Proposed Science TEKS

High School (Grades 9-12)

OFFICIAL PUBLIC COMMENTS

Summary Listing

Course	Introduction Statements	Total Number of Knowledge/Skills (KS) and Student Expectations (SE)	Number of KS or SE Statements with at Least One Comment
Aquatic	7	58	2
Astronomy	7	75	8
Biology	7	67	20
Chemistry	7	73	42
Earth and Space Science	13	85	16
Environmental Systems	7	67	5
IPC	7	46	4
Physics	7	59	15
		530	112

Compiled During February 13 - March 20, 2009

Category	Public Comment	Teacher	Admin.	Parent	Community	Univ. -College	Total
General High School	Nice to see emphasis on empirical data, science as a tool.	1					1
General High School	I love the changes – much more detailed than the previous TEKS.	1					1
General High School	Support strengths and weaknesses language.	4			738		742
General High School	Reject strengths and weaknesses language.	5			105		110
General High School	Support creationism in TEKS.	1					1
General High School	Reject creationism in TEKS.	16		1	124	28	169
AQUATIC SCIENCE							
Aquatic - 2A	Accept amendment. Retain new SE.	1			8		9
Aquatic - 2A	Reject amendment. Delete SE.	3	1	18	377	90	489
Aquatic - 5D	Add "wetlands" to the list of aquatic environments.	1					1
ASTRONOMY							
Astro Introduction (B)(3)	The word "observational" should be added as a method of scientific investigation. This is the primary means of investigation for astronomy and it is important for many aspects of biology. More generally, it is in fact the method that led to most scientific advances. This method is not properly described by the terms "descriptive" or "comparative".					1	1
Astro - 2A	Accept amendment. Retain new SE.	1			8		9
Astro - 2A	Delete amendment. Delete SE.	3	1	18	377	90	489
Astro - 2I	A reasonable substitute is to "understand the use of" such technology. Sextants could be deleted as they are not used in modern astronomy.					2	2
Astro - 5A	Revise wording to: “observe and record the apparent movement of the sun during the day and the moon during the night”.	1					1
Astro - 5C	Delete reference to the “zodiac”.	1					1
Astro - 9D	Add to end of the sentence: “…Kuiper belt objects, including Pluto.”	1					1

Category	Public Comment	Teacher	Admin.	Parent	Community	Univ. -College	Total
Astro - 9D	There should be another item inserted before D that deals with the origin of the major bodies of the solar system. It is peculiar to talk about origin only of the "leftovers." Please add "Understand the modern theories for the origin of the solar system including the sun and major planets from a circumstellar disk around a forming star."					2	2
Astro - 13B	Change the word "estimates" to "measurements" in the phrase "estimates for the age of the universe". We have moved beyond crude estimates to measurements of high precision for the age of the Universe. This should also be clearly distinguished from "theories of the evolution of the Universe" as the primary basis is observational, rather than theoretical.					2	2
Astro - 13C	Revise SE to read: "theories of the fate of the universe" rather than "hypotheses". They are well developed scientific theories.					2	2
Astro - 14C	Change analyze to recognize	1					
BIOLOGY							
Biology - General	Need to add more plant specifics.	1					1
Biology - General	History of science discovery, especially DNA, is needed. Science and biology are products of individual efforts and experiments through time.					1	1
Biology - General	Scope is too large. This looks more like AP biology	1					1
Biology - General	Need to include human population dynamics, and the consequence of ever-increasing human populations.					1	1
Biology Introduction (B)(3)	The word "observational" should be added as a method of scientific investigation. This is the primary means of investigation for astronomy and it is important for many aspects of biology. More generally, it is in fact the method that led to most scientific advances. This method is not properly described by the terms "descriptive" or "comparative".					1	1
Biology Introduction (B)(3)	Due to length, comment is included on page 21. Intro to Biology, Chemistry, Physics (B)(3).		14			2	16
Biology - 2A	Accept amendment. Retain new SE.	1			8		9
Biology - 2A	Delete amendment. Delete SE.	3	1	18	377	90	489

