

**Report on Depth-of-Knowledge
Distribution and Appropriateness
of the West Virginia Science Content
Standards and Objectives (CSOs)**

With Modified Depth of Knowledge Levels of those Challenged in October

Prepared for the State of West Virginia

By

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Report on Depth-of-Knowledge Distribution and Appropriateness in the West Virginia Science Content Standards and Objectives (CSOs)

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Introduction

The purpose of this report is to describe an analysis of the depth-of-knowledge (DOK) levels of the K–12 West Virginia Content Standards and Objectives (CSOs), the ways in which the CSOs might be improved, and how the state’s distribution of depth of knowledge levels across grades compares to that of two other states. This analysis addressed the degree to which the distribution of DOK levels represents appropriate and challenging content for each grade level, the extent to which the content expectations become more challenging from kindergarten to grade 12, and the degree to which the DOK distribution is appropriate for each grade and across grades.

The first step in preparing the analysis was to assign an appropriate DOK level to each objective, K–12 (see Appendix A.). The DOK levels are those developed by Dr. Norman Webb, and assignment is based upon experience with 21 alignment studies in 15 states, territories, and countries using his procedure.

In order to allow for comparison of DOK distribution across grade levels and states, we developed an index number based on the average of DOK levels across a specified range of objectives. We began by assigning each objective its DOK number. After totaling these numbers at each grade level for the content domain we wanted to compare (for example, the nature of science for each grade K-12), we divided by the number of objectives, which may vary from grade to grade or from state to state. The resulting index number allowed us to make comparisons of the average complexity level, or the growth in the average complexity, across grades.

To permit analysis of the West Virginia DOK distributions, we did four comparisons. We looked at distributions in nature of science, science content, and applications of science individually, and, finally, at science objectives in total. In the report, we discuss the results and offer some explanation and evaluation of the results (Section I).

Having completed this work, we evaluated the CSOs for ways in which they might be improved (Section II). Finally, we compared the distribution of DOKs in West Virginia with that in two other states (Section III).

Section I. Analysis of DOK Levels in the West Virginia CSOs

The depth-of-knowledge levels indicate the cognitive complexity of objectives. Cognitive complexity is not the same as difficulty. A relatively simple task may still be difficult for some students.

The depth-of-knowledge levels for all of the grades for each objective are summarized in Table 1 for grades K-7 and Table 2 for grades 8 through high school. The DOK level for each objective for each grade is given in Appendix A.

There is a modest progression in the expected depth of knowledge across the grade levels, with complexity being introduced at different grade ranges for different standards.

- In grades K-1, there are objectives only for DOK levels 1 and 2.
- Level 3 objectives are introduced at grade 2 for Nature of Science (Standard 1) and grade 4 for Application of Science (Standard 3).
- For the Content standard (2), a few level 3 objectives regularly appear in grades 8 through high school. For earlier grades, 1-2 level 3 objectives appear in grades 3-5.
- A level 4 objective is expected in the Nature of Science (standard 1) for grades 8 through high school.

Table 1

Frequency and Average of DOK Levels Among Objectives for Grades K-8 WV Science

Grade	Standard 1 Nature of Science					Standard 2 Science Content				Standard 3 Application of Science			
	DOK Level					DOK Level				DOK Level			
	1	2	3	4	Avg	1	2	3	Avg	1	2	3	Avg
K	3	4	-		1.6	9	3	-	1.2	1	3	-	1.8
1	3	3	-		1.5	13	6	-	1.3	2	3	-	1.6
2	6	1	1		1.4	15	3	-	1.2	3	3	-	1.5
3	7	1	3		1.64	13	10	1	1.43	6	5	-	1.45
4	7	2	4		1.77	18	16	1	1.51	5	4	2	1.73
5	5	3	4		1.92	8	14	2	1.76	2	3	2	2.00
6	5	3	4		1.92	13	16	-	1.55	1	3	2	2.17
7	5	3	4		1.92	21	12	-	1.36	1	4	2	2.14
8	3	2	2	1	2.13	16	15	2	1.58	1	1	4	2.50

Table 2

Frequency and Average of DOK Levels Among Objectives for Grades 8 through High School WV Science

Grade/Course	Standard 1 Nature of Science					Standard 2 Science Content				Standard 3 Application of Science			
	DOK Level					DOK Level				DOK Level			
	1	2	3	4	Avg	1	2	3	Avg	1	2	3	Avg
9	3	2	2	1	2.13	9	21	4	1.85	1	2	3	2.33
10	3	2	2	1	2.13	12	21	1	1.68	1	2	3	2.33
Adv Bio	3	2	2	1	2.13	7	15	1	1.74	1	2	3	2.33
Bio Tech	3	2	2	1	2.13	11	13	3	1.70	1	2	3	2.33
Anatomy/Phys	3	2	2	1	2.13	22	9		1.29	1	2	3	2.33
Adv Chem	3	2	2	1	2.13	13	20	1	1.65	1	1	4	2.50
Chem Tech	3	2	2	1	2.13	14	12		1.46	1	2	3	2.33
Adv Earth	3	2	2	1	2.13	19	10	4	1.55	1	2	3	2.33
Adv Physics	3	2	2	1	2.13	7	11	3	1.81	1	2	3	2.33
Physics Tech	3	2	2	1	2.13	11	20	2	1.73	1	2	3	2.33

Nature of Science

The average DOK level for the Nature of Science gradually increases from lower elementary (K-3, 1.4-1.6), to upper elementary and middle grades (4-7, 1.8-1.9), as summarized in Table 3. The highest average level occurs during grades 8-high school. The Standard 1 objectives from grade 8 through high school are identical, and have an average DOK of 2.13.

A level 4 objective is included in grades 8 through high school. While only a single objective, this is a crucial and commendable feature of the state's document. Conducting full-blown investigations is a central aspect of carrying out science. Therefore, it is important for state documents to include such expectations in order to guide instruction. However, many states fail to include any such complex objectives because it is generally impossible for state testing frames to assess these objectives.

Table 3

Progression of Average DOK levels among WV science DOK levels Rounded to Nearest Tenth

Standard 1 Nature of Science	Average DOK levels	Standard 2 Science Content	Average DOK levels	Standard 3 Application of Science	Average DOK levels
Grades		Grades		Grades	
K-2	1.4-1.6	K-2	1.2-1.3	K-2	1.5-1.8
3-7	1.6-1.9	3-7	1.4-1.8	3-7	1.5-2.2
8-12	2.1	8-12	1.3-1.9	8-12	2.3 or 2.5

* Exceptions: Anatomy/Physiology (1.3) and Advanced Earth Science (1.2).

Science Content

The average depth of knowledge for Standard 2 for grades K through 7 has some progression. The majority of objectives for grades K-3 were judged to have a majority at a DOK level 1. For grades 4-7, the majority of the objectives were judged to have a DOK level 2. The average DOK for grade 5 (1.76) was the highest while the average DOK for grade 7 (1.36) was the lowest for grades 4-7. For grades 8 through 12, the average DOK levels mainly were 1.6 or 1.7. Grade 9 and Advanced Physics had the highest average DOK levels at 1.8 or 1.9. For Advanced Physics to have this status seems appropriate because the course inherently must call for a greater number of multi-step mathematical calculations to solve complex problems. It is more difficult to explain why grade 9 science would have this status.

