

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

Edit #	Chap	Pg	Lines	Source	Current Language	Suggested Change	Rationale
1	1	2	58-59	CFIRD ROS	(CA CCSS for ELA/Literacy), California Common Core State Standards for Mathematics (CA CCSSM),	(CA CCSS for ELA/Literacy), California Model School Library Standards (CA MSLS), California Common Core State Standards for Mathematics (CA CCSSM),	The MSLS directly support the opportunities outlined in lines 39 to 43 of the introduction. In the introduction to the MSLS it describes how the School Library Standards for Students incorporate information literacy (access, evaluate, use, and integrate information) and these concepts directly support the science framework and 21st century learning.
2	1	3	82-83	Imp Acc JL	...three dimensions of science (i.e., disciplinary core ideas, science and engineering practices, and crosscutting concepts).	...three dimensions of science (practices, crosscutting concepts, and disciplinary core ideas)	Per NGSS official wording, please review at http://www.nextgenscience.org/three-dimensions
3	1	6	130-131	Expanded learning	Across the grade band, students engage	Across the grade band and other out-of-school learning venues	Expanded learning is identified on page 30 as a venue for youth to engage in STEM. Adding "other learning venues" points out the importance of working in concert
4	1	7	157-58	CFIRD JPS	These models can be mathematical, as well as diagrammatic and link possible causes to observable effects.	These models can be mathematical, as well as diagrammatic, or 3 dimensional and link possible causes to observable effects.	Students that cannot see need other representations of graphic visuals.
5	1	8	204	PLSD CR		Can we call out the EP and Cs here?	It is basically referring to the first EP and C and would make sense here.
6	1	8	206-207	Expanded learning	As well as across science disciplines and grade levels	As well as across science disciplines, grade levels and out-of-school learning venues.	Much learning occurs outside of the school day and if the experiences reinforce the school day focus, youth will have more opportunities to learn deeply. This addition serves as a reminder to think of a broader range of learning venues.
7	1	10	253-54	CFIRD JPS	K–Grade 2 focus on visible phenomena with which students are likely to have some experience in their everyday lives or in the classroom.	K–Grade 2 focus on visible or uses of other sense phenomena, with which students are likely to have some experience in their everyday lives or in the classroom.	For students that cannot see, but can employ other senses to explain everyday life realities.
8	1	11	281	CFIRD ROS	Insert a line after - to support learning in science and engineering.	<i>The California Model School Library Standards (CA MSLS) provides guidance across all grade levels in formulating appropriate questions, evaluating and analyzing information, and using information and technology creatively.</i>	The MSLS cut across and support all disciplines. They are the one standards that focus on students formulating appropriate questions and encourage students to explore what interests them personally, and thus support the overarching themes of the NGSS.

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

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9	1	11	282	ELSD GG	At the elementary level, it also requires teachers...	At the elementary and secondary level, it requires teachers...	Teachers at all levels should support literacy and language development for the ELs (integrated ELD).
10	1	11	286-289	CFIRD ROS	This coherence can realistically be achieved because the standards for other disciplines (science, English language arts, history/social studies, mathematics, and health) overlap in substantive ways and thereby enhance the opportunity to give all students equitable access to comprehensive learning standards.	This coherence can realistically be achieved because the standards for other disciplines (science, English language arts, history/social studies, mathematics, <i>school libraries</i> , and health) overlap in substantive ways and thereby enhance the opportunity to give all students equitable access to comprehensive learning standards.	See rationale for edit 1 and 2.
11	1	12	311-12	CFIRD JPS	Relationships and convergences among mathematics	No change, but read rationale.	You'll need to ensure that graphics have alt text so that text-to-speech read the graphic in a logical manner
12	1	13	340	PLSD CR	Experts are brought in as providers	which include expertise from within the LEA or external providers	It is important for LEAs to recognize the expertise within their districts or sites.
13	1	13	341-342	Expanded learning	Teachers can work with other teachers	Teachers can work with other teachers and support educators	The addition of support educators includes out-of-school time in professional development and provides opportunity for coherence and alignment
14	1	13	342-43	CFIRD JPS	This will allow both teachers within and across schools and districts to share expertise, reflect on challenges, and plan for future units of instruction.	This will allow both teachers within and across schools and districts to share expertise, reflect on challenges, and plan for future units of instruction. Add: For Example, a collaboration between a general and special education teacher can provide accommodations in the lessons from planning to assessment, making the lessons accessible to all students.	Too often science teachers are not knowledgeable of IEP goals and Section 504 Plans for accommodations and modification needed for students with disabilities. By planning together the lessons will be inclusive and meet the student's needs.
15	1	14	345-46	CFIRD JPS	shared among principals, district administrators, and designated lead or mentor teachers	shared among principals, district administrators, education specialists, both EDL and special education, and designated lead or mentor teachers	Including specialists to ensure that lessons will be delivered so that all students can access the materials is critical.
16	1	15	377-378	Imp Acc JL		Be assessed for learning and problem solving (or demonstrate learning and problem solving)	I added this bullet for computer based assessment purpose.
17	1	15	392-395	PLSD CR	List of orgs	Leave out specific org names	Always a concern that someone was left out.
18	1	16	412	PLSD CR	Figure 2	Leave out	Seems too in the weeds
19	1	16	402-407	PLSD CR	The Bifocal Modeling... Engineering solves problems	Leave out of introduction	Seems too in the weeds

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

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20	1	16	423-24	CFIRD JPS	students are not trained to blindly accept the models and theories put forth by others as black boxes	students are not trained to "delete-- blindly" accept the models and theories put forth by others as scientific fact.	Blindly is a poor choice of word, insensitive to the blind, and black boxes is an unfamiliar term and I suggest a common phrase instead
21	1	17	438	CFIRD ROS	Insert a line after - ... evaluating and communicating information.	<i>The CA MSLS delineates what students should know and be able to do at each grade level as they access, evaluate, use, and integrate information into their lives.</i>	Lines 433-438 talks about science educators leveraging technology and calls out examples of the ethical use of information and technology. This is exactly what the MSLS address and provide teachers, administrators, and parents with a clear expectation of what a child should know at each grade level. When taught within the context of curriculum they act as an excellent resource for grade level expectations related to information literacy.
22	1	17	443	CFIRD JPS	Add after line 443	New technologies are being developed that may support or refute science principles, so it is important to look at science as an evolving set of theories.	Not everything in science has been discovered, so this needs to be part of the technology discussion.
23	1	17	444	Imp Acc JL			I suggest to add a paragraph regarding the use of computers or tablets as a tool in reading information, frame science questions, develop and solve science problems as need in assessment.
24	1	18	456	Imp Acc JL	Including English learners, are able to ...	Including English learners and students with disabilities, are able to...	Full range of equity
25	1	18	458	Imp Acc JL	...language development.	...language development and learning disabilities	Full range of equity
26	1	18	459	PLSD CR	Do science	Participate in	
27	1	18	463	Imp Acc JL	...as well as culturally and linguistically response instruction that values and leverages students' experiences.		Tapping students' prior knowledge and their social capitals is critical to learning engagement. I really like the wording here.
28	1	18	467	Imp Acc JL	...in the core curriculum,	...in the well-rounded curriculum,	Per Every Student Succeeds Act (ESSA)'s language
29	1	18	472	PLSD CR	education	More specific content area or just leave off since this is a science framework	Very vague
30	1	18	465-466	Expanded learning	Both general education and special education teachers	General education and special education teachers and support educators should ensure	This would point to the importance of all educators working to support learners who have special instructional needs

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

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31	1	18	467-68	CFIRD JPSdifferentiated instruction in the core curriculum, which includes science....	differentiated instruction in the core curriculum, honoring accommodations in the Section 504 Plan and IEP, which includes science	In addition to differentiation there is a legal mandate to implement accommodations to protect students and avoid litigation.
32	1	18	468-472	Imp and Acc LE		Remove sentence	Why list only certain diverse student groups...either include all student groups, or possibly remove the sentence.
33	1	19	487	ELSD GG	...and develop academic English in science.	...and develop the academic use of English in science.	Emphasizes the support for ELs to meet the language demands required to engage in the science content in all domains (listening, speaking, reading and writing).
34	1	19	510	PLSD CR	work	Instruction and opportunities	
35	1	19	515	PLSD CR	Grading may also be based on	Assessment may also include	
36	1	20	537	Imp Acc JL	...at the center of instruction.	...at the center of teaching and learning process.	The work "instruction" seems to be a little bit narrow.
37	1	20	533-34	CFIRD JPS	varying amounts of time and addressing different aspects of student learning.	varying amounts of time, formats, accessibility, and addressing different aspects of student learning.	Including formats and accessibility presents the options for student needs to be met.
38	1	21	553	PLSD CR	tests	assessments	
39	1	22	595-97	CFIRD JPS	Schools can help students connect their learning to their career options through building connections with local employers and institutions of higher education.	Add after: Students with disabilities require an Individualized Transition Plan (ITP) to include work experiences, which would naturally support NGSS standards.	The ITP is federally mandated, so including science and engineering opportunities would be a great fit for these students.
40	1	23	612	PLSD CR	head	guide	
41	1	28	747	Expanded learning	The system of teacher professional learning that	The system of teacher and support educator professional development	Including support educators in professional learning will benefit youth as it will help to "standardize" approaches and strategies
42	1		824	CFIRD JPS	End of chapter 1	Add: Student moving into California from other states, or those who miss large chunks of time away from school will need to have a modified curriculum to help them catch up with their peers.	Perhaps this will be addressed in specific chapters, but it should be stated in the introduction so that it becomes part of the planning by educators and included in professional development.
43	1		149-152	CFIRD JPS	....students make observations....	Add: ....students make multi-sensory observations....	Students who are blind or neurologically impaired, resulting in loss of observation skills need to be paired or with a group that collaborates the observations so that everyone is included.
44	1			PLSD CR		General comment: You may want to include less about the other frameworks in the introduction.	It makes more sense within the chapters, but is distracting in the intro.