Category	Public Comment	Teacher	Admin.	Parent	Community	Univ. -College	Total
Biology - 2E	Replace SE to read: plan and implement descriptive, comparative and experimental investigations, including asking well-defined questions, formulating testable hypotheses in comparative and experimental studies, and selecting equipment and technology.		12			2	14
Biology - 2F	Because of financial strains, delete data collecting probes, gel electrophoresis apparatus, micropipettes, and camera.	1					1
Biology - 2F	Perhaps use term “or equivalent” instead of “such as”	1					1
Biology - 3C	Replace SE to read: evaluate the impact of scientific research on society and the environment and describe the connection between biology and future careers;		12			2	14
Biology - 5C	This SE requires additional clarification; factors influencing cell differentiation are numerous and complex. In my opinion, this TEKS as written is more appropriate for a PhD dissertation than a Biology classroom.		6			2	8
Biology - 5C	No change.		5				5
Biology - 5D	Non-Mendelian genetics is too vague and covers too many areas. Be more specific.		8			2	10
Biology - 5D	No change.		6				6
Biology - 6D	Delete SE. Too specific for high school	2					2
Biology - 6H	Change “describe” to “know.” Include cloning and stem cell research.	1					1
Biology - 7	Support evolution in TEKS.	7			220	38	265
Biology - 7	Reject evolution in TEKS.				7		7
Biology - 7	Change "analyze and evaluate" to "analyze" for each SE.	2					2
Biology - 7	(7)(each entry) The call to "analyze and evaluate" all the aspects of evolution should be replaced by the term "understand." A high school student is not in a position to "analyze and evaluate." What they need to do is to understand the well established scientific theory of evolution.					2	2
Biology - 7A	Accept new language in amendment. Retain new language.	1			8		9

Category	Public Comment	Teacher	Admin.	Parent	Community	Univ. -College	Total
Biology - 7A	Reject language in amendment. Return to original language. Replace "analyze and evaluate" to "identify."	3	1	18	377	90	489
Biology - 7A	Remove “including anatomical, molecular, and developmental”	1					1
Biology - 7B	Accept amendment. Retain new language.	1			8		9
Biology - 7B	Reject language in amendment for new SE that refers to "sufficiency or insufficiency of common ancestry."	3	1	18	377	90	489
Biology - 7B	We recognize that natural selection produces change in populations, not individuals. It is requested that the SBOE amendment “describe the sufficiency” be deleted.					2	2
Biology - 7B	Delete SE.	1					1
Biology - 7B	7B is opening the door to creationism/intelligent design.	1					1
Biology - 7B	Eliminate "sufficiency or insufficiency of common ancestry" and the term "sudden appearance". They need to "understand the genetic and morphological evidence for common ancestry of all life on earth". The reference to "sudden appearance" is highly misleading unless it is clear that the appearance is "sudden" only on geological timescales of millions to tens of millions of years. These timescales are long compared to well-established timescales for significant biological evolution.		13			2	15
Biology - 7B	Remove "sufficiency or insufficiencies" in 7B- substitute "evidence"	1					1
Biology - 7B	7B contradicts 7A	1					1
Biology - 7C	Accept amendment. Retain new language.	1			8		9
Biology - 7C	Reject language in amendment. Return to original language. Replace "analyze and evaluate how" to "describe."	3	1	18	377	90	489
Biology - 7C	Change “analyze and evaluate how” to “recognize”	1					1

Category	Public Comment	Teacher	Admin.	Parent	Community	Univ. -College	Total
Biology - 7C	The call to "analyze and evaluate" all the aspects of evolution should be replaced by the term "understand." A high school student is not in a position to "analyze and evaluate." What they need to do is to understand the well established scientific theory of evolution.	1					1
Biology - 7D	Accept amendment. Retain new language.	1			8		9
Biology - 7D	Reject language in amendment. Return to original language. Replace "analyze and evaluate" to "recognize."	3	1	18	377	90	489
Biology - 7D	Change “analyze and evaluate how” to “describe”	1					1
Biology - 7D	The call to "analyze and evaluate" all the aspects of evolution should be replaced by the term "understand". A high school student is not in a position to "analyze and evaluate". What they need to do is to understand the well established scientific theory of evolution.	1					1
Biology - 7E	Accept amendment. Retain new language.	1			8		9
Biology - 7E	Reject language in amendment. Return to original language. Replace "analyze and evaluate" to "recognize."	3	1	18	377	90	489
Biology - 7E	Change “analyze and evaluate” to “recognize”	1					1
Biology - 7E	Replace SE to read: recognize the effects of other evolutionary mechanisms including genetic drift, gene flow, mutation, and recombination					2	2
Biology - 7E	The call to "analyze and evaluate" all the aspects of evolution should be replaced by the term "understand." A high school student is not in a position to "analyze and evaluate." What they need to do is to understand the well established scientific theory of evolution.	1					1
Biology - 7F	Accept amendment. Retain new language.	1			8		9
Biology - 7F	Reject language in amendment. Return to original language. Replace "analyze and evaluate" to "recognize."	3	1	18	377	90	489

