

2005/06 NASA Science Mission Directorate: Space Science Education Products Review

K-12 Formal Education Review Form (Educators)

This review form was designed for evaluating NASA Space Science curriculum/instructional materials for K-12. In general, NASA k-12 curriculum/instructional materials are intended to support standards-based education (including science, mathematics, geography, and technology standards) and to supplement existing curricula. These products are developed for use in a formal classroom setting or instruction, as part of a school program, activity, or assignment. Examples are instructional modules, teachers' guides with learning activities, student activity books, online courses, etc.

General Instructions:

- Complete one form for each resource that you are evaluating.
- Please evaluate the materials based upon the following scale, in response to the criteria provided.

Outstanding	or	Numerous examples/evidence consistently found throughout the materials.
Very Good	or	Numerous examples/evidence found in some components of the materials
Good	or	Some examples/evidence consistently found throughout the materials.
Fair	or	Some examples/evidence found in some components of the materials.
Poor	or	Little or no examples/evidence found in the materials.

- All of the examples provided for each criterion may not apply to a product (and are not required to apply to every product). Examples are not presented in rank order, but are alphabetized so that you can easily refer to specific items (e.g., "regarding a., this product...")
- Check the appropriate rating next to each criterion.
- Reviewer notes should be written in the space following each criterion. Extra pages may be added if needed. Please be as specific as possible.
- Note the rating for each criterion and provide an overall assessment on the summary page (next to last page).
- Provide your overall recommendation on the "Recommendation" page (last page).

Product Title: _____ **No.** _____

Product Title: _____ **No.** _____

Criterion 1: Materials emphasize effective instructional practices.

Rating: Outstanding Very Good Good Fair Poor

{The following are given as a range of examples. Not all examples are expected to be addressed in every product. Do not use these suggestions as a checklist.}

- a. Observable events, problem-centered tasks, and concrete experiences introduce key concepts of science.
- b. Students are encouraged to explore ideas and events, to construct relationships and patterns, and to make and test hypotheses.
- c. Learning activities offer opportunities for students to revise or dispel prior knowledge, to build on existing knowledge and to create or construct new knowledge.
- d. Opportunities are provided for students to apply concepts.
Materials provide opportunities for interactive student participation (e.g., hands-on experiences, small group activities, communicating and sharing information, safe use of materials and equipment is promoted).
- e. Product is designed to foster outcome based learning goals.

Reviewer comments:

Criterion 2: Materials support national education standards.

Rating: Outstanding Very Good Good Fair Poor

{The following are given as a range of examples. Not all examples are expected to be addressed in every product. Do not use these suggestions as a checklist.}

- The material provides content that is well-aligned to national education standards in science, geography, mathematics, or technology. Other standards are identified as appropriate (e.g., English language arts – reading, writing, and speaking)
- The material identifies specific national education standards that are supported.
- Content matches the standards and specific outcomes that are identified.
- In general, it is expected that NASA education materials will support national standards; in some cases it may be appropriate to identify relevant state standards, either in addition to or in place of national standards.

National Education Standards

Science -- National Research Council’s (NRC) *National Science Education Standards* or the American Association for the Advancement of Science (AAAS’) *Benchmarks for Science Literacy*

Geography -- National Council for Geographic Education's (NCGE) *National Geography Standards*)

Mathematics -- National Council of Teachers of Mathematics' (NCTM) *Principles and Standards for School Mathematics*

Technology -- International Technology Education Association's (ITEA) *Standards For Technological Literacy* or the International Society for Technology in Education (ISTE) *National Educational Technology Standards*

Reviewer comments:

Criterion 3: Materials actively engage students in the use of processes.

Rating: Outstanding Very Good Good Fair Poor

{The following are given as a range of examples. Not all examples can be expected to be addressed in every product. Do not use these suggestions as a checklist.}

Look at the breadth of the process skills covered. Then, determine whether the process skills have been meaningfully combined to develop scientific inquiry.

For breadth of process skills.