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

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45	4	13	257	ELSD GG		Include a sentence that informs the reader of the language instruction that would benefit ELs to meet the language demands for the science content, for example, “English learners, particularly at the emerging and expanding proficiency levels, would benefit from instruction of language structures needed for making predictions, describing observations, and asking questions orally and in writing (ELD PI.K.1, PI.K.5–6, PI.K.9, PI.K.12, PII.K.3.)”	Strategically highlights the instructional support ELs needs to meet the language demands required to meaningfully engage in the science content in all domains (listening, speaking, reading and writing).
46	4	17	310	ELSD GG		Include a subheading, “Support for English Learners:” at the end of the vignette, and inserting the sentence, “English learners, particularly at the emerging and expanding proficiency levels, would benefit from instruction focused on prepositional phrases or sentence structure (ELD PII.K.5).”	Strategically highlights the instructional support ELs needs to meet the language demands required to meaningfully engage in the science content in all domains (listening, speaking, reading and writing).
47	4	27	423	ELSD GG		Insert the subheading and sentence at the end of the vignette, “Support for English Learners: English learners, particularly at the emerging and expanding proficiency levels, would benefit from instruction focused on language structures for asking and answering questions, having conversations, and responding to text for ELs orally and in writing (ELD PI.K.1–3, PI.K.5–12, PII.K.3–6).”	Strategically highlights the instructional support ELs needs to meet the language demands required to meaningfully engage in the science content in all domains (listening, speaking, reading and writing).
48	4	39	526	ELSD GG		Include the ELD standards that correspond to the listed ELA standards at the end of the Vignette Debrief, before “Resources for the Vignette”, “ELD PI.K.1–3, PI.K.5–6, PI.K.7–12, PII.K.3–6”	Assist the reader to make the connection with the ELA standards and the ELD standards in all domains (listening, speaking, reading and writing).
49	4	55	754	ELSD GG		Insert the subheading and sentence at the end of the Vignette Debrief, before “Resources for the Vignette”, “Support for English Learners: English learners, particularly at the emerging and expanding proficiency levels, would benefit from instruction focused on language structures for asking and answering questions, making statements orally and in writing, reading text and viewing closely media, analyzing main ideas and details in text, and writing a paragraph (ELD PI.1.1–2, PI.1.5–7, PI.1.10, PII.1.6–7).”	Strategically highlights the instructional support ELs needs to meet the language demands required to meaningfully engage in the science content in all domains (listening, speaking, reading and writing).

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

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50	4	72	1033	ELSD GG	Connections to the CA CCSS for ELA/Literacy:W.1.2	Include the ELD standards that correspond to the writing standard: ELD PI.1.10, PII.1.1–2, PII.1.6–7	Assist the reader to make the connection with the ELA standards and the ELD standards.
51	4	80	1154	4		Include a sentence that informs the reader of the language instruction that would benefit ELs to meet the language demands for the science content, for example, “English learners, particularly at the emerging and expanding proficiency levels, would benefit from instruction focused on language structures for asking questions, explaining, discussing, and analyzing and arguing from evidence orally and in writing (ELD PI.2.1, PI.2.3–5, PI.2.11, PII.2.3–5).”	Strategically highlights the instructional support ELs needs to meet the language demands required to meaningfully engage in the science content in all domains (listening, speaking, reading and writing).
52	4	84	1228	ELSD GG		Include a sentence that informs the reader of the language instruction that would benefit ELs to meet the language demands for the science content, for example, “English learners, particularly at the emerging and expanding proficiency levels, would benefit from instruction focused on language structures for writing informative text, cause and effect statements, synthesizing information to provide evidence and reasoning to support claims, and arguing to support claims orally and in writing (ELD PI.2.1, PI.2.3–6, PI.2.10–12, PII.2.3–7).”	Strategically highlights the instructional support ELs needs to meet the language demands required to meaningfully engage in the science content in all domains (listening, speaking, reading and writing).
53	4	98	1581	ELSD GG		Insert the subheading and sentence at the end of the Vignette Debrief, before “Resources for the Vignette”, “Support for English Learners: English learners, particularly at the emerging and expanding proficiency levels, would benefit from instruction focused on language structures for asking and answering questions, recalling information, and summarizing information orally and in writing (ELD PI.2.1, PI.2.3–6, PI.2.10, PI.2.12, PII.2.6–7).”	Strategically highlights the instructional support ELs needs to meet the language demands required to meaningfully engage in the science content in all domains (listening, speaking, reading and writing).

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

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54	4		Throughout the chapter	ELSD GG	ELA ELD Connection for the most part describes strong ELA strategies beneficial for all students.	The ELA ELD Connection needs to include specific ELD instructional focus and strategies, or strategically insert specific instructional practices for English learners throughout the chapter.	A clearer emphasis of ELD instruction in the ELA ELD Connection will help make the distinction for the reader between strong ELA strategy for all students and specific instruction that ELs need to meet the language demands for the science content in all domains (listening, speaking, reading and writing).
55	5	47	1026	ELSD GG		Add a row and insert "CA ELD Standards: PI.3.6-7, PI.3.10, PII.3.1-2, PII.3.6-7"	Assist the reader to make the connection with the ELA standards and the ELD standards.
56	5	48	1079	ELSD GG		Insert the subheading and sentence, "Support for English Learners: English learners, particularly at the emerging and expanding proficiency levels, would benefit from instruction focused on language structures for asking and answering questions, describing relationships, using language that pertains to time, sequence, and effect, and recalling experiences orally and in writing."	Strategically highlights the instructional support ELs needs to meet the language demands required to meaningfully engage in the science content in all domains (listening, speaking, reading and writing).
57	5	55	1216	ELSD GG		Insert the subheading and sentence, "Support for English Learners: English learners, particularly at the emerging and expanding proficiency levels, would benefit from instruction focused on language structures for making cause and effect arguments, asking and answering questions, describing weather conditions orally and in writing."	Strategically highlights the instructional support ELs needs to meet the language demands required to meaningfully engage in the science content in all domains (listening, speaking, reading and writing).
58	5	68	1470	ELSD GG		Insert the subheading and sentence, "Support for English Learners: English learners, particularly at the emerging and expanding proficiency levels, would benefit from instruction focused on language structures for developing questions, making predictions, making cause and effect arguments, constructing explanations, and describing energy orally and in writing."	Strategically highlights the instructional support ELs needs to meet the language demands required to meaningfully engage in the science content in all domains (listening, speaking, reading and writing).

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

Edit #	Chap	Pg	Lines	Source	Current Language	Suggested Change	Rationale
59	5	83	1802	ELSD GG		Insert the subheading and sentence, "Support for English Learners: English learners, particularly at the emerging and expanding proficiency levels, would benefit from instruction focused on language structures for constructing explanations of change over time and comparing possible solutions orally and in writing."	Strategically highlights the instructional support ELs needs to meet the language demands required to meaningfully engage in the science content in all domains (listening, speaking, reading and writing).
60	5	99	2136	ELSD GG		Insert "CA ELD Standards: PI.4.10–11, PII.4.1–2, PII.4.6–7, PI.4.9"	Assist the reader to make the connection with the ELA standards and the ELD standards.
61	5	100	2179	ELSD GG		Insert the subheading and sentence at the end of the Vignette Debrief, before "Resources for the Vignette", "Support for English Learners: English learners, particularly at the emerging and expanding proficiency levels, would benefit from instruction focused on language structures for describing plant and animal external structures, constructing an argument about the function of a plant or animal's external structures, and developing an explanation for how plants and animal structures function orally and in writing."	Strategically highlights the instructional support ELs needs to meet the language demands required to meaningfully engage in the science content in all domains (listening, speaking, reading and writing).
62	5	126	2814	ELSD GG		Insert the subheading, "Support for English Learners: English learners, particularly at the emerging and expanding proficiency levels, would benefit from instruction focused on language structures for explaining differences between the structures of solids, liquids, and gases, summarizing information, and describing physical properties of materials and chemical reactions orally and in writing."	Strategically highlights the instructional support ELs needs to meet the language demands required to meaningfully engage in the science content in all domains (listening, speaking, reading and writing).
63	5	141	3198	ELSD GG		Insert "CA ELD Standards: PI.5.6"	Assist the reader to make the connection with the ELA standards and the ELD standards.
64	5	142	3199	ELSD GG		Insert the subheading and sentence at the end of the Vignette Debrief, before "Resources for the Vignette", "Support for English Learners: English learners, particularly at the emerging and expanding proficiency levels, would benefit from instruction focused on language structures for supporting an argument, explaining, and describing what they see and what is happening in a story orally and in writing."	Strategically highlights the instructional support ELs needs to meet the language demands required to meaningfully engage in the science content in all domains (listening, speaking, reading and writing).

