Garden Grove Unified School District
Office of Secondary Education
Department of 7-12 Instructional Services

Physics

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.**

6/23/2010

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CM Functions - Year At-A-Glance

Physics

Quarter	Dominant and Supportive Functions
1	Cause and Effect Elaboration/Description Sequencing Compare and Contrast Proposition and Support
2	Cause and Effect Elaboration/Description Sequencing Compare and Contrast Proposition and Support
3	Cause and Effect Elaboration/Description Sequencing Compare and Contrast Proposition and Support
4	Cause and Effect Elaboration/Description Sequencing

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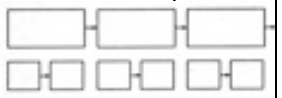
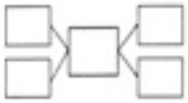
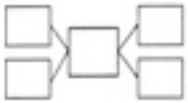
Physics: English Learner Support Supplement to Pacing

Quarter 1 Standards	**Functions for Production** (Bold denotes dominant function)		**Sample Products**	**Sentence Frames**	**Structured Oral Language Practice Routine(s)** (CM Binder Tab 3)	**Correlating Thinking Map(s)**
a. Students know how to solve problems that involve constant speed and average speed.	Does the textbook provide language of dominant function for production? YES or (NO)	**Elaboration/ Description** Compare and Contrast	• **Summary Template** (Problem Solving Method) • **Single Bubble and/or Double Bubble Map**	• **Elaboration/ Description** • _____ is illustrated by ____. • Compare and Contrast • The differences/ similarities between ____ and ____ are _____.	• Th**ink-Pair-Share** What is the difference between instantaneous versus average velocity? • **Cooperative Learning Groups** (white boards for problem solving development) (not in CM Binder)	Circle Map  Double Bubble Map 
b. Students know that when forces are balanced, no acceleration occurs; thus an object continues to move at a constant speed or stays at rest (Newton's first law).	Does the textbook provide language of dominant function for production? YES or (NO)	**Sequencing** Elaboration/ Description Cause and Effect	• **Quick write/draw** (Freebody diagrams) • **Lab Report Write-up** • **Flow Map** (Sequencing-Problem Solving)	• **Sequencing** Refer to "Lab Report Drafting Template" • If an object _____, it will _____ unless _____. • Initially _____, then ____. • Prior to _____, _____.	• **Heterogeneous Cooperative Learning Groups** (Lab Groups) (Not in CM Binder) • **Think-Pair-Share** (Summarize Newton's first law) • **Talking Stick** Students use frames to discuss demonstration of Newton's First Law in Learning Groups.	Flow Map  Multi-Flow Map 
c. Students know how to apply the law F=ma to solve one-dimensional motion problems that involve constant forces (Newton's second law).	Does the textbook provide language of dominant function for production? (YES) or NO	**Cause and Effect** Elaboration/ Description Sequencing	• **Sequence Flow Map** (Problem Solving) • **Lab Report Write-up** • **Equation Bookmark** (Bookmark containing relevant equations)	**Cause and Effect** Refer to "Lab Report Drafting Template" • _____ results in_____. • _____ is proportional to _____.	• **Heterogeneous Cooperative Learning Groups** (Lab Groups) (Not in CM Binder) • **Think-Pair-Share** (Summarize Newton's second law)	Multi-Flow Map 