There is a notable drop in the expected depth of knowledge for grade 7, where the average is 1.36 versus 1.5 or 1.7 for grades 4-6. The average DOK level for grade 7 results from an high number of objectives judged to have a DOK level 1 without any objectives with a DOK level 3 (see Table 1). In grades 11-12, the average levels for Anatomy/Physiology are slightly lower than DOK averages for all other courses (1.29 versus 1.5 to 1.85).

The levelness of DOK for the Content standard seems consistent with the needs of science instruction. As one progresses through higher grades, the curriculum needs to address different topics in each grade and course in order to cover the science content necessary for scientific literacy by graduation. It becomes more challenging to routinely spend enough time on many topics in a way that permits more involved thinking/reasoning that would be reflected in DOK levels 2 and 3. That is, it makes sense that there are many level 1 objectives at each grade and course for the new material, and not as much time available as one would like to flesh out many topics at higher DOK.

Two noteworthy features of the WV Content standard are its incorporation of contemporary teaching/learning and infusion of requirements for hands-on instruction

within this standard. (1) In almost all grades and courses, there is one or more objectives calling for students to ‘research’ a phenomenon, which presumably would require and sanction contemporary Web use in addition to convention library and other information sources. Many state science documents have not been updated sufficiently to capture this. Further, both the phenomena highlighted and the wording of these objectives usually signal the pursuit of higher rather than lower levels of depth of knowledge. Such objectives almost always were a DOK level of 3, and represented most of the level 3 objectives found in the Content standard.

(2) Some state documents compartmentalize the facts/content of science versus the doing of science. The WV document gives explicit attention to science investigation in Standard 1 and, to a lesser extent, in Standard 3. However, the document also writes some objectives of the Content standard (2) in way that solicits teachers to carry out active learning of the topics. Objectives calling for research, discussed above, are one type of example. But there also are objectives that utilize such phrases as “*compare though investigation....*”. This infusing of science investigation throughout the document is consistent with the framework’s stipulation that “Students will engage in active inquiries, investigations and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and research/laboratory skills”.

Application of Science

The pattern for the average DOK level for Application of Science (Standard 3) is similar to that for the Nature of Science (Standard 1). The average level gradually increases from lower elementary (K-4, 1.5-1.8), to upper elementary and middle grades (5-7, 1.7-2.2). The highest average level occurs for grades 8-high school. The Standard 3 objectives over these grades are mainly identical with a DOK of 2.3 except for grade 8 and Advanced Chemistry that both have an average DOK of 2.5.

Three Science Standards Combined

Overall, the DOK levels of the West Virginia CSOs show a fairly steady upward progression across the grades. This progression is found with Standards 1 and 3, while the DOK level remains more constant with the content section (Standard 2), which seems reasonable. Since meaningful interpretation of this document feature is only understood within each standard, this review does not provide an overall average DOK for each grade or course.

Another reason for omitting an overall average DOK statistic stems from the fact that there typically are many more objectives for the Content (Standard 2) than for Nature of Science or Application of Science (Standards 1 and 3) (see Table 4). The evenness of DOK levels in Standard 2 would suppress the manifestation of changes in DOK in the less numerous objectives of Standards 1 and 3.

Table 4
Numbers of Objectives for each Standard in Each Grade or Course for WV Science

Grade/Course	Total Objectives	Std 1 Nature Sci.	Std 2 Content	Std 3 Application
K	23	7	12	4
1	30	6	19	5
2	32	8	18	6
3	45	11	23	11
4	59	13	35	11
5	44	12	25	7
6	47	12	29	6
7	52	12	33	7
8	47	8	33	6
9	48	8	34	6
10	48	8	34	6
Adv Bio	37	8	23	6
Bio Tech	41	8	27	6
Anatomy/Phys	45	8	31	6
Adv Chem	48	8	34	6
Chem Tech	50	8	26	6
Adv Earth	47	8	33	6
Adv Physics	36	8	22	6
Physics Tech	47	8	33	6

Coding notes

The following notes elaborate the reviewers’ rationale for a few instances where different DOK codes were assigned for the same/similar objectives in different grades.

1. Early instance involving reasoning while later instances are recall/reproduction.

When the same objective (or very similar ones) appear in different grades, the students’ earlier learning may require a higher depth of knowledge. That is, the information processing in this first, novel situation, requires a higher DOK level than the student will need to exhibit for the same objective in a later grade. At that time, the student will be repeating an understood process rather than having to reason/process the information.

Example 1

SC.O.4.2.24. investigate the change in the length, tension, or thickness of the vibrating object on the frequency of vibration (e.g., string, wire, or rubber band) – Level 2

SC.O.5.2.17. compare and contrast the change in length, tension, or thickness of a vibrating object on the frequency of vibration - Level 1

Example 2

SC.O.8.3.5. explore occupational opportunities in science, engineering and technology and evaluate the required academic preparation – Level 3

SC.O.9.3.5. explore occupational opportunities in science, engineering and technology and evaluate the required academic preparation – Level 2

2. Consider abstractness and spatial/visualization capability at different development levels. A sometimes overlooked, secondary facet of distinguishing DOK levels is the extent to which students' typical development at a particular grade will require abstract thinking or use of advanced or unfamiliar spatial /visualization to address the objective. For example, the reviewer's assignment of DOK for the following objective might, as a result, be higher than the DOK assignment by some other reviewers.

SC.O.5.22 analyze a topographical map to make inferences related to elevation and land features - Level 3

Section II. Evaluation and Suggestions to Improve West Virginia CSOs

Enhancing DOK levels through clear language

Almost every science framework faces the challenge of how to describe the kind of knowledge processing expected. Imprecise or inconsistent use of words like classifying, comparing, explaining, etc. makes it difficult for teachers to know just what kind of reasoning/processing is expected for specific Content objectives. From our experience with many states, science experts involved in the Webb alignment method often must limit a rating of an objective that starts with such words to a level 1 if it appears that such words are not clearly being invoked in an intentional manner on a consistent basis. The WV framework seems to be above average in the consistency/intentionality of use of such words. However, further improvement could permit reviewers (particularly out of state reviewers) to recognize higher-level DOK objectives.

Aberrant larger number of objectives in a few grades or courses

Note from Table 4 that there are an exceptionally larger number of objectives in grade 4 (59 versus 44-52 in grades 3-10). Also, the difference in the number of objectives of the Content standard between the related courses of Advanced Physics and Technical Physics (22 versus 33) is much larger than differences between other related courses (e.g., 31 for Advanced Chemistry versus 34 for Technical Chemistry).

Larger pattern question

1. No cross-disciplinary integration found in Standard 2 (content) objectives. The advance organizer for Standard 2 for every grade expects "students will demonstrate an understanding of the *interrelationships* among physics, chemistry, biology, and the earth

and space sciences”. Beginning in grade 5, there is a similarly stated objective. But there are no objectives calling for students to apply/extract different science fields to/from a specific phenomenon.

Specific edits and errors

1. *Comparing concepts before understanding of each one.* A grade 3 objective asks students to identify physical and chemical properties before grade 4 where the notion of chemical properties is introduced. Perhaps rewrite grade 3 along the lines of “identify variety of physical and chemistry properties without defining them”.

SC.O.3.2.6 identify physical and chemical properties

SC.O.4.2.11 examine simple chemical changes (e.g., tarnishing, rusting, or burning)

2. *Confusion over definition of science versus technology.*

SC.O.8.1.3. demonstrate how a testable methodology is employed to seek solutions for personal and societal issues (e.g., “scientific method”).

