Instructional Material Bureau
Summer 2011 Adoption Review Institute
Form F: *Publisher Alignment Form & Review Scoring Rubric*
(1731 Physics)

Publisher information and instructions:

Corporation or Publisher:	**Submitted by (name) :**	
Division or Imprint: **Phone:**	**E-mail:**	
Title of Student Edition:	**ISBN:**	**Lexile Score:**
Title of Teacher Edition:	**ISBN:**	

Alignment contact information:

Completed by (name):	**E-mail:**
Phone:	**Date:**

SECTION I (CONTENT STANDARDS) CITATION REQUIREMENTS AND SCORING

A. Enter three (3) citations (one in each cell) for each indicator; enter the page number and the paragraph.
   a. Example: [123-5] would refer the reviewer to Page 123, paragraph 5 to find the evidence of the indicator.
B. Citations for "Content Standards, Benchmarks & Performance Standards" must refer to the Student Edition.
C. Citations for "Other Relevant Criteria" must refer to the Teacher Edition.
D. Each citation must address an increasing level of cognition:
   a. Citation 1: Cites material that provides **an introduction** to the content at the **basic knowledge and recall** level.
   b. Citation 2: Cites material that **builds on prior knowledge/skills** at the **comprehension and application** level.
   c. Citation 3: Cites material that builds on prior knowledge/skills **and integrates content to meet the standard at the analysis, synthesis, or evaluation** levels.
E. At least two citations must be found satisfactory by the Review Team to meet the requirements of the standard. Scoring will be as follows:
   a. Satisfactory citations at the "Basic Knowledge" level only, or no valid citations, score **zero (0) points**.
   b. Satisfactory citations at both the "Basic Knowledge" and "Application" level score a total of **six (6) points**.
   c. Satisfactory citations at all three levels score a total of **ten (10) points**.

SEE THE BEGINNING OF SECTION II FOR REQUIREMENTS AND SCORING OF "OTHER RELEVANT CRITERIA" CITATIONS

Instructional Material Bureau
Summer 2010 Adoption Review Institute

THIS PAGE FOR REVIEW INSTITUTE STAFF

FACILITATOR USE ONLY

FINAL SCORE VERIFICATION (TO BE COMPLETED BY THE FACILITATOR)		
	Verified: **90% or Higher**	**Facilitator Signature**
	Verified: **89% or Lower**	**Facilitator Signature**

Reviewer Name:	**Reviewer Number:**	**Date:**	**Facilitator:**

REVIEWER INSTRUCTIONS

Enter score in the **"Item Score"** column. Every **numbered item** must be scored. Scoring must follow these criteria:

1. Citations that you verify at the "Basic Knowledge" level only, or no valid citations, score zero (0) points.
2. Citations that you verify at both the "Basic Knowledge" and "Application" level score a total of six (6) points.
3. Citations that you verify at all three levels score a total of ten (10) points.

Enter the total number of points in the "YES" column in the **Page Total Score** box at the bottom of each page.

POINTS	DEFINITION
0	Citations did not meet the requirements of the standard for at least two levels.
6	Citations met the requirements of the standard at two of the levels.
10	Citations met the requirements of the standard at all three levels.

REVIEWER # _____

Content Standards, Benchmarks and Performance Standards	Citation 1 Basic Knowledge	Citation 2 Application	Citation 3 Analysis	Item #	Item Score
Strand I: Scientific Thinking and Practice **Standard I:** Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.					
I-A. **Benchmark:** Use accepted scientific methods to collect, analyze, and interpret data and observations and to design and conduct scientific investigations and communicate results.					
I-A(1). Describe the essential components of an investigation, including appropriate methodologies, proper equipment, and safety precautions.				1	
I-A(2). Design and conduct scientific investigations that include:					
I-A(2)a. testable hypotheses				2	
I-A(2)b. controls and variables				3	
I-A(2)c. methods to collect, analyze, and interpret data				4	
I-A(2)d. results that address hypotheses being investigated				5	
I-A(2)e. predictions based on results				6	
I-A(2)f. re-evaluation of hypotheses and additional experimentation as necessary				7	
I-A(2)g. error analysis.				8	
I-A(3). Use appropriate technologies to collect, analyze, and communicate scientific data (e.g., computers, calculators, balances,					

