

7-12 Science Constructing Meaning Functions Scope and Sequence

This chart reflects the dominant and supportive language functions for production

	Elaboration/ Description*	Compare and Contrast*	Sequencing*	Proposition and Support* (Problem/Solution)	Cause and Effect*
7 Life Science	Introduced Q1 & 3, Q2 & 4	Introduced Q 1 & 3, Q2 & 4	Introduced Q1 & 3, Q2 & 4	Introduced Q2 & 4	Introduced Q2 & 4
8 Physical Science	Continued Practice Q1, Q2, Q3, Q4	Continued Practice Q1, Q2, Q4	Continued Practice Q1	Continued Practice Q1	Continued Practice Q1, Q2, Q3, Q4
Biology	Mastery Q1, Q2, Q3, Q4	Continued Practice Q1, Q2	Continued Practice Q1, Q2, Q3	Continued Practice Q1, Q3	Continued Practice Q1, Q3, Q4
Physical Science (Earth)	Mastery Q1, Q2, Q3, Q4	Mastery Q1, Q2, Q3, Q4	Mastery Q2, Q3, Q4	Continued Practice Q2, Q3	Mastery Q1, Q2, Q3, Q4
Chemistry	Mastery Q1, Q2, Q3, Q4	Mastery Q1, Q2, Q3, Q4	Mastery Q1, Q2, Q3, Q4	Continued Practice Q2, Q3	Mastery Q1, Q3, Q4
Physics	Mastery Q1, Q2, Q3, Q4	Mastery Q1, Q2, Q3	Mastery Q1, Q2, Q3, Q4	Mastery Q1, Q2, Q3	Mastery Q1, Q2, Q3, Q4


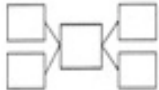

* The language function of summarizing is to be used throughout the curriculum in conjunction with the other language functions.

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Department of 7-12 Instructional Services

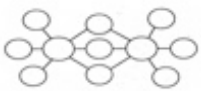
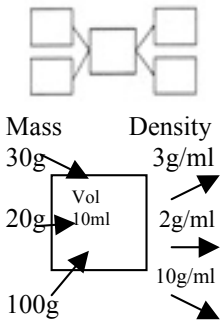
CM Functions - Year At-A-Glance

8th Grade Physical Science		
Quarter	Topic	Dominant and Supportive Functions
1	Scientific Method Density and Buoyancy	Elaboration/Description Cause and Effect Compare and Contrast Sequencing Proposition and Support
2	States of Matter Chemistry	Elaboration/Description Compare and Contrast Cause and Effect
3	Motion and Forces	Elaboration and Description Cause and Effect
4	Space	Elaboration/Description Cause and Effect Compare and Contrast

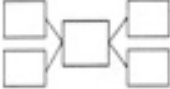


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Quarter 1 Standards	Functions for Production (Bold denotes dominant function)		Sample Products <small>(Items with a double asterisk are accessible on SharePoint with "EL Support." 7-12 Instruction SharePoint Site http://k12sp.ggusd.us</small>	Sentence Frames	Structured Oral Language Practice Routine(s) (CM Binder Tab 3)	Correlating Thinking Map(s)
9a. Plan and conduct a scientific investigation to test a hypothesis.	Does the textbook provide language of dominant function for production? YES or NO Suggested text: Pages 14-20, 550-553	Sequencing Cause and Effect Proposition and Support	<ul style="list-style-type: none"> • Lab Report of teacher's choosing. Example: Chapter Resource File Quick Lab page 93 • Flow Map • RAFT – Prompt: Students are scientists and are explaining their experiment to their lab assistant. • Applying Scientific Method with Flow Map and Summary template** • Steps to Scientific Method Summary Template** 	Sequencing <ul style="list-style-type: none"> • First scientists _____. Then, _____. After that _____. • Prior to _____, scientists must _____. • Subsequently they _____. Following that they _____. • In sum, the evidence suggests that _____. 	<ul style="list-style-type: none"> • Numbered Heads Together Use this strategy to discuss the steps of the scientific method. • Jigsaw reading: Each person becomes an expert in one step of the scientific method and then shares within a group. (not in CM Binder) 	<p>Flow Map</p>  <p>Multi-Flow Map</p> 
9b. Evaluate the accuracy and reproducibility of data.	Does the textbook provide language of dominant function for production? YES or NO Suggested text: Pages 19 and 57	Elaboration/ Description Proposition and Support	<ul style="list-style-type: none"> • Measuring Liquid Volume, textbook page 28-29 • Accuracy and Reproducibility of Data, textbook page 64 • Foss Density Boats ** 	Elaboration/ Description <ul style="list-style-type: none"> • _____ can be described as _____. • Components of a _____ include _____. • We can conclude _____ due to _____. • The evidence strongly suggests _____. 	<ul style="list-style-type: none"> • Think (Write)-Pair-Share Use sample lab data or their own data and pair-share to determine the accuracy and reproducibility of the data. 	<p>Circle Map</p> 


