

Overview

Overview | What can fossils teach us about life long ago?



*What can fossils teach us about life long ago?*

*by Leah Clark and Dave Neely*

*Students will use information from earth and life science to create a feature article about what fossils teach us about life long ago and how this effects life today.*

**Grades:** 4 5

**Discipline:** Science

**Teaching Task:** Task Template 13 (Informational or Explanatory and Description)

**Course:** Science

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*Section 1: What Task?*

TEACHING TASK

*Task Template 13 — [1 Level]*

*Informational & Description*

**L1:** After researching informational texts on fossils, write a feature article that describes what fossils can teach us about life long ago. Support your discussion with evidence from your research.

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STUDENT BACKGROUND

Students will have completed all of Life Science and will also have completed the rocks and minerals units of Earth Science.

EXTENSION

Rubric						
Scoring Elements	Not Yet		Approaches Expectations		Meets Expectations	Advanced
1	1.5	2	2.5	3	3.5	4
<b>Focus</b>	Attempts to address prompt, but lacks focus or is off-task.		Addresses prompt appropriately, but with a weak or uneven focus.		Addresses prompt appropriately and maintains a clear, steady focus.	Addresses all aspects of prompt appropriately and maintains a strongly developed focus.
<b>Controlling Idea</b>	Attempts to establish a controlling idea, but lacks a clear purpose.		Establishes a controlling idea with a general purpose.		Establishes a controlling idea with a clear purpose maintained throughout the response.	Establishes a strong controlling idea with a clear purpose maintained throughout the response.
<b>Reading/Research</b>	Attempts to present information in response to the prompt, but lacks connections or relevance to the purpose of the prompt. (L2) Does not address the credibility of sources as prompted.		Presents information from reading materials relevant to the purpose of the prompt with minor lapses in accuracy or completeness. (L2) Begins to address the credibility of sources when prompted.		Presents information from reading materials relevant to the prompt with accuracy and sufficient detail. (L2) Addresses the credibility of sources when prompted.	Accurately presents information relevant to all parts of the prompt with effective selection of sources and details from reading materials. (L2) Addresses the credibility of sources and identifies salient sources when prompted.
<b>Development</b>	Attempts to provide details in response to the prompt, including retelling, but lacks sufficient development or relevancy. (L2) Implication is missing, irrelevant, or illogical. (L3) Gap/unanswered question is missing or irrelevant.		Presents appropriate details to support the focus and controlling idea. (L2) Briefly notes a relevant implication or (L3) a relevant gap/unanswered question.		Presents appropriate and sufficient details to support the focus and controlling idea. (L2) Explains relevant and plausible implications, and (L3) a relevant gap/unanswered question.	Presents thorough and detailed information to strongly support the focus and controlling idea. (L2) Thoroughly discusses relevant and salient implications or consequences, and (L3) one or more significant gaps/unanswered questions.
<b>Organization</b>	Attempts to organize ideas, but lacks control		Uses an appropriate organizational structure to address the specific requirements of the prompt, with		Maintains an appropriate organizational structure to address the	Maintains an organizational structure that intentionally and effectively enhances the presentation of

	of structure.		some lapses in coherence or awkward use of the organizational structure.		specific requirements of the prompt.	information as required by the specific prompt.
<b>Conventions</b>	Attempts to demonstrate standard English conventions, but lacks cohesion and control of grammar, usage, and mechanics. Sources are used without citation.		Demonstrates an uneven command of standard English conventions and cohesion. Uses language and tone with some inaccurate, inappropriate, or uneven features. Inconsistently cites sources.		Demonstrates a command of standard English conventions and cohesion, with few errors. Response includes language and tone appropriate to the audience, purpose, and specific requirements of the prompt. Cites sources using an appropriate format with only minor errors.	Demonstrates and maintains a well-developed command of standard English conventions and cohesion, with few errors. Response includes language and tone consistently appropriate to the audience, purpose, and specific requirements of the prompt. Consistently cites sources using appropriate format.
<b>Content Understanding</b>	Attempts to include disciplinary content in explanations, but understanding of content is weak; content is irrelevant, inappropriate, or inaccurate.		Briefly notes disciplinary content relevant to the prompt; shows basic or uneven understanding of content; minor errors in explanation.		Accurately presents disciplinary content relevant to the prompt with sufficient explanations that demonstrate understanding.	Integrates relevant and accurate disciplinary content with thorough explanations that demonstrate in-depth understanding.

**STANDARDS***Kentucky — Biological Science*

**SC-04-3.5.1:** Students will use representations of fossils to draw conclusions about the nature of the organisms and the basic environments that existed at the time; and make inferences about the relationships to organisms that are alive today.