The definition in this objective is for technology education (AKA technological/pre-engineering design and problem-solving), as specified the technology education standards of the International Technology Education Association (ITEA), which were funded by NASA and NSF. This objective is not eliciting the “scientific method”. That is, the scientific method is employed to understand what is happening in a natural phenomenon. The technological process is used to seek solutions for personal and societal issues.

If the state desires to have an objective eliciting the scientific method, it should be stated separately from this one. Note that this objective is repeated at other grades.

Minor questions or puzzlements

1. *Wording inconsistency for same objective?* For example, the Standard 1 objective for kindergarten and grade 1 (below) seem almost identical. Is the wording difference intentional, and, if so, what different understanding is being elicited between these two grades? If the learning intention is the same, recommend using the same language. This situation occurs for other objectives across the grades.

SC.O.K.1.2: listen to and discuss stories about the lives and discoveries of scientists.

SC.O.1.1.2. discuss the lives and discoveries of scientists after listening to stories about their lives and discoveries.

Example. Is SCO.BTC.1.8 the same as SC.O.AB.1.8? The former ends with the additional phrase “,or interpret maps”, but the two objectives otherwise are identical. The same objective for all high school courses includes the phrase “..interpret maps”, and only the biology technical course seems to leave it out.

2. Is SCO.AC.3.1 meant to be different from 3.1 for the other high school courses?

SCO.AC.3.1. “draw conclusions from a variety of data sources to analyze and interpret systems and models (e.g., use graphs and equations to measure and apply variables such as rate and scale, evaluate changes in trends and cycles, or predict the influence of external variables such as potential sources of error).”

SC.O.HAP.3.1, SC.O.BTC.3.1, etc. “synthesize concepts across various science disciplines to better understand the natural world (e.g., form and function, systems, or change over time).”

Comments and Action on Selected Challenged DOK Ratings

The DOK ratings were shared with WVDOE staff in early October 2006. Some of the assigned DOK values were challenged or questioned, mainly objectives that were assigned in this review a DOK level 1. Many of these DOK levels have changed to a DOK level 2. Explanations for some of the actions are given here.

Grade 3

SC.O.3.2.16 Explore the eroding of different materials by water and wind (e.g., sand, mud pile and rocks).

Comment: Keep at 1? Once done/taught, would students be expected to do any reasoning, or just recall/remember what they were taught?

SC.O.3.2.5 Relate the buoyancy of an object to its density.

Comment: Change to 2, as is

SC.O.3.2.9 Investigate the absorption, reflection and refraction of light by objects.

Comment: Keep at 1? After ‘investigation’ is done, isn’t this merely asking student definitionally to know whether a phenomenon is reflection, absorption, refraction?

Grade 4

SC.0.4.2.14 Investigate variables that affect the rate of evaporation of a liquid.

Comment: Change to 2, as is.

SC.0.4.2.4 Compare and sequence changes in cycles in relation to plant and animal life.

Comment: Change to 2, as is

SC.0.4.2.28 Investigate the cause and effects of volcanoes, earthquakes and landslides.

Comment: Keep at 1? You either know this or don’t after being taught – recall. Or consider reword for 2, such as...For various landforms or changes in them, determine whether volcanoes, earthquakes and landslides could cause them.

Grade 5

SC.O.5.2.8 Trace and describe the pathways of the sun's energy through producers, consumers and decomposers using food webs and pyramids.

Comment: Change to 2, as is

SC.O.5.2.20 Use a variety of instruments and sources to collect and display weather data to describe weather patterns.

Comment: Change to 2, as is.

SC.O.5.2.5 Compare variations of plant growth and reproduction.

Comment: Change to 2, as is

Grade 6

SC.O.6.2.8 Predict changes in populations of organisms due to limiting environmental factors (e.g., food supply, predators, disease, or habitat).

Comment: Change to 2, as is

SC.O.6.2.5 Examine how abiotic and biotic factors affect the interdependence among organisms.

Comment: Change to 2, as is

SC.O.6.2.4 Compare the similarities of internal features of organisms, which can be used to infer relatedness.

Comment: Change to 2, as is

Grade 7

SC.O.7.2.12 Evaluate the consequences of the introduction of chemicals into the ecosystem (e.g., environmental consequences, human health risks, or mutations).

Comment: Change to 2, as is

SC.O.7.2.8 Analyze how changes in the environment have led to reproductive adaptations through natural selection.

Comment: Change to 2, as is

SC.O.7.2.27 Examine the effects of the sun's energy on oceans and weather (e.g., air masses, or convection currents).

Comment: Keep at 1? Students either know this or don't after being taught. What reasoning would be involved?

Grade 8

SC.O.8.2.15 Evaluate the variations in diffusion rates and examine the effect of changing temperatures.

Comment: Borderline, so use round up rule to 2.

SC.O.8.2.21 Relate the conservation of energy theory to energy transformations (e.g., electrical/heat, or mechanical/heat).

Comment: Change to 2, as is

SC.O.8.2.28 Determine the impact of oceans on weather and climate; relate global patterns of atmospheric movement on local weather.

Comment: Consider reword to 2, such as.....determine how various changes in oceans would impact weather and climate; determine how changes in global patterns of atmospheric movement would affect local weather.

Grade 10

SC.O.10.2.7 Compare the ontogeny and phylogeny using the embryonic development of invertebrate and vertebrate animals.

Comment: Unsure, so employ round-up rule = 2

SC.O.10.2.10 Compare and contrast theories for the development, diversity and/or extinction of a species (e.g., natural selection, Lamarckism, or catastrophism).

Comment: Consider reword to make 2, such as....Given varying scenarios causing an extinction of a species, compare how different theories of species development and diversity would explain the extinction.

SC.O.10.2.11 Construct diagrams showing energy flow and cycles of matter between chemical and biological systems including photosynthesis, stored chemical energy, decomposition, carbon and nitrogen cycles.

Comment: Change to 2, as is

SC.O.10.2.23 Qualitatively and quantitatively describe the conservation of energy (e.g., thermal, chemical, or mechanical).

Comment: Consider reword to make 2, such as....For varying energy systems (e.g., thermal, chemical, or mechanical), use the conservation of energy principle to explain or calculate the balance of energy in them. (As is, “quantitatively describe” could merely have meant students need to recall an equation they have been taught, rather than use it to do a calculation - a 2.)

Section III. Comparison of the Distribution of West Virginia’s DOK Levels with Two Other States

This section of the report compares the distribution of DOE levels across grades in West Virginia with two other states for which the Webb Alignment System has comparable data. While neither of the selected states have data for all grades K-12, data for grades 3-8 are available for every grade in State A and for grades 5 and 8 in state B, as shown in Table 5. The DOK levels in West Virginia fare well in comparison with both states.

Table 5. Comparison of Total Average DOK levels between West Virginia and two states, by Grade, Grades 3-8.