- Observing
- Classifying
- Measuring
- Predicting
- Inferring
- Hypothesizing
- Communicating
- Identifying variables
- Collecting and displaying data
- Conducting experiments
- Constructing and interpreting models
- Assessing risks and benefits

For the development of scientific inquiry:

Grades K-4

- a. Materials encourage students to ask for information in answering a question.
- b. Materials encourage students in planning and conducting a simple investigation.
- c. Materials develop an understanding of different types of investigations such as descriptive, classification, experimental.
- d. Materials require students to employ simple equipment and experiences to gather data and extend their senses.

- e. Materials require students to use data and experiences to construct a reasonable explanation. Materials encourage students to recognize and analyze alternative explanations and procedures.
- f. Materials require students to communicate about their investigations and to offer explanations.

Grades 5-8

- a. Materials encourage students to identify appropriate questions for a scientific investigation.
- b. Materials involve students in designing and conducting scientific investigations.
- c. Materials require students to use appropriate tools and technologies to gather, analyze, and interpret data.
- d. Materials require students to construct explanations and models using evidence.
- e. Materials require students to think critically and logically about the relationships between evidence and explanations.
- f. Materials encourage students to recognize and analyze alternative explanations and procedures.
- g. Materials require students to communicate about their investigations and to offer explanations.

Grades 9-12

- a. Materials encourage students to identify the questions and concepts that guide scientific investigations.
- b. Materials involve students in designing and conducting a full scientific investigation.
- c. Materials require students to use technologies to improve investigations and communication.
- d. Materials require students to construct and revise scientific explanations and models using logic and evidence.
- e. Materials encourage students to recognize and analyze alternative explanations and models.
- f. Materials require students to communicate and defend a scientific argument.
- g. Materials require students to analyze a historical or contemporary scientific inquiry.

Reviewer comments:

Criterion 4: Materials provide opportunities that nurture scientific reasoning.

Rating: Outstanding Very Good Good Fair Poor

{The following are given as a range of examples. Not all examples are expected to be addressed in every product. Do not use these suggestions as a checklist.}

- a. Curiosity and inquisitiveness are promoted through questions and problems that promote thinking.
- b. Openness to new ideas is encouraged through opportunities for collaboration, creative thought, and brainstorming.

- c. Demand for verification of data is required through repeated trials and replication of findings/studies.
- d. Respect for logic is encouraged through orderly movement from assumptions to implementation to conclusions.
- e. Consideration of consequences is developed through opportunities to predict outcomes and to analyze risks and benefits.
- f. Questioning of assumptions is encouraged through identification and checking of assumptions.

Reviewer comments:

Criterion 5: Materials present opportunities to develop fundamental understandings of key scientific concepts, principles, theories, or laws.

Rating: Outstanding Very Good Good Fair Poor

{The following are given as a range of examples. Not all examples are expected to be addressed in every product. Do not use these suggestions as a checklist.}

Look for fundamental understandings within a specific discipline (e.g., physical sciences, Earth sciences, astronomy, chemistry, biology, etc.) as well as fundamental understandings that transcend scientific disciplines

Examples of fundamental understandings that transcend scientific disciplines include:

- a. Materials develop understanding of the methods used by scientists to expand and refine their knowledge of the universe (science as inquiry).
- b. Materials encourage development of scientific perspective. (science as inquiry)
- c. Materials develop understanding of science as a human endeavor and provide a historical perspective (nature of science).
- d. Materials increase students’ understanding of major challenges and issues facing society (science-technology-society).
- e. Materials develop an understanding of the nature of science and technology and the ways they interact (science-technology).

Reviewer comments:

Criterion 6: Materials promote student assessment.

Rating: Outstanding Very Good Good Fair Poor

{The following are given as a range of examples. Not all examples are expected to be addressed in every product. Do not use these suggestions as a checklist.}

Materials include assessments that are appropriate for the type of product and/or audience. For example, these might include:

- a. Specific assessment suggestions and scoring criteria are provided for student products and collections of work such as portfolios, computer simulations, video or multimedia productions, oral presentations and written work, student exhibitions, surveys or collections of data, etc.
- b. Specific assessment suggestions and scoring criteria are provided for student performances such as rubrics, open-ended questions, concept maps, independent and group research, interviews, laboratory practices, observation checklists, self and peer evaluations, etc.
- c. Options include traditional assessment items such as multiple choice, matching, fill-in-the-blanks, true-false, short answer, essay, etc.
- d. Techniques for assessing students' prior knowledge are included.
- e. Options include assessment items that require students to apply concepts.
- f. Options include assessment items that require students to analyze information and/or to synthesize information from diverse sources.
- g. Options include assessment items that require students to evaluate situations and make judgments or recommendations.
- h. Assessment items are correlated with learning objectives.