Category	Public Comment	Teacher	Admin.	Parent	Community	Univ. -College	Total
Biology - 7F	The call to "analyze and evaluate" all the aspects of evolution should be replaced by the term "understand." A high school student is not in a position to "analyze and evaluate." What they need to do is to understand the well established scientific theory of evolution.	1					1
Biology - 8C	Replace SE to read: compare characteristics of taxonomic groups including currently recognized kingdoms		12			2	14
Biology - 8C	Leave as is.		3				3
Biology - 9C	Replace SE to read: identify and investigate the role of enzymes as biological catalysts		12			2	14
Biology - 9C	Leave as is.		3				3
Biology - 10	Too ambiguous; suggest going back to the original wording or using parts of that wording to specify items here.	1					1
Biology - 10C	It is unclear as to the intention of this - cells, tissues, organisms, or larger.		12			2	14
Biology - 10C	Leave as is.		3				3
Biology - 11B	Replace SE to read: investigate and analyze how organisms, populations, and communities respond to external factors such as …;		12			2	14
Biology - 11B	Leave as is.		3				3
Biology - 12C	Replace SE with “analyze the flow of energy and the cycling of matter through trophic levels using various models, including food chains, food webs, and ecological pyramids."		8			2	10
Biology - 12C	Leave as is.		4				4
Biology - 12E	This SE should also include the water cycle. Water is the molecule that supports life.	1	8			2	11
Biology - 12E	Leave as is.		4				4

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CHEMISTRY							
Chemistry	Need more conceptual chemistry. Relate to the everyday citizen.	4					4
Chemistry	Too many calculations in TEKS.	5					5
Chemistry	Math level is too high.	1					1
Chemistry	Crazy expectations for students. This will lead to more dropouts of students and teachers.	1					1
Chemistry	Wholeheartedly support revisions. Emphasis on math problem solving is appropriate.	1					1
Chemistry	Overall, I love that the changes are much more detailed than the previous TEKS!	1					1
Chemistry	Appreciate the streamlined content, more manageable.	1					1
Chemistry	They are very clear and concise and exactly tell the teacher what to teach.	1					1
Chemistry	Some of the proposed TEKS are on a level too high for the majority of my students. A lot of my students are not going to pursue science in college, so whey do they need to be able to use Planck's constant, describe metallic bonding, use Dalton's law of partial pressure, perform stoichiometric calculations, predict products in acid base reactions that form water, differentiate among oxidation-reduction reactions and precipitation reactions, write balanced nuclear equations, or distinguish between degrees of dissociation for strong and weak acids and bases. With TEKS like these, I feel like my non-college bound students will be left behind.	1					1
Chemistry	Too much content in course.	2					2
Chemistry	So much material needs to be covered. I think the TEKS need to be reevaluated to determine if this is feasible for this difficult subject.	1					1
Chemistry	Some idea of equilibrium (le Chatelier's Principle) and what affects rates of reactions is essential. No TEKS addresses this area of content.	1					1
Chemistry	The calculation of a pH is beyond the math level of chemistry students. Found in Algebra 2.	1					1
Chemistry	Too much material. How can students learn depth. Too many calculations.	1					1

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Chemistry	Appreciate the detail to the TEKS. Vagueness of current TEKS is frustrating.	1					1
Chemistry	Change references to the Periodic Table to Period Table of Elements	1					1
Chemistry Introduction (B)(3)	Due to length, comment is included on page 21. Intro to Biology, Chemistry, Physics (B)(3).		14			2	16
Chemistry Introduction (4)	I think it is important to teach ethics.	1					1
Chemistry Introduction (4)	I think that it is improper to have chemistry teachers teach ethics.	1					1
Chemistry - 2A	Accept amendment. Retain new SE.	1			8		9
Chemistry - 2A	Delete amendment. Delete SE.	3	1	18	377	90	489
Chemistry - 2E	Access to graphing calculators, computers, and probes is very difficult.	1					1
Chemistry - 2E	Edit SE to read: plan and implement descriptive, comparative and experimental investigations including asking well-defined questions, formulating testable hypotheses in comparative and experimental studies, and selecting equipment and technology;		15			2	17
Chemistry - 2E	Delete electronic balances from list.	2	15				17
Chemistry - 2E	Graphing calculators are nice, but not practical in every school. Recommend to delete this reference.	4					4
Chemistry - 2E	Why list equipment? Perhaps use "or equivalent" instead of "such as."	1					1
Chemistry - 2E	List non-glass items first, after safety equipment.	1					1
Chemistry - 3E	Edit KS to read: The student uses critical thinking, scientific reasoning and problem solving to make informed decisions within and outside the classroom.	1					1
Chemistry - 3E	Too general. Suggest listing a few names of scientists.	3					3
Chemistry - 4B	Delete SE.		16			2	18
Chemistry - 5	Edit KS to read: The student understands the historical development of the Periodic Table of Elements and can use the arrangement of elements to predict properties of elements in a chemical family or period.	1					1