Grade	Number of objectives	Total Avg DOK	Number of objectives	Total Avg DOK	Number of objectives	Total Avg DOK
	West Virginia		State A		State B	
3	45	1.49	49	1.2	-	-
4	59	1.61	44	1.2	-	-
5	44	1.84	51	1.3	24	1.8
6	47	1.72	25	1.4	-	-
7	52	1.60	26	1.3	-	-
8	47	1.79	38	1.4	28	2.0

The DOK levels in West Virginia are higher at every grade level than those in state A and for grade 5 in state B, but somewhat lower than levels for grade 8 in state B. The higher WV levels relative to state A can be readily understood from the structure of the two states' frameworks. State A's framework is entirely focused on content, with no sections/objectives comparable to West Virginia standards 1 and 3, Nature of Science and the Application of Science. The average DOK for only the Content Standard (2) in West Virginia are very similar to state A. However, the addition by West Virginia of the higher DOK objectives in Standards 1 and 3 generates a total DOK average that exceeds state A.

The organization of the state framework B also explains the relationship between its overall DOK averages and those of West Virginia. While there are fewer objectives per grade in state B, each of those objectives is detailed, containing 2-5 statements or examples. While the DOK of the parts of the objective varies, the entire objective would procedurally be coded at a level 2 as long as one part is at that level, even if most parts of the objective warrant a level 1. That is, the structure of the state B document has an inflationary effect on its DOK assignment and masks some lower level DOK statements. Therefore, the reviewer feels that DOK levels of West Virginia are comparable to those of state B despite the apparently higher values assigned in state B.

Appendix
**West Virginia Science Depth-of-
Knowledge Analysis**

Britton, 9/22

West Virginia 2006 Science Standards and Objectives

Grade K	9/22	Mod	
Standard 1			
SC.S.K.1			
SC.O.K.1.1	2		
SC.O.K.1.2	1		
SC.O.K.1.3	2		
SC.O.K.1.4	2		
SC.O.K.1.5	1		
SC.O.K.1.6	1		
SC.O.K.1.7	2		
Standard 2			
SC.S.K.2			
SC.O.K.2.1	1		
SC.O.K.2.2	1		
SC.O.K.2.3	1		
SC.O.K.2.4	2		
SC.O.K.2.5	1		
SC.O.K.2.6	1		
SC.O.K.2.7	1		
SC.O.K.2.8	1		
SC.O.K.2.9	1		
SC.O.K.2.10	2		
SC.O.K.2.11	1		
SC.O.K.2.12	2		
Standard 3			
SC.S.K.3			

SC.O.K.3.1	2		
SC.O.K.3.2	2		
SC.O.K.3.3	1		
SC.O.K.3.4	2		

Grade 1	9/22	Mod	
Standard 1			
SC.S.1.1			
SC.O.1.1.1	2		
SC.O.1.1.2	1		
SC.O.1.1.3	2		
SC.O.1.1.4	1		
SC.O.1.1.5	1		
SC.O.1.1.6	2		
Standard 2			
SC.S.1.2			
SC.O.1.2.1	2		
SC.O.1.2.2	1		
SC.O.1.2.3	1		
SC.O.1.2.4	1		
SC.O.1.2.5	2		
SC.O.1.2.6	1		
SC.O.1.2.7	1		
SC.O.1.2.8	1		
SC.O.1.2.9	2		
SC.O.1.2.10	1		
SC.O.1.2.11	2		
SC.O.1.2.12	1		
SC.O.1.2.13	1		
SC.O.1.2.14	2		
SC.O.1.2.15	1		
SC.O.1.2.16	1		
SC.O.1.2.17	1		

SC.O.1.2.18	1		
SC.O.1.2.19	2		
Standard 3			
SC.S.1.3			
SC.O.1.3.1	1		
SC.O.1.3.2	2		
SC.O.1.3.3	2		
SC.O.1.3.4	2		
SC.O.1.3.5	1		

Grade 2	9/22	Mod	
Standard 1			
SC.S.2.1			
SC.O.2.1.1	1		
SC.O.2.1.2	1		
SC.O.2.1.3	1		
SC.O.2.1.4	2		
SC.O.2.1.5	1		
SC.O.2.1.6	1		
SC.O.2.1.7	1		
SC.O.2.1.8	3		
Standard 2			
SC.S.2.2			
SC.O.2.2.1	1		
SC.O.2.2.2	1		
SC.O.2.2.3	2		
SC.O.2.2.4	2		
SC.O.2.2.5	1		
SC.O.2.2.6	1		
SC.O.2.2.7	1		
SC.O.2.2.8	1		
SC.O.2.2.9	1		
SC.O.2.2.10	1		
SC.O.2.2.11	1		
SC.O.2.2.12	1		
SC.O.2.2.13	1		
SC.O.2.2.14	1		
SC.O.2.2.15	1		
SC.O.2.2.16	2		
SC.O.2.2.17	1		

SC.O.2.2.18	1		
Standard 3			
SC.S.2.3			
SC.O.2.3.1	1		
SC.O.2.3.2	2		
SC.O.2.3.3	1		
SC.O.2.3.4	2		
SC.O.2.3.5	2		
SC.O.2.3.6	1		

Grade 3	9/22	Mod	12-12-06
Standard 1			
SC.S.3.1			
SC.O.3.1.1	1		1
SC.O.3.1.2	1		1
SC.O.3.1.3	1		1
SC.O.3.1.4	3		3
SC.O.3.1.5	1		1
SC.O.3.1.6	2		2
SC.O.3.1.7	1		1
SC.O.3.1.8	1		1
SC.O.3.1.9	1		1
SC.O.3.1.10	3		3
SC.O.3.1.11	3		3
Standard 2			
SC.S.3.2			
SC.O.3.2.1	1		1
SC.O.3.2.2	1	2	2
SC.O.3.2.3	2		2
SC.O.3.2.4	2		2
SC.O.3.2.5	1	2	2
SC.O.3.2.6	3	1	1
SC.O.3.2.7	1		1
SC.O.3.2.8	2		2
SC.O.3.2.9	1		1
SC.O.3.2.10	1	2	2
SC.O.3.2.11	1		1
SC.O.3.2.12	2		2
SC.O.3.2.13	1		1
SC.O.3.2.14	1		1

SC.O.3.2.15	1		1
SC.O.3.2.16	1		1
SC.O.3.2.17	1	2	2
SC.O.3.2.18	2		2
SC.O.3.2.19	1		1
SC.O.3.2.20	1		1
SC.O.3.2.21	1		1
SC.O.3.2.22	2		2
SC.O.3.2.23	1		1
Standard 3			
SC.S.3.3			
SC.O.3.3.1	1		1
SC.O.3.3.2	2		2
SC.O.3.3.3	2		2
SC.O.3.3.4	1		1
SC.O.3.3.5	2		2
SC.O.3.3.6	1		1
SC.O.3.3.7	2		2
SC.O.3.3.8	1		1
SC.O.3.3.9	2		2
SC.O.3.3.10	1		1
SC.O.3.3.11	1		1

Grade 4	9/22	Mod	12-12-06
Standard 1			
SC.S.4.1			
SC.O.4.1.1	1		1
SC.O.4.1.2	1		1
SC.O.4.1.3	1		1
SC.O.4.1.4	3		3
SC.O.4.1.5	1		1
SC.O.4.1.6	2		2
SC.O.4.1.7	1		1
SC.O.4.1.8	1		1
SC.O.4.1.9	2		2
SC.O.4.1.10	3		3
SC.O.4.1.11	3		3
SC.O.4.1.12	3		3
SC.O.4.1.13	1		1
Standard 2			
SC.S.4.2			
SC.0.4.2.1	1	2	2
SC.0.4.2.2	1		1
SC.0.4.2.3	1	2	2
SC.0.4.2.4	1	2	2
SC.0.4.2.5	1		1
SC.0.4.2.6	1		1
SC.0.4.2.7	1		1
SC.0.4.2.8	2		2
SC.0.4.2.9	1		1
SC.0.4.2.10	3		3
SC.0.4.2.11	1		1
SC.0.4.2.12	1		1