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*Common Core Anchor Standards — Reading*

**R.CCR.1:** Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

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**R.CCR.2:** Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.

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**R.CCR.4:** Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.

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**R.CCR.6:** Assess how point of view or purpose shapes the content and style of a text.

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**R.CCR.10:** Read and comprehend complex literary and informational texts independently and proficiently.

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*Common Core Anchor Standards — Writing*

**W.CCR.2:** Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.

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**W.CCR.4:** Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

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**W.CCR.5:** Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.

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**W.CCR.9:** Draw evidence from literary or informational texts to support analysis, reflection, and research.

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**W.CCR.10:** Write routinely over extended time frames (time for research, reflection, and

revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

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*Custom Standards*

*Section 2: What Skills?*

**Selected Skills**

*Preparing for the Task*

**TASK ENGAGEMENT:** Ability to connect the task and new content to existing knowledge, skills, experiences, interests, and concerns

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**TASK ANALYSIS:** Ability to understand and explain the task's prompt and rubric.

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*Reading Process*

**TEXT SELECTION:** Ability to identify appropriate texts

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**ACTIVE READING:** Ability to identify the central point and main supporting elements of a text.

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**ESSENTIAL VOCABULARY:** Ability to apply strategies for developing an understanding of text(s) by locating words and phrases that identify key concepts and facts, or information.

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**ACADEMIC INTEGRITY:** Ability to use and credit sources appropriately.

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**NOTE-TAKING:** Ability to read purposefully and select relevant information; to summarize and/or paraphrase.

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*Transition to Writing*

**BRIDGING:** Ability to begin linking reading results to writing task.

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*Writing Process*

**CONTROLLING IDEA:** Ability to establish a controlling idea and consolidate information relevant to task.

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**PLANNING:** Ability to develop a line of thought and text structure appropriate to an information/explanation task.

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**DEVELOPMENT:** Ability to construct an initial draft with an emerging line of thought and structure.

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**REVISION:** Ability to refine text, including line of thought, language usage, and tone as

appropriate to audience and purpose.

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**EDITING:** Ability to proofread and format a piece to make it more effective.

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**COMPLETION:** Ability to submit final piece that meets expectations.

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## Section 3: What Instruction?

### MiniTasks

#### *Preparing for the Task*

**TASK ENGAGEMENT:** Ability to connect the task and new content to existing knowledge, skills, experiences, interests, and concerns

##### **LIST**

In a quick write, write your first reaction to the task prompt. Add some notes of things you know about how fossils teach us about the past.

**Pacing:** One day

##### **Scoring Guide: work meets expectations if:**

It includes at least 10 responses that relate to the subject.

##### **Teaching Strategies:**

- Link this task to earlier class content.
- Discuss student responses.
- Clarify timetable and support plans for the task.

**TASK ANALYSIS:** Ability to understand and explain the task's prompt and rubric.

##### **LIST**

In your own words, what are the important features of a good response to this prompt?

**Pacing:** One day

##### **Scoring Guide: work meets expectations if:**

Collaboration, participation, if students can explain reasoning behind their lists

##### **Teaching Strategies:**

- Share examples of type of text students will produce (either from past students or from professional writers).
- Identify or invite students to identify key features of examples.
- Pair students to share and improve their individual bullets.
- Create a classroom list: Choose one student to share a few ideas on the board, and ask other to add to it.

## Reading Process

**TEXT SELECTION:** Ability to identify appropriate texts

### NOTES

For each text, list the needed bibliographic information. Add bullets on why you think the work is credible and/or worthy of study.

**Pacing:** One day

### Scoring Guide: work meets expectations if:

- Identifies author, title, publisher, date, and any other needed information (for example, the volume for a periodical or the editor for an anthology).
- Includes reasonable evidence that work is credible and/or worthy of study.

### Teaching Strategies:

- Provide citation guide and discuss why each element of citation is needed.
- Ask students to brainstorm what makes an author credible and/or worthy of study.
- Provide access to research sources for students to assess the texts.
- Note: for an “after researching” task, add teaching and time for students to select the texts they will use.

### Notes:

Collaborate with Mrs. Rahm in library for lesson on bibliography.

**ACTIVE READING:** Ability to identify the central point and main supporting elements of a text.

### SHORT CONSTRUCTED RESPONSE

What is the author trying to accomplish? Which parts of the text show you that?

- L2 What competing arguments have you encountered or can you think of?
- L3 What historical or current examples can you note that relate to the task prompt?

**Pacing:** 2-3 days

### Scoring Guide: work meets expectations if:

- Answers questions with credible response.

### Teaching Strategies:

- Invite students to brainstorm ways to figure out any author’s intent.