Reviewer comments:

Criterion 7: Materials are appropriate, complete, and effectively presented

Rating: Outstanding Very Good Good Fair Poor

{The following are given as a range of examples. Not all examples are expected to be addressed in every product. Do not use these suggestions as a checklist.}

- a. Materials are appropriate for the age, grade, and maturity of the target audience.
- b. Current, up-to-date information is provided.
- c. Instructional or explanatory materials are effective and well-written; acronyms and terms are clearly explained; information is presented in a logical and organized manner, answers are provided to all specific questions asked.
- d. Graphs, charts, images, and animations are clearly labeled/indicated/narrated, including color keys where appropriate, and information describing units of measurements that are used (e.g., what these units mean and how they compare to familiar examples), and clear distinctions between scientific data and simulated data/artist renditions.
- e. Material is appropriately engaging, stimulating, and/or entertaining for the target audience.

Reviewer comments:

Criterion 8: Production/design quality is high.

Rating: Outstanding Very Good Good Fair Poor

{The following are given as a range of examples. Not all examples are expected to be addressed in every product. Do not use these suggestions as a checklist.}

NOTE: NASA requires all products to go through a Communications Material Review (CMR) following the education product review. The CMR examines materials for their conformance to NASA visual guidelines. For this reason you are encouraged to look beyond appearance and layout issues, which will be addressed by the CMR.

Further, some products being reviewed may still be in an unfinished state so that recommendations from the education product review may be implemented along with design changes that may be required by the CMR. The product submission form may contain additional information about the planned design and format of the final product. Please consult developer notes in the product submission form.

- a. Design seems effective, visually stimulating, and appealing (even if in a draft state).
- b. Visuals/images are crisp, clear, and/or high-resolution.
- c. Video/audio quality is high.
- d. The material is free from production errors (e.g., misspellings, typos, grammatical and editorial errors).

Reviewer comments:

Criterion 9: Materials effectively integrate learning technologies.

Rating: Outstanding Very Good Good Fair Poor N/A

{The following are given as a range of examples. Not all examples are expected to be addressed in every product. Do not use these suggestions as a checklist.}

Learning technologies may be used in the following ways:

- a. to make measurements and perform calculations, e.g., probeware, hand-held data collectors, computers, and calculators.
- b. to collect, organize, analyze, and present data, e.g., spread sheets and graphics packages.
- c. to access and communicate information, e.g., telecommunications, Internet, databases, and word processing.
- d. to explore and/or simulate complex relationships, e.g., modeling programs.
- e. to develop conceptual understanding, e.g. CD-ROM, DVD and videos.

Reviewer comments:

Criterion 10: The content presented is accurate.

Rating: Outstanding Very Good Good Fair Poor

{The following are given as a range of examples. Not all examples are expected to be addressed in every product. Do not use these suggestions as a checklist.}

The product presents content accurately. Consider the following:

- a. The material is free from content errors (e.g., scientific and mathematical inaccuracies, incorrect facts or statements, theory and fact are adequately distinguished).
- b. The material addresses common misconceptions.
- c. The metric system of weights and measures is consistently used (e.g., Celsius, grams, liters, meters) or metric equivalents are provided.

Reviewer comments:

Criterion 11: The product provides good and relevant references for further investigation/information.

Rating: Outstanding Very Good Good Fair Poor

{The following are given as a range of examples. Not all examples are expected to be addressed in every product. Do not use these suggestions as a checklist.}

- a. Suggestions are noted for relevant extensions, science fair or other research projects.
- b. References, e.g., WWW sites, books, organizations, toll free numbers, etc. are identified for further investigation, so that someone wanting to learn more about the topic can do so.
- c. Contact information is provided, where appropriate, for technical support, questions, and/or further information in using the product.