REVIEWER # _____

Content Standards, Benchmarks and Performance Standards	Citation 1 Basic Knowledge	Citation 2 Application	Citation 3 Analysis	Item #	Item Score
microscopes).					
I-A(4). Convey results of investigations using scientific concepts, methodologies, and expressions, including:					
I-A(4)a. scientific language and symbols				9	
I-A(4)b. diagrams, charts, and other data displays				10	
I-A(4)c. mathematical expressions and processes (e.g., mean, median, slope, proportionality)				11	
I-A(4)d. clear, logical, and concise communication				12	
I-A(4)e. reasoned arguments.				13	
I-A(5). Understand how scientific theories are used to explain and predict natural phenomena (e.g., plate tectonics, ocean currents, structure of atom).				14	
I-B. **Benchmark:** Understand that scientific processes produce scientific knowledge that is continually evaluated, validated, revised, or rejected.					
I-B(1). Understand how scientific processes produce valid, reliable results, including:					
I-B(1)a. consistency of explanations with data and observations				15	
I-B(1)b. openness to peer review				16	
I-B(1)c. full disclosure and examination of assumptions				17	
I-B(1)d. testability of hypotheses				18	
I-B(1)e. repeatability of experiments and reproducibility of results.				19	
I-B(2). Use scientific reasoning and valid logic to recognize:					
I-B(2)a. faulty logic				20	

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Content Standards, Benchmarks and Performance Standards	Citation 1 Basic Knowledge	Citation 2 Application	Citation 3 Analysis	Item #	Item Score
I-B(2)b. cause and effect				21	
I-B(2)c. the difference between observation and unsubstantiated inferences and conclusions				22	
I-B(2)d. potential bias.				23	
I-B(3). Understand how new data and observations can result in new scientific knowledge.				24	
I-B(4). Critically analyze an accepted explanation by reviewing current scientific knowledge.				25	
I-B(5). Examine investigations of current interest in science (e.g., superconductivity, molecular machines, age of the universe).				26	
I-B(6). Examine the scientific processes and logic used in investigations of past events (e.g., using data from crime scenes, fossils), investigations that can be planned in advance but are only done once (e.g., expensive or time-consuming experiments such as medical clinical trials), and investigations of phenomena that can be repeated easily and frequently.				27	
I-C. **Benchmark:** Use mathematical concepts, principles, and expressions to analyze data, develop models, understand patterns and relationships, evaluate findings, and draw conclusions.					
I-C(1). Create multiple displays of data to analyze and explain the relationships in scientific investigations.				28	
I-C(2). Use mathematical models to describe, explain, and predict natural phenomena.				29	
I-C(3). Use technologies to quantify relationships in scientific hypotheses				30	

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Content Standards, Benchmarks and Performance Standards	Citation 1 Basic Knowledge	Citation 2 Application	Citation 3 Analysis	Item #	Item Score
(e.g., calculators, computer spreadsheets and databases, graphing software, simulations, modeling).					
I-C(4). Identify and apply measurement techniques and consider possible effects of measurement errors.				31	
I-C(5). Use mathematics to express and establish scientific relationships (e.g., scientific notation, vectors, dimensional analysis).				32	
Strand II: The Content of Science **Standard I (Physical Science):** Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.					
I-B. **Benchmark:** Understand the transformation and transmission of energy and how energy and matter interact.					
I-B (4). Understand how heat can be transferred by conduction, convection, and radiation, and how heat conduction differs in conductors and insulators.				33	
I-B(6). Understand that the ability of energy to do something useful (work) tends to decrease (and never increases) as energy is converted from one form to another				34	
I-B(7). Understand that electromagnetic waves carry energy that can be transferred when they interact with matter.				35	
I-B(11). Understand the concept of equilibrium (i.e., thermal, mechanical, and chemical).				36	
I-C. **Benchmark:** Understand the motion of objects and waves, and the forces that cause them.				37	

