transfer

11. Create and manipulate a simple model for waves.

- a) I can describe waves both qualitatively and quantitatively.
- b) I can predict and describe how the amplitude, frequency and wavelength of a wave is related to the energy in a wave.
- c) I can analyze and interpret data to illustrate an electromagnetic spectrum.

- d) I can develop and use a model to describe how waves are reflected, absorbed, or transmitted through various materials.
- e) I can integrate qualitative information to explain that common communication devices use electromagnetic waves to encode and transmit information.

Social Studies Learning Targets

World History

Critical Thinking through Social Science

Evidence and Documentation of History

1. Explain how historians use artifacts and record keeping to show the development of advanced cultures.

- a) I can distinguish differences and similarities between archaeologist, anthropologist, paleontologist, and historians.
- b) I can categorize the characteristics and advancements over time.

Elements of Civilizations

2. Analyze characteristics of early civilizations.

- a) I can analyze technology and inventions.
- b) I can compare division of labor/social classes between ancient river civilizations.
- c) I can distinguish between the ancient river civilizations development of government.
- d) I can compare the different language/writing systems of the ancient civilizations.
- e) I can recognize the geographic challenges pertaining to the ancient river civilization.

3. Compare the development of early world religions, and philosophies.

- a) I can identify the key beliefs of Buddhism.
- b) I can identify the key beliefs of Hinduism.
- c) I can compare/contrast similarities and differences between Buddhism and Hinduism.
- d) I can recognize the key beliefs of Judaism.
- e) I can identify the key beliefs of Islam.
- f) I can correlate the beliefs that Judaism, Christianity, and Islam share.
- g) I can connect how the world religions, migration, and trade are interconnected.

4. Compare early civilizations in the Americas

- a) Compare and contrast the Zapotec, Mesoamericans, and Andes civilizations.
- b) Describe geographical and political challenges of early American civilizations.

Power and Influence of Ancient Civilizations

5. Explain how the four river civilizations gained power and formed empires.

- a) I can trace the unification of upper and lower Egypt.
- b) I can give examples of early governments in Mesopotamia.
- c) I can identify strong central government in Harappa.
- d) I can demonstrate the Dynastic Cycle in Ancient China and tell how it related to a change in government leadership.

6. Describe the rise and influence of the Byzantine and Asian Empire

- a) I can identify the ruling elite of the Byzantine Empire.
- b) I can describe changes in the Byzantine Empire.
- c) I can connect the Byzantine and early Russian Empires.
- d) I can identify the unification of China.
- e) I can debate the role that Shia Huangdi had on the Chinese people.
- f) I can describe the spread of Chinese culture to neighboring people groups.

7. Analyze the characteristics of Ancient Greece.

- a) I can determine the impact that the physical challenges had on the environment and the people of Ancient Greece.
- b) I can infer the significance of a place in connection with a historical event that occurred there.
- c) I can connect Greek city-states through their shared belief in Mythology.
- d) I can demonstrate how ancient Greek mythology has impacted cultures throughout history in various forms.
- e) I can research the different epics and myths of Greek mythology.
- f) I can identify the two earliest Greek civilizations.
- g) I can explain the importance of the major Greek philosophers and their affects on the Western world: Socrates, Plato, Aristotle, and Hippocrates.
- h) I can describe the role that culture played on Greek society.
- i) I can compare and contrast the daily life of Spartans and Athenians.
- j) I can compare and contrast the characteristics of a monarchy, democracy, aristocracy, and oligarchy.
- k) I can show how in times of crisis or war Greek city-states combined and connected.
- l) I can identify the spread of Greek culture through the conquest of Alexander the Great.

8. Distinguish the characteristics of the Roman Empire and their impact on the western world.

- a) I can describe the impact that physical challenges had on the environment and the people of the Roman Empire.
- b) I can connect the significance of a place with an event pertaining to the expansion of the Roman Empire.
- c) I can compare and contrast the major religions of the Roman Empire.
- d) I can differentiate between the different aspects of the Roman Republic.
- e) I can identify the major Roman Emperors and government leaders and their contributions to the Empire.
- f) I can state different laws that helped shape the Roman Empire.
- g) I can trace the expansion of the Roman Empire through military conquest.
- h) I can show the role of the Arts in the Roman Empire.
- i) I can describe daily life in the Roman Empire.
- j) I can recognize the importance of philosophy and education in the Roman Empire.
- k) I can explain how Roman contributions in technology helped shape the Western world.

9. List reasons for the downfall of the Roman Empire

- a) I can describe the military conquests that led to the downfall of the Roman Empire.
- b) I can describe the internal conflicts that led to the fall of the Roman Empire.

10. Recognize the changes in the social and political structure in Europe through the Middle Ages.

- a) I can identify the role of the Dark Ages and the loss of knowledge during that time.
- b) I can create a graphic organizer displaying the hierarchy of the Feudalism system in the Middle Ages.

- c) I can examine the role the manor system played in the Middle Ages.
- d) I can identify the unique culture and architecture that developed during the Middle Ages.
- e) I can analyze the role of Christendom and its influence on political and social structures during the Middle Ages.
- f) I can recognize changes and developments in technology and commercial society.
- g) I can break down the impact that the great plague had on people of the Middle Ages.
- h) I can outline the political and religious conquest known as the Crusades.
- i) I can identify major invasions during the Middle Ages and problems that arose from invasions.
- j) I can connect the Great Schism to the cause of the 100 Years War.

11. Examine how events and conditions of the late Middle Ages fostered political and economic changes and led to the origins of the Renaissance.

- a) I can identify the role and changes within the Catholic Church.
- b) I can review the changes in society through the late Middle Ages.
- c) I can describe the reasons for a break down in the Manor system and the beginning of the European Nations.

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.