Reviewer comments:

Criterion 12: The product is easy to use and free from technical difficulties.

Rating: Outstanding Very Good Good Fair Poor N/A

{The following are given as a range of examples. Not all examples are expected to be addressed in every product. Do not use these suggestions as a checklist.}

For technology-based products, consider the following:

- a. The user interface is intuitively easy to understand and master.
- b. Instructions are easy-to-follow, clear, and complete.
- c. The product is quick loading, user friendly, well organized, and structured.
- d. Ease of navigation: not too many levels to click through, easy to move forward, backward, and "escape" easily (e.g., back to the home page, to quit, etc.), and updates are easy to find.
- e. Documentation and any technical requirements for using the resource are specified.
- f. The product is free from technical difficulties (e.g., doesn't freeze, no error messages, links to WWW sites are up-to-date).
- g. Where appropriate, useful online help is provided.
- h. Text and graphics are appropriate for the content: for example, on WWW sites image files are as small as possible to do the job and load quickly, text is legible, background does not interfere with reading.
- i. Design avoids excessive or inappropriate scrolling, especially lateral scrolling.

Reviewer comments:

Criterion 13: Product is accessible.

Rating: Outstanding Very Good Good Fair Poor N/A

{The following are given as a range of examples. Not all examples are expected to be addressed in every product. Do not use these suggestions as a checklist.}

- a. WWW sites are identified (either on the Website or on the product submission form) as "508 Compliant" – accessible to disabled users.
- b. Software/CD-ROMs are available for dual platforms (Windows and Macintosh).
- c. Electronic versions of documents are available in PDF. PDF files are 508 compliant.
- d. Images are available in easily-accessible formats, e.g., gif, tiff, jpeg.
- e. Image files are provided at an appropriate resolution. For example, low-resolution images and graphics may be preferable (e.g., for quickly loading on a Website); high-resolution versions of images might be necessary (e.g., for student interpretation, printing, etc.); or both low and high-resolution versions may be required (e.g., for Web and print versions)
- f. Animations/video/audio are available in a format that is easily used by broad audiences: e.g., videotape, DVD, CD, Real One audio/video, Windows Media Viewer (WMV), QuickTime, etc.
- g. WWW pages can be easily printed.
- h. Videos include closed captioning for the hearing impaired.

Reviewer comments:

Criterion 14: Does the site require parents' permission before collecting personal information from children younger than 13?

Web sites for children under 13 that collect personal information from children **or** general audience Web sites that collect personal information from children (information that would allow someone to identify or contact the child), must comply with the Children’s Online Privacy Protection Act (COPPA). For more information, see <http://www.ftc.gov/ogc/coppa1.htm>.

Personal information is individually identifiable information about a child that is collected online, such as full name, home address, email address, telephone number or any other information that would allow someone to identify or contact the child. The Act and Rule also cover other types of information-- for example, hobbies, interests and information collected through cookies or other types of tracking mechanisms -- when they are tied to individually identifiable information.

The primary goal of COPPA is to place parents in control over what information is collected from their children online. Only answer these questions if the site is targeted for children under 13 years old AND collects personal information.

a. Has the Web site operator posted their privacy policy on the site?

Yes No Can’t Tell Not Applicable

b. Does the site require parents’ permission before collecting personal information from children younger than 13?

Yes No Can’t Tell Not Applicable

Reviewer comments:

Criterion 15: Customer Focused: Materials have been designed to meet the needs of the target audience.

Rating: Outstanding Very Good Good Fair Poor

{The following are given as a range of examples. Not all examples are expected to be addressed in every product. Do not use these suggestions as a checklist.}

- The target audience (e.g., teachers, faculty, students) would find the product meaningful and/or useful.
- The format of the product is accessible and easily useable by the target audience. For example, online files are in a standard format (PDF) and are easy to download or broken into appropriate sections; posters with text on the back are formatted in 8 ½” x 11” pages so that they are easy to photocopy, etc.
- Appropriate tools are provided for using the product (e.g., suggestions for the classroom, links to needed software, education standards are identified, etc.)

