**Formation of the Earth**

Apply scientific reasoning and evidence from the ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth’s formation and early history.

Using the CER format will help create your explanation.

Construct an account of Earth’s formation and early history that includes:

* Formation of the solar system (4.6 billions years ago)
* Impacts on Earth and other objects in the solar system
* Explanation behind the scarcity of impact craters on Earth

Include and describe:

* Age and composition of Earth’s oldest rocks, lunar rocks, and meteorites as determined by radiometric dating
* Composition of solar system objects
* Observations of the size and distribution of impact craters on Earth’s surface and other surfaces of rocky objects in the solar system
* Role of plate tectonics

Be sure to use reasoning to connect the following in your explanation:

* Radiometric ages of lunar rocks, meteorites and the oldest Earth rocks point to an origin of the solar system
* Planetary surfaces and patterns of impact cratering
* The lack of impact craters and age of most rocks compared to other bodies in the solar system

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| NGSS Strand | Not Yet | Approaches Expectations | Meets Expectations | Advanced |
| HS-ESS1-6 | Identifies or otherwise applies irrelevant content OR relevant content with major errors or omissions. | Identifies or otherwise applies relevant content with minor errors or omissions. | Explains or otherwise applies relevant and accurate content. | Explains and applies relevant and accurate content. |
| Controlling Idea | Addresses prompt.  Presents a general or unclear controlling idea. | Addresses prompt.  Presents a clear controlling idea with an uneven focus. | Addresses prompt.  Presents and maintains a clear, specific controlling idea that takes into account the complexity of the topic. | Addresses prompt.  Presents and maintains a precise, substantive controlling idea that takes into account the complexity of the topic and, where appropriate, acknowledges gaps in evidence or information. |
| Selection & Citation of Evidence | Includes minimal details from sources.  Sources are used without citation. | Includes details, examples, and/or quotations from sources that are relevant to the controlling idea.  Consistently cites sources. | Includes details, examples, and/or quotations from sources that support the controlling and supporting ideas.  Consistently cites sources with minor formatting errors. | Includes well-chosen, details, examples, and/or quotations from sources that fully support the controlling and supporting ideas.  Consistently cites sources using appropriate format. |
| Development/  Explanation of Sources | Explanation of source material is irrelevant, incomplete, or inaccurate. | Explains source material to support the controlling idea, with some incomplete reasoning or explanations. | Accurately explains source material and how it supports the controlling idea. | Thoroughly and accurately explains source material to support and develop the controlling idea. |