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Quarter 1 Standards	**Functions for Production** (Bold denotes dominant function)		**Sample Products**	**Sentence Frames**	**Structured Oral Language Practice Routine(s)** (CM Binder Tab 3)	**Correlating Thinking Map(s)**
d. Students know that when one object exerts a force on a second object, the second object always exerts a force of equal magnitude and in the opposite direction (Newton's third law).	Does the textbook provide language of dominant function for production? YES or NO	**Elaboration/ Description** Cause and Effect	• **Summary** • **Haiku or Couplet** (Develop a Haiku/ Couplet to elaborate on Newton's third law)	**Elaboration/ Description** • _____ is illustrated by _____. • One example of Newton's Third Law is _____.	• **Think-Pair-Share** (Summarize Newton's third law) • **Talking Stick** Students discuss demonstration of Newton's Third Law in Learning Groups using sentence frames.	Circle Map 
h*. Students know Newton's laws are not exact but provide very good approximations unless an object is moving close to the speed of light or is small enough that quantum effects are important.	Does the textbook provide language of dominant function for production? YES or NO	**Elaboration/ Description**	• **RAFT** (History of Physics) – Strategy that integrates reading and writing in a non-traditional way. RAFT stands for: (1) **R**ole; (2) **A**udience; (3) **F**ormat; and (4) **T**opic Sources: www.readingquest.org www.greece.k12.ny.us	**Elaboration/ Description** • _____ is illustrated by _____. • One example of _____ is _____.	• **Talking Stick** Students can present RAFT to their group.	Circle Map 
i*. Students know how to solve two-dimensional trajectory problems.	Does the textbook provide language of dominant function for production? YES or NO	**Sequencing** Elaboration/ Description Compare and Contrast	• **Flow Map** (Problem Solving) • **Bridge Map** (Vertical/Horizontal Independence) • **Quick write/draw** (Freebody diagrams) • **Lab Report Write-up** • **Equation Bookmark**	**Sequencing** Refer to "Lab Report Drafting Template" • First, _____. Then, _____ and _____. Eventually, _____. • Lastly, _____.	• **Give One Get One** Heterogeneous Cooperative Learning Groups (Lab Groups). Students can explain to each other how to solve two-dimensional trajectory problems.	Flow Map  Bridge Map 

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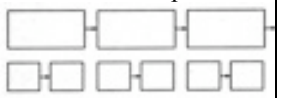
Quarter 1 Standards	**Functions for Production** (Bold denotes dominant function)		**Sample Products**	**Sentence Frames**	**Structured Oral Language Practice Routine(s)** (CM Binder Tab 3)	**Correlating Thinking Map(s)**
j*. Students know how to resolve two-dimensional vectors into their components and calculate the magnitude and direction of a vector from its components.	Does the textbook provide language of dominant function for production? YES or (NO)	**Sequencing** Elaboration/ Description	• **Flow Map**	• **<u>Sequencing</u>** • First _____, then _____. Next, _____.	• **Numbered Heads Together**	Flow Map 
k*. Students know how to solve two-dimensional problems involving balanced forces (statics).	Does the textbook provide language of dominant function for production? YES or (NO)	**Proposition and Support** Elaboration/ Description Cause and Effect Sequencing	• **Lab Report Write-up** (Refer to Lab Report Drafting Template) • **Key-Term Foldable** (Force Types)... reference text supplemental materials) To be used as a tool by students when explaining the key terms in context. • **Cornell Notes** on Demo Lab (Force Table or Balanced Forces on a Loop) (To be used as a tool to produce the final product. Cornell Notes themselves are not products)	**<u>Proposition and Support</u>** • Refer to "Lab Report Drafting Template" To solve the problem, we will_____. • The question under consideration is _____. • To answer the question _____, we hypothesize that _____. • My hypothesis is _____ because _____.	• **Heterogeneous Cooperative Learning Groups** (Lab Groups) • **Numbered Heads Together**	Multi-Flow Map 