- Invite students to share and discuss their answers for each text.
  - After the discussion, allow them to add to their entries.
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**ESSENTIAL VOCABULARY:** Ability to apply strategies for developing an understanding of text(s) by locating words and phrases that identify key concepts and facts, or information.

**LIST**

In your notebook, list words and phrases essential to the texts. Add definitions, and (if appropriate) notes on connotation in this context.

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**Pacing:** 2 days

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**Scoring Guide: work meets expectations if:**

- Lists appropriate phrases.
  - Provides accurate definitions.
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**Teaching Strategies:**

- After scoring, ask some students to share definitions of terms that others overlooked or misunderstood.
  - After scoring, be willing to provide direct instruction or guide a close reading if needed to work through a key phrase most students missed.
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**ACADEMIC INTEGRITY:** Ability to use and credit sources appropriately.

**SHORT CONSTRUCTED RESPONSE**

Define "plagiarism" and list ways to avoid it.

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**Pacing:** One day

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**Scoring Guide: work meets expectations if:**

- Provides accurate definition
  - Lists several appropriate strategies
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**Teaching Strategies:**

- Discuss respect for others' work to assemble evidence and create texts.
  - Discuss academic penalties for stealing others thoughts and words.
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**NOTE-TAKING:** Ability to read purposefully and select relevant information; to summarize

and/or paraphrase.

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**NOTES**

From each text, make a list of the elements that look most important for answering the prompt. Do what you need to do to avoid plagiarism.

- L2(a) What strategies will you use to discern “credible sources”?
  - L2(b): What implications can you draw? (Tasks 11,12 )
  - L3 Why is it important in the process of inquiry to “identify gaps” or “unanswered questions” about the topic?
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**Pacing:** 1 day

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**Scoring Guide: work meets expectations if:**

- Identifies relevant elements.
  - Includes information to support accurate citation (for example, page numbers for a long text, clear indication when quoting directly).
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**Teaching Strategies:**

- Teach a model format for note taking.
  - Check that early student work is in the assigned format (or in another format that gathers the needed information effectively).
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*Transition to Writing*

**BRIDGING:** Ability to begin linking reading results to writing task.

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**LIST**

In a quick write, write about what you know now that you’ve read about how fossils teach us about the past.

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**Pacing:** 1 day

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**Scoring Guide: work meets expectations if:**

The student must list 10 relevant facts about how fossil teach us about the past.

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**Teaching Strategies:**

- Discussion-based strategies, such as seminar.
  - Small group discussion using question.
  - Compare what you wrote today with what you wrote before you had read...what have you learned?
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## *Writing Process*

**CONTROLLING IDEA:** Ability to establish a controlling idea and consolidate information relevant to task.

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### **SHORT CONSTRUCTED RESPONSE**

Write an opening paragraph that includes a controlling idea and sequences the key points you plan to make in your composition

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**Pacing:** One day

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**Scoring Guide: work meets expectations if:**

- Writes a concise summary statement or draft opening.
- Provides direct answer to main prompt requirements.
- Establishes a controlling idea.
- Identifies key points that support development of argument.

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**Teaching Strategies:**

- Offer several examples of opening paragraphs.
  - Ask class to discuss what makes them strong or weak.
  - Review the list that students created earlier to identify needed elements (from Cluster 1, skill 2).
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**PLANNING:** Ability to develop a line of thought and text structure appropriate to an information/explanation task.

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### **OUTLINE**

Create an outline based on your notes and reading in which you state your claim, sequence your points, and note your supporting evidence.

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**Pacing:** One day

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**Scoring Guide: work meets expectations if:**

- Creates an outline or organizer.
- Supports controlling idea. Uses evidence from texts read earlier.

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**Teaching Strategies:**

- Provide and teach one or more examples of outlines or organizers.
- Invite students to generate questions in pairs about how the format works, and then take and answer questions.

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**DEVELOPMENT:** Ability to construct an initial draft with an emerging line of thought and structure.

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**LONG CONSTRUCTED RESPONSE**

Write an initial draft complete with opening, development, and closing; insert and cite textual evidence.

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**Pacing:** 2-3 days

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**Scoring Guide: work meets expectations if:**

- Provides complete draft with all parts.
- Supports the opening in the later sections with evidence and citations.

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**Teaching Strategies:**

- Encourage students to re-read prompt partway through writing, to check that they are on track.
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**REVISION:** Ability to refine text, including line of thought, language usage, and tone as appropriate to audience and purpose.

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**LONG CONSTRUCTED RESPONSE**

Refine composition's analysis, logic, and organization of ideas/points. Use textual evidence carefully, with accurate citations. Decide what to include and what not to include.