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9c. Distinguish between variable and controlled parameters of a test.	Does the textbook provide language of dominant function for production? YES or NO Suggested text: Pages 17 and 51	Compare and Contrast	<ul style="list-style-type: none"> Lab Report for Quick Lab on textbook page 18 Double Bubble Map for variables and controls Activities on textbook pages 150 and 270 Variables and Controls Double Bubble and Sentence Frames** 	Compare and Contrast <ul style="list-style-type: none"> _____ and _____ are different because _____. The differences between _____ and _____ are _____. The primary distinction between _____ and _____ can be described as _____. 	<ul style="list-style-type: none"> Think (Write)-Pair-Share Use this routine to have students share their Double Bubble Maps they create. Numbered Heads Together Use whiteboards with Numbered Heads Together to show ability to distinguish between variables and controls. 
8a. Students know $D = m/v$. 8b. Students know how to calculate the density of substances (regular and irregular solids and liquids) from measurements of mass and volume.	Does the textbook provide language of dominant function for production? YES or NO Suggested text: Pages 44, 85-86, 416	Elaboration/ Description	<ul style="list-style-type: none"> Determine the density of common classroom objects, both regular and irregular, and the density of common household liquids. Activity on textbook page 98 Density Summary Template** 	Elaboration/ Description <ul style="list-style-type: none"> In order to calculate _____, you must _____. _____ is the relationship between _____ and _____. 	<ul style="list-style-type: none"> Think (Write)-Pair-Share Use this routine to have students share their Bridge Maps they create. 



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8d. Students know how to predict whether an object will float or sink.	Does the textbook provide language of dominant function for production? YES or NO Suggested text: Page 415	Cause and Effect	<ul style="list-style-type: none"> Accurately predict whether common classroom objects will float or sink in various liquids. Activity on textbook page 416 Density Lab Template** Density Summary Template** 	Cause and Effect <ul style="list-style-type: none"> If the object is _____, then it will _____. If the object is _____, it follows that the object will _____. 	<ul style="list-style-type: none"> Think (Write)-Pair-Share While having students pair share have them also write on whiteboards to check for understanding of the objective. (Can be used with all standards) 	Multi-Flow Map 
3d. Students know the states of matter depend on molecular motion. 3e. Students know that in solids the atoms are closely locked in position and can only vibrate; in liquids the atoms and molecules are more loosely connected and can collide and move past one another; and in gases the atoms and molecules are free to move independently, colliding frequently.	Does the textbook provide language of dominant function for production? YES or NO Suggested text: Pages 110-112	Elaboration/ Description	<ul style="list-style-type: none"> Tree map classifying the properties and states of matter including examples of each state. Trifold: Students write a summary of each state of matter and its properties. States of Matter sentence frames for Tree Map** 	Elaboration/ Description <ul style="list-style-type: none"> One example of _____, is _____. _____ is an example, of a _____, because _____. _____ can be identified as a _____, due to _____. 	<ul style="list-style-type: none"> Whip Around (Structured) Have students say, using complete sentences, examples of solids, liquids, or gases. Have them also explain why their example falls into that category. Use sentence frames to scaffold. 	Tree Map  Circle Map 



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5d. Students know physical process include freezing and boiling, in which a material changes form with no chemical reaction.	Does the textbook provide language of dominant function for production? <div style="text-align: center;"> YES or NO </div> (but not overtly) Suggested text: Pages 114-119	Sequencing	<ul style="list-style-type: none"> Flow (Cycle) Map Lab textbook page 120 Raft – Have the students write a RAFT as if they were one state of matter and wanted to become another. Dry ice observations and Sentence Frames** 	Sequencing <ul style="list-style-type: none"> _____ can change to a _____ by _____. _____ can become a _____ if _____. _____ can transform into a _____, through the process of _____. 	<ul style="list-style-type: none"> Lines of Communication Teacher gives an example of matter and the first group explains what happens if you add energy and the second group explains what happens if you remove energy. 	Flow Map 