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Quarter 2 Standards	**Functions for Production** (Bold denotes dominant function)		**Sample Products**	**Sentence Frames**	**Structured Oral Language Practice Routine(s)** (CM Binder Tab 3)	**Correlating Thinking Map(s)**
a. Students know how to calculate kinetic energy by using the formula $E = \frac{1}{2} mv^2$. b. Students know how to calculate changes in gravitational potential energy near Earth by using the formula (change in potential energy) = mgh (h is the change in the elevation).	Does the textbook provide language of dominant function for production? YES or (NO)	**Elaboration/ Description** Compare and Contrast	• **Two-Panel Flip Chart** (Compare/ Contrast Kinetic & Potential Energies)… reference textbook supplemental materials • **Lab Report Write-up**	**Elaboration/ Description** • One example of _____is _____. • _____ can be explained as _____. Compare and Contrast • The primary distinction between ____ and _____ can be described as _____.	• **Heterogeneous Cooperative Learning Groups** (Lab Groups) • **Talking Chips** (Compare & Contrast KE and PE)	Circle Map  Double Bubble Map 
c. Students know how to solve problems involving conservation of energy in simple systems, such as falling objects. h*. Students know how to solve problems involving conservation of energy in simple systems with various sources of potential energy, such as capacitors and springs.	Does the textbook provide language of dominant function for production? YES or (NO)	**Elaboration/ Description** (2c & d) Sequencing (2h) Cause and Effect (2c & h)	• **Sequence Fold** (Problem Solving) • **Multi-Flow Map** (Energy Conversion in simple systems) • **Lab Report Write-up** • **Summary** Use the summary template in the CM Binder. Or download it from the website and modify it to fit the needs of the students. (Conservation of Mechanical Energy Equation)	**Elaboration/ Description** • Energy is transferred from _____ to _____ when _____.	• **Heterogeneous Cooperative Learning Groups** (Lab Groups) • **Talking Chips** (Solving Conservation of Energy Problems)	Circle Map  Multi-Flow Map 

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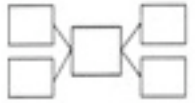
Quarter 2 Standards	**Functions for Production** (Bold denotes dominant function)		**Sample Products**	**Sentence Frames**	**Structured Oral Language Practice Routine(s)** (CM Binder Tab 3)	**Correlating Thinking Map(s)**
d. Students know how to calculate momentum as the product mv. e. Students know momentum is a separately conserved quantity different from energy. f. Students know an unbalanced force on an object produces a change in its momentum.	Does the textbook provide language of dominant function for production? YES or NO	Elaboration/ Description (2d, e & f) **Compare and Contrast** (2e) Cause and Effect (2f)	• **Circle Map** (Momentum) • **Multi-Flow Map** • **Double Bubble Map**	**<u>Compare and Contrast</u>** • _____ is different than ____ because _____.	• **Numbered Heads Together** (Conservation of Momentum Problem Solving)	Circle Map  Multi-Flow Map  Double Bubble Map 
g. Students know how to solve problems involving elastic and inelastic collisions in one dimension by using the principles of conservation of momentum and energy.	Does the textbook provide language of dominant function for production? YES or NO	**Elaboration/ Description** Compare and Contrast	• **Storyboard** (Demo the collision of two objects and have students develop a storyboard detailing what happens before, during and after the collision). • **Lab Report Write-up**	**<u>Elaboration/Description</u>** • There are several types of _____, including _____, _____ and _____.	• **Heterogeneous Cooperative Learning Groups** (Lab Groups) • **Think-Pair-Share** (storyboards)	Circle Map 

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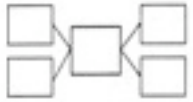
e. Students know the relationship between the universal law of gravitation and the effect of gravity on an object at the surface of Earth. f. Students know applying a force to an object perpendicular to the direction of its motion causes the object to change direction but not speed (e.g. Earth's gravitational force causes a satellite in a circular orbit to change direction but not speed). m. Students know how to solve problems involving the forces between two electric charges at a distance (Coulomb's Law) or the forces between two masses at a distance (universal gravitation).	Does the textbook provide language of dominant function for production? YES or NO	**Description/ Elaboration** (1e, f & m) Cause & Effect (1e & f) Proposition and Support	• **Circle Map** (Gravitation) • **Summary** Using Proposition and Support language: Universal gravitation problem (Aristotlian, Newtonian and Einstein explanations of gravity) • **Summary** Using a summary template: Describe how the law of universal gravitation is related to prior understanding of the acceleration of gravity ($a = 9.8\ m/s^2$)	**Description/ Elaboration** • _____ can be described as _____. Proposition and Support • Predict the path of _____ if it is _____ from Earth.	• **Numbered Heads Together** (Gravity) • **Think-Pair-Share** (Summary Template)	Circle Map  Multi-Flow Map 