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

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65	5	165	3525	ELSD GG	...as well as lessons that look specifically at language features used within informational reports (e.g., subheadings to organize information, present tense, etc.).	...as well as lessons that look specifically at language features used within informational reports (e.g., subheadings to organize information, present tense, etc.), letter writing, and describing cause and effect.	Strategically highlights the instructional support ELs needs to meet the language demands required to meaningfully engage in the science content in all domains (listening, speaking, reading and writing).
66	Intro 4 C Chem	2	59	PLSD KS	That will use to	That they will use to	Sentence sense
67	7- 4 C Chem	3	78	PLSD KS	Correspond one to two	Correspond to one to two	Sentence sense
68	7- 4 C Chem	3	82	PLSD KS	A instructional	An instructional	Correct use of word
69	7 HS 4 CM- Chemistry	15	279	ELSD GG		Insert the subheading and sentence, "Support for English Learners:English learners, particularly at the emerging and expanding proficiency levels, would benefit from instruction focused on language structures for describing (texture, color, physical properties of matter, chemical properties, etc.), cause and effect relationships, asking and answering questions, and using general- and domain-specific academic words orally and in writing."	Strategically highlights the instructional support ELs needs to meet the language demands required to meaningfully engage in the science content in all domains (listening, speaking, reading and writing).
70	7- 4 C Chem	20	417	PLSD KS	Other configurations and	Other configurations, and	Comma needed
71	7- 4 C Chem	21	420	PLSD KS	Of (red)	Of (black)	Word color is red
72	7 HS 4 CM- Chemistry	23	482	ELSD GG		Insert the subheading and sentence, "Support for English Learners:English learners, particularly at the emerging and expanding proficiency levels, would benefit from instruction focused on language structures for constructing explanations, predicting, arguing from evidence, explain cause and effect, and asking and answering questions orally and in writing."	Strategically highlights the instructional support ELs needs to meet the language demands required to meaningfully engage in the science content in all domains (listening, speaking, reading and writing).
73	7 HS 4 CM- Chemistry	33	644	ELSD GG		Insert the subheading and sentence, "Support for English Learners:English learners, particularly at the emerging and expanding proficiency levels, would benefit from instruction focused on language structures for constructing explanations, describing, predicting, and supporting opinions and persuading others orally and in writing."	Strategically highlights the instructional support ELs needs to meet the language demands required to meaningfully engage in the science content in all domains (listening, speaking, reading and writing).

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

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74	7- 4 C Chem	39	748	PLSD KS	*Proust's Law	Proust's Law	Why the supracircle before Proust's?
75	7 HS 4 CM- Chemi stry	60	1215	ELSD GG		Insert the subheading and sentence, "Support for English Learners:English learners, particularly at the emerging and expanding proficiency levels, would benefit from instruction focused on language structures for creating scientific explanations, engaging in argument from evidence, using general- and domain-specific academic words orally and in writing."	Strategically highlights the instructional support ELs needs to meet the language demands required to meaningfully engage in the science content in all domains (listening, speaking, reading and writing).
76	7- 4 C Chem	67	1372	PLSD KS	Figure graphs	Figure 18 graphs	Needs reference #
77	7-4C- ESS	4	120	PLSD KS	In a instructional	In an instructional	Proper use of word
78	7-4C- ESS	14	201-208	PLSD KS	Type Font 9	Type Font 11	Too small to read
79	7-4C- ESS	34	505	PLSD KS	Which is expected in CA NGSS	?	What is expected? Sentence is unclear in message
80	7-4C- ESS	46	700	PLSD KS	*Not all of California's	Not all of California's	Why have supracircle before the word "Not"?
81	7-4C- ESS	57	863	PLSD KS	Which is dense, rises up	?	Sentence doesn't make sense
82	7-4C- ESS	57	871	PLSD KS	A instructional	An instructional	Proper use of word
83	7-4C- ESS	57	874	PLSD KS	A instructional	An instructional	Proper use of word
84	7-4C- ESS	59	922	PLSD KS	Steeper faster than	?	Sentence doesn't make sense
85	7-4C- ESS	60	937	PLSD KS	A instructional	An instructional	Proper use of word
86	7-4C- ESS	63	980 Chart	PLSD KS	Aligned right	Aligned left	Format
87	7-4C- ESS	65	1036	PLSD KS	Different temperature objects	Different temperatures emit	Repeat word objects incorrectly
88	7-4C- ESS	69	1123	PLSD KS	air conditioning instructional segment	?	Doesn't make sense
89	7-4C- ESS	84	1431- 1432	PLSD KS	Enough they fuse releasing	Collisions can bring their nuclei together so that they fuse? Per Instructional segment of mass? What is that?	Doesn't make sense

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

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90	7-4C-ESS	87	1520	PLSD KS			Comment: This whole sequence is a bit much to grasp – too many high level concepts without sufficient background information, and the part about the carbon in our bodies coming from supernovas has not been explained with evidence – it requires a large leap of faith.
91	7-4C-ESS	90	1540	PLSD KS	Less well understand	Less well understood	Word tense
92	7-4C-ESS	90	1543	PLSD KS	material the cooler and denser material	The cooler and denser material	Delete first reference to “material” for sentence to make sense
93	7-4C-Bio	11	104	PLSD KS	How do we know that DNA codes for proteins that actually do things in cells?	How do we know that DNA codes for proteins actually do things in cells?	Delete word “that” for sentence to make sense
94	7-4C-Bio	11	104	PLSD KS	HS-LS1-1. Construct an explanation based on evidence for how the structure of DNA determines the structure	How the structure	Why have a supra circle before the words “the structure”?
95	7-4C-Bio	18	257	PLSD KS			Supra Circle before word “in”
96	7-4C-Bio	21	306	PLSD KS	HS-LS1-5		Supra Circle before word “to”
97	7-4C-Bio	22	312	PLSD KS	can be rearranged and during	can be rearranged, and during	Needs Comma
98	7-4C-Bio	23	331	PLSD KS	adenine diphosphate (ADP).		Should this be adenosine diphosphate?
99	7-4C-Bio	23	339-340	PLSD KS	Some organisms that do not live in oxygen-rich environments (like organisms that live near thermal vents deep in the ocean) and must use a different energy pathway.		Incomplete sentence
100	7-4C-Bio	24	345	PLSD KS			Supra Circle before word “and”
101	7-4C-Bio	26	390	PLSD KS			Supra Circle before word “of”
102	7-4C-Bio	31	479	PLSD KS	LS2-3		Supra Circle before word “and”
103	7-4C-Bio	33	513	PLSD KS	nitrites into nitrogen though bacteria	nitrites into nitrogen through bacteria	“Through” is appropriate word for sentence sense
104	7-4C-Bio	47	663	PLSD KS	Discussing the scientists themselves science is a human endeavor .		Incomplete sentence

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

Edit #	Chap	Pg	Lines	Source	Current Language	Suggested Change	Rationale
105	7-4C-Bio	47	666	PLSD KS	specific advise for teaching	specific advice for teaching	"advice" is correct word
106	7-4C-Bio	52	762	PLSD KS	HS-Ls3-2		Supra Circle before word "inheritable"
107	7-4C-Bio	57	859	PLSD KS	LS4-1		Supra Circle before word "[Clarification]"
108	7-4C-Bio	59	906	PLSD KS	Some classical examples	Some classic examples	Word choice?
109	7-4C-Bio	65	999	PLSD KS			Supra Circle before word "the process"
110	7-4C-Bio	70	1072	PLSD KS			Supra Circle before word "[Clarification]"
111	7-4C-Bio	75	1167	PLSD KS	How obtain raw data	How to obtain raw data	Sentence sense
112	7-4C-Bio	76	1190	PLSD KS			Supra Circle before word "This vignette"
113	7-4C-Bio	77	1204	PLSD KS	(Day 2 – Student Does): That the Grant's observed on	That the Grants observed on	No apostrophe is needed – not possessive
114	8	4	75-77	CFIRD JPS	Short cycle assessment provides information ....so teachers can continuously adjust instruction to meet students' specific needs and ensure progress.	Short cycle assessment provides information ....so teachers can continuously adjust instruction to meet students' specific needs and ensure progress. Add: Were accommodations effective? Were inclusive strategies provided so that students with disabilities could participate, or were alternate assessments devised to provide feedback?	If in planning accommodations were part of the lesson design then the learner could demonstrate mastery of skills, but a review of the assessment will show if additional design is needed for specific student groups, especially those with disabilities, and perhaps those with disabilities and also English learner to meet needs.
115	8	12	199	CFIRD JPS	Figure 2	Add: Be mindful of students with disabilities will need alternate means of representation to express drawings or models if they cannot see or have mobility challenges.	Free Appropriate Public Education (FAPE) requires inclusion, but also alternatives to paper/pencil tasks.
116	8	16	237	CFIRD JPS	Achieve has listed evidence statements	Achieve, (explain the nature of the group- it seems to be just stuck in here)	I may have missed this, but this left me confused.
117	8	18	275-76	CFIRD JPS	These assessments are primarily used to determine if individual students or groups of students have adequate prerequisite skills	These assessments are primarily used to determine if individual students or groups of students have adequate prerequisite skills...Add: Students in grades K-8 may lack vocabulary, lab techniques, and gaps in scientific processes due to prior school preparation and may need additional diagnostic tools devised by the teacher to fill in gaps of prior knowledge.	Transfers from other schools. Districts, counties, or states may differentiate in preparation especially for students with disabilities and English learners.