Reviewer comments:

Criterion 16. Material is relevant to NASA-unique Science Mission Directorate (SMD) Content*

Rating: Outstanding Very Good Good Fair Poor

NASA SMD products/programs should be centered on and draw upon NASA’s unique assets in Earth or Space Sciences: **content/information** (acquired through NASA science and technology programs and missions); **facilities and tools** (including observational datasets); **or people** (including NASA employees and NASA-sponsored scientists, technical and engineering experts) in at least one of the following areas:

- Sun-Earth Connection,
- Solar System Exploration,
- Structure and Evolution of the Universe, or
- Astronomical Search for Origins).

Following are a range of examples for each of these areas. Do not use these examples as a checklist. Not all examples under each area are expected to be addressed by every product; it’s acceptable for an education product to focus on only one of the examples given.

**** Please refer to the appropriate forum area (SEC, SSE, SEU or ASO) below:***

**** Sun-Earth Connection***

A. SEC Overall Mission: Understanding the changing Sun and its effects on the Solar System, Life and Society

B. SEC Fundamental Questions:

Why Does the Sun Vary?

- What are the origins of solar variability?

- What are the effects of the solar activity on the corona and solar wind (i.e., the entire heliosphere)?

How do the Planets Respond to Solar Variations? For example, four basic questions about the Earth cut across SEC's scientific endeavors:

- How do mass and energy enter geospace?
- How are mass, momentum, and energy transported within magnetospheres and upper atmospheres?
- How is electromagnetic energy converted into charged-particle kinetic and thermal energy?
- What are the sinks for mass and energy?

How Do the Sun and Galaxy Interact?

- What is the nature of boundary regions separating the heliosphere from the local interstellar medium?
- What are the properties of the interstellar medium?

How Does Solar Variability Affect Life and Society?

- What are the impacts of space weather?
- How can space weather hazards be predicted?
- How does the changing Sun affect planetary climates?
- How have (living) conditions evolved in the Solar System as a result of evolution of the Sun?

C. SEC Missions and/or Campaigns: The material provides information on SEC missions and/or campaigns.

Reviewer comments:

* ***Solar System Exploration***

A. Solar System Exploration Fundamental Quests and Goals:

Understand the Formation and Evolution of the Solar System and Earth Within It

- Inventory and characterize the remnants of the original material from which the Solar System formed.
- Learn why the planets in our Solar System are so different from each other
- Learn how the Solar System evolves.

Probe the Origin and Evolution of Life on Earth and Determine if Life exists elsewhere in the Solar System.

- Investigate the origin and early evolution of life on Earth, and explore the limits of life in terrestrial environments that might provide analogues for conditions on other worlds.
- Determine the general principles governing the organization of matter into living systems and the conditions required for the emergence and maintenance of life.
- Chart the distribution of life-sustaining environments within our Solar System, and search for evidence of past and present life.
- Identify plausible signatures of life on other worlds.

B. Our Destiny in the Solar System

- Understand forces and processes, such as impacts, that affect habitability of Earth.
- Develop the capability to predict space weather.
- Find extraterrestrial resources and assess the suitability of Solar System locales for future human exploration

C. Solar System Exploration Missions and/or Campaigns: The material provides information on NASA Solar System Exploration missions and/or campaigns.

Reviewer comments:

* ***Structure and Evolution of the Universe***

A. SEU Fundamental Quests:

- What are the cycles of matter and energy in the evolving Universe?
- How did structure in the Universe form?
- What are the ultimate limits of gravity and energy in the Universe?

B. SEU Missions and/or Campaigns: The material provides information on SEU Program missions and/or campaigns. Research Campaigns include efforts to:

- Identify dark matter and learn how it shapes galaxies and systems of galaxies.
- Explore where and when the chemical elements were made.
- Understand the cycles in which matter, energy, and magnetic field are exchanged between stars and the gas between stars.
- Discover how gas flows in disks and how cosmic jets are formed.
- Identify the sources of gamma- ray bursts and high- energy cosmic rays.
- Measure how gravity operates in extreme conditions - near black holes and in the early Universe.