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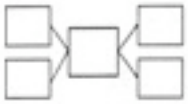
Quarter 2 Standards	**Functions for Production** (Bold denotes dominant function)		**Sample Products**	**Sentence Frames**	**Structured Oral Language Practice Routine(s)** (CM Binder Tab 3)	**Correlating Thinking Map(s)**
g. Students know circular motion requires the application of a constant force directed toward the center of the circle. l. Students know how to solve problems in circular motion by using the formula for centripetal acceleration in the following form: $a = v^2/r$	Does the textbook provide language of dominant function for production? YES or NO	Description/ Elaboration (1g & l) **Cause and Effect** (1l)	• **Centripetal Force Lab** (Predict & summarize what will occur)… Text pg. 237 • **Lab Report Write-up**	• **Cause and Effect** • If _____ travels in a circular motion & is released _____, then it will _____.	• **Heterogeneous Cooperative Learning Groups** (Lab Groups) • **Think-Pair-Share** (centripetal force lab in groups)	Multi-Flow Map 

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Quarter 3 Standards	**Functions for Production** (Bold denotes dominant function)		**Sample Products**	**Sentence Frames**	**Structured Oral Language Practice Routine(s)** (CM Binder Tab 3)	**Correlating Thinking Map(s)**
a. Students know waves carry energy form one place to another. b. Students know how to identify transverse and longitudinal waves in mechanical media, such as springs and ropes, and on the earth (seismic waves). c. Students know how to solve problems involving wavelength, frequency, and wave speed. d. Students know sound is a longitudinal wave whose speed depends on the properties of the medium in which it propagates. e. Students know radio waves, light, and X-rays are different wavelength bands in the spectrum of electromagnetic waves whose speed in a vacuum is approx. 3.0×10^8 m/s. f. Students know how to identify the characteristic properties of waves: interference (beats, diffraction, refraction, Doppler effect and polarization	Does the textbook provide language of dominant function for production? YES or NO	**Elaboration/ Description** (4a,d,e & f) Compare and Contrast (4b) Sequencing (4c)	• **Double Bubble Map** (Venn Diagram)(Longitudinal vs. transverse waves) • **Tree Map** (Waves types – string, spring, water, sound, seismic, etc.) • **Summary** Using a summary template: List the electromagnetic wave types in order of increasing wavelength.	**Elaboration/ Description** • The primary distinction between ____ and ____ can be described as __-___. • Characteristics of _____ include _____ and _____.	• **Heterogeneous Cooperative Learning Groups** (Students ID objects on the EM spectrum and describe why it is there and how it is used). • **Give One Get One** (Demo wave interference using a wave generator/bowl of water and have students discuss how they could use the water to demonstrate both constructive and destructive interference.)	Circle Map  Double Bubble Map 

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k. Students know the force on a charged particle in an electric field is qE, where E is the electric field at the position of the particle and q is the charge of the particle. l. Students know how to calculate the electric field resulting from a point charge. m. Students know static electric fields have as their source some arrangement of electric charges. o. Students know how to apply the concepts of electrical and gravitational potential energy to solve problems involving conservation of energy.	Does the textbook provide language of dominant function for production? YES or NO	Elaboration/ Description (5k) Cause and Effect (5l,m, and o) **Sequencing** (5l and m) Proposition and Support	• **Quick Draw** (Like and oppositely charged particles with varying charges…e.g. draw the electric field between two charges, -3q and +q). • **Summary** Students write a summary using language of Proposition and Support: Electrostatic charge problem (one-fluid versus two-fluid theory)	• **Sequencing** Rules for drawing electric field lines: When drawing electric field lines, first ___, then and ____, lastly ____.	• **Think-Pair-Share** (Justify your quick draw to another student)	Flow Map 