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Chemistry - 5B	Replace SE with: use the Periodic Table to identify and explain the properties of transition metals, and of chemical families, including alkali metals, alkaline earth metals, halogens, and noble gases; and		17			2	19
Chemistry - 6A	There is some question as to the focus of this and why others such as Curie are not listed. Why not learn about the working models we now have and the impact of those changing models through recent research such as CERN?					2	2
Chemistry - 6A	It is important to understand the history of the current model of the atom.	1					1
Chemistry - 6A	Perhaps list names of scientists.	2					2
Chemistry - 6A	Awkward since Bohr model focuses on positions of electrons around nucleus instead of nucleus-suggest "Bohr's Model of Hydrogen Atom"	1					1
Chemistry - 6B	Delete SE.	5					5
Chemistry - 6B	Revise to remove calculation, but stick with relationship between energy, frequency, and wavelength - and how these relate to the electromagnetic spectrum.	7					7
Chemistry - 6B	Revise SE to read: understand the electromagnetic spectrum and the mathematical relationships between energy, frequency, and wavelength of light; relate the use of atomic emission spectra to historic development of atomic theory		14			2	16
Chemistry - 6C	Calculation using Planck's constant is not necessary or appropriate. Delete SE.	11					11
Chemistry - 6C	The wavelength calculation using Planck's constant is not necessary. Should be in physics or AP chemistry instead. Recommend to delete SE.	7					7
Chemistry - 6C	Revise SE to read: understand the relationships among energy, frequency, and wavelength of light		14			2	16
Chemistry - 6C	Revise SE to read: understand and use the appropriate analogy of the relationships among energy, frequency and wavelength; and					2	2
Chemistry - 6D	Revise SE to read: use isotopic composition to explain average atomic mass of an element.		14			2	16

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Chemistry - 6D	Revise SE to read: use isotopic composition and percent abundance data to calculate average atomic mass of an element	1					1
Chemistry - 6E	Revise SE to read: understand and use the appropriate analogy of the relationships among energy, frequency and wavelength		14			2	16
Chemistry - 7	Too much emphasis on metallic bonding. Better to emphasize ionic and covalent in general chemistry.	1					1
Chemistry - 7A	Needs to address characteristics of ionic and covalent bonding, not just metallic bonding	1					1
Chemistry - 7B	Revise SE to read: write the chemical formulas of common ionic compounds containing polyatomic ions, main group or transition metals, covalent compounds, acids, and bases;		13			2	15
Chemistry - 7B	Writing polyatomic ions is mentioned. I do not want students to memorize a list of the ions, need to use reference chart.	3					3
Chemistry - 7B	Covalent compounds is too general. Suggest that SE reference “binary covalent compounds” instead of “covalent compounds.”	5					5
Chemistry - 7C	Revise SE to read: construct and identify electron dot structures to illustrate ionic and covalent bonds		13			2	15
Chemistry - 7C	Change to "Lewis valence electron dot structures" to be consistent with 6E.	1					1
Chemistry - 7D	Revise SE to read: use metallic bonding to explain properties of metals such as thermal and electrical conductivity, malleability and ductility; and		13			2	15
Chemistry - 7D	Metallic bonding concepts are not needed in a regular chemistry class. Recommend to delete SE.	4					4
Chemistry - 7D	What theory? Electron Sea Model?	1					1
Chemistry - 7E	Revise SE to read: relate Valence Shell Electron Pair Repulsion (VSEPR) theory to shapes of molecules including linear, trigonal planar or tetrahedral electron pair geometries.		13			2	15
Chemistry - 7E	Students do not need to predict molecular structures using VSEPR Theory. Should be in advanced chemistry class only. Recommend to delete SE.	7					7