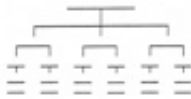


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<p>3a. Students know the structure of the atom and know it is composed of protons, neutrons, and electrons.</p>	<p>Does the textbook provide language of dominant function for production?</p> <p>YES or NO</p> <p>Suggested text: Pages 168-169, 172-175</p>	<p>Elaboration/Description</p>	<ul style="list-style-type: none"> • Brace Map • Create an atomic model and identify its parts. • Atoms Summary Template** 	<p>Elaboration/Description</p> <ul style="list-style-type: none"> • _____ can be described as _____. • Components of _____ include _____. • The structure of _____ is composed of _____. 	<ul style="list-style-type: none"> • Jigsaw parts of an atom using the Interactive Reader and other reference material. (Each student becomes an expert on one sub-atomic particle and shares with the group.) (Not in the CM Binder) 	<p>Brace Map</p> 
<p>7b. Students know each element has a specific number of protons in the nucleus (the atomic number) and each isotope of the element has a different but specific number of neutrons in the nucleus.</p>	<p>Does the textbook provide language of dominant function for production?</p> <p>YES or NO</p> <p>Suggested text: Pages 175-177</p>	<p>Elaboration/Description</p>	<ul style="list-style-type: none"> • Atomic Poster • Classroom Periodic Table • Bohr Model Diagram • Bohr Model Bingo • Lab Page 180 (with Marshmallows) • Bohr Model Sentence Frames** • Covalent and Ionic Bond Double Bubble and Sentence Frames** 	<p>Elaboration/Description</p> <ul style="list-style-type: none"> • _____ can be described as _____. • _____ and _____ share the same _____, but have different _____. 	<ul style="list-style-type: none"> • Think (Write)-Pair-Share (Whiteboards) 	<p>Brace Map</p> 





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<p>7a. Students know how to identify regions corresponding to metals, non-metals, and inert gases.</p> <p>3f. Students know how to use the periodic table to identify elements in simple compounds.</p>	<p>Does the textbook provide language of dominant function for production?</p> <p>YES or NO</p> <p>Suggested text: Pages 194-199</p>	<p>Compare and Contrast</p> <p>Elaboration/Description</p>	<ul style="list-style-type: none"> • Correctly Color Periodic Table by region Reinforcement Activity (Teacher Resources Book Chapter 9) • Tri-Fold/Three Panel Flip Book Page 520 • Elements summary template** • Ionic and Covalent Compounds Summary Template** 	<p>Compare and Contrast</p> <ul style="list-style-type: none"> • _____ are different from _____ because _____. • The majority of _____ are _____, while _____ are _____. 	<ul style="list-style-type: none"> • Think (Write)-Pair-Share (Whiteboards) 	<p>Bubble Map</p>  <p>Double Bubble Map</p> 


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7c. Students know substances can be classified by their properties, including their melting temperature, density, hardness, and thermal and electrical conductivity.	Does the textbook provide language of dominant function for production? YES or NO Suggested text: Pages 200-208	Elaboration/Description	<ul style="list-style-type: none"> Flow Map/Flee Map on a poster board/ butcher paper that identifies the groups and their properties. Properties include: valence electrons, reactivity, and other shared physical properties. Summary must include the trends on the periodic table they discovered. Can use pages 202-208 Lab Page 210 Elements in groups Sentence Frames** 	Elaboration/Description <ul style="list-style-type: none"> _____ and _____ share the same _____. One key characteristic of _____ is _____. A secondary characteristic is _____. 	<ul style="list-style-type: none"> Give One Get One To share poster 	Tree Map 
3b. Students know compounds are formed by combining two or more different elements, and that compounds have properties that are different from their constituent elements.	Does the textbook provide language of dominant function for production? YES or NO	Compare and Contrast	<ul style="list-style-type: none"> Hydrolysis activity. The students can compare the constituent elements to the resulting compound. Create foldable/tree map for ionic, covalent, and metallic bonding. Will you Bond with Me? 	Compare and Contrast <ul style="list-style-type: none"> _____ and _____ are different because _____ is _____ and _____ is _____. The most notable difference is that _____ has _____ as opposed to _____ which has _____. The primary distinction between _____ and _____ can be described as _____. 	<ul style="list-style-type: none"> Think (Write)-Pair-Share (Whiteboards) Will you Bond with Me? Students are assigned an element and they have to find partners in the class that have elements that they could bond with then explain the bond they create. (Not in CM Binder) 	Tree Map  Double Bubble Map 