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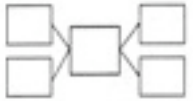
Quarter 3 Standards	**Functions for Production** (Bold denotes dominant function)		**Sample Products**	**Sentence Frames**	**Structured Oral Language Practice Routine(s)** (CM Binder Tab 3)	**Correlating Thinking Map(s)**
a. Students know how to predict the voltage or current in simple direct current (DC) electric circuits constructed from batteries, wires, resistors, and capacitors. b. Students know how to solve problems involving Ohm's Law. c. Students know any resistive element in a DC circuit dissipates energy, which heats the resistor. Students can calculate the power (rate of energy dissipation) in any resistive circuit element by using P = IR. d. Students know the properties of transistors & their role in circuits.	Does the textbook provide language of dominant function for production? YES or NO	**Elaboration/ Description** (5d) **Cause and Effect** (5a and c) Compare and Contrast (5c) Sequencing (5b)	• **Quick Draw** (Provide description of circuits and have students draw & solve them) • **Summary Report** (Students find ten appliances and calculate the resistance of each. Then, write a brief report explaining which are the most expensive and why) • **Lab Report Write-up**	**Elaboration/ Description** • Appliance _____ is more expensive because _____ and _____. Compare and Contrast • Appliance _____ is more efficient than _____appliance _____ because _____. **Cause and Effect** • Because of _____, the _____ is _____. • Due to the fact that _____, it will most certainly _____. • Without _____ it will _____. • I predict that _____ since I observed _____.	• **Heterogeneous Cooperative Learning Groups** (Lab Groups) • **Numbered Heads Together** Present summary reports in small groups	Circle Map  Multi-Flow Map  Double Bubble Map  Flow Map 

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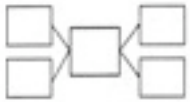
Quarter 3 Standards	**Functions for Production** (Bold denotes dominant function)		**Sample Products**	**Sentence Frames**	**Structured Oral Language Practice Routine(s)** (CM Binder Tab 3)	**Correlating Thinking Map(s)**
n. Students know the magnitude of the force on a moving particle (with charge q) in a magnetic field is qvbsin(a), where a is the angle between v and B (v and B are the magnitudes of vectors v and B, respectively), and students use the right-hand rule to find the direction of this force. e. Students know charged particles are sources of electric fields and are subject to the forces of the electric fields from other charges. f. Students know magnetic materials and electric currents (moving electric charges) are sources of magnetic fields and are subject to forces arising from the magnetic fields of other sources. g. Students know how to determine the direction of a magnetic field produced by a current flowing in a straight wire or in a coil. h. Students know changing magnetic fields produce electric fields, thereby inducing currents in nearby conductors. i. Students know plasmas, the fourth state of matter, contain ions or free electrons or both and conduct electricity. j. Students know electric and magnetic fields contain energy and act as vector force fields.	Does the textbook provide language of dominant function for production? YES or NO	Elaboration/ Description (5d, e,g and i) **Cause and Effect** (5e,f,h, and n) Compare and Contrast (5i)	• **Quick Draw** (magnetic fields in bar and/or horseshoe type magnets). • **Quick Draw** (draw magnetic fields for a current-carrying wire and solenoid). • **Electromagnets** (Build an electromagnet and analyze in a lab report format) (Use the template) • **Multi-Flow Map** (types of matter) • **Lab Report Write-up**	**Cause and Effect** • If a _____ occurs in a coil, then _____ will result in the coiled wire. Elaboration/ Description • _____ is/are widely acknowledged as _____ and exhibit(s) _____. (plasma)	• **Heterogeneous Cooperative Learning Groups** (Lab Groups) • **Think-Pair-Share** (Present summary reports of quick draw on magnetic field lines). • **Whip Around** (Right-hand rule) • **Think-Pair-Share** (current versus induced current)	Multi-Flow Map 