Reviewer comments:

* ***Astronomical Search for Origins***

A. Search for Origins Defining Questions:

Where Do We Come From? Are We Alone?

B. Search for Origins Goals:

To understand how galaxies formed in the early universe.

- Gravity's Role in Galaxy Formation.
- How Galaxies Produce Chemicals for Stars, Planets, and Living Organisms.

To understand how stars and planetary systems form and evolve.

- Discover planetary systems forming around young stars, and characterize their properties.
- Characterize the planets and planetary systems around other stars.

To determine whether habitable or life-bearing planets exist around nearby stars

- Determine what makes a planet habitable and determine how common habitable worlds are in the Universe.
- Establish how to recognize the signatures of life on other worlds.

To understand how life forms and evolves

- Determine the general principles governing the organization of matter into living systems.
- Determine both the early evolution of life and its limits in environments that might provide analogues for conditions on other worlds.

C. Search for Origins Missions and/or Campaigns: The material provides information on Origins Program missions and/or campaigns.

Reviewer comments:

Criterion 17: Other reviewer comments

Provide comments on any perceived good or bad qualities that were not measured by any of the previous criteria.

Reviewer comments:

Product Title: _____ **No.** _____

Space Science K-12 Education Review Summary

Criteria	Rating					
1. Instructional Practices	<input type="checkbox"/> Outstanding	<input type="checkbox"/> Very Good	<input type="checkbox"/> Good	<input type="checkbox"/> Fair	<input type="checkbox"/> Poor	
2. Standards	<input type="checkbox"/> Outstanding	<input type="checkbox"/> Very Good	<input type="checkbox"/> Good	<input type="checkbox"/> Fair	<input type="checkbox"/> Poor	
3. Processes	<input type="checkbox"/> Outstanding	<input type="checkbox"/> Very Good	<input type="checkbox"/> Good	<input type="checkbox"/> Fair	<input type="checkbox"/> Poor	
4. Scientific Reasoning	<input type="checkbox"/> Outstanding	<input type="checkbox"/> Very Good	<input type="checkbox"/> Good	<input type="checkbox"/> Fair	<input type="checkbox"/> Poor	
5. Fundament. Understandings	<input type="checkbox"/> Outstanding	<input type="checkbox"/> Very Good	<input type="checkbox"/> Good	<input type="checkbox"/> Fair	<input type="checkbox"/> Poor	
6. Assessment	<input type="checkbox"/> Outstanding	<input type="checkbox"/> Very Good	<input type="checkbox"/> Good	<input type="checkbox"/> Fair	<input type="checkbox"/> Poor	
7. .Appropriate/Complete	<input type="checkbox"/> Outstanding	<input type="checkbox"/> Very Good	<input type="checkbox"/> Good	<input type="checkbox"/> Fair	<input type="checkbox"/> Poor	
8. Product Design/Quality	<input type="checkbox"/> Outstanding	<input type="checkbox"/> Very Good	<input type="checkbox"/> Good	<input type="checkbox"/> Fair	<input type="checkbox"/> Poor	
9. Learning Technologies	<input type="checkbox"/> Outstanding	<input type="checkbox"/> Very Good	<input type="checkbox"/> Good	<input type="checkbox"/> Fair	<input type="checkbox"/> Poor	<input type="checkbox"/> N/A
10. Accuracy	<input type="checkbox"/> Outstanding	<input type="checkbox"/> Very Good	<input type="checkbox"/> Good	<input type="checkbox"/> Fair	<input type="checkbox"/> Poor	
11. Further investigation	<input type="checkbox"/> Outstanding	<input type="checkbox"/> Very Good	<input type="checkbox"/> Good	<input type="checkbox"/> Fair	<input type="checkbox"/> Poor	
12. Ease of Use	<input type="checkbox"/> Outstanding	<input type="checkbox"/> Very Good	<input type="checkbox"/> Good	<input type="checkbox"/> Fair	<input type="checkbox"/> Poor	<input type="checkbox"/> N/A
13. Accessibility	<input type="checkbox"/> Outstanding	<input type="checkbox"/> Very Good	<input type="checkbox"/> Good	<input type="checkbox"/> Fair	<input type="checkbox"/> Poor	<input type="checkbox"/> N/A
14. Conformance with COPPA (WWW sites for children under 13)						
a. Privacy Policy Posted	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Can't Tell	<input type="checkbox"/> N/A		
b. Parental Permission	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Can't Tell	<input type="checkbox"/> N/A		
15. Customer Focused	<input type="checkbox"/> Outstanding	<input type="checkbox"/> Very Good	<input type="checkbox"/> Good	<input type="checkbox"/> Fair	<input type="checkbox"/> Poor	
16. SMD Relevance	<input type="checkbox"/> Outstanding	<input type="checkbox"/> Very Good	<input type="checkbox"/> Good	<input type="checkbox"/> Fair	<input type="checkbox"/> Poor	
Overall Assessment	<input type="checkbox"/> Outstanding	<input type="checkbox"/> Very Good	<input type="checkbox"/> Good	<input type="checkbox"/> Fair	<input type="checkbox"/> Poor	