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<p>3c. Students know atoms and molecules form solids by building up repeating patterns, such as the crystal structure of NaCl or long chain polymers.</p>	<p>Does the textbook provide language of dominant function for production?</p> <p>YES or NO</p> <p>Suggested text: Pages 234, 314</p>	<p>Elaboration/Description</p>	<ul style="list-style-type: none"> • Create a model of a crystal lattice and a polymer 	<p>Elaboration/Description</p> <ul style="list-style-type: none"> • _____ can be described as _____. • Characteristics of _____ include _____. • _____ can be identified as _____ by _____. 	<ul style="list-style-type: none"> • Numbered Heads Together (Whiteboards) 	<p>Circle Map</p>  <p>Tree Map</p>  <p>Brace Map</p> 
<p>6a. Students know that carbon, because of its ability to combine in many ways with itself and other elements, has a central role in the chemistry of living organisms.</p>	<p>Does the textbook provide language of dominant function for production?</p> <p>YES or NO</p> <p>Suggested text: Pages 310-313</p>	<p>Cause and Effect</p>	<ul style="list-style-type: none"> • Create a model of common carbon compounds using marshmallows, or strips of paper, or index cards. Universal Access Page 310 • Carbon Model and Sentence Frames** 	<p>Cause and Effect</p> <ul style="list-style-type: none"> • Carbon is essential to _____, because _____. • Due to the fact that _____ it has a central role _____. 	<ul style="list-style-type: none"> • Give One Get One 	<p>Tree Map of the 3 Kinds of Carbon Backbones examples on page 310. Use sentence frame to create a summary.</p> 

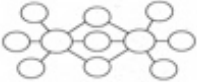

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6b. Students know living organisms are made of molecules consisting largely of carbons, hydrogen, nitrogen, oxygen, phosphorous, and sulfur.	Does the textbook provide language of dominant function for production? YES or NO Suggested text: Pages 312-313	Elaboration/Description	<ul style="list-style-type: none"> • Make a pneumonic device to learn the 6 essential elements. • Create a pie chart consisting of the 6 essential elements. • Mnemonic Device** 	Elaboration/Description <ul style="list-style-type: none"> • One example of _____ is _____. • _____ consists largely of _____. 	<ul style="list-style-type: none"> • Give One Get One To share their pneumonic devices. 	
6c. Students know that living organisms have many different kinds of molecules, including small ones, such as water and salt, and very large ones, such as carbohydrates, fats, proteins, and DNA.	Does the textbook provide language of dominant function for production? YES or NO Suggested text: Pages 314-319	Elaboration/Description	<ul style="list-style-type: none"> • Tree Map - include function, examples, and structure. • Complex and Simple Organic Molecules Sentence Frames** 	Elaboration/Description <ul style="list-style-type: none"> • One example of _____ is _____. • Living organisms contain _____, an example of which is _____. • There are several types of _____, including _____. 	<ul style="list-style-type: none"> • Numbered Heads Together (Whiteboards) Prompt: Teacher provides students with a function, example, or structure of a biochemical and the students must identify it. 	Tree Map of the Four Macromolecules/ Polymers/ Biochemicals. 

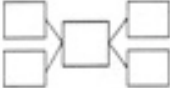
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5a. Students know reactant atoms and molecules interact to form products with different chemical properties.	Does the textbook provide language of dominant function for production? YES or NO	Cause and Effect Elaboration/Description	<ul style="list-style-type: none"> Students write a paragraph summarizing how new products are formed because of the combination of 2 or more molecules. (Use a summary template) Product Property changes Summary Template** 	Cause and Effect <ul style="list-style-type: none"> When _____ the result is _____. If _____ was added to _____, the result _____. _____ has been caused by _____, thus _____. 	<ul style="list-style-type: none"> Lines of Communication 	Multi-Flow Map 
5b. Students know the idea of atoms explains the conservation of matter: In chemical reactions the number of atoms stays the same no matter how they are arranged, so their total mass stays the same.	Does the textbook provide language of dominant function for production? YES or NO	Elaboration/Description	<ul style="list-style-type: none"> Students write and balance basic chemical equations. Students write a paragraph interpreting what the equation shows, how and why it is balanced. Law of Conservation Matter Summary Template** 	Elaboration/Description <ul style="list-style-type: none"> _____ can be described as _____. _____ is illustrated by _____. Indicators of _____ are _____. 	<ul style="list-style-type: none"> Give One Get One 	Circle Map 