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Content Standards, Benchmarks and Performance Standards	Citation 1 Basic Knowledge	Citation 2 Application	Citation 3 Analysis	Item #	Item Score
I-C(1). **Forces**: Know that there are four fundamental forces in nature: gravitation, electromagnetism, weak nuclear force, and strong nuclear force.				38	
I-C(2). **Forces**: Know that every object exerts gravitational force on every other object, and how this force depends on the masses of the objects and the distance between them.				39	
I-C(3). **Forces**: Know that materials containing equal amounts of positive and negative charges are electrically neutral, but that a small excess or deficit of negative charges produces significant electrical forces.				40	
I-C(4). **Forces**: Understand the relationship between force and pressure, and how the pressure of a volume of gas depends on the temperature and the amount of gas.				41	
I-C(5). **Forces**: Explain how electric currents cause magnetism and how changing magnetic fields produce electricity (e.g., electric motors, generators).				42	
I-C(6). **Forces**: Represent the magnitude and direction of forces by vector diagrams.				43	
I-C(7). **Forces**: Know that when one object exerts a force on a second object, the second object exerts a force of equal magnitude and in the opposite direction on the first object (i.e., Newton's Third Law).				44	
I-C(8). **Motion**: Apply Newton's Laws to describe and analyze the behavior of moving objects, including:					

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Content Standards, Benchmarks and Performance Standards	Citation 1 Basic Knowledge	Citation 2 Application	Citation 3 Analysis	Item #	Item Score
II-C(8)a. displacement, velocity, and acceleration of a moving object				45	
II-C(8)b. Newton's Second Law, F = ma (e.g., momentum and its conservation, the motion of an object falling under gravity, the independence of a falling object's motion on mass)				46	
II-C(8)c. circular motion and centripetal force.				47	
I-C(9). **Motion**: Describe relative motion using frames of reference.				48	
I-C(10). **Motion**: Describe wave propagation using amplitude, wavelength, frequency, and speed.				49	
I-C(11). **Motion**: Explain how the interactions of waves can result in interference, reflection, and refraction.				50	
I-C(12). **Motion**: Describe how waves are used for practical purposes (e.g., seismic data, acoustic effects, Doppler effect)				51	
Strand II: The Content of Science Standard III (Earth and Space Science): Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.					
~~III-A. **Benchmark:** Examine the scientific theories of the origin, structure, energy, and evolution of Earth and its atmosphere, and their interconnections.~~					ITEM DELETED
~~III-A(1). Understand the scale and contents of the universe, including:~~					ITEM DELETED
~~III-A(1)a. range of structures from atoms through astronomical objects to the~~				52	ITEM DELETED

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Content Standards, Benchmarks and Performance Standards	Citation 1 Basic Knowledge	Citation 2 Application	Citation 3 Analysis	Item #	Item Score
~~universe~~					
~~III-A(1)b.objects in the universe such as planets, stars, galaxies, and nebulae.~~				53	ITEM DELETED
~~III-A(2). Predict changes in the positions and appearances of objects in the sky (e.g., moon, sun) based on knowledge of current positions and patterns of movements (e.g., lunar cycles, seasons).~~				54	ITEM DELETED
~~III-A(3). Understand how knowledge about the universe comes from evidence collected from advanced technology (e.g., telescopes, satellites, images, computer models).~~				55	ITEM DELETED
~~III-A(4). Describe the key observations that led to the acceptance of the Big Bang theory and that the age of the universe is over 10 billion years.~~				56	ITEM DELETED
~~III-A(5). Explain how objects in the universe emit different electromagnetic radiation and how this information is used.~~				57	ITEM DELETED
~~III-A(7). Examine the role that New Mexico research facilities play in current space exploration (e.g., Very Large Array, Goddard Space Center).~~				58	ITEM DELETED
~~III-B. **Benchmark:** Examine the scientific theories of the origin, structure, energy, and evolution of Earth and its atmosphere, and their interconnections.~~					ITEM DELETED
~~III-B(5). Explain plate tectonic theory and understand the evidence that supports it.~~				59	ITEM DELETED
~~III-B(6). **Energy in Earth's System**: Know that Earth's systems are driven by internal (i.e., radioactive decay and gravitational energy) and external (i.e., the sun) sources of energy.~~				60	ITEM DELETED
~~III-B(7). **Energy in Earth's System**: Describe convection as the mechanism for moving~~				61	ITEM DELETED

