Evidence Notebooks...
CER...
&
NGSS

Todd Koenig
How is it organized?

JOURNAL REQUIREMENTS

- Three legible handwritten pages (single-sided) per week. Entries may also be typed if the student prefers.
- A date and a title for each entry.
- Two entries for prompt #1: In science class, discussion, or lab this week I learned... Specific science words or vocabulary presented in class must be used in prompt #1.
- One entry for prompt #2: What I am curious about in science is...
- A written response to the teacher’s question or comment.
Journal Requirements

*Complete assigned journal questions, labs, concepts or activities. Some weeks we will have free choice entries. Free choice entries need to be science related but give YOU the choice to write about anything SCIENCE!

*Questions and free choice entries need to be 1/3 page minimum! Absolutely no exceptions! (They definitely can be longer) Entries may also be typed. (If you are having trouble with the 1/3 page see page IDEAS page for help)

*A date and a title for each entry are necessary.

Science-Journal Rubric

One assessment or a cumulative grade is given each journal check. You will be required to do a self evaluation prior to turning in your journal. Keeping with the scientific process you will also be required to do and receive a peer review of your entries. (See me with any questions or concerns)

√++ = 100% (Exceptional!) **Entries need to be above and beyond the requirements to get this.**

*All required entries, 1/3 page OR MORE, with titles, and neatly written.

*Through observations, predictions, investigations, and reflections of the scientific concepts, classroom discussions, or labs.

*Wide variety and use of science terms or vocabulary spelled and used correctly, with detailed descriptions translated in your own words, NO definitions. Sketches or visuals are labeled and fully explained.
<table>
<thead>
<tr>
<th>DATE</th>
<th>KEY</th>
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<tr>
<td>11/11/09</td>
<td>Journal question #1/10, observations of foster</td>
<td>Pg. 1</td>
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<td>11/14/09</td>
<td>Journal Entry #2 / Species</td>
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<td>11/16/09</td>
<td>Journal question #3 / Geology of MN</td>
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<td>11/18/09</td>
<td>Journal Entry #4 / Observation of 3-D Maps</td>
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<td>11/31/09</td>
<td>Journal Entry #5 / Minnesota Slideshow</td>
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<td>12/4/09</td>
<td>Journal Entry #6 / Practice Sketching</td>
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<td>12/25/09</td>
<td>Journal Entry #7 / Nature Drawing</td>
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<td>Journal question #8 / Upland game birds</td>
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<td>12/31/09</td>
<td>Journal Entry #9 / Different animals of the animal farm</td>
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<td>12/10/09</td>
<td>Journal Entry #10 / Upland Game Birds</td>
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<td>12/26/09</td>
<td>Journal Entry #11 / VT: Goose and the Goshawk video</td>
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<td>Journal Entry #12 / Timberdoodles of Makeehorn video</td>
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<td>Journal Entry #13 / Ruffed Grouse</td>
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<td>Journal Entry #14 / Duluth</td>
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<td>Journal Entry #15 / North Dakota</td>
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<td>12/30/09</td>
<td>Journal Entry #16 / Land of the Reindeers, Predator video</td>
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<td>12/30/09</td>
<td>Journal Entry #17 / Turkeys</td>
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<td>Journal Entry #18 / Turkey Powerpoint</td>
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<td>12/30/09</td>
<td>Journal Entry #19 / Wild Turkey Video</td>
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<td>Journal Entry #20 / Antlered Family</td>
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<td>Journal Entry #21 / Antlers vs. Horns</td>
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<td>Journal Entry #22 / Antlers Family Powerpoint</td>
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<td>Journal Entry #23 / Headgear Video</td>
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<td>12/30/09</td>
<td>Journal Entry #24 / Born to run video</td>
<td>Pg. 24/++</td>
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Science-Journal Rubric

One assessment or a cumulative grade is given each journal check. You will be required to do a self-evaluation prior to turning in your journal. Keeping with the scientific process you will also be required to do and receive a peer review of your entries. (See me with any questions or concerns)

√++  = 100% (Exceptional!) **Entries need to be above and beyond the requirements to get this.**
*All required entries, 1/3 page OR MORE, with titles, and neatly written.
*Through observations, predictions, investigations, and reflections of the scientific concepts, classroom discussions, or labs.
*Wide variety and use of science terms or vocabulary spelled and used correctly, with detailed descriptions translated in your own words, NO definitions. Sketches or visuals are labeled and fully explained.