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Chemistry - 7E	Electron pair geometries or molecular geometries? These are different things. Awkward since SE says molecular structure, but uses electron pair geometries; in my experience electron pair geometry is not typically covered in a first year chemistry course.	1					1
Chemistry - 8	Factors that affect chemical reactions were in the previous TEKS (old TEKS 15B) and should still be included.	1					1
Chemistry - 8C	Revise SE to read: calculate percent composition and distinguish between empirical and molecular formulas;		12			2	14
Chemistry - 8C	May be better to separate these ideas since you need to know a formula to calculate percent composition; and then you use percent composition information to determine an empirical and molecular formula; Suggestion: “Calculate percent composition when given a formula; Use percent composition information to calculate empirical and molecular formulas”	1					1
Chemistry - 8D	Students should be also able to identify types of chemical reactions. If you want to be specific, they should know these types: combustion, synthesis, decomposition, single replacement and double replacement.	1					1
Chemistry - 8D	Students should first be able to identify the types of a reaction and predict the products. Revise SE.	1					1
Chemistry - 8E	Stoichiometric calculations are difficult. Recommend to delete SE.	8					8
Chemistry - 8E	Stoichiometric calculations are good and should remain in SE.	3					3
Chemistry - 8E	Edit SE to read: understand that limiting reagents determine the products of chemical reactions. Apply this concept to real world applications such as in an industrial setting.					2	2
Chemistry - 8E	Revise SE to read: perform stoichiometric calculations including determination of mass relationships between reactants and products and calculation of percent yield. OR understand limiting reagents determine the products of chemical reactions and apply to real world applications such as in an industrial setting		12			2	14

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Chemistry - 8F	New SE: understand the concept of a limiting reactant		12			2	14
Chemistry - 9A	Calculations are not appropriate here. Recommend "Know the relationships between volume, pressure, number of moles, and temperature."	4					4
Chemistry - 9A	Replace SE with: use kinetic molecular theory to predict changes in behavior of gases		14			2	16
Chemistry - 9A	You could either include Gay-Lussac in your current list, or Combined Gas Law could take the place of listing all four laws.	1					1
Chemistry - 9B	Stoichiometric calculations are difficult. Recommend to delete SE.	9					9
Chemistry - 9B	Replace SE with: describe and calculate the relationship between volume, pressure, number of moles, and temperature for an ideal gas, as described by Boyle's Law, Charles' Law, Avogadro's Law, Dalton's Law of Partial Pressure and the Ideal Gas Law.		14			2	16
Chemistry - 9B	Replace SE with: recognize stoichiometric changes of mass and volume relationships between reactants and products for reactions involving gases.					2	2
Chemistry - 9C	Replace SE with: recognize stoichiometric changes of mass and volume relationships between reactants and products for reactions involving gases.		14			2	16
Chemistry - 9C	Suggestion: "Distinguish between real and ideal gases as defined according to the postulates of the kinetic molecular theory." Postulates of this theory alone would be challenging to assess without application to chemistry.	1					1
Chemistry - 10	The SEs are lengthy. Very challenging.	1					1
Chemistry - 10B	Replace SE with: given general rules regarding solubility, investigate properties of aqueous solutions.		13			2	15
Chemistry - 10B	Do students really need to develop the rules of solubility if they are already printed on their EOC chart. Maybe they could just use the rules to predict the solubility in aqueous solutions.	1					1
Chemistry - 10C	Remove molarity calculations. Delete SE.	1					1
Chemistry - 10D	Remove calculations.	1					1
Chemistry - 10D	Delete SE.		13			2	15