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

Edit #	Chap	Pg	Lines	Source	Current Language	Suggested Change	Rationale
118	8	21	357	CFIRD JPS	What's in the Bubbles' assessment probe.	What's in the Bubbles' assessment probe. Add: All graphics must contain alt-text describing the graphic, and if needed a tactile of the graphic.	Students who cannot see will need either alt-text describing the graphic or a tactile that they can feel, depending on the concept being addressed.
119	8	22	366	CFIRD JPS	.... twenty objects with pictures.	twenty objects with pictures Add: , describing the objects for text-to-speech users.	Students who cannot see need alt text to describe the graphics for readers.
120	8	23	386	CFIRD JPS	Individual white boards can be used at any grade level and with a variety of topics	Add: Refer to alternative response options for students with physically disabilities in Chapter 8.	Provide a guide to teachers about alternative means to convey information for students with disabilities including assistive technology
121	8	23	392-93	CFIRD JPS	use their white boards and to write two statements about examples of systems in which energy is transferred	use their white boards or accessible devices, and to write two statements about examples of systems in which energy is transferred	Honoring the student IEP means that options have to be available to participate in classroom activities.
122	8	24	430-31	CFIRD JPS	draw models with arrows indicating what would happen on their whiteboards	draw models with arrows indicating what would happen on their whiteboards or accessible technology devices...	Honoring the student IEP means that options have to be available to participate in classroom activities.
123	8	26	430-31	CFIRD JPS	Green means I understand; yellow, I'm not sure; and red, I do not understand.	Green means I understand; yellow, I'm not sure; and red, I do not understand. (Provide braille or other indication for students who are colorblind or blind.)	Honoring the student IEP means that options have to be available to participate in classroom activities.
124	8	29	503	CFIRD JPS	decide how an animal uses its structures to move	decide how an animal uses its structures to move (provide tactile graphics of the animals that include body parts to students that cannot see the animal can feel the features and respond).	Tactile graphics are inclusive for students who cannot see.
125	8	29	515	CFIRD JPS	Exit Cards,...	Exit Cards or digital representation for students using AT devices that cannot see to draw or able to create drawings other than through AT	Providing multiple means of expression is an inclusive practice.
126	8	30	546	CFIRD JPS	observing and recording the mass of an ice cube in a sealed Ziploc bag before and after it melts	observing and recording the mass of an ice cube in a sealed Ziploc bag before and after it melts (provide all students a chance to feel the ice and water as well as alternatives for weighing the two forms for those without sight ; digital scale with voice output).	If everyone feels the ice cube and water it provides them with information in addition to those that can see the two forms. Providing the digital scale with voice output includes students who cannot read a scale that does not speak the weight.
127	8	31	558	CFIRD JPS	Students share their thoughts with each other	Students share their thoughts with each other, including with an interpreter or digital speech-to-text device....	Students who are deaf and mainstreamed need to have the accommodation for discussion with peers.
128	8	31	567	CFIRD JPS	write	enter	Entering as a verb is inclusive for students using AT or pencil/paper.

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

Edit #	Chap	Pg	Lines	Source	Current Language	Suggested Change	Rationale
129	8	32	599	CFIRD JPS	....they have their own section to write in	....they have their own section to write in, have a partner write for students unable to write, but adding their thoughts to the group process.	Inclusive collaboration can be as simple as having a partner write for those that cannot write for themselves, or students that cannot write can use AT to write and print out their thoughts.
130	8	32	586-87	CFIRD JPS	groups with whiteboards to illustrate and explain the difference between an eclipse and a new moon.	groups with whiteboards to illustrate and explain the difference between an eclipse and a new moon. Use of a described video or a the teacher describing the interaction between the sun, moon, and earth can expand the learning for everyone.	Where possible use described video to explain phenomenon, or having students/teachers describe the actions for a person that cannot see the event helps all students put words to an action that has no sound.
131	8	33	632-33	CFIRD JPS	Each group is trying to come up with a consensus idea	Each group is trying to come up with a consensus idea (students who cannot see the reaction can use an oscilloscope to hear the differences in frequency as opposed to brightness of the emitted light)	Using different means to target the experiment provides understanding for all students and includes that who cannot see.
132	8	35	659-60	CFIRD JPS	What happens as matter and energy are transferred through an ecosystem?	What happens as matter and energy are transferred through an ecosystem? Add: Use speech-to-text to include students who cannot see the web.	Drag and Drop or connecting lines is not accessible to students who cannot see. An alternate is to have students describe relationships using speech-to-text AT.
133	8	36	664	CFIRD JPS	how matter and energy are transferred through an ecosystem?	how matter and energy are transferred through an ecosystem (using AT or AAC include students in the discussion)?	For students who cannot speak you can provide an alternative such as AAC or text-to-speech.
134	8	37	669	CFIRD JPS	..computer-based Technology-Enhanced Simulation	..computer-based Technology-Enhanced Simulation with captions and described video,	Students who cannot see or hear the simulation need access to the information.
135	8	41	1012-1013	Expanded learning	To collaborate with teachers, specialists, school administrators, and other stakeholders	To collaborate with teachers, specialists, school administrators, early childhood and expanded learning educators, and other stakeholders	By calling out early childhood and expanded learning educators it broadens the collaboration and it identifies with more specificity the term "other stakeholders"
136	8	45	803-04	CFIRD JPS	What gaps in student learning are evident in student work?	What gaps in student learning are evident in student work? Which accommodations are helping students and what else needs to be added for greater understanding?	Although accommodations are in the IEP or Section 504 Plans it is important to review the effectiveness of these accommodations to determine if they provide enough support, or if additional supports need to be in place.
137	8	48	900-01	CFIRD JPS	The students' conduct an investigation	The students' conduct an investigation, in pairs to allow for students who cannot see or cannot blow the sand sufficiently to monitor the experiment,	Adding a partner piece for the experiment does not deter from the actual results as these can be shared through multiple means of AT.
138	8	49	912	CFIRD JPS	students	Students, in small groups take turns adding ingredients and describing the effects so that everyone knows what reactions were part of the experiment.	Group work, even in testing situations, can lead to more inclusive participation and allow for all students to participate.

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

Edit #	Chap	Pg	Lines	Source	Current Language	Suggested Change	Rationale
139	8	50	956-57	CFIRD JPS	reactions based on the outermost electron of the atoms involved in the reaction	reactions based on the outermost electron of the atoms involved in the reaction. Students who are blind will have the equations and charts provided in Nemeth braille.	Students who are blind must have any math converted to Nemeth so that the AT device can read it correctly, otherwise the device will only read left to right and ignore exponents and other math symbols needing to be read in a logical order.
140	8	53	1019-21	CFIRD JPS	The tasks may involve hands-on work, investigation using simulations, or analysis of data produced by others.	The tasks may involve hands-on work, investigation using simulations, or analysis of data produced by others. Careful planning to accommodate students with disabilities is needed between the general and special education teachers.	Differentiating the assessment with accommodations will allow the teacher to assess the students appropriately.
141	8	54	1062	CFIRD JPS	A science notebook....	A science notebook, digital or hard-copy,....	Universal design calls for options where available.
142	8	55	1091	CFIRD JPS	Whiteboards....	Whiteboards, or the digital equivalent,	Universal design calls for options where available.
143	8	56	1115-16	CFIRD JPS	.... help teachers assess what students do and do not understand.	... help teachers assess what students do and do not understand. Provide alternate organizers that are accessible to text-to-speech and formatting.	Many graphic organizers are not accessible, and therefore useless to students who are blind or those that cannot create them due to other physical challenges. There are accessible options that can be produced digitally and are accessible to AT devices.
144	8	57	1158	CFIRD JPS	technology-enhanced items	technology-enhanced items, that have either alt-text for screen-readers 8or tactiles of charts for students who cannot see,	Providing accessible assessments requires that a check for accessibility is undertaken ahead of time.
145	8	57	1141-42	CFIRD JPS	help teachers assess what students do and do not understand.	help teachers assess what students do and do not understand. Before using simulations ensure the version includes accessible features for those who cannot see, hear, or manipulate independently.	There are many good accessible simulations on the market, but only a few are accessible. Have the simulation checked for accessibility before using it with students. An example of these science-based games can be found at https://books.google.com/books?id=6NKeBQAAQBAJ&pg=PA327&lpg=PA327&dq=accessible+game-based+science+simulations&source=bl&ots=c0mddWqELX&sig=X5Ce6OrcODHBo0xKDC L7UI01eJw&hl=en&sa=X&ved=0ahUKEwjS_6n8DJAhUJ22MKHWpPDTEQ6AEIJzAB#v=onepage&q=accessible%20game-based%20science%20simulations&f=false