√+  = 85% (very good!) *This will be your grade if you meet the exact requirements from above.*
*All required entries, 1/3 page, with titles, and neatly written.
*Observations and explanations of scientific concepts are included relating to the classroom discussions, or labs.
*Many science terms or vocabulary spelled and used correctly, description in your own words, NO definitions. Sketches or visuals are labeled and summarized.

√  = 75% (passing)
*All required entries, 1/3 page or less, with titles, and neatly written.
*Descriptions of science concepts are included relating to classroom discussions, or labs.
*Some science terms or vocabulary used, spelled and used correctly, described in your own words, NO definitions. Sketches or visuals are labeled and described.

√-  = 50% (needs improvement) *Talk to me about the expectations to improve your score.*
*Missing some of the required entries, 1/3 page or less, missing titles, hard to read or writing doesn’t make sense.
*Some ideas or descriptions are listed, not all related to science concepts, classroom discussions, or labs.
*Few science terms or vocabulary used, misspelled or used incorrectly. NO definitions. Sketches or visuals are labeled.

√-- = 25% (re-check what is expected!) *You are required to see me if you get this mark*
*Few entries are written or minimal thoughts shared.
*Ideas are not related to science or are off topic.
*No science terms or vocabulary used, misspelled or used incorrectly. NO definitions. Either no sketches or visuals or they are not labeled.

0 = 0% Not handed in OR nothing done! *You are required to see me if you get this mark*
*No LATE JOURNALS accepted!!!
*If you have an EXCUSED ABSENCE the journal is due the day you come back!
SCIENCE-JOURNAL RUBRIC

One assessment or a cumulative grade is given for all three journal entries. Various comments or feedback based on the journal content and overall writing of the student are also given. Students must respond to at least one teacher question or comment in their journal.

√ ++ = 100% (exceptional)
- Three dated entries, at least one page each, with titles, and neatly written.
- Several ideas all related to science, classroom discussions, or labs.
- Wide variety of science terms or vocabulary spelled and used correctly, detailed description in student’s own words (outside sources or visuals are labeled and fully explained).
- Response to the teacher’s question or comment is highly detailed, shows additional curiosity, thought, or ideas, and more in-depth research.

√ + = 85% (very good!)
- Three dated entries, one page each, and neatly written.
- Few/some ideas, all related to science, classroom discussions, or labs.
- Many science terms spelled and used correctly, some description in student’s own words (outside sources or visuals are labeled and mostly explained).
- Response to teacher’s question or comment is detailed and shows some curiosity, thought, and research.

√ = 75% (passing)
- Three dated entries, one page each, and neatly written.
- At least one idea related to science, classroom discussions, or labs.
- Some science terms or vocabulary spelled and used correctly, mostly described in student’s own words (either an example or visual or outside source is used and explained somewhat in student’s own words).
- Response to teacher’s question or comment shows limited curiosity, thought, ideas, or research.

√ – = 50% (needs improvement)
If a student receives this grade, a consultation or one-on-one conference is scheduled between the student and the teacher.
- Less than three entries, or entries that are less than one page each, or writing doesn’t make sense.
- Ideas are not related to science or are off topic.
- No science terms used, or spelled or used incorrectly, or not written in student’s own words (no outside sources or visuals).
- No response to teacher’s question or comment.
Stay focused on SCIENCE. Journals are not appropriate for writing personal thoughts about your classmates, creative drawing, or other information not related to science!

In class scientific concepts – Focused Writing
Write in your own words what you are learning
- In science class, discussion, or lab this week I learned...
  - Correctly use science terms and vocabulary
  - Record observations and make predictions from lab work
  - Write your own questions about what we did/discussed and explore ways to find answers
- Today I learned that...
  - In lab or class this week, I thought _____ was interesting because ______.
  - What we did today in science reminds me of....
  - I am confused about....
  - I previously thought ______, but now I think ______.
  - I was wondering about....
  - I would like to explore ______ because ______.
  - I really understood....[give details].
  - I am trying to find the answer to...
  - When I visited ______, I observed ______.
  - While watching______, I noticed that______.
  - In another subject [social studies, reading, math] we talked about ______, which related to science because....

Free Choice sentence starters - Open-ended Writing
Connect science to your everyday life! Use your curiosity to think of questions and explore the world around you
- What I am curious about science is.....
  - What connections and experience are you making outside of science class
    - Science programs from TV or the Internet
    - News reports from TV, Internet, Radio, Magazines, or Newspapers
    - Animals or plants you observe around your community
VIDEO Journal Prompts - Pick two/1 per category

If there is assigned assignment this does not apply. If you are assigned a video prompt these are your choices. SET UP THE FOLLOWING! 1st Add the name of the video to your index of your journal, along with the date and page #. 2nd Go to the appropriate page and add the video title. 3rd Pick categories as you watch the video ½ page each for a total of one page.