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Chemistry - 10G	Revise SE to read: distinguish between Arrhenius and Bronsted-Lowery definitions; and predict products in acid base reactions that form water.		13			2	15
Chemistry - 10G	Delete: Distinguishing between Arrhenius and Bronsted Lowery acids and bases.	1					1
Chemistry - 10G	If the students are not predicting products in the chemical reactions objective, they should not be required to predict the products here as well.	1					1
Chemistry - 10G	No "e" in name "Lowry."	1					1
Chemistry - 10H	Leave in acid-base reactions, but move precipitation reactions and oxidation-reduction reactions to AP Chemistry.	1					1
Chemistry - 10H	Are the students just required to distinguish between these reactions? It seems like placing redox reactions here is not a logical place. Redox itself is a broad concept and suddenly bringing it into solutions from nowhere will cause lot of confusion among students. Do they even need it?	1					1
Chemistry - 10I	Revise SE to read: define pH and use the hydrogen or hydroxide ion to determine the integer value pH of a solution; and		13			2	15
Chemistry - 10I	Remove calculations. Only use pH to identify a substance as an acid or base.	2					2
Chemistry - 10J	Move to PreAP or AP Chemistry.	1					1
Chemistry - 11	The focus is on "enthalpy" with "entropy" visibly missing.	1					1
Chemistry - 11A	Should be moved to AP Chemistry.	1					1
Chemistry - 11A	Revise SE to read: understand energy and recognize its forms including kinetic and potential;		14			2	16
Chemistry - 11B	Revise SE to read: apply the law of conservation of energy to process of heat transfer and use calorimetry to calculate the heat of a chemical process;		14			2	16
Chemistry - 11C	Remove calculations. Students should be able to classify reactions as exothermic or endothermic based on observations.	1					1
Chemistry - 11C	Should be moved to AP Chemistry.	1					1

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Chemistry - 11C	Revise SE to read: use thermochemical reaction equations to classify energy changes that occur in chemical reactions and classify reactions as exothermic or endothermic;		14			2	16
Chemistry - 11D	Remove calculations.	1					1
Chemistry - 11D	Revise SE to read: use calorimetry to measure and compare heat contained in chemical process; and		14			2	16
Chemistry - 11E	Move to PreAP or AP Chemistry.	1					1
Chemistry - 11E	Remove calculations.	1					1
Chemistry - 11E	Delete SE.		14			2	16
Chemistry - 12	This is supposed to be a fun unit. Where are all the applications?	1					1
Chemistry - 12B	Delete SE. HS students do not need this.	1					1
Chemistry - 12B	Does this include half-life concepts and calculations?	1					1
Chemistry - 12C	Revise SE to read: compare fission and fusion reactions and evaluate their applications.		14			2	16
EARTH AND SPACE SCIENCE							
Earth/Space - General	Too many TEKS. Suggest focus only on Earth-Space systems.	1					1
Earth/Space - General	Approve as written. No revisions, changes, or amendments.	3	1	18	377	90	489
Earth/Space - General	Approve as amended in January.	1					1
Earth/Space - General	Appropriate rigor. Good capstone class.	1					1
Earth/Space - General	Concern about the removal of "traditional" concepts in Earth Science.	1					1
Earth/Space - General	Too much information. Need to follow "less is more."	1					1
Introduction (B)(3)	The word "observational" should be added as a method of scientific investigation. This is the primary means of investigation for astronomy and it is important for many aspects of biology. More generally, it is in fact the method that led to most scientific advances. This method is not properly described by the terms "descriptive" or "comparative".					1	1
Earth/Space - 2A	Accept amendment. Retain new SE.	1			8		9
Earth/Space - 2A	Delete amendment. Delete SE.	3	1	18	377	90	489

Category	Public Comment	Teacher	Admin.	Parent	Community	Univ. -College	Total
Earth/Space - 2F	Why list equipment? Perhaps use "or equivalent" instead of "such as."	1					1
Earth/Space - 4	This refers to the universe, not Earth. It should be covered as part of Astronomy, not here.	1					1
Earth/Space - 4	The insertion of the words “differing theories” implies that there is another major scientific theory beyond the Big Bang Theory. Astrophysicists do not have differing theories for the origin of the universe. The language for differing theories implies creationism and makes the language for science weaker.	1					1
Earth/Space - 4	Accept amendment. Retain new language.	1			8		9
Earth/Space - 4	Reject amendment. Return to original language.	3	1	18	377	90	489
Earth/Space - 5	Go back to original language: The student knows that Earth's place in the solar system is explained by the solar nebular accretionary disk model.	1					1
Earth/Space - 5	The change from "The student knows that Earth's place in the solar system is explained by the solar nebular accretionary disk model" to "The student understands that Earth's place in the solar system is explained by the solar nebular accretionary disk model." is pedagogically incorrect. The accretionary disk model is the appropriate explanation for the Earth and Space Science high school class.					2	2
Earth/Space - 5	Accept amendment. Retain new language.	1			8		9
Earth/Space - 5	Reject amendment. Return to original language.	3	1	18	377	90	489
Earth/Space - 5B	Inserting "are thought to allow" into the sentence "...kinetic heat of impact accretion, gravitational compression, and radioactive decay, which are thought to allow protoplanet differentiation..." is incorrect since there is no ambiguity or scientific question about the heat sources necessary for the Earth separating into different zones (mantel, outer core, inner core) during formation. The phrase "are thought to" implies incorrect and unnecessary doubt"					2	2
Earth/Space - 5B	Accept amendment. Retain new language.	1			8		9
Earth/Space - 5B	Reject amendment. Return to original language.	3	1	18	377	90	489
Earth/Space - 5C	This refers to the universe, not Earth. It should be covered as part of Astronomy, not here.	1					1