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

Edit #	Chap	Pg	Lines	Source	Current Language	Suggested Change	Rationale
146	8	59	1175	CFIRD JPS	(PhET Interactice Simulations 2015)	(PhET Interactice Simulations 2015) Ensure captions, described video, and accessible navigation are included in assessments.	Accessible computer-generated instruction and assessments are going to be prevalent in the future, but they need to be accessible.
147	8	60	1203	CFIRD JPS	Figure 11	Figure 11....Draw a model, using accessible tools to include students who cannot see or manipulate the built-in tool bar...	Joysticks, buttons, pointers and other accessible tools can be used to draw. Students who cannot see may write their responses in digital text.
148	8	61	1207	CFIRD JPS	Figure 12	Figure 12...Add: Drag and drop actions can be substituted with other accessible tools, or written as a justification to explain the student response.	Drag and drop is fine for those who can see or manipulate tools, but for students with mobility or vision impairments and alternative is needed in order to assess student knowledge.
149	8	62	1211	CFIRD JPS	Figure 12	Figure 12....Provide alternative text for the video including descriptions of actions that cannot be seen.	Experiments that must be watched, must include descriptive video tracks.
150	8	64	1224	CFIRD JPS	data tables and graphs	data tables and graphs, must include alt-text for screen-readers to read the content in a logical manner for students who cannot see.	Screen-readers read text left to right, but often in charts the axis, both vertical and horizontal need to be read first, then any marking or graduation, and finally inside text.
151	8	65	1257	CFIRD JPS	A scoring rubric	A scoring rubric, accessible for screen-readers...	Same rationale as item above.
152	8	68	1485	Expanded learning	General guidelines for establishing learning environments that are	General guidelines for establishing learning environments during the school day and out-of-school-time that are...	A growth mindset is essential in all learning environments. Including school day and out-of-school time points to the importance of everyone supporting this mindset.
153	8	71	1422	CFIRD JPS	....set goals for future learning. (The addition may also go after the sentence in line 1430.)	....set goals for future learning. For students who use assistive technology it is important to access their ability to use the tools effectively and efficiently. At times it may be helpful to include sessions with the assistive technology specialist to learn more about the tools they are using.	An assumption by many general education teachers is that students using AT know all about it, when in fact they may not be very proficient with the tool. It is helpful to notice the skill level with the AT and consider further demonstration and tutoring on the tool as the student becomes more familiar with the device.
154	8	73	1477	CFIRD JPS	interactive computer tasks.	interactive computer tasks. NAEP may have a braille version of the test, as they have in the past. If the computer-adaptive test is the only one available refer to the accessibility guidelines for your students.	NAEP is a voluntary test, but important feedback for a disaggregated populations. Refer to accessibility guidelines before administering the test.

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

Edit #	Chap	Pg	Lines	Source	Current Language	Suggested Change	Rationale
155	8	73	1461-62	CFIRD JPS	PISA are conducted regularly to allow the monitoring of student outcomes over time.	PISA are conducted regularly to allow the monitoring of student outcomes over time. Add: To learn more about the accessibility features of PISA, go to https://nces.ed.gov/surveys/pisa/ .	PISA is an international test, but accessibility varies around the globe. It is important to check these accommodations for specific students before administering this assessment.
156	8	84	1578	CFIRD JPS	Formative Assessment Tasks...	Formative Assessment Tasks...Add: Provide alternatives, such as pairing students (one person observes and the other tallies) to include all students. Ensure that all of the downloadable forms are accessible with a text reader (e.g., PDF is not typically accessible, but Word documents are.	Visual observation is no a task you can assign a person who cannot see, but an alternative is to have that visual impaired person pair up with a sighted partner and conduct the observation in tandem.
157	8	94	1627	CFIRD JPS	matter (water cycle).	matter (water cycle). Add: Ensure all text describing the experiment and all forms are accessible. Teams might work together to be inclusive of students with mobility or vision disabilities.	Review IEP and 504 plans for accommodations and partner non-disabled students so that everyone can be included in the experiment.
158	8	94	1629	CFIRD JPS	Student Procedures	Student Procedures Add: Include specific instructions for students using AT or alternate means to accomplish the tasks of the experiment.	Most students will be able to participate with accommodations, and a few will need modifications to the experiment in order to participate.
159	8	95	1656	CFIRD JPS	Building a Mars Habitat	Building a Mars Habitat...Add: The research involved in the experiment will be accessible. The construction of the device to simulate the hypothesis may need to be adapted using software CAD or other design programs instead of physical models.	Universal design; means of expression allow for digital or virtual models to replace physical models.
160	8	98	1724	CFIRD JPS	Solar Cookers	Solar Cookers Add: Digital tools including speaking thermometers can be used to measure heat. Other accommodations may be needed, please consult with the special education specialist for these options.	Universal design in meeting the needs of students will allow the experiment to be inclusive.
161	8	11 of 104	183 – 187	Imp and Acc LE	In the drawing at the right, Student 2's model is incomplete. It does not model the plates moving across the hot spot. In the drawing on the left, Student 1's model is complete showing the plates moving across the hot spots using arrows to show movement. Student 1 also labeled all of the part of their model.	In the drawing on the left, Student 1's model is complete showing the plates moving across the hot spots using arrows to show movement. Student 1 also labeled all of the part of their model. In the drawing at the right, Student 2's model is incomplete. It does not model the plates moving across the hot spot.	References to Students 1 & 2 might be in numeric order, or from left to right. This also focuses on the positive work by students, rather than the negative comments for Student 2.

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

Edit #	Chap	Pg	Lines	Source	Current Language	Suggested Change	Rationale
162	8	30/104	531-541	Imp and Acc LE		Page 60/104 includes Figure 11 that correlates to the ice cube example.	Are we placing Figures next to text? Placing Figure 11 following the text on page 30 might be a great idea.
163	8	84/104	Formative Assessment Tasks	Imp and Acc LE	Instructions: Once you have formed your team, your teacher will assign your team to a zone in the schoolyard. Your job is to go outside and spend approx. 40 minutes observing and recording all of the animals and signs of animals that you see in your schoolyard zone ..etc.	Either change this observation to types of blacktop, types of vegetation, or types of insects.	This task is not applicable in schools in an urban setting (which happens to be a lot in CA). Also, even in rural CA, multitudes of animals do not make their way onto a school yard.
164	9	2	14	CFIRD JPS	in order to best serve all students.	in order to best serve all students. Add: It is important to note two things about students; 1. The range of disabilities over disability populations can be from low functioning to high functioning; and 2. Many students are members of multiple groups (e.g., Hispanic, blind, cerebral palsy, and of fragile health.	We serve students better by looking at students holistically; ethnic, physical, mental, and emotional parts of the individual. Some students fall into more than one category, but the educational plan for them must be based on the needs of the individual.
165	9	2	40	CFIRD JPS	members of multiple groups.	members of multiple groups. Add: Struggling students may be unidentified students with disabilities and benefit from differentiated instruction.	Differentiated instruction is important not only for identified students, but for students who do not yet qualify as having a disability.
166	9	4	66-90	CFIRD JPS	benefit from engagement in the arts	benefit from engagement in the arts... I do not know why this statement is here in chapter 9?	This should be in the introduction, not equity and access.
167	9	6	122	CFIRD JPS	real materials	real materials, assistive technology,	In addition to real lab materials students may need assistive technology devices and software/apps to fully participate in the science curriculum.
168	9	18	414-417	ELSD GG	...found to correspond with the NGSS and the CCSS for Mathematics, and at the same time as this science framework was being developed, materials that augment the CA ELD Standards in ways that support their use in mathematics and science were also developed.	...found to correspond with the NGSS and the CCSS for Mathematics, materials that augment the CA ELD Standards in ways that support their use in mathematics and science have been developed.	The integration document has already been developed.

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

Edit #	Chap	Pg	Lines	Source	Current Language	Suggested Change	Rationale
169	9	18	415-17	CFIRD JPS	augment the CA ELD Standards in ways that support their use in mathematics and science were also being developed.	augment the CA ELD Standards in ways that support their use in mathematics and science were also being developed. Add: Students who learn ASL as their first language are considered to have a complete language, and English would be their second language. ASL needs to be considered when teaching the lessons to this group of students.	ASL is a recognized language by itself. Teachers need to be aware of the need for an interpreter for lessons taught, as well as captions for other audio introduced in the lessons.
170	9	31	785-87	CFIRD JPS	Likewise, students with disabilities may not be identified as gifted and talented as readily as others by teachers, yet some students with disabilities may be also gifted and talented.	Likewise, students with disabilities may not be identified as gifted and talented as readily as others by teachers, yet some students with disabilities may be also gifted and talented.	This statement is buried in the paragraph and should be its own paragraph, perhaps citing students of gifted students with disabilities: Meeting the Needs of Gifted/Learning Disabled Students: How Far Have We Come? http://eric.ed.gov/?id=EJ494758 ; An Enrichment Program for Gifted Learning Disabled Students http://gcq.sagepub.com/content/32/1/226.short ; Effects of Enrichment on Gifted/Learning-Disabled Students http://jeg.sagepub.com/content/18/4/385.short
171	9	33	850	CFIRD JPS	equitable access to the curriculum	equitable access to the curriculum, Add: and honor the IEP or Section 504 for the individual student.	The IEP is to be followed or the result will be a due process finding against the district. This flows into the next sentence about the IEP.
172	9	34	880-81	CFIRD JPS	Appropriate accommodations are provided to help students access grade-level content and complete tasks successfully.	Appropriate accommodations are provided to help students access grade-level content and complete tasks successfully. Add: 4. For some students, typically those with cognitive disabilities, the materials and assessment must be simplified, creating a modification, which should be noted in the student's IEP.	There was no mention of a modification in the first three tenants so adding a 4 th point to include modification would be appropriate.
173	9	37	909	CFIRD JPS	Reducing the expectations of an assignment or assessment	Reducing the expectations of an assignment or assessment	Reducing the number of problems does not change the expectation, just the number, which could be a designated support, not even an accommodation. If a template was provided that included steps to complete the task – that would be an accommodation that changes the assignment. I feel this example of a modification should be removed