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Content Standards, Benchmarks and Performance Standards	Citation 1 Basic Knowledge	Citation 2 Application	Citation 3 Analysis	Item #	Item Score
~~heat energy from deep within Earth to the surface and discuss how this process results in plate tectonics, including:~~					
~~III-B(7)a. geological manifestations (e.g., earthquakes, volcanoes, mountain building) that occur at plate boundaries~~				62	ITEM DELETED
~~III-B(7)a. impact of plate motions on societies and the environment (e.g., earthquakes, volcanoes).~~				63	ITEM DELETED
Strand III: Science and Society **Standard I:** Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.					
I-A. **Benchmark:** Examine and analyze how scientific discoveries and their applications affect the world, and explain how societies influence scientific investigations and applications.				64	
I-A(1). **Science and Technology**: Know how science enables technology but also constrains it, and recognize the difference between real technology and science fiction (e.g., rockets vs. antigravity machines; nuclear reactors vs. perpetual-motion machines; medical X-rays vs. Star-Trek tricorders).				65	
I-A(2). **Science and Technology**: Understand how advances in technology enable further advances in science (e.g., microscopes and cellular structure; telescopes and understanding of the universe).				66	
I-A(3). **Science and Technology**: Evaluate the influences of technology on society (e.g., communications, petroleum,				67	

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Content Standards, Benchmarks and Performance Standards	Citation 1 Basic Knowledge	Citation 2 Application	Citation 3 Analysis	Item #	Item Score
transportation, nuclear energy, computers, medicine, genetic engineering) including both desired and undesired effects, and including some historical examples (e.g., the wheel, the plow, the printing press, the lightning rod).					
I-A(4). **Science and Technology**: Understand the scientific foundations of common technologies (e.g., kitchen appliances, radio, television, aircraft, rockets, computers, medical X-rays, selective breeding, fertilizers and pesticides, agricultural equipment).				68	
~~I-A(5). **Science and Technology**: Understand that applications of genetics can meet human needs and can create new problems (e.g., agriculture, medicine, cloning).~~				69	ITEM DELETED
I-A(6). **Science and Technology**: Analyze the impact of digital technologies on the availability, creation, and dissemination of information.				70	
I-A(7). **Science and Technology**: Describe how human activities have affected ozone in the upper atmosphere and how it affects health and the environment.				71	
I-A(8). **Science and Technology**: Describe uses of radioactivity (e.g., nuclear power, nuclear medicine, radiometric dating).				72	
I-A(9). **Science and Society:** Describe how scientific knowledge helps decision makers with local, national, and global challenges (e.g., Waste Isolation Pilot Project [WIPP], mining, drought, population growth, alternative energy, climate change).				73	

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Content Standards, Benchmarks and Performance Standards	Citation 1 Basic Knowledge	Citation 2 Application	Citation 3 Analysis	Item #	Item Score
I-A(10). **Science and Society:** Describe major historical changes in scientific perspectives (e.g., atomic theory, germs, cosmology, relativity, plate tectonics, evolution) and the experimental observations that triggered them.				74	
I-A(11). **Science and Society:** Know that societal factors can promote or constrain scientific discovery (e.g., government funding, laws and regulations about human cloning and genetically modified organisms, gender and ethnic bias, AIDS research, alternative-energy research).				75	
~~I-A(12). **Science and Society:** Explain how societies can change ecosystems and how these changes can be reversible or irreversible.~~				76	ITEM DELETED
~~I-A(13). **Science and Society:** Describe how environmental, economic, and political interests impact resource management and use in New Mexico.~~				77	ITEM DELETED
I-A(14). **Science and Individuals:** Identify how science has produced knowledge that is relevant to individual health and material prosperity.				78	
~~I-A(15). **Science and Individuals:** Identify how science has produced knowledge that is relevant to individual health and material prosperity.~~				79	ITEM DELETED
I-A(16). **Science and Individuals:** Understand that reasonable people may disagree about some issues that are of interest to both science and religion (e.g., the origin of life on Earth, the cause of the Big Bang, the future of Earth).				80	
I-A(17). **Science and Individuals:** Identify important questions that science cannot				81	