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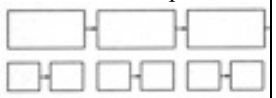
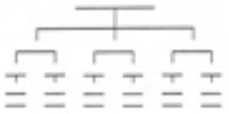
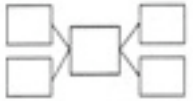
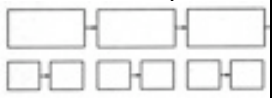
Quarter 4 Standards	**Functions for Production** (Bold denotes dominant function)		**Sample Products**	**Sentence Frames**	**Structured Oral Language Practice Routine(s)** (CM Binder Tab 3)	**Correlating Thinking Map(s)**
a. Students know heat flow and work are two forms of energy transfer between systems. b. Students know that the work done by a heat engine that is working in a cycle is the difference between the heat flow into the engine at high temperature and the heat flow out at a lower temperature (first law of thermodynamics) and that this is an example of the law of conservation of energy. g. Students know how to solve problems involving heat flow, work, and efficiency in a heat engine and know that all real engines lose some heat to their surroundings.	Does the textbook provide language of dominant function for production? YES or NO	Elaboration/ Description (3a and b) Cause and Effect (3b) **Sequencing** (3g)	• **Flow Map** (Engine cycles, e.g. Carnot Cycle) • **Poster** (Students use internet, magazines, or any other type of visual source as an example of an isothermal, isovolumetric, isobaric and adiabatic processes). Students can create a tree map. • **Lab Report Write-Up** • **Summary** Students can use a summary template: Heat flow and work	• **Sequencing** • First _____ happened. Then, _____ occurred and ___. Eventually ____. (engine cycles) Elaboration/ Description • _____ can be identified by _____. (thermodynamic processes)	• **Think-Pair-Share** (summarize how poster describes one or more processes). • **Numbered Heads Together** (solving problems in thermo- dynamics, e.g. zeroth and first laws) • **Heterogeneous Cooperative Learning Groups** (Lab Groups)	Flow Map  Tree Map 

Physics: English Learner Support Supplement to Pacing

Quarter 4 Standards	**Functions for Production** (Bold denotes dominant function)		**Sample Products**	**Sentence Frames**	**Structured Oral Language Practice Routine(s)** (CM Binder Tab 3)	**Correlating Thinking Map(s)**
c. Students know the internal energy of an object includes the energy of random motion of the object's atoms and molecules, often referred to as the thermal energy. The greater the temperature of the object, the greater the energy of motion of the atoms and molecules that make up the object. d. Students know that most processes tend to decrease the order of a system over time and that energy levels are eventually distributed uniformly. e. Students know that entropy is a quantity that measures the order or disorder of a system and that this quantity is larger for a more disordered system. f. Students know the statement "Entropy tends to increase" is a law of statistical probability that governs all closed systems (Second Law of Thermodynamics).	Does the textbook provide language of dominant function for production? YES or NO	**Elaboration/ Description** (3c, e and f) Cause & Effect (3c) Sequencing (3g and e) Proposition and Support	• **Semantic Features Map** (first column outlines a situation and where two of the other columns have the headings "high entropy" and "low entropy". Students rank 5-10 situations in order from highest to lowest entropy) • **Entropy & Probability Lab** (What number is most probable?)…Text pg. 357 • **Lab Report Write-Up** (Refer to Lab Report Drafting Template)	**Elaboration/ Description** • When _____ is _____ to a system, entropy _____. • _____ can be explained on a molecular level by ___. (pressure/temperature and the kinetic energy of molecules) Proposition and Support • _____ is most probable because _____.	• **Talking Chips** (using the semantic features map) • **Heterogeneous Cooperative Learning Groups** (Lab Groups)	Circle Map  Multi-Flow Map  Double Bubble Map  Flow Map 

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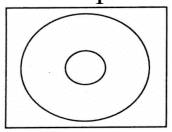
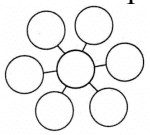
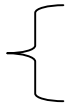
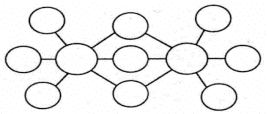
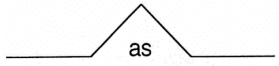
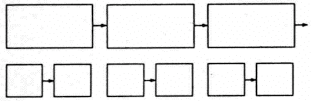
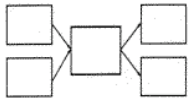
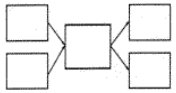
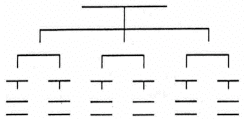
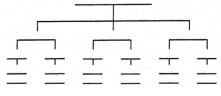
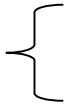
Constructing Meaning Functions and Thinking Maps

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