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

Edit #	Chap	Pg	Lines	Source	Current Language	Suggested Change	Rationale
174	9	37	931-32	CFIRD JPS	Classroom access to laboratory equipment may be limited by reach or vision	Classroom access to laboratory equipment may be limited by reach or vision. Add: Many lab equipment items can be found that speak (e.g., talking thermometers) and other assistive technology devices.	Assistive technology supports students and could be universal by design to include all students. It would be important to talk to secondary, Post-secondary, or college AT specialists to find resources for the AT lab tools.
175	9	38	942-43	CFIRD JPS	challenge for teachers to fully include all students in classroom discourse and to address science literacy.	challenge for teachers to fully include all students in classroom discourse and to address science literacy. Add: Working with the specialist in charge of supporting the students with disabilities plans can address whether vocabulary tasks, defining tasks or other interventions will be used to precede new lessons.	Not all students benefit from vocabulary cards or other language supports, but in combination with interventions specific to individuals the students will have the preparation to be included in the lesson and lab.
176	9	41	1007-08	CFIRD JPS	alternative “catch-up” instruction.	alternative “catch-up” instruction. Add: In addition to multiple means of expression, allow for different means of expression, it is also important to consider the accommodations beyond Universal Design at the time of planning as students with disabilities will likely need a wider range of alternative representation to include assistive technology and software/apps.	Universal Design does not take the place of an IEP or 504, and is usually not specific to individual needs, but does allow for the greatest number of students to receive the information.
177	9	43	1083-84	CFIRD JPS	Tier 2 or Tier 3 supports not be deprived from participating in engaging STEM coursework	Tier 2 or Tier 3 supports not be deprived from participating in engaging STEM coursework...Add: It is important to note that more time is not the solution, but more specifically directed intervention created for just a few students in methods that were not needed in tier 1 & 2. This intervention would be aligned to the IEP and 504 plan to meet student needs.	There are times when pulling a student to the Resource Room is a good solution, but that has to be weighed with what else the student is missing. The time should be skill specific and not set up for a regular meeting. It should also only be used for important science literacy, not incidental learning. The lessons should be standards based and accommodated with specific interventions.
178	9	47	1598	School Fac. MS		Should we add the Science Safety Handbook 2014 to “Works Cited”? I know the handbook is referenced in footnotes but we may want to put it under works cited as well.	

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

Edit #	Chap	Pg	Lines	Source	Current Language	Suggested Change	Rationale
179	9	49	1150	CFIRD JPS	diversity among all students	diversity among all students...Add: Linguistically diverse also includes students who use ASL as their first language. The interpreters may not be familiar with the words and concepts being presented, so it would be important to advance these lessons to the interpreter in advance.	Generally ASL interpreters are well rounded, but some may not have a science vocabulary or concepts in science in their own education, so to be fair to the students it would be helpful to provide the interpreters with advance copies of instructional materials and vocabulary being introduced in a science unit.
180	9	72	1589	School Fac. MS	Other support elements include adequate time, space and resources (e.g., equipment and consumable materials) devoted to science in all schools, public-private-community partnerships to support student science learning in and out of school time.....	Other support elements include safe and appropriately designed facilities, adequate time, space and resources (e.g., equipment and consumable materials) devoted to science in all schools, public-private-community partnerships to support student science learning in and out of school time..... Or Replace with Other support elements include adequate time, safe and appropriately designed facilities, and resources (e.g., equipment and consumable materials) devoted to science in all schools, public-private-community partnerships to support student science learning in and out of school time.....	Under critical actions for ensuring equity, "Maintain safe and appropriately designed facilities including suitable spaces for NGSS-based science and engineering tasks and uncrowded classrooms" and since this is a critical action, it should probably be included somewhere in the concluding/ summary paragraph for chapter 9.
181	9		531-564			http://www.cde.ca.gov/ls/fa/re/ " In regards to our conversation regarding lines 531-564, if you feel there is a need for a citation or a reference about research on school facilities and student achievement, you may want to consider including our school facilities research web page, specifically the summary of research PDF, "School Facilities Improve Learning".	
182	9			CFIRD JPS	modifications	modifications changes	The word modification means to alter the lesson significantly so that the assessment is different than the lesson assigned to general students. If that is what is meant it still calls to change the lesson and provide a modified assignment for the specific students.
183	10	4	82-87	PLSD CR	CCSS	CA Standards for ELA and Math	

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

Edit #	Chap	Pg	Lines	Source	Current Language	Suggested Change	Rationale
184	10	5	116	School Fac. MS		Please add a footnote for the Science Safety Handbook after this sentence: Instructing students to use particular equipment and in overall laboratory safety strategies is an essential element of CA NGSS instruction.	Rationale: While the Science Safety handbook is referenced throughout the framework, sometimes instructors or administrators only read sections of the frameworks so it may be useful to add the footnote here as well.
185	10	5	114-116	PLSD CR	In overall lab safety	To also use safe overall lab strategies	
186	10	6	140	PLSD CR	Models that students develop	Students develop models and use them	More active
187	10	7	142	PLSD CR	Whole section reads like a literature review of a resource	Start with line 171 and then back up with the research as needed.	It would be more engaging to teachers
188	10	8	148	CFIRD JPS	observable	(delete observable) using senses to understand	Phenomena is noticed by all of the senses, not just vision. Those without vision can still understand the science principle using other senses or by having it relayed by classmate observations.
189	10	9	183	PLSD CR		Add in "further detail can be found in grade level chapters"	
190	10	9	195	PLSD CR	Beginning of paragraph	Add in " As described in chapter two,	
191	10	9	195	PLSD CR	Is the phrase the science education community uses when discussing	refers to	
192	10	10	231	CFIRD JPS	cultural	delete "cultural" anthropological	Culture is commonly used to describe day to day ways of a people that include routines and rituals, whereas anthropology looks at the core of how and why humans behave is such a way and how that behavior over time identifies a group of people. Example; nursing took a giant leap forward when hand-washing was introduced both in surgery and patient care by nurses and attendants, so much so that the practice permeated across the globe and became common practice to the anthropology of patient care.
193	10	16	343	CFIRD JPS	write	Write complete	In the digital age it is more likely for students to enter text/data into a computer or digital device, which is also more inclusive of students with print disabilities.
194	10	24	580	PLSD CR	Vignette is a bit confusing how it is written.	It needs to follow the same pattern as the previous vignettes.	

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

Edit #	Chap	Pg	Lines	Source	Current Language	Suggested Change	Rationale
195	10	25	625-26	CFIRD JPS	discussions on the nature of science as a means of motivating students.	discussions on the nature of science as a means of motivating students. Add: When providing scientific experiments it is important to look at the whole semester and vary the types of means of conducting the experiments to include all students; some visual, some audio, some smell/taste, and some at molecular and grant (micro/macro) diversity.	Universal design at the design of the lesson will be more inclusive, but varying the senses used to view results is more inclusive.
196	10	29	688	PLSD CR	Figure 3 needs to move down below line 693	Provide lines 691-693 as intro to the figure	
197	10	31	743	CFIRD JPS	illustrated by the following snapshot	illustrated by the following snapshot...Add: In addition to the discussion of background knowledge the students may have, there is also a window to research the pollination process in the Internet or source documents in the school library.	If only background knowledge is used the discussion is limited to those with the topics experience. Widening the research capability provides an opportunity for students that do not have that knowledge to participate, especially those that will be reading about the project and not able to see the experiment when it comes to that stage.
198	10	33	813	CFIRD JPS	best possible design	best possible group design	Group process is inclusive, especially for students with mobility or vision issues.
199	10	35	863	PLSD CR	problem	solution	
200	10	36	897	PLSD CR	Vignette needs to better describe how the instruction and student learning happens	It would help to see one activity broken down and described thoroughly	
201	10	37	935	PLSD CR	Two related crosscutting concepts	The CCCs need to be clarified	
202	10	39	954	PLSD CR	Links and general comment on section	remove	I am not sure we need to include links but it would be good to include some analysis or explanation for the lessons and strategies as are used in the next section.
203	10	42	970	PLSD CR	Whole paragraph is very important and should somehow be highlighted – maybe move to line 968 before the chart?		
204		44	1028	CFIRD JPS	never even heard of before	never even heard of before. Add: Chemical reactions often produce unexpected smells, which may be different from those they have been exposed to. Chemical reactions in cooking too provide a possible new tasting experience.	Expanding the core experience to all senses is more inclusive of students may not have one or more sense.