Summary Comments:

Recommendation

Check your recommendation(s) for this product:

- Recommended: The product is an excellent candidate for broad distribution or availability, for example, at education conferences, on a WWW site, etc.
- Recommended as is, with revisions on next printing/edition. Note to reviewers: the material may not be re-printed/revised, do not select this option if you believe the revisions are necessary before continued distribution/availability by NASA. (**Provide notes on recommended revisions**).
- Recommended -- Distribution through Teacher Workshops. This product is recommended for distribution through NASA teacher training sessions and workshops. Most teachers would require some introduction or training for effective use.
- Recommended -- Limited Audience. This product would be useful to limited audience, for example, very advanced users, lower/higher education level than originally identified, a limited topic area/course, a limited geographic area, etc. Provide notes below describing this audience.
- Needs Minor Revisions: The overall approach is very good, but **minor** revisions are needed before this product is distributed or recommended by NASA. “**Minor**” is not meant to indicate that the revisions aren’t important to make, but that they can be easily made. The material is generally free of scientific errors/misconceptions or obvious pedagogical problems; if there are errors they can be easily corrected. These products are not required to go back through the panel review process once they have been revised.

Examples of minor revisions include:

- Few text edits/minor text additions (e.g., grammatical errors, misspellings, and typos)
- Minor corrections to images or graphics
- Minor re-organizing of the material
- Online Products: a few broken links on a Web site (It is “Minor” due to ease of correcting.)
- Hard Copy Products: broken WWW links in a hard copy product, which are not critical to implementation (e.g., links to further reading/information).

- Needs Medium Revisions: The overall approach is sound, but revisions are required before this product is distributed or recommended by NASA. Depending on the extent of revisions to be made, NASA education program managers may require these products to go back through the panel review process after they have been revised.

Examples of medium revisions include:

- Large number of text edits/additions throughout the material (e.g., grammatical mistakes, typos, misspellings)
 - Corrections to more than a few images or graphics
 - Sections that suffer from organizational or presentational difficulties
 - Numerous broken links on a Web site
 - Several broken Web links on a hard copy product, which are not critical to the implementation of the product (e.g., links to further information/research)
 - Few scientific errors/misconceptions (perhaps limited to a single section, chapter, unit or lesson)
 - Isolated sections/chapters/units/or lessons that contain obvious pedagogical problems
- Needs Major Revisions: This product has potential, but **major** revisions are required to the overall approach before it is distributed or recommended by NASA. Products that are recommended for “major revisions” are required to go back through the panel review process after they have been revised.

Examples of major revisions include:

- Numerous or major scientific errors/misconceptions.
 - Serious problems with the overall approach to the subject, organization, structure, or presentation that renders it ineffective or difficult to use.
 - Pedagogical approach needs significant work for the intended audience (e.g., reading level, cognitive approach, scope/sequence, etc.).
 - Broken links in a printed document, which are critical to the implementation of the product.
- Not Recommended: NASA should take this product out of circulation/not release it as a space science education product. The quality is poor, the material dated, or it is not relevant to NASA's Science Mission Directorate: Space Science.
 - Other (**Specify**):

NOTES:

Reviewer Name: _____