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5c. Students know chemical reactions usually liberate heat or absorb heat.	Does the textbook provide language of dominant function for production? YES or NO	Compare and Contrast	<ul style="list-style-type: none"> Students write a summary paragraph comparing and contrasting endothermic and exothermic reactions. (Use a summary template.) Exothermic vs. Endothermic reactions Summary Template** 	Compare and Contrast <ul style="list-style-type: none"> _____ and _____ are different because _____ is _____ and _____ is _____. The most notable difference is that _____ has _____ as opposed to _____ which has _____. The primary distinction between _____ and _____ can be described as _____. 	<ul style="list-style-type: none"> Give One Get One 	Double Bubble 
5e. Students know how to determine whether a solution is acidic, basic, or neutral.	Does the textbook provide language of dominant function for production? YES or NO	Elaboration/Description	<ul style="list-style-type: none"> Students write a paragraph describing how to determine whether a solution is acidic, basic, or neutral. Acids and Bases Summary Template** 	Elaboration/Description <ul style="list-style-type: none"> _____ can be described as _____. _____ is illustrated by _____. Indicators of _____ are _____. 	<ul style="list-style-type: none"> Lines of Communication 	Tree Map 

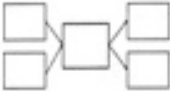

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1a. Students know that position is defined in relation to some choice of a standard reference point and a set of reference directions.	Does the textbook provide language of dominant function for production? YES or NO	Elaboration/Description	<ul style="list-style-type: none"> • Create a Treasure Map to a classroom object using a compass and a measuring tape. • FOSS Online Force and Motion Lab Pages • Reference Point ppt Sentence Frames** 	Elaboration/Description <ul style="list-style-type: none"> • _____ is defined by _____ and _____. • _____ is _____ in relation to _____. 	<ul style="list-style-type: none"> • Whip Around Students give their current position in relation to another student. 	
1b. Students know that average speed is the total distance traveled divided by the total time elapsed and that the speed of an object along the path traveled can vary. 1c. Students know how to solve problems involving distance, time, and average speed 9f. Apply simple mathematic relationships to determine a missing quantity in a mathematic expression, given the two remaining terms (including speed = d/t , density = m/v , force = $p \times a$, and volume = $a \times h$.)	Does the textbook provide language of dominant function for production? YES or NO	Cause and Effect	<ul style="list-style-type: none"> • FOSS Online Force and Motion Lab Pages • Quick Lab Page 339 • Math Focus Page 338 • Math Focus Page 407 • Math Focus 415 • Science Skills Activity Page 422 • Speed Lab and Summary Template** 	Cause and Effect <ul style="list-style-type: none"> • If _____, then _____. (Example: If distance is 100m and the time is 20s then the speed is 5 m/s.) • Since _____ is equal to _____ then _____ is equal to _____. (Example: Since density is equal to mass/volume then volume is equal to mass/density.) 	<ul style="list-style-type: none"> • Think (Write)-Pair-Share Can use whiteboards to check for understanding. 	Multi-Flow Map for math equation 

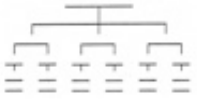
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<p>1d. Students know the velocity of an object must be described by specifying both the direction and the speed of the object. 1e. Students know changes in velocity maybe due to the changes in speed, direction, or both.</p>	<p>Does the textbook provide language of dominant function for production?</p> <p>YES or NO</p> <p>Somewhat</p>	<p>Cause and Effect</p>	<ul style="list-style-type: none"> • Students create foldable for situations involving changes in velocity. See Table 1 on page 340 • Tree Map • Acceleration –CM Analysis and Lesson ** 	<p>Cause and Effect</p> <ul style="list-style-type: none"> • If _____ takes place then _____. • _____ result(s) in _____. • Due to the fact that _____ occurred, _____ resulted. 	<ul style="list-style-type: none"> • Give One Get One For the situations involving changes in velocity. 	<p>Tree Map with examples, pictures, situations of the 3 ways to change velocity.</p> 
<p>1f. Students know how to interpret graphs of position versus time and graphs of speed versus time for motion in a single direction. 9d. Recognize the slope of the linear graphs as the constant in the relationship $y=kx$ and apply this principle in interpreting graphs constructed from data. 9e. Construct appropriate graphs from data and develop quantitative statements about the relationship between variables. 9g. Distinguish between linear and nonlinear relationships on a graph of data.</p>	<p>Does the textbook provide language of dominant function for production?</p> <p>YES or NO</p>	<p>Elaboration/Description</p>	<ul style="list-style-type: none"> • Students time their classmates walking, running, skipping a set distance. They then would turn their data into a position versus time graph and find the slope for each different type of motion. Then they would create a summary detailing the creation and relationship of the slopes of the lines on the graph. 	<p>Elaboration/Description</p> <ul style="list-style-type: none"> • _____ can be described as _____. • _____ is illustrated by _____. • Indicators of _____ are _____. 	<ul style="list-style-type: none"> • Think (Write)-Pair-Share They would present their graphs that they created and share the slopes they found from their graphs. This could lead to a whole class presentation. 	