SC.0.4.2.13	1		1
SC.0.4.2.14	1	2	2
SC.0.4.2.15	1	2	2
SC.0.4.2.16	2		2
SC.0.4.2.17	1		1
SC.0.4.2.18	1		1
SC.0.4.2.19	2		2
SC.0.4.2.20	1		1
SC.0.4.2.21	2		2
SC.0.4.2.22	2		2
SC.0.4.2.23	1	2	2
SC.0.4.2.24	2		2
SC.0.4.2.25	1		1
SC.0.4.2.26	1		1
SC.0.4.2.27	1	2	2
SC.0.4.2.28	1		1
SC.0.4.2.29	2		2
SC.0.4.2.30	1		1
SC.0.4.2.31	2		2
SC.0.4.2.32	1	2	2
SC.0.4.2.33	1		1
SC.0.4.2.34	1		1
SC.0.4.2.35	1		1
Standard 3			
SC.S.4.3			
SC.0.4.3.1	1		1
SC.0.4.3.2	2		2
SC.0.4.3.3	2		2
SC.0.4.3.4	1		1
SC.0.4.3.5	2		2

SC.0.4.3.6	3		3
SC.0.4.3.7	3		3
SC.0.4.3.8	1		1
SC.0.4.3.9	2		2
SC.0.4.3.10	1		1
SC.0.4.3.11	1		1

Grade 5	9/22	Mod	12-12-06
Standard 1			
SC.S.5.1			
SC.O.5.1.1	1		1
SC.O.5.1.2	1		1
SC.O.5.1.3	1		1
SC.O.5.1.4	2		2
SC.O.5.1.5	2		2
SC.O.5.1.6	3		3
SC.O.5.1.7	3		3
SC.O.5.1.8	1		1
SC.O.5.1.9	1		1
SC.O.5.1.10	3		3
SC.O.5.1.11	2		2
SC.O.5.1.12	3		3
Standard 2			
SC.S.5.2			
SC.O.5.2.1	1	2	2
SC.O.5.2.2	1	2	2
SC.O.5.2.3	1	2	2
SC.O.5.2.4	1		1
SC.O.5.2.5	1	2	2
SC.O.5.2.6	1	2	2
SC.O.5.2.7	3		3
SC.O.5.2.8	1	2	2
SC.O.5.2.9	1		1
SC.O.5.2.10	1		1
SC.O.5.2.11	1		1
SC.O.5.2.12	2		2
SC.O.5.2.13	2		2

SC.O.5.2.14	1		1
SC.O.5.2.15	2		2
SC.O.5.2.16	1	2	2
SC.O.5.2.17	1	2	2
SC.O.5.2.18	1		1
SC.O.5.2.19	1	2	2
SC.O.5.2.20	1	2	2
SC.O.5.2.21	1	2	2
SC.O.5.2.22	3		3
SC.O.5.2.23	1		1
SC.O.5.2.24	1	2	2
SC.O.5.2.25	1		1
Standard 3			
SC.S.5.3			
SC.O.5.3.1	1		1
SC.O.5.3.2	2		2
SC.O.5.3.3	2		2
SC.O.5.3.4	2		2
SC.O.5.3.5	3		3
SC.O.5.3.6	3		3
SC.O.5.3.7	1		1

Grade 6	9/22	Mod	12-12-06
Standard 1			
SC.S.6.1			
SC.O.6.1.1	1		1
SC.O.6.1.2	1		1
SC.O.6.1.3	1		1
SC.O.6.1.4	2		2
SC.O.6.1.5	2		2
SC.O.6.1.6	3		3
SC.O.6.1.7	3		3
SC.O.6.1.8	1		1
SC.O.6.1.9	1		1
SC.O.6.1.10	3		3
SC.O.6.1.11	2		2
SC.O.6.1.12	3		3
Standard 2			
SC.S.6.2			
SC.O.6.2.1	1	2	2
SC.O.6.2.2	1		1
SC.O.6.2.3	2		2
SC.O.6.2.4	2		2
SC.O.6.2.5	1	2	2
SC.O.6.2.6	1	2	2
SC.O.6.2.7	1	2	2
SC.O.6.2.8	2		2
SC.O.6.2.9	1	2	2
SC.O.6.2.10	2		2
SC.O.6.2.11	2		2
SC.O.6.2.12	1		1
SC.O.6.2.13	1		1

SC.O.6.2.14	1		1
SC.O.6.2.15	1		1
SC.O.6.2.16	2	1	1
SC.O.6.2.17	1		1
SC.O.6.2.18	1		1
SC.O.6.2.19	2		2
SC.O.6.2.20	1		1
SC.O.6.2.21	1		1
SC.O.6.2.22	2		2
SC.O.6.2.23	2		2
SC.O.6.2.24	1		1
SC.O.6.2.25	1	2	2
SC.O.6.2.26	1		1
SC.O.6.2.27	1		1
SC.O.6.2.28	2		2
SC.O.6.2.29	2		2
Standard 3			
SC.S.6.3			
SC.O.6.3.1	1		1
SC.O.6.3.2	2		2
SC.O.6.3.3	2		2
SC.O.6.3.4	2		2
SC.O.6.3.5	3		3
SC.O.6.3.6	3		3

Grade 7	9/22	Mod	12-12-06
Standard 1			
SC.S.7.1			
SC.O.7.1.1	1		1
SC.O.7.1.2	1		1
SC.O.7.1.3	1		1
SC.O.7.1.4	2		2
SC.O.7.1.5	2		2
SC.O.7.1.6	3		3
SC.O.7.1.7	3		3
SC.O.7.1.8	1		1
SC.O.7.1.9	1		1
SC.O.7.1.10	3		3
SC.O.7.1.11	2		2
SC.O.7.1.12	3		3
Standard 2			
SC.S.7.2			
SC.O.7.2.1	1	2	2
SC.O.7.2.2	1		1
SC.O.7.2.3	1		1
SC.O.7.2.4	1		1
SC.O.7.2.5	1		1
SC.O.7.2.6	1		1
SC.O.7.2.7	1	2	2
SC.O.7.2.8	1	2	2
SC.O.7.2.9	1		1
SC.O.7.2.10	1	2	2
SC.O.7.2.11	2		2
SC.O.7.2.12	1	2	2
SC.O.7.2.13	1		1

SC.O.7.2.14	1	2	2
SC.O.7.2.15	2		2
SC.O.7.2.16	1		1
SC.O.7.2.17	1	2	2
SC.O.7.2.18	1		1
SC.O.7.2.19	1		1
SC.O.7.2.20	1		1
SC.O.7.2.21	1		1
SC.O.7.2.22	1		1
SC.O.7.2.23	1		1
SC.O.7.2.24	1		1
SC.O.7.2.25	1		1
SC.O.7.2.26	1		1
SC.O.7.2.27	1		1
SC.O.7.2.28	2		2
SC.O.7.2.29	1		1
SC.O.7.2.30	1		1
SC.O.7.2.31	2		2
SC.O.7.2.32	1	2	2
SC.O.7.2.33	1		1
Standard 3			
SC.S.7.3			
SC.O.7.3.1	1	2	2
SC.O.7.3.2	2		2
SC.O.7.3.3	2		2
SC.O.7.3.4	2		2
SC.O.7.3.5	3		3
SC.O.7.3.6	3		3
SC.O.7.3.7	1		1