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

Edit #	Chap	Pg	Lines	Source	Current Language	Suggested Change	Rationale
205	10	44	1032	CFIRD JPS	experiences they had before coming to a class	experiences they had before coming to a class. Insert: Using these experiences of students to discuss their prior knowledge provides leadership opportunities, and allows for more than the teacher to share knowledge.	Students teaching students is a valuable part of the educational system, and should be encouraged.
206	10	48	1127	PLSD CR	We may want to be more clear that this is how science used to be taught and we can do better.		
207	10	49	1136	CFIRD JPS	the activities, as well as problem sets on the topic	the activities, as well as problem sets on the topic. Insert: Assigning the role of narrator, one who describes the actions visible to the group, provides the input needed for students without a visual context.	Students with vision impairments should be included in all discussions, simulations, and experiments, but there needs to be a link to the missing sense by adding a feature that provides that input. The same holds true to hearing, and mobility.
208	10	49	1145	PLSD CR	For this entire section add in the 5E headings to clarify what each paragraph is focusing on.		Many teachers are not familiar with 5E and it would help them understand each part of the 5E cycle
209	10	52	1230	PLSD CR	The educational support personnel in Expanded learning...	I would not include this here	It should be included but not at the beginning of the section
210	10	53	1265-66	CFIRD JPS	provide additional experience in applying the concept	provide additional experience in applying the concept. Insert: At this point some students/groups may defer to the Internet or other resources to find applications of force that might influence their re-design, following the dialogue with peers and the teacher.	When students receive feedback on their projects, it is natural to want to make improvements, but as part of that phase it is advisable to allow for research time to identify other possible iterations of the design they had previously shown in class.
211	10	57	1375	PLSD CR	Deeper meaning	Add in depth of knowledge (DOK) to the first paragraph in front of or after deeper meaning if that makes sense.	
212	10	57	1386-87	CFIRD JPS	balance of intellectual challenge presented to students	balance of intellectual challenge presented to students...Add: understanding the cognitive abilities of included students that may need support through AT or scaffold processes...	Bloom's Taxonomy escalates the complex cognition as it moves up the pyramid. For some students attainment of the top tier should not be impermeable, but provided support according to the IEP/504 Plan.
213	10	60	1415	PLSD CR	Further definitions	Delete further definitions	The original definition is probably enough, maybe add in a link for those who may want advanced info on DOK.

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

Edit #	Chap	Pg	Lines	Source	Current Language	Suggested Change	Rationale
214	10	61	1440	CFIRD JPS	organizing and displaying data in tables, graphs, and charts.	organizing and displaying data in tables, graphs, and charts. Add: Students with specific learning disabilities such as dyslexia and dysgraphia, and some with dyscalculia may have difficulty with graphs and charts, and will need accommodations, not that the task is beyond them.	It is important to clarify that disabilities such as dyslexia do not involve intelligence, rather most students with dyslexia are quite intelligent, but need accommodations to preform along with peers.
215	10	62	1459-50	CFIRD JPS	The cognitive demands at level 3 are complex and abstract.	The cognitive demands at level 3 are complex and abstract. Add: Understand that cognitive demands do not exclude students with processing challenges or cognitive issues related to intelligence so long as accommodations for these individuals are allowed.	Developmental Disabilities and other Intellectual disabilities can still allow the student to function at all levels, but with accommodations that support their tasks.
216	10	64	1533	Expanded learning	Questioning can improve student learning when teachers:	Questioning can improve student learning when teachers and expanded learning educators:	Expanded learning professionals need to be included in developing good questioning skills. As facilitators of learning, inquiry is essential. Consistency in questioning will help youth increase Depth of Knowledge
217	10	64	1517-18	CFIRD JPS	use scientific and engineering practices and crosscutting concepts.	use scientific and engineering practices and crosscutting concepts. Add: Remember to include students with communication disabilities; autistic, deaf, and other language impairments using accommodations or modifications in the student's IEP/504 Plan.	ADA requires that all students be provided the right to take courses for which they have the required prerequisites, and that inclusion is part of the role of the students. Teacher must provide all levels of participation.
218	10	65	1554-55	CFIRD JPS	strategies to engage students in discourse:	strategies to engage students in discourse (insert: before showing these clips to students defer to the specialist to ensure the modes/formats are accessible):	Many clips do not include captions, described video, or other language related formats, which should be the bar for inclusion in any curriculum.
219	10	70	1643-44	CFIRD JPS	The samples come from students of all grade levels, demographic groups, and geographic regions.	The samples come from students of all grade levels, demographic groups, and geographic regions. Add: Digital notebooks work well in this aspect of student sharing as the teacher can arrange groups to share ideas and the software/apps students use to include the same information in different accessible forms.	The drawing, making of charts and other graphic displays rely on software and apps to level the playing field for students with disabilities. Making students aware and how to use these formats is important for the specialist to provide and teach the nuances of the software making it accessible/sharable.
220	10	74	1694	CFIRD JPS	description of the tests used	description of the tests used add: as well as unique tools used both hardware and software in case the product needs to be reproducible.	Engineering and other science experiments provide the justification for an end-product or rule/law. Accordingly this must be written out so this it can be replicated to verify identical results, if not the rule invalid.

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

Edit #	Chap	Pg	Lines	Source	Current Language	Suggested Change	Rationale
221	10	76	1772	CFIRD JPS	pause the video at critical points during the demonstration	pause the video at critical points during the demonstration (add: ensure the video supports deaf/blind students)	Accessibility must be a forethought, not an afterthought and provide equal access.
222	10	77	1786-87	CFIRD JPS	The scientific explanation for why the water rises in the flask is not simple.	The scientific explanation for why the water rises in the flask is not simple. Add: Provide students with vision impairments a partner to narrate the observations.	This experiment was visual, to provide accommodations there must be a narrator to describe the event for the benefit of those who could not see the results.
223	10	82	1936	CFIRD JPS	reasonably-priced probes	reasonably-priced probes (add: including talking devices)	Many scientific apparatus now come with a text-to-speak option, which includes students unable to see the markings.
224	10	83	1972	CFIRD JPS	Simulations	Simulations (add: assuring that all students well benefit from the accessibility of the simulation)	Teacher are required to provide equal access and by working with the specialist a simulation can be found that is accessible for all students.
225	10	87	2073-74		by cross-disciplinary discussion and collaboration to achieve their distinct but overlapping goals	by cross-disciplinary discussion and collaboration to achieve their distinct but overlapping goals. Add: Also important is the inclusion of the language specialist for English learners, and specialist for students with disabilities to ensure accommodations are in place for all students with participate equally.	IDEA requires that students receive the same access to instruction and curriculum.
226	10	88	2100-01	CFIRD JPS	online information resources	online information resources. Ensure that Internet resources are accessible and that they comply with WCAG 2.0	WCAG 2.0 is the current requirement for all internet accessibility. Not all internet sites are compliant at this time, so it is important to pre-check the sites students may visit.
227	10	89	2127	CFIRD JPS	One must have words for the things being observed	One must have words for the things being observed (add: English learners and students with language impairments may need vocabulary preview and context support.	Vocabulary. More than other language issues can frustrate students with English or disabilities, therefore planning time to review or teach vocabulary is important.
228	10	90	2165	CFIRD JPS	sophisticated graphs and graph interpretation	sophisticated graphs and graph interpretation. Add: Allowance for digital tools to support calculations as well as accessible software for display and reading of graphs/charts should be part of the planning.	Include assistive technology options as well as software and apps to accessibility.
229	10	90	2171	CFIRD JPS	drop-and-drag	drop-and-drag (add: or accessible versions)	Students with vision impairments cannot drop and drag, but digital software/apps options exist.
230	10	91	2184-85	CFIRD JPS	teachers of science need to know what level of mathematics their students have mastered	teachers of science need to know what level of mathematics their students have mastered (add: including support devices as accommodations for students)	Ensure accommodations are in place to support students with digital tools.

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

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231	10	95	2282	CFIRD ROS	Insert a line after - ... that integrate the use of technologies, inquiry, and problem-based learning.	<i>In the California Model School Library Standards students learn to access, evaluate, use, and integrate information and ideas found in print, media, and digital resources, enabling them to function in a knowledge-based economy and technologically oriented society.</i>	The CA MSLS are designed to help students learn and work with 21 st century skills and apply responsible research practices, be respectful to others when using digital devices, continue to grow as lifelong learners, and to help them be college and career ready.
232	10	98	2315-16	CFIRD JPS	need to develop new curriculum designs and also increased capacity to support teachers	need to develop new curriculum designs and also increased capacity to support teachers. Add: Assistive technology exists and is being developed that provides support for students with disabilities in the 21 st Century.	The specialists working with students with disabilities must keep up with new technology developments, especially regarding assistive technology related to science and engineering to provide new tools so that students can have options in college and career.
233	10	9 to 14		PLSD CR	General comment on section	This feels too long and the vignette covers much of the same information. I would cut out a lot of this	
234	11	7	115	CFIRD JPS	multiple performance expectations	multiple performance expectations and across various accessibility issues related to IEP or 504 accommodations as well as language issues for English learners	Accommodations must be included in planning, and not an afterthought as has been the previous means of including students who learn differently.
235	11	9	184	CFIRD JPS	engages educators	engages educators (add: including general, special education, and English learner supports)	Perspective of different views is needed to provide access to the curriculum.
236	11	11	239	CFIRD JPS	use of technology	use of technology, and assistive technology	Addressing both technology and assistive technology to include tools used by students with disabilities
237	11	12	259	Expanded learning	Parents, guardians, families, and community	Parents, guardians, families, early learning and out-of-school time educators, and community	Calling out early learning and out-of-school time calls on everyone to change their paradigm around learning and supporting learning.
238	11	13	281-82	CFIRD JPS	to support the quality implementation of the standards	to support the quality implementation of the standards (add: and to evaluate and provide feedback to teachers being supervised)	Evaluation by administrators must include knowledge of the subject to add commendations and suggestions in addition to general teaching practices that provide guidance for professional development where needed.
239	11	16	358	CFIRD JPS	how to differentiate instruction	how to differentiate instruction, including accommodations and the use of assistive technology (AT),	Planning must also include supporting students with disabilities both for accommodations and the use of AT.
240	11	17	382	CFIRD JPS	integrating the practices into their classrooms.	integrating the practices into their classrooms. Add: General and special education teachers need to collaborate to support students.	Subject and specialty experts need to work together to support student needs.