Category	Public Comment	Teacher	Admin.	Parent	Community	Univ. -College	Total
Earth/Space - 5F	This refers to the universe, not Earth. It should be covered as part of Astronomy, not here.	1					1
Earth/Space - 6A	Remove the reference to the "original hydrogen-helium" atmosphere. There is no evidence that the earth ever had such an atmosphere, as it was not massive enough to collect gas from the circumstellar disk.					2	2
Earth/Space - 6D	Accept amendment. Retain new language.	1			8		9
Earth/Space - 6D	Reject amendment. Return to original language.	3	1	18	377	90	489
Earth/Space - 6D	Inserting "the evidence that the" into the phrase "evaluate the evidence that the Earth's cooling led to tectonic activity..." is unnecessary and implies a doubt about these processes that Earth Scientists do not share.					2	2
Earth/Space - 7B	Change "apply" to "describe"	1					1
Earth/Space - 8A	Accept amendment. Retain new language.	1			8		9
Earth/Space - 8A	Reject amendment. Return to original language.	3	1	18	377	90	489
Earth/Space - 8A	This item suggests that the student evaluate fossil types and assess arguments for and against universal common descent. They should simply "understand" the fossil types and "understand the evidence of universal common descent based on the fossil record." There are NO arguments against common descent in the fossil record. More generally, this topic really should be part of biology class if common descent will be studied.					2	2
Earth/Space - 10D	Change “calculate” to “describe.”	1					1
Earth/Space - 13E	Delete SE. Not for high school.	1					1
Earth/Space - 13F	Delete SE. Not for high school.	1					1
Earth/Space - 15C	Delete SE. Not for high school.	1					1
ENVIRONMENTAL SYSTEMS							
Env Systems	History of science discovery, especially DNA, is needed. Science and biology are products of individual efforts and experiments through time.					1	1
Env Systems	Need to include human population dynamics, and the consequence of ever-increasing human populations.					1	1
Env Systems	Why is course limited to grades 11-12?	1					1
Env Systems - 2A	Accept amendment. Retain new SE.	1			8		9

Category	Public Comment	Teacher	Admin.	Parent	Community	Univ. -College	Total
Env Systems - 2A	Delete amendment. Delete SE.	3	1	18	377	90	489
Env Systems - 2G	Why list equipment? Perhaps use "or equivalent" instead of "such as."	1					1
Env Systems - 2H	Why list equipment? Perhaps use "or equivalent" instead of "such as."	1					1
INTEGRATED PHYSICS AND CHEMISTRY							
IPC - 2A	Accept amendment. Retain new SE.	1			8		9
IPC - 2A	Delete amendment. Delete SE.	3	1	18	377	90	489
IPC - 3E	Add to the end of the sentence: ”…of scientists to those disciplines”	1					1
IPC - 4	Please use the original wording from TEKS 4A-D and then specify the relevant examples. This will make the wording more specific.	1					1
IPC - 4B	Who supplies the moving toys?	1					1

Category	Public Comment	Teacher	Admin.	Parent	Community	Univ. -College	Total
PHYSICS							
Physics	List of equipment and supplies is excessive.	2					2
Physics	Add descriptive titles to each content KS. For example: KS 4 - Laws of Motion; KS 5 - Forces in the Physical World; KS 6 - Conservation of Energy and Momentum; KS 7 - Characteristics of Waves; KS 8 - Atomic Structure					2	2
Physics	Question about math level of course.	2					2
Physics	Do not support physics as suitable for grades 9-12. Algebra should be a prerequisite.	1					1
Physics Introduction (B)(1)	Edit to include additional topics: "thermodynamics; electricity and magnetism, characteristics and behavior of …"		16			2	18
Physics Introduction (B)(3)	Due to length, comment is included on page 21. Intro to Biology, Chemistry, Physics (B)(3).		14			2	16
Physics - 2A	Accept amendment. Retain new SE.	1			8		9
Physics - 2A	Delete amendment. Delete SE.	3	1	18	377	90	489
Physics - 2E	Replace SE with: plan and implement descriptive, comparative and experimental investigations including asking well-defined questions, formulating testable hypotheses in comparative and experimental studies, and selecting equipment and technology; selecting appropriate equipment and technology, and evaluating numerical answers for reasonableness;		15			2	17
Physics - 2F	Delete rolls of white craft paper.	1					1
Physics - 2F	Streamline equipment list, revise SE to read: demonstrate the use of course apparatus, equipment, techniques, and procedures, including multimeters (current, voltage, resistance), triple beam balances, dynamics demonstration equipment, collision apparatus, data acquisition probes, spectroscopes, hot plates, slotted and hooked lab masses, bar magnets, horseshoe magnets, plane mirrors, lenses, stopwatches, tuning forks, magnetic compasses, polarized film, prisms, resistors, spring scales, knife blade switches, meter sticks, scientific calculators, graphing technology, computers, and laser pointers;		15			2	17