Grade 8	9/22	Mod	12/12/06
Standard 1			
SC.S.8.1			
SC.O.8.1.1	2		2
SC.O.8.1.2	1		1
SC.O.8.1.3	1		1
SC.O.8.1.4	3		3
SC.O.8.1.5	1		1
SC.O.8.1.6	2		2
SC.O.8.1.7	4		4
SC.O.8.1.8	3		3
Standard 2			
SC.S.8.2			
SC.O.8.2.1	1	2	2
SC.O.8.2.2	1		1
SC.O.8.2.3	1	2	2
SC.O.8.2.4	2		2
SC.O.8.2.5	1		1
SC.O.8.2.6	1	2	2
SC.O.8.2.7	2		2
SC.O.8.2.8	1		1
SC.O.8.2.9	3		3
SC.O.8.2.10	1	2	2
SC.O.8.2.11	1		1
SC.O.8.2.12	1		1
SC.O.8.2.13	2		2
SC.O.8.2.14	1		1
SC.O.8.2.15	1	2	2
SC.O.8.2.16	2		2
SC.O.8.2.17	1		1

SC.O.8.2.18	1		1
SC.O.8.2.19	1		1
SC.O.8.2.20	2		2
SC.O.8.2.21	1	2	2
SC.O.8.2.22	2		2
SC.O.8.2.23	3		3
SC.O.8.2.24	1	2	2
SC.O.8.2.25	2		2
SC.O.8.2.26	3	2	2
SC.O.8.2.27	1		1
SC.O.8.2.28	1		1
SC.O.8.2.29	1		1
SC.O.8.2.30	1		1
SC.O.8.2.31	3	1	1
SC.O.8.2.32	1	2	1
SC.O.8.2.33	1		1
Standard 3			
SC.S.8.3			
SC.O.8.3.1	2		2
SC.O.8.3.2	3		3
SC.O.8.3.3	1		1
SC.O.8.3.4	3		3
SC.O.8.3.5	3		3
SC.O.8.3.6	3		3

Grade 9	9/22	Mod	12-12-06
Standard 1			
SC.S.9.1			
SC.O.9.1.1	2		2
SC.O.9.1.2	1		1
SC.O.9.1.3	1		1
SC.O.9.1.4	3		3
SC.O.9.1.5	1		1
SC.O.9.1.6	2		2
SC.O.9.1.7	4		4
SC.O.9.1.8	3		3
Standard 2			
SC.S.9.2			
SC.O.9.2.1	2		2
SC.O.9.2.2	1	2	2
SC.O.9.2.3	1	2	2
SC.O.9.2.4	2		2
SC.O.9.2.5	2		2
SC.O.9.2.6	1		1
SC.O.9.2.7	2		2
SC.O.9.2.8	1	2	2
SC.O.9.2.9	2		2
SC.O.9.2.10	1		1
SC.O.9.2.11	2		2
SC.O.9.2.12	2		2
SC.O.9.2.13	2		2
SC.O.9.2.14	1		1
SC.O.9.2.15	2		2
SC.O.9.2.16	1		1
SC.O.9.2.17	1		1

SC.O.9.2.18	1		1
SC.O.9.2.19	1	2	2
SC.O.9.2.20	3		3
SC.O.9.2.21	1	2	2
SC.O.9.2.22	2		2
SC.O.9.2.23	3		3
SC.O.9.2.24	1		1
SC.O.9.2.25	3		3
SC.O.9.2.26	1	2	2
SC.O.9.2.27	1	2	2
SC.O.9.2.28	2		2
SC.O.9.2.29	1		1
SC.O.9.2.30	2		2
SC.O.9.2.31	2		2
SC.O.9.2.32	1	2	2
SC.O.9.2.33	3		3
SC.O.9.2.34	1		1
Standard 3			
SC.S.9.3			
SC.O.9.3.1	2		2
SC.O.9.3.2	3		3
SC.O.9.3.3	1		1
SC.O.9.3.4	3		3
SC.O.9.3.5	2		2
SC.O.9.3.6	3		3

Grade 10	9/22	Mod	12-12-06
Standard 1			
SC.S.10.1			
SC.O.10.1.1	2		2
SC.O.10.1.2	1		1
SC.O.10.1.3	1		1
SC.O.10.1.4	3		3
SC.O.10.1.5	1		1
SC.O.10.1.6	2		2
SC.O.10.1.7	4		4
SC.O.10.1.8	3		3
Standard 2			
SC.S.10.2			
SC.O.10.2.1	1		1
SC.O.10.2.2	2		2
SC.O.10.2.3	1	2	2
SC.O.10.2.4	1		1
SC.O.10.2.5	1	2	2
SC.O.10.2.6	1	2	2
SC.O.10.2.7	1	2	2
SC.O.10.2.8	1		1
SC.O.10.2.9	2		2
SC.O.10.2.10	1	1	1
SC.O.10.2.11	1	2	2
SC.O.10.2.12	1	1	1
SC.O.10.2.13	2	2	2
SC.O.10.2.14	2	2	2
SC.O.10.2.15	1		1
SC.O.10.2.16	2		2

SC.O.10.2.17	1	2	2
SC.O.10.2.18	3	2	2
SC.O.10.2.19	2		2
SC.O.10.4.20	1	2	2
SC.O.10.2.21	2	2	2
SC.O.10.2.22	1	2	2
SC.O.10.2.23	1	2	2
SC.O.10.2.24	3		3
SC.O.10.2.25	1	2	2
SC.O.10.2.26	2		2
SC.O.10.2.27	1	2	2
SC.O.10.2.28	2		2
SC.O.10.2.29	1		1
SC.O.10.2.30	1		1
SC.O.10.2.31	1		1
SC.O.10.2.32	1		1
SC.O.10.2.33	1		1
SC.O.10.2.34	1		1
Standard 3			
SC.S.10.3			
SC.O.10.3.1	2		2
SC.O.10.3.2	3		3
SC.O.10.3.3	1		1
SC.O.10.3.4	3		3
SC.O.10.3.5	2		2
SC.O.10.3.6	3		3

High School Advanced Biology	9/22	Mod	12-12-06
Standard 1			
SC.S.AB.1			
SC.O.AB.1.1	2		2
SC.O.AB.1.2	1		1
SC.O.AB.1.3	1		1
SC.O.AB.1.4	3		3
SC.O.AB.1.5	1		1
SC.AB.O.1.6	2		2
SC.O.AB.1.7	4		4
SC.O.AB.1.8	3		3
Standard 2			
SC.S.AB.2			
SC.O.AB.2.1	1	2	2
SC.O.AB.2.2	1		1
SC.O.AB.2.3	1	1	1
SC.O.AB.2.4	1	2	2
SC.O.AB.2.5	2		2
SC.O.AB.2.6	1	2	2
SC.O.AB.2.7	1		1
SC.O.AB.2.8	2		2
SC.O.AB.2.9	2		2
SC.O.AB.2.10	1		1
SC.O.AB.2.11	1	2	2
SC.O.AB.2.12	3		3
SC.O.AB.2.13	1	2	2
SC.O.AB.2.14	2		2
SC.O.AB.2.15	1		1
SC.O.AB.2.16	1	2	2