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

Edit #	Chap	Pg	Lines	Source	Current Language	Suggested Change	Rationale
241	11	18	400	CFIRD JPS	experiences that focus on, the nature of science	experiences that focus on, the nature of science regarding assistive technology and alternate formats	Supporting students with disabilities includes a wider range of accessible formats and devices, which teachers need to be aware of as well as the array of accommodations possible.
242	11	19	425	CFIRD JPS	address the need for inclusion	address the need for inclusion (students special needs and English learners)	New requirements from the federal department of education view all students, including those with special needs, as students first – supporting the accommodations needed to include these students in all school activities especially academic endeavors.
243	11	23	557	Expanded learning	Teachers will need to think across grade levels, building	Teachers will need to think across grade levels and learning platforms, building	Serves as a reminder teaching and learning needs to be coherent across all venues
244	11	23	559-60	CFIRD JPS	collective participation by a school staff is more likely to result in implementing the vision	collective participation by a school staff is more likely to result in implementing the vision. Add: New teachers are evaluated more regularly than veteran teachers, but both groups need to be evaluated by knowledgeable administrators guiding them to become more professional in the process.	Collective bargaining requires evaluation by administrators that commends good practice and supports professional development where skills need to be improved or expanded.
245	11	25	600	CFIRD JPS	analyzing student learning	analyzing student learning, including English learner and special education IEP/504 Plans,	Knowing the supports needed for students improves the planning process and eventually the reaching of student goals.
246	11	27	673	CFIRD JPS	First, one-size strategies do not fit all teacher learners.	First, one-size strategies do not fit all teacher learners. Teachers must however be exposed to all learning strategies to accommodate the needs of various students learning styles.	Exposure and training in multiple learning styles provides teachers with a background of how students learn so that differentiated instruction can be planned for and taught.
247	11	30	741	Expanded learning	Help organize student exploration? How can	Organize student exploration? How can teachers work closely with out-of-school time educators to support student learning? How can...	Teachers working with out-of-school time educators will create stronger learning environments and explorations for youth. Calling this out in the question format brings to mind the need to consider how to do this effectively.
248	11	30	748-49	CFIRD JPS	collegiality with other teachers	collegiality with other teachers including specialists for English learners and those supporting students with disabilities...	It is important to consider all students when discussing collaborations, especially those with accommodations.

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

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249	11	32	834-35	CFIRD JPS	Careful analysis of online resources for professional learning is required to match appropriate needs.	Careful analysis of online resources for professional learning is required to match appropriate needs. Resources may include online chat rooms where educators can share new developments in AT.	One person cannot know all of the technical advances being developed, so sharing with peers enhances all participants and improves in the level of support for students, especially in the area of assistive technology devices and software/apps.
250	11	36	915-16	CFIRD JPS	teacher leaders need professional learning targeted toward leadership	teacher leaders need professional learning targeted toward leadership, including train the trainer model,	For efficiency the train-the-trainer model can be used for teacher leaders to improve and advance the skills of the leader and those being provided the new tools presented by the teacher leader.
251	11	38	965	CFIRD JPS	conversations about instructional practice	conversations about instructional practice. Add: This model is particularly effective for rural educators, especially for low incidence population techniques.	Travel costs can be prohibitive, and low incidence populations are more difficult to collaborate new ideas in AT and software/apps that online offers viable opportunities.
252	11	40	1026	CFIRD ROS	Add an additional bullet to list, after line 1025.	<i>Read and understand the CA Model School Library Standards and the role the integration of these standards play in preparing student for college and career readiness.</i>	The MSLS cut across and support all disciplines. They are designed to be taught collaboratively by the classroom teacher and the teacher library in the context of the curriculum.
253	11	41	1064	CFIRD JPS	equitable science opportunities	equitable science opportunities, including assistive devices and applications,	The means of representation and demonstration from Universal Design in addition to the use of AT support all student learning.
254	11	46	1200	CFIRD JPS	Although some equipment	Although some equipment, including assistive technology devices,	Accommodating for students with disabilities that include students who cannot see, hear, or move in ways to experience traditional experiments or demonstrations is important to meet student needs.
255	11	46	1222	CFIRD JPS	representing all grade levels	representing all grade levels, as well as specialists,	Inclusion during the planning will provide support for diverse needs.
256	11	48	1273	Expanded learning	Guardians, and community members can be active players in	Guardians, early childhood and expanded learning educators, and community members can be active players	Includes the early learning and expanded learning educators in the role of actively supporting policies and practices to support professional learning for all educators.
257	11	49	1305-06	CFIRD JPS	Enlisting parents, guardians, and families in understanding and supporting the CA NGSS	Enlisting parents, guardians, and families in understanding and supporting the CA NGSS, particularly for parents of students with disabilities who might learn differently,	Parents are the best advocates for their children, so providing them the information students will be exposed to in the standards will help them secure the necessary accommodations.

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

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258	11	50	1331	CFIRD ROS	guardians,families...	guardians, families	Add a space after comma.
259	11	50	1346	CFIRD JPS	Professional organizations	Professional organizations, including those dedicated to specific physical, emotional, and social disabilities....	Professional organizations such as National Federation for the Blind, Understood...offer support for specific students with disabilities.
260	11	52	1380	CFIRD JPS	Groups at the state level	Groups at the state level, and national organizations that might produce alternate formats of instructional materials...	Blindness specifically provides braille and tactiles for high school students nationally, and should be included in these discussions.
261	11	53	1417-18	CFIRD JPS	capacity to integrate three-dimensional learning into their instruction	capacity to integrate three-dimensional learning into their instruction. Add: Many national organizations provide disability specific conferences where these techniques can be introduced and demonstrated.	Deaf, blind, mobility organizations provide national conference to look specific at target populations and how to support students with these disabilities.
262	11	56	1498	CFIRD JPS	job shadowing, mentoring, and internships	job shadowing, mentoring, and internships. Insert: Students with disabilities will have a mandated requirement to provide an Individual Transition Plan (ITP) which must be in place at the student's 16 th birthday (may begin earlier) that includes training options as well as new WIOA legislation.	IDEA requires an ITP for students with disabilities.
263	11	56	1515-16	CFIRD JPS	professional learning opportunities for students and educators.	professional learning opportunities for students and educators. Add: The internet provides lists of celebrated individuals that made contributions by ethnic group and by disability so that students can read about people that have similar backgrounds.	Providing information or even bulletin boards noting famous people that students can aspire to builds confidence.
264	12	2	39	CFIRD JPS	adopt resources that best meet the needs of its students	adopt resources that best meet the needs of its students, especially where the materials are either translations or materials using scaffold techniques,	Provide support for English learners and students with cognitive disabilities.
265	12	6	181-82	CFIRD JPS	presents diverse examples of notable scientists and engineers	presents diverse examples of notable scientists and engineers, including ethnic diversity and people with disabilities.	Specific diversity needs to include representatives that mimic the student population in looks and disabilities. To honor the tenants of ADA.
266	12	10	280	CFIRD JPS	Resources encourage the meaningful use of technologies	Resources encourage the meaningful use of technologies, including assistive technology devices that provide accommodations for students with disabilities,	Technology goes beyond computers and must include assistive technologies for qualified students that are written into the IEP and Section 504 Plan.

Item C: California Department of Education- Internal Review Responses

Science SMC Meeting- February 19, 2016

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267	12	12	341	CFIRD JPS	differentiated path for diverse students	differentiated path for diverse students, including accessible tests that might include braille and descriptions of graphics or tactiles as needed for students,	Assessments must be accessible to provide students with print disabilities the ability to show what they know.
268	12	12	355	CFIRD JPS	written	written, or allowing for digital options for students with disabilities,	Some populations with print disabilities must be provided the accommodations of alternatives to physical writing that includes digital or scribed writing.
269	12	14	402	CFIRD JPS	differentiated path for all students.	differentiated path for all students. Populations that have print disabilities may need assistive technologies to provide access to the information as well as to respond to assignments or assessments.	Print disabilities must be accommodated for as legislated in IDEA.
270	12	16	487	CFIRD JPS	outside resources	outside resources, accessible to students who may not be able to hear, see, or support students with mobility challenges	Outside resources must still accommodate student needs for access.
271	12	16	460-61	CFIRD JPS	consumable and non-consumable equipment and materials	consumable and non-consumable accessible equipment and materials	Access to materials is guaranteed in both ADA and IDEA legislation.
272	12	18	548	CFIRD JPS	students in the classroom	students in the classroom including assistive technology devices that support students who cannot see or that have mobility constraints.	Specialized equipment is of importance and is written into legislation; ADA and IDEA.
273	12	19	555	CFIRD JPS	multicultural society	multicultural society and a community that includes people with disabilities,	Inclusion of people with disabilities validates those that learn differently.
274	12	20	593	CFIRD JPS	Open-source Electronic Resources (OERs)	Open-source Electronic Resources (OERs), which must be accessible to be used with students with disabilities,	Access to information must be guaranteed to provide support for IEP and 504 plans.
275	Appx			School Fac. MS		Please add Science Safety Handbook to appendices.	Provides easy access to the safety handbook and Title 5 lab requirements.
276	Appx E	2		PLSD KS	Resources Section	This section includes resource descriptions that differ in format – some are full sentences, and some are clauses that begin with verbs or adjectives. They should be consistent.	
277	Appx	Whole docume nt		PLSD KS			This Appendix does not really provide “guidance”. It provides Ed code and resources, but no real assistance or suggestions in the teaching of this topic. Is that the intent?