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**Pacing:** 2 days

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**Scoring Guide: work meets expectations if:**

- Provides complete draft with all parts.
- Supports the opening in the later sections with evidence and citations.
- Improves earlier edition.

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**Teaching Strategies:**

- Sample useful feedback that balances support for strengths and clarity about weaknesses.
  - Assign students to provide each other with feedback on those issues.
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**EDITING:** Ability to proofread and format a piece to make it more effective.

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**LONG CONSTRUCTED RESPONSE**

Revise draft to have sound spelling, capitalization, punctuation, and grammar. Adjust formatting as needed to provide clear, appealing text.

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**Pacing:** One day

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**Scoring Guide: work meets expectations if:**

- Provides draft free from distracting surface errors.
  - Uses format that supports purpose.
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**Teaching Strategies:**

- Briefly review selected skills that many students need to improve.
  - Teach a short list of proofreading marks.
  - Assign students to proofread each other's texts a second time.
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**COMPLETION:** Ability to submit final piece that meets expectations.

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**LONG CONSTRUCTED RESPONSE**

Turn in your complete set of drafts, plus the final version of your piece

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**Pacing:** One day

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**Scoring Guide: work meets expectations if:**

- Fits the "Meets Expectations" category in the rubric for the teaching task.
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## Resources

### *Uploaded Files*

### *Keywords*

### *Links\**

\* These Lexile measures were computed automatically and did not undergo human review. They are not certified measures and should not be published or recorded in any way.

### *Other Resources*

#### Fossils

by Spilsbury, Richard

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#### Rocks & Fossils

by Hynes, Margaret, - 2006.

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#### Living Fossils

by Pope, Joyce. - c1992.

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#### Fossils

By Alike 1972

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#### Fossils of the World

by Pellant, Chris. - 1994

---

#### Dinosaurs walked here, and other stories fossils tell

by Lauber, Patricia. - c1987.

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#### Fossils : a guide to prehistoric life

481 illustrations in color by Rhodes, Frank Harold Trevor. - c1962

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#### Dinosaur Habitat

by Griffith, Helen V. - c1998

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#### Earth science : discovering the secrets of the earth

by Knapp, Brian J. - 2000

---

#### How do we know the age of the earth

by Caes, Charles J. - 2001



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#### The great whale of Kansas





by Jennings, Richard W. - 2001



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  Reading Strategy Lessons for Science & Social Studies  
Laura Robb Scholastic 2009



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  McGraw-Hill Science  
National Geographic Society 2002

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  Earth Space Science  
Steck-Vaughn 1999



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  Earth Science for Every Kid  
101 Easy Experiments that Really Work By Janice VanCleave 1991



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  Cave Detectives  
Unraveling the Mystery of an Ice Age Cave By David L. Harrison 2007



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  Mary Anning and the Sea Dragon  
Jeannine Atkins 1999

---

  Fossils  
The Evolution and Extinction of Species Niles Eldredge 1991

---

  Facts on File  
Junior Science Experiments on File Fruit Fossils Create a Fossil

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## Section 4: What Results?

Classroom Assessment Rubric	
<b>Not Yet</b>	
<b>Focus</b>	Attempts to address prompt but lacks focus or is off-task.
<b>Reading/Research</b>	Attempts to present information relevant to prompt.
<b>Controlling Idea</b>	Controlling idea is weak and does not establish a purpose and/or address a research question.
<b>Development</b>	Tends to retell rather than present information in order to answer questions, solve problems; lacks details to develop topic. *L2 Implications are weak or not relevant to topic. L3 Does not identify a relevant gap or unanswered question.
<b>Organization</b>	Applies an ineffective structure; composition does not address requirements of the prompt.
<b>Conventions</b>	Demonstrates a weak command of standard English conventions; lacks cohesion; language and tone are inappropriate to audience and purpose.
<b>Meets Expectations</b>	
<b>Focus</b>	Addresses prompt with a focused response.
<b>Reading/Research</b>	Presents and applies relevant information with general accuracy.
<b>Controlling Idea</b>	Establishes a controlling idea that states the main purpose and/or question for the tasks. L2 Addresses the credibility of sources.
<b>Development</b>	Presents sufficient information in order to examine or convey topics or issues, answer questions, solve problems; identifies salient themes or features; explains key information with sufficient detail. *L2 Discusses relevant implications to topic. L3 Identifies a gap or unanswered question.
<b>Organization</b>	Applies a generally effective structure to address specific requirements of the prompt.
<b>Conventions</b>	Demonstrates a command of standard English conventions and cohesion; employs language and tone appropriate to audience and purpose.

### Classroom Assessment Task

No Classroom Assessment Task for this module

### Exemplar Work

*Uploaded Files*

*Comments*

Author Notes

Other Comments