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Content Standards, Benchmarks and Performance Standards	Citation 1 Basic Knowledge	Citation 2 Application	Citation 3 Analysis	Item #	Item Score
answer (e.g., questions that are beyond today's science, decisions that science can only help to make, questions that are inherently outside of the realm of science)					
I-A(18). **Science and Individuals:** Understand that scientists have characteristics in common with other individuals (e.g., employment and career needs, curiosity, desire to perform public service, greed, preconceptions and biases, temptation to be unethical, core values including honesty and openness).				82	
I-A(19). **Science and Individuals:** Know that science plays a role in many different kinds of careers and activities (e.g., public service, volunteers, public office holders, researchers, teachers, doctors, nurses, technicians, farmers, ranchers).				83	

Reviewer's Section I Totals	

REVIEWER # _____

PUBLISHER: SECTION II CITATION REQUIREMENTS AND SCORING

A. Citations for "Other Relevant Criteria" will usually refer to the Teacher Edition, but may refer to the Student Edition.
B. Enter three (3) citations (one in each cell) for each indicator; enter the page number and the paragraph.
   a. Example: [123-5] would refer the reviewer to +Page 123, paragraph 5 to find the evidence of the indicator.
C. All three citations must be found satisfactory by the Review Team to meet the requirements of the standard.

REVIEWER: USE THE TEACHER'S EDITION AND THE STUDENT EDITION TO CONDUCT THIS PORTION OF THE REVIEW

Mark your score in the "Item Score" column.
KEY:
0 = Citations did not meet the requirements of the standard.
5 = Citations met the requirements of the standard.

SECTION II: OTHER RELEVANT CRITERIA	Citation 1	Citation 2	Citation 3	Item Number	Item Score
A. The textbook provides pictorials, graphics, and illustrations that represent diversity of cultures, race, color, creed, national origin, age, gender, language or disability.	Citation 1	Citation 2	Citation 3	1	
B. The textbook provides a variety of cultural perspectives used within the lesson content.	Citation 1	Citation 2	Citation 3	2	
C. The textbook provides reading selections with activities requiring student responses that promote respect for all people regardless of race, color, creed, national origin, age, gender, language or disability.	Citation 1	Citation 2	Citation 3	3	
D. The textbook presents appropriate role models within content rather than an oversimplified standardized image of a person or group; avoids stereotyping.	Citation 1	Citation 2	Citation 3	4	

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SECTION II: OTHER RELEVANT CRITERIA	Citation 1	Citation 2	Citation 3	Item Number	Item Score
E. The textbook provides an introduction to the lesson including the comprehension questions (i.e. focus questions or guiding questions) the student will be expected to answer at the conclusion of the classroom instruction.	Citation 1	Citation 2	Citation 3	5	
F. The textbook introduces a vocabulary list at the beginning of each lesson.	Citation 1	Citation 2	Citation 3	6	
G. The textbook provides visual aids to assist comprehension.	Citation 1	Citation 2	Citation 3	7	
H. The textbook provides extensive and varied opportunities to practice lesson objectives /targeted skills.	Citation 1	Citation 2	Citation 3	8	
I. The textbook provides the student with ongoing review and practice for the purpose of retaining previously acquired knowledge.	Citation 1	Citation 2	Citation 3	9	
J. The textbook provides writing activities for students to make connections across reading selections and their personal experiences. Some ***examples*** of this might include: 1. discussing/responding to open-ended prompts; 2. tracing cause and effect relationships; 3. comparing real life situations; dramatizing, or; 4. tracing themes, patterns.	Citation 1	Citation 2	Citation 3	10	
K. The textbook provides speaking activities for students to make connections across reading selections and their personal experiences. Some ***examples*** of this might include: • discussing/responding to open-ended prompts;	Citation 1	Citation 2	Citation 3	11	