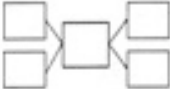
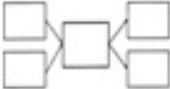
8th Grade Physical Science: English Learner Support Supplement to Pacing

Quarter 3 Standards	Functions for Production (Bold denotes dominant function)		Sample Products <small>(Items with a double asterisk are accessible on SharePoint with "EL Support." 7-12 Instruction SharePoint Site http://k12sp.ggusd.us</small>	Sentence Frames	Structured Oral Language Practice Routine(s) (CM Binder Tab 3)	Correlating Thinking Map(s)
2a. Students know a force has both a direction and magnitude. 2b. Students know when an object is subject to two or more forces at once, the result is cumulative effect of all the forces.	Does the textbook provide language of dominant function for production? <input checked="" type="radio"/> YES or NO Somewhat	Cause and Effect	<ul style="list-style-type: none"> • Draw pictures of multiple forces acting on an object and calculate the net force. Students must show magnitude by drawing the appropriate length of arrow/vector. • Net Force Sentence Frames** 	Cause and Effect <ul style="list-style-type: none"> • When _____ the result is _____. • If _____ was added to _____, the result _____. • _____ has been caused by _____, thus _____. 	<ul style="list-style-type: none"> • Lines of Communication Students create a net force scenario on whiteboards. 	Multi-Flow Map For math equation 
2c. Students know when the forces on an object are balanced, the motion of the object doesn't change.	Does the textbook provide language of dominant function for production? <input checked="" type="radio"/> YES or NO	Cause and Effect	<ul style="list-style-type: none"> • Analyze and create pictures with objects that have balanced forces. • Create a house of cards where forces are balanced. • Balanced and unbalanced Forces Summary Template** 	Cause and Effect <ul style="list-style-type: none"> • If _____, then _____. • As a result of _____, _____. • Due to the fact that _____, it will most certainly _____. 	<ul style="list-style-type: none"> • Whip Around Students state an example of everyday balanced forces. 	Circle Map For balanced forces 

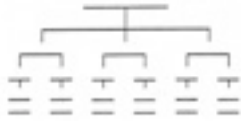
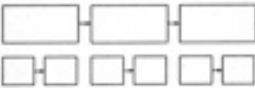

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Quarter 3 Standards	Functions for Production (Bold denotes dominant function)		Sample Products <small>(Items with a double asterisk are accessible on SharePoint with "EL Support." 7-12 Instruction SharePoint Site http://k12sp.ggusd.us)</small>	Sentence Frames	Structured Oral Language Practice Routine(s) (CM Binder Tab 3)	Correlating Thinking Map(s)
<p>2d. Students know how to identify separately the two or more forces that are acting on a single static object, including gravity, elastic forces due to tension or compression in matter, and friction.</p> <p>8c. Students know the buoyant force on an object in a fluid is an upward force to the weight of the fluid the object has displaced.</p>	<p>Does the textbook provide language of dominant function for production?</p> <p>YES or NO</p>	<p>Elaboration/Description</p>	<ul style="list-style-type: none"> Friction activity where students roll cars down ramps covered with various textures. (sandpaper, wax paper, and aluminum foil.) Quick lab Page 374. Friction Lab with Template** Universal Access Activities Sentence Frames** 	<p>Elaboration/Description</p> <ul style="list-style-type: none"> One example of _____ is _____. _____ can be identified by _____. _____ is characterized by _____. 	<ul style="list-style-type: none"> Numbered Heads Together Teacher shows an example of a force and the students must identify it. 	<p>Tree Map Categorizing the forces</p> 