Summarize the video!

Answer the questions!


For Example: Create the questions and answer them! Who lives where? Who eats what? When are young born? Who raises the young? What are the prevailing winds, sun and shade patterns (weather)? What are the internal/external – conditions that are present? How does this relate to what are we doing in class?

Visual/Artistic Images!

- It can contain sketches, drawings, and photographs.
  * You need to give me details regarding the drawings/sketches/photos’s what is being depicted or shown.
- It can contain quotes and poems relating to the topic or video seen.

Research a topic discussed on the video!

For Example: What can you infer from the video that was not discussed or what personal experiences have you had that were similar to or different from the video? Find out additional information about the area this video was filmed at, tell me about the habitat, or other factors that could or will affect the animal of study in that area.

Ask “If” Questions! Example could include:

- If you could be a living creature on the video what would you be and why?
- If you were in charge of the video, how would you improve it?
- If you were able to go to the location depicted (shown) what would you want to explore?

Create a top "ten" list!

- Focus on listing. If you are a compulsive list maker, this is just what you need. *For each item listed tell me about it! For Example: Descriptions, why did you list it, how it relates to the video/class, or other ideas.

ABSENT?

If you are absent during a video, you will have to find a video on-line to supplement your knowledge and then choose any of the above prompts to complete just as if you were in class (some of the videos we view are available on YouTube, if not approve it one with the teacher).

- OR -

Read the transcript if available and use the internet to supplement your knowledge with pictures. You will need to do a one page summary but must supplement with 2 pictures no larger that 2”x2”.
HS-LS4-2 Biological Evolution: Unity and Diversity

Students who demonstrate understanding can:

Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number; (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment. [Clarification Statement: Emphasis is on using evidence to explain the influence each of the four factors has on number of organisms, behavioral, morphology, or physiological terms of ability to compete for limited resources and subsequent survival of individuals and adaptation of species. Examples of evidence could include mathematical models such as simple distribution graphs and proportional reasoning.] [Assessment Boundary: Assessment does not include other mechanisms of evolution, such as genetic drift, gene flow through migration, and co-evolution.]

The performance expectation above was developed using the following elements from the NRC document A Framework for K-12 Science Education:

**Science and Engineering Practices**

Constructing Explanations and Designing Solutions

Constructing explanations and designing solutions in 9–12 builds on K–8 experiences and progresses to explanations and designs that are supported by multiple independent sources of evidence that are consistent with scientific ideas, principles, and theories.

- Construct an explanation based on valid and reliable evidence obtained from a variety of sources (including students' own investigations, models, theories, simulations, peer review) and the assumption that theories and laws that describe the natural world operate today as the did in the past and will continue to do so in the future.

**Disciplinary Core Ideas**

**LS4.B: Natural Selection**

- Natural selection occurs only if there is both (1) variation in the genetic information between organisms in a population and (2) variation in the expression of that genetic information—what is, trait variation—the levels to differences in performance among individuals.

**LS4.C: Adaptation**

- Evolution is a consequence of the interaction of four factors: (1) the potential for a species to increase in number, (2) the genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for an environment's limited supply of the resources that individuals need in order to survive and reproduce, and (4) the ensuing proliferation of those organisms that are better able to survive and reproduce in that environment.

**Crosscutting Concepts**

**Cause and Effect**

- Empirical evidence is required to differentiate between cause and correlation and make claims about specific causes and effects.

**Connections to other DCIs across grade bands:**


**Articulation of DCIs across grade bands:**


**Common Core State Standards Connections:**

- **ELA/Literacy - RST.11-12.1**
  - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. (HS-LS4-2)

- **WHST.9-12.2**
  - Write informative explanatory texts, including the narrative of historical events, scientific procedures/experiments, or technical processes. (HS-LS4-2)

- **WHST.9-12.9**
  - Draw evidence from informational texts to support analysis, reflection, and research. (HS-LS4-2)

- **SL.11-12.4**
  - Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation. (HS-LS4-2)

**Mathematics - MP2**

- Reason abstractly and quantitatively. (HS-LS4-2)

- **MP4**
  - Model with mathematics. (HS-LS4-2)