REVIEWER # _____

SECTION II: OTHER RELEVANT CRITERIA	Citation 1	Citation 2	Citation 3	Item Number	Item Score
• tracing cause and effect relationships; • comparing real life situations; dramatizing, or; tracing themes, patterns.					
L. The textbook incorporates increasingly complex practice into lessons requiring analysis, evaluation and synthesis.	Citation 1	Citation 2	Citation 3	12	
M. The textbook provides activities that elicit critical thinking, such as, research, defining a problem, examining evidence, analyzing assumptions and biases, avoiding emotional reasoning, avoiding oversimplification, considering other interpretations, tolerating ambiguity, and metacongition.	Citation 1	Citation 2	Citation 3	13	
N. The textbook includes comprehensive laboratory projects and assignments for students.	Citation 1	Citation 2	Citation 3	14	
O. The textbook provides a Reference Section that includes: Glossary, Academic Word List and other relevant information to support student learning.	Citation 1	Citation 2	Citation 3	15	
P. The textbook provides relevant tables such as the periodic table of elements, chart of the elements, classification of plants and animals, and summary pages for relevant content and formulas.	Citation 1	Citation 2	Citation 3	16	
Q. The Teacher's Edition presents an overview of the scope and sequence of skills and concepts.	Citation 1	Citation 2	Citation 3	17	
R. Within each lesson the Teacher's Edition provides articulated **objectives** for varied skill levels of the students.	Citation 1	Citation 2	Citation 3	18	
S. The Teacher's Edition provides instructional support for laboratory projects and	Citation 1	Citation 2	Citation 3	19	

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SECTION II: OTHER RELEVANT CRITERIA	Citation 1	Citation 2	Citation 3	Item Number	Item Score
assignments for students.					
T. The Teacher's Edition provides correlation citations of the New Mexico Science Content Standards, Benchmarks and Performance Standards to the corresponding location in the Student Edition.	Citation 1	Citation 2	Citation 3	20	
U. At the beginning of each unit, chapter or lesson there is a list of standards covered within the unit, chapter or lesson.	Citation 1	Citation 2	Citation 3	21	
V. The Teacher's Edition provides leveled **activities** for differentiated instructional to meet the needs of all students including struggling and accelerated learners.	Citation 1	Citation 2	Citation 3	22	
W. The Teachers Edition provides instructional strategies for English language learners.	Citation 1	Citation 2	Citation 3	23	
X. The Teacher's Edition includes content and information that support a variety of approaches to instruction, including (score each item separately):					
1. Writing activities	Citation 1	Citation 2	Citation 3	24	
2. Project-based learning assignments	Citation 1	Citation 2	Citation 3	25	
3. Interdisciplinary instruction	Citation 1	Citation 2	Citation 3	26	
4. Thematic instruction across genres	Citation 1	Citation 2	Citation 3	27	
Y. The Teacher's Edition provides the teacher with instructional strategies for every lesson.	Citation 1	Citation 2	Citation 3	28	

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SECTION II: OTHER RELEVANT CRITERIA	Citation 1	Citation 2	Citation 3	Item Number	Item Score
Z. The Teacher's Edition provides instructional support for explicitly teaching comprehension.	Citation 1	Citation 2	Citation 3	29	
AA. The Teacher's Edition provides pre and post-tests that cover lesson and/or chapter content.	Citation 1	Citation 2	Citation 3	30	
BB. The Teacher's Edition provides student assessments that are accompanied by an item analysis and score interpretation for the identification of skill areas in need of further instruction.	Citation 1	Citation 2	Citation 3	31	
CC. The Teacher's Edition provides strategies for students to use technology-based knowledge and skills in the curriculum area, such as, student presentations and projects.	Citation 1	Citation 2	Citation 3	32	
Reviewer's Section II Total				Total Section Score	
Reviewer's Grand Total				Total Review Score	