SC.O.AB.2.17	1		1
SC.O.AB.2.18	1		1
SC.O.AB.2.19	1	2	2
SC.O.AB.2.20	2		2
SC.O.AB.2.21	2		2
SC.O.AB.2.22	1	2	2
SC.O.AB.2.23	2		2
Standard 3			
SC.S.AB.3			
SC.O.AB.3.1	2		2
SC.O.AB.3.2	3		3
SC.O.AB.3.3	1		1
SC.O.AB.3.4	3		3
SC.O.AB.3.5	2		2
SC.O.AB.3.6	3		3

High School Biology-Technical Conceptual	9/22	Mod	12-12-06
Standard 1			
SC.S.BTC.1			
SC.O.BTC.1.1	2		2
SC.O.BTC.1.2	1		1
SC.O.BTC.1.3	1		1
SC.O.BTC.1.4	3		3
SC.O.BTC.1.5	1		1
SC.O.BTC.1.6	2		2
SC.O.BTC.1.7	4		4
SC.O.BTC.1.8	3		3
Standard 2			
SC.S.BTC.2			
SC.O.BTC.2.1	1	2	2
SC.O.BTC.2.2	1		1
SC.O.BTC.2.3	1		1
SC.O.BTC.2.4	1	2	2
SC.O.BTC.2.5	1		1
SC.O.BTC.2.6	2		2
SC.O.BTC.2.7	1		1
SC.O.BTC.2.8	1		1
SC.O.BTC.2.9	1		1
SC.O.BTC.2.10	1		1
SC.O.BTC.2.11	2		2
SC.O.BTC.2.12	1	2	2
SC.O.BTC.2.13	1	2	2
SC.O.BTC.2.14	2		2
SC.O.BTC.2.15	2		2

SC.O.BTC.2.16	2		2
SC.O.BTC.2.17	1		1
SC.O.BTC.2.18	1		1
SC.O.BTC.2.19	1		1
SC.O.BTC.2.20	1	2	2
SC.O.BTC.2.21	3		3
SC.O.BTC.2.22	1	2	2
SC.O.BTC.2.23	1	3	3
SC.O.BTC.2.24	1		1
SC.O.BTC.2.25	1	3	3
SC.O.BTC.2.26	1	2	2
SC.O.BTC.2.27	1	2	2
Standard 3			
SC.S.BTC.3			
SC.O.BTC.3.1	2		2
SC.O.BTC.3.2	3		3
SC.O.BTC.3.3	1		1
SC.O.BTC.3.4	3		3
SC.O.BTC.3.5	2		2
SC.O.BTC.3.6	3		3

High School Human Anatomy and Physiology	9/22	Mod	12-12-06
Standard 1			
SC.S.HAP.1			
SC.O.HAP.1.1	2		2
SC.O.HAP.1.2	1		1
SC.O.HAP.1.3	1		1
SC.O.HAP.1.4	3		3
SC.O.HAP.1.5	1		1
SC.O.HAP.1.6	2		2
SC.O.HAP.1.7	4		4
SC.O.HAP.1.8	3		3
Standard 2			
SC.S.HAP.2			
SC.O.HAP.2.1	1		1
SC.O.HAP.2.2	1		1
SC.O.HAP.2.3	1	2	2
SC.O.HAP.2.4	2		2
SC.O.HAP.2.5	1		1
SC.O.HAP.2.6	1	2	2
SC.O.HAP.2.7	1	2	2
SC.O.HAP.2.8	1		1
SC.O.HAP.2.9	1		1
SC.O.HAP.2.10	1		1
SC.O.HAP.2.11	1	2	2
SC.O.HAP.2.12	1		1
SC.O.HAP.2.13	1		1
SC.O.HAP.2.14	1		1
SC.O.HAP.2.15	1		1

SC.O.HAP.2.16	1		1
SC.O.HAP.2.17	1		1
SC.O.HAP.2.18	1		1
SC.O.HAP.2.19	1		1
SC.O.HAP.2.20	1		1
SC.O.HAP.2.21	1		1
SC.O.HAP.2.22	1		1
SC.O.HAP.2.23	1	2	2
SC.O.HAP.2.24	1		1
SC.O.HAP.2.25	1	2	2
SC.O.HAP.2.26	1		1
SC.O.HAP.2.27	1		1
SC.O.HAP.2.28	1		1
SC.O.HAP.2.29	2		2
SC.O.HAP.2.30	1		1
SC.O.HAP.2.31	2		2
Standard 3			
SC.S.HAP.3			
SC.O.HAP.3.1	2		2
SC.O.HAP.3.2	3		3
SC.O.HAP.3.3	1		1
SC.O.HAP.3.4	3		3
SC.O.HAP.3.5	2		2
SC.O.HAP 3.6	3		3

High School Chemistry	9/22	Mod	12-12-06
Standard 1			
SC.S.AC.1			
SC.O.AC.1.1	2		2
SC.O.AC.1.2	1		1
SC.O.AC.1.3	1		1
SC.O.AC.1.4	3		3
SC.O.AC.1.5	1		1
SC.O.AC.1.6	2		2
SC.O.AC.1.7	4		4
SC.O.AC.1.8	3		3
Standard 2			
SC.S.AC.2			
SC.O.AC.2.1	2		2
SC.O.AC.2.2	2		2
SC.O.AC.2.3	1		1
SC.O.AC.2.4	1	2	2
SC.O.AC.2.5	1	2	2
SC.O.AC.2.6	1		1
SC.O.AC.2.7	1		1
SC.O.AC.2.8	2		2
SC.O.AC.2.9	1	2	2
SC.O.AC.2.10	1	2	2
SC.O.AC.2.11	1		1
SC.O.AC.2.12	2		2
SC.O.AC.2.13	1		1
SC.O.AC.2.14	1	2	2
SC.O.AC.2.15	1	2	2
SC.O.AC.2.16	1		1

SC.O.AC.2.17	2		2
SC.O.AC.2.18	2		2
SC.O.AC.2.19	3		3
SC.O.AC.2.20	2		2
SC.O.AC.2.21	2		2
SC.O.AC.2.22	2		2
SC.O.AC.2.23	1		1
SC.O.AC.2.24	1	1	1
SC.O.AC.2.25	1		1
SC.O.AC.2.26	1		1
SC.O.AC.2.27	1		1
SC.O.AC.2.28	2		2
SC.O.AC.2.29	2		2
SC.O.AC.2.30	2		2
SC.O.AC.2.31	1		1
SC.O.AC.2.32	2		2
SC.O.AC.2.33	1		1
SC.O.AC.2.34	2		2
Standard 3			
SC.S.AC.3			
SC.O.AC.3.1	3		3
SC.O.AC.3.2	3		3
SC.O.AC.3.3	1		1
SC.O.AC.3.4	3		3
SC.O.AC.3.5	2		2
SC.O.AC.3.6	3		3