Category	Public Comment	Teacher	Admin.	Parent	Community	Univ. -College	Total
Physics - 2F	Why list equipment? Perhaps use "or equivalent" instead of "such as."	1					1
Physics - 2F	Recommend to delete ticker timers, cathode ray rubes with horseshoe magnets.	1					1
Physics - 2G	Revise SE with: use a wide variety of additional course apparatus, equipment, techniques, materials, and procedures as appropriate		15			2	17
Physics - 2G	Why list equipment? Perhaps use "or equivalent" instead of "such as."	1					1
Physics - 4A	Replace SE with: generate and interpret graphs and charts describing different types of motion, including the use of real-time technology such as motion detectors, sensors, or photogates;		15			2	17
Physics - 4C	Replace SE with: analyze and describe accelerated motion in two dimensions, including projectile and circular examples;		15			2	17
Physics - 4D	Replace SE with: analyze and describe the effect of forces on objects, including the law of inertia, the relationship between force and acceleration, and the nature of force pairs between objects;		15			2	17
Physics - 6A	Replace SE with: demonstrate an understanding of the work-energy theorem in various situations;		15			2	17
Physics - 6C	Replace SE with: understand and calculate mechanical energy, power, impulse, and momentum of a physical system;		15			2	17
Physics - 7E	Replace SE with: describe and predict image formation as a consequence of reflection		15			2	17
Physics - 7F	New SE: describe and predict the effects of different media on refraction, including critical angles		15			2	17
Physics - 7F	7F should become 7G if the new proposed SE is accepted above.		15			2	17
Physics - 8C	Delete SE. Not appropriate for high school.	1					1
Physics - 8D	Delete SE. Not appropriate for high school.	1					1
Physics - 8D	Delete digital cameras, and consider using superconducting quantum interference devices	1					1

Category	Public Comment	Teacher	Admin.	Parent	Community	Univ. -College	Total
Physics - 8D	Replace SE with: give examples of applications of atomic and nuclear phenomena such as radiation therapy, diagnostic imaging, and nuclear power and examples of applications of quantum phenomena such as digital cameras and plasma screens.					2	2
Introduction to Biology, Chemistry, and Physics (B)(3)	Replace with: Scientific inquiry. Scientific inquiry is the planned and deliberate investigation of the natural world. Scientific methods of investigation are descriptive, comparative or experimental. The method chosen should be appropriate to the question being asked. Scientific investigations are conducted in for different ways using different scientific research designs. However, all investigations require a well-designed research question or hypothesis, careful observations, data gathering and analysis of the data to identify the patterns that will explain the findings. Descriptive investigations are used to explore new phenomena such as conducting surveys of pond organisms, or measuring the abiotic components of a habitat. Descriptive statistics include frequency, mean, median, and mode. No hypothesis and no dependent and independent variables are used in this type of investigation. On the other hand, Comparative investigations are used when conditions can be kept constant in order to focus on a single variable.					16	16
	Comparative analysis is used to compare the strength of a relationship between two variables. The investigator selects the independent variable (IV) and records the responses of the dependent (responding) variable (DV). No control group is used for this type of investigation. Conditions other than IV or DV are held constant or at least they are the same for all test groups. The IV is the factor being selected. The DV is the factor that responds to changes of the IV. Statistics used in the Comparative method include some type of comparison between or among means of various DVs. However, when a scientific study can have a control, then an Experimental investigation is used to determine causation. Students in grades 5-12 should experience all three types of investigations and understand that different scientific research questions require different research designs.						