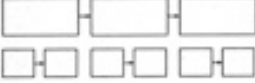

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Quarter 3 Standards	Functions for Production (Bold denotes dominant function)		Sample Products <small>(Items with a double asterisk are accessible on SharePoint with "EL Support." 7-12 Instruction SharePoint Site http://k12sp.ggusd.us)</small>	Sentence Frames	Structured Oral Language Practice Routine(s) (CM Binder Tab 3)	Correlating Thinking Map(s)
2e. Students know that when the forces on an object are unbalanced, the object will change its velocity (it will speed up, slow down, or change direction).	Does the textbook provide language of dominant function for production? YES or NO	Cause and Effect	<ul style="list-style-type: none"> Analyze and create pictures with objects that have unbalanced forces or using these activities: Balloon cars, Balloon rockets on string, Air trolleys, bottle rockets. Can include a summary. Newton Rocket Car Lab report with Template** 	<u>Cause and Effect</u> <ul style="list-style-type: none"> Due to the fact that _____, it will most certainly _____. _____ has been caused by _____, thus _____. 	<ul style="list-style-type: none"> Think (Write)-Pair-Share Using sentence frames in groups of four. 	Multi-Flow Map 
2f. Students know the greater the mass of an object, the more force is needed to achieve the same rate of change in motion.	Does the textbook provide language of dominant function for production? YES or NO	Cause and Effect	<ul style="list-style-type: none"> Using the vehicles from the previous experiment or skateboards, add weights with washers (or books for skateboards) and measure the effect on distance traveled. Then use a larger balloon or more spins on the trolley or more pumps for the bottle rockets. Newton's Laws Dialectical Journal** 	<u>Cause and Effect</u> <ul style="list-style-type: none"> If _____, then _____. If _____, it follows that _____. If _____ was increased, it would follow that _____. 	<ul style="list-style-type: none"> Lines of Communication First line shares the difference in distance when the weight was added. The second line shares how much force they had to add. 	Multi-Flow Map 


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Quarter 4 Standards	Functions for Production (Bold denotes dominant function)		Sample Products <small>(Items with a double asterisk are accessible on SharePoint with "EL Support." 7-12 Instruction SharePoint Site http://k12sp.ggusd.us</small>	Sentence Frames	Structured Oral Language Practice Routine(s) (CM Binder Tab 3)	Correlating Thinking Map(s)
4a. Students know how galaxies are clusters of billions of stars and may have different shapes.	Does the textbook provide language of dominant function for production? YES or NO	Elaboration/Description	<ul style="list-style-type: none"> Students are given pictures of various galaxies to classify on a tree map by shape. Galaxies Summary Template** 	Elaboration/Description <ul style="list-style-type: none"> _____ is _____ because _____. _____ is an example of _____ due to the fact _____. 	<ul style="list-style-type: none"> Talking Stick Students place their picture on a class tree map and have to justify their placement using the sentence frames. 	Tree Map 
4b. Students know that the Sun is one of many stars in the Milky Way galaxy and that stars may differ in size, temperature, and color.	Does the textbook provide language of dominant function for production? YES or NO	Elaboration/Description	<ul style="list-style-type: none"> Students create H-R diagrams on chart paper and place various star images appropriately. Stars Summary Template** 	Elaboration/Description <ul style="list-style-type: none"> _____ is an example of _____ because _____. _____ is classified as a _____, due to the fact _____. 	<ul style="list-style-type: none"> Think(Write)-Pair Share Have students in partners, place images of stars in a sequence to illustrate a stars' life cycle and justify their placements using sentence frames. 	Flow Map (Cycle Map) For a life cycle of a star 
4c. Students know how to use astronomical units and light years as measures of distances between the Sun, stars, and Earth.	Does the textbook provide language of dominant function for production? YES or NO	Elaboration/Description Compare and Contrast	<ul style="list-style-type: none"> Using a paper model or hanging mobile have students create the orbits of the objects in our solar system using the scale of 1cm=1AU. Students should be able to reason that in order to measure the distance of any object outside our solar system they should use light years. Distance in Space ppt with Sentence Frames** 	Elaboration/Description <ul style="list-style-type: none"> _____ can be measured using _____, because _____. In order to measure _____, we should use _____, due to the fact _____. 	<ul style="list-style-type: none"> Lines of Communication Teacher calls out objects in space and the partners have to decide which measurement to use and why. 	Double Bubble Between Astronomical Units and Light Years 

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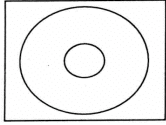
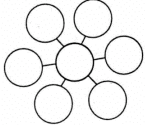
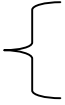
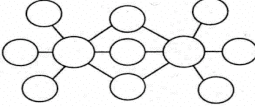
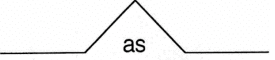
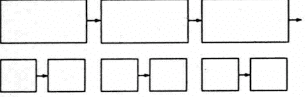
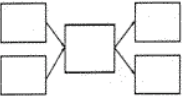
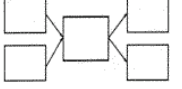
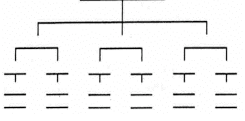
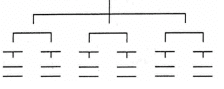