High School Chemistry-Technical Conceptual	9/22	Mod	12-12-06
Standard 1			
SC.S.CTC.1			
SC.O.CTC.1.1	2		2
SC.O.CTC.1.2	1		1
SC.O.CTC.1.3	1		1
SC.O.CTC.1.4	3		3
SC.O.CTC.1.5	1		1
SC.O.CTC.1.6	2		2
SC.O.CTC.1.7	4		4
SC.O.CTC.1.8	3		3
Standard 2			
SC.S.CTC.2			
SC.O.CTC.2.1	1		1
SC.O.CTC.2.2	1		1
SC.O.CTC.2.3	2		2
SC.O.CTC.2.4	1		1
SC.O.CTC.2.5	2		2
SC.O.CTC.2.6	1	2	2
SC.O.CTC.2.7	2		2
SC.O.CTC.2.8	1		1
SC.O.CTC.2.9	1		1
SC.O.CTC.2.10	1		1
SC.O.CTC.2.11	2		2
SC.O.CTC.2.12	1		1
SC.O.CTC.2.13	1		1
SC.O.CTC.2.14	2		2
SC.O.CTC.2.15	2		2

SC.O.CTC.2.16	2		2
SC.O.CTC.2.17	2		2
SC.O.CTC.2.18	1		1
SC.O.CTC.2.19	1		1
SC.O.CTC.2.20	1	2	2
SC.O.CTC.2.21	1		1
SC.O.CTC.2.22	1		1
SC.O.CTC.2.23	1		1
SC.O.CTC.2.24	2		2
SC.O.CTC.2.25	2		2
SC.O.CTC.2.26	1		1
Standard 3			
SC.S.CTC.3			
SC.O.CTC.3.1	2		2
SC.O.CTC.3.2	3		3
SC.O.CTC.3.3	1		1
SC.O.CTC.3.4	3		3
SC.O.CTC.3.5	2		2
SC.O.CTC.3.6	3		3

High School Advanced Earth Science	9/22	Mod	12-12-06
Standard 1			
SC.S.AES.1			
SC.O.AES.1.1	2		2
SC.O.AES.1.2	1		1
SC.O.AES.1.3	1		1
SC.O.AES.1.4	3		3
SC.O.AES.1.5	1		1
SC.O.AES.1.6	2		2
SC.O.AES.1.7	4		4
SC.O.AES.1.8	3		3
Standard 2			
SC.S.AES.2			
SC.O.AES.2.1	1		1
SC.O.AES.2.2	1		1
SC.O.AES.2.3	2		2
SC.O.AES.2.4	1		1
SC.O.AES.2.5	1	2	2
SC.O.AES.2.6	1	2	2
SC.O.AES.2.7	1	2	2
SC.O.AES.2.8	1		1
SC.O.AES.2.9	1		1
SC.O.AES.2.10	1		1
SC.O.AES.2.11	1		1
SC.O.AES.2.12	2		2
SC.O.AES.2.13	1	3	3
SC.O.AES.2.14	1		1

SC.O.AES.2.15	1	2	2
SC.O.AES.2.16	1		1
SC.O.AES.2.17	1	2	2
SC.O.AES.2.18	1		1
SC.O.AES.2.19	1		1
SC.O.AES.2.20	1		1
SC.O.AES.2.21	1		1
SC.O.AES.2.22	2	3	3
SC.O.AES.2.23	1		1
SC.O.AES.2.24	1	2	2
SC.O.AES.2.25	1	2	2
SC.O.AES.2.26	1		1
SC.O.AES.2.27	1		1
SC.O.AES.2.28	1		1
SC.O.AES.2.29	1		1
SC.O.AES.2.30	1	2	2
SC.O.AES.2.31	1		1
SC.O.AES.2.32	3		3
SC.O.AES.2.33	3		3
Standard 3			
SC.S.AES.3			
SC.O.AES.3.1	2		2
SC.O.AES.3.2	3		3
SC.O.AES.3.3	1		1
SC.O.AES.3.4	3		3
SC.O.AES.3.5	2		2
SC.O.AES.3.6	3		3

High School Advanced Physics	9/22	Mod	9/22
Standard 1			
SC.S.AP.1			
SC.O.AP.1.1	2		2
SC.O.AP.1.2	1		1
SC.O.AP.1.3	1		1
SC.O.AP.1.4	3		3
SC.O.AP.1.5	1		1
SC.O.AP.1.6	2		2
SC.O.AP.1.7	4		4
SC.O.AP.1.8	3		3
Standard 2			
SC.S.AP.2			
SC.O.AP.2.1	2		2
SC.O.AP.2.2	3		3
SC.O.AP.2.3	3		3
SC.O.AP.2.4	2		2
SC.O.AP.2.5	2		2
SC.O.AP.2.6	2		2
SC.O.AP.2.7	2		2
SC.O.AP.2.8	1		1
SC.O.AP.2.9	1		1
SC.O.AP.2.10	2		2
SC.O.AP.2.11	2		2
SC.O.AP.2.12	1		1
SC.O.AP.2.13	1		1
SC.O.AP.2.14	1		1
SC.O.AP.2.15	3		3
SC.O.AP.2.16	2		2

SC.O.AP.2.17	2		2
SC.O.AP.2.19	2		2
SC.O.AP.2.20	2		2
SC.O.AP.2.21	1		1
SC.O.AP.2.22	1		1
Standard 3			
SC.S.AP.3			
SC.O.AP.3.1	2		2
SC.O.AP.3.2	3		3
SC.O.AP.3.3	1		1
SC.O.AP.3.4	3		3
SC.O.AP.3.5	2		2
SC.O.AP.3.6	3		3

High School Physics Tech- Conceptual	9/22	Mod	12-12-06
Standard 1			
SC.S.PTC.1			
SC.O.PTC.1.1	2		2
SC.O.PTC.1.2	1		1
SC.O.PTC.1.3	1		1
SC.O.PTC.1.4	3		3
SC.O.PTC.1.5	1		1
SC.O.PTC.1.6	2		2
SC.O.PTC.1.7	4		4
SC.O.PTC.1.8	3		3
Standard 2			
SC.S.PTC.2			
SC.O.PTC.2.1	1	2	2
SC.O.PTC.2.2	2		2
SC.O.PTC.2.3	2		2
SC.O.PTC.2.4	2		2
SC.O.PTC.2.5	2		2
SC.O.PTC.2.6	2		2
SC.O.PTC.2.7	1		1
SC.O.PTC.2.8	3		3
SC.O.PTC.2.9	1		1
SC.O.PTC.2.10	1		1
SC.O.PTC.2.11	2		2
SC.O.PTC.2.12	2		2
SC.O.PTC.2.13	1		1
SC.O.PTC.2.14	1		1
SC.O.PTC.2.15	1	2	2

SC.O.PTC.2.16	2		2
SC.O.PTC.2.17	1	2	2
SC.O.PTC.2.18	1	2	2
SC.O.PTC.2.19	1	2	2
SC.O.PTC.2.20	1	2	2
SC.O.PTC.2.21	1		1
SC.O.PTC.2.22	1		1
SC.O.PTC.2.23	1	2	2
SC.O.PTC.2.24	1		1
SC.O.PTC.2.25	3		3
SC.O.PTC.2.26	1		1
SC.O.PTC.2.27	1		1
SC.O.PTC.2.28	1	2	2
SC.O.PTC.2.29	1		1
SC.O.PTC.2.30	2		2
SC.O.PTC.2.31	1	2	2
SC.O.PTC.2.32	1	2	2
SC.O.PTC.2.33	2		2
Standard 3			
SC.S.PTC.3			
SC.O.PTC.3.1	2		2
SC.O.PTC.3.2	3		3
SC.O.PTC.3.3	1		1
SC.O.PTC.3.4	3		3
SC.O.PTC.3.5	2		2
SC.O.PTC.3.6	3		3