

Name _____

Period _____

Science Technology Engineering and Mathematics
ENGINEERING DESIGN AND INQUIRY

SMITHSONIAN EXHIBIT PROPOSAL



Defining the Problem and Brainstorming

1. According to the Request for Proposal (RFP), what is the problem?
2. What ideas based on your own experience do you have?
3. What information do you need to learn before creating one of your ideas?
4. Make a list of the resources you will use in order to gather the information necessary to solve the problem.
5. What questions do you have about the RFP requirements of the project?
6. What do you need to learn more about?

**Researching and Generating Ideas
Mass Extinctions**

Mass Extinction Event	What Caused It	Types of Organisms That Went Extinct
<p>Late Ordovician</p> <hr/> <p>Million years ago</p>		
<p>Late Devonian</p> <hr/> <p>Million years ago</p>		
<p>Permian</p> <hr/> <p>Million years ago</p>		
<p>Triassic</p> <hr/> <p>Million years ago</p>		
<p>Cretaceous-Tertiary</p> <hr/> <p>Million years ago</p>		

Researching and Generating Ideas - Species Information

What extinct species am I researching? _____

Identification of species common name and/or scientific name	Description of when organism lived in Earth's history and the environmental conditions of the time
Description of evolutionary relationships to organisms living today (including anatomical and/or embryological similarities)	Description of adaptations organism had that allowed it to survive in past environment

Researching and Generating Ideas - Extinction Information

<p>Representation of fossil (picture, diagram, drawing)</p>	<p>Description of type of fossils found</p>
<p>Identification of what caused extinction</p>	<p>Explanation of why organisms was unable to survive extinction even</p>

Selecting an Approach

Using your research, you will create a proposal for the new exhibit at the Smithsonian Museum of Natural History on extinction of species and the causes of mass extinctions.

Your proposal must include the following information:

- i. All species and extinction information
- ii. Be scientifically correct
- iii. Be interactive and engaging
- iv. Be of appropriate scientific rigor for general public

Please note: Groups may collaborate on research but only individual proposals will be accepted

What communication tool will you use?

Identifying Criteria and Constraints

1. What are the design constraints and other variables that may affect your project?

2. What materials or tools will you need to construct your design?

Making a Model or Prototype

Directions: Use the space below to draft an outline for your proposal (poster, pamphlet, brochure, or multimedia presentation). Please show your draft to your teacher before continuing.

Communicating Process and Results

Directions: Your teacher will determine the specific processes for giving and receiving feedback on your display or report. Please use the information below to help give and receive feedback.

Criteria for Feedback:

As you give feedback on other proposals. Consider the following:

Are your comments:

- *respectful*: comments should not be mean-spirited, insulting or condescending
- *warranted*: comments – whether positive or negative- should not be trivial, exaggerated or unfounded,
- *specific*: comments should identify particular aspects, as opposed to very vague remarks (using an example, illustrate the value of the specific item rather than vague general comments),
- *constructive*: the primary purpose of critique is to improve our work – not to belittle or criticize; therefore, advice on how to improve is preferable to comments that merely note areas of strength or weakness.

Advice for hearing critiques of your work

Assume an active listening role by limiting your comments to:

- asking for clarification or elaboration,
- checking for understanding and,
- determining whether or not the ideas held by the commentator are widely held.