Quarter 4 Standards	Functions for Production (Bold denotes dominant function)		Sample Products <small>(Items with a double asterisk are accessible on SharePoint with "EL Support." 7-12 Instruction SharePoint Site http://k12sp.ggusd.us)</small>	Sentence Frames	Structured Oral Language Practice Routine(s) (CM Binder Tab 3)	Correlating Thinking Map(s)
4d. Students know that stars are the source of light for all bright objects in outer space and that the Moon and planets shine by reflected sunlight not by their own light.	Does the textbook provide language of dominant function for production? <input checked="" type="radio"/> YES or NO	Elaboration/Description	<ul style="list-style-type: none"> • Phases of the moon with flashlight and foam balls. • Activity TE wraparound page 494 • Quick Lab page 495 • Eclipse ppt with Sentence Frames** 	Elaboration/Description <ul style="list-style-type: none"> • _____ is illustrated by _____. • _____ is different from _____ because _____. • By demonstrating _____ it became clear that _____. 	<ul style="list-style-type: none"> • Using the Activity on 494, the person playing the Earth uses the sentence frames to describe how the light causes the phases of the moon. 	Flow Map (Cycle Map) Phases of the moon with summary describing reflected light vs. light created by the sun. 
4e. Students know the appearance, general composition, relative position and size, and motion of objects in the solar system, including planets, planetary satellites, comets, and asteroids.	Does the textbook provide language of dominant function for production? <input checked="" type="radio"/> YES or NO	Elaboration/Description Compare and Contrast	<ul style="list-style-type: none"> • Brochure • Solar System Model • Power point • Poster (Each of the above would include a writing piece) • Impact Craters ppt with Sentence Frames** 	Elaboration/Description <ul style="list-style-type: none"> • _____ is composed of _____, therefore it is a _____. • _____ are characterized by several distinct features, such as _____. Compare and Contrast <ul style="list-style-type: none"> • The primary distinction between _____ and _____ can be described as _____. 	<ul style="list-style-type: none"> • Talking Stick Present product to group by using Talking Sticks. 	Tree Map for any of the following: <ul style="list-style-type: none"> • Inner and outer planets • Asteroids, comets, meteoroids • Star(s), planets, and moons • Size • Position • Composition 

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2g. Students know the role of gravity in forming and maintaining the shapes of planets, stars, and the solar system.	Does the textbook provide language of dominant function for production? YES or NO	Cause and Effect	<ul style="list-style-type: none"> Students create a flow map or flip book sequencing nebula to planet as on page 474 figure 3 or page 456 figure 2. Activity in TE wraparound page 474 Gravity Summary template** 	<u>Cause and Effect</u> <ul style="list-style-type: none"> Because of _____, the _____ is _____. Due to _____, the result was _____. Experts agree that _____ is a result of _____. 	<ul style="list-style-type: none"> Group Activity (Skit) in TE wraparound page 474 	Multi-Flow Map 

Garden Grove Unified School District
Office of Secondary Education
Department of 7-12 Instructional Services
Constructing Meaning Functions and Thinking Maps

The chart below shows the alignment between the dominant language functions (Systematic ELD and Constructing Meaning) and the eight Thinking maps. Aligning the two will support English Learners in their receptive and expressive language acquisition.

Language Function	Language Function	Thinking Map
Elaboration/ Description	Defining content and text Describes attributes, qualities, characteristics and properties Explain relationships of objects in space Comparing whole to parts Analysis of text	Circle Map  Bubble Map  Brace Map 
Compare/ Contrast	Compare and Contrast Understand and express how two or more things are similar and how they are different Understand and express the relationship between two ideas, concepts, or things	Double-Bubble Map  Bridge Map 
Sequencing	Sequencing and ordering Relate steps in a process Express time relationships and actions within a larger event	Flow- Map 
Cause-Effect	Cause and Effect Explain the cause of an outcome Explain why something occurred	Multi-Flow Map 
Proposition and Support	Defend an opinion Explain reasoning, or justify a position Classifying and sorting	Multi-Flow Map  Tree Map 
Summarizing	Express main ideas and significant details	Tree Map  Brace Map  Circle Map 