Student Name: ­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Unit 1: Technological Inventions and Innovations**

Lesson 4: The Role of Research and Development: A Problem-Solving Approach

**File 1.4.3: Invention Design Proposal**

Considering the invention you designed in the engagement and exploration portion of the lesson, you will need to develop a design proposal to present to a company to convince it to further develop the invention for the marketplace within their research and development department.

Your design proposal, which must be submitted electronically, needs to include the following components (represent each component with its own heading):

1. Title Page: your name, product name, picture of invention
2. Introduction to Design Team (you): your credentials
3. Purpose of the Invention: statement of problem the invention solves, background information related to the problem and product
4. Overview of Procedure: steps the company would need to complete in order to further develop the invention
5. Timeline: projected timeline and steps for further development
6. Project Budget: including materials for invention, materials for testing, and salaries for engineers/designers
7. Summary: one-paragraph summary of information included in the proposal

The following rubric will be used to evaluate your work:

|  |  |  |  |
| --- | --- | --- | --- |
| **Category** | **Below Average** | **Average** | **Excellent** |
| **Title Page and Introduction to Design Team** | The title page and introduction to design team includes most components. | The title page and introduction to design team includes all components. | The title page and introduction to design team includes all components, including a three-dimensional sketch/image of the invention. |
| **Purpose of Invention** | The purpose of the invention includes information related to the invention and the problem the invention is trying to solve. | The purpose of the invention includes background information related to the invention and the problem the invention is trying to solve. | The purpose of the invention includes significant background information related to the invention and the problem the invention is trying to solve.  |
| **Overview of Procedure** | The overview of procedure reflects some of the steps a company would use to prepare a product for the marketplace. | The overview of procedure reflects the steps a company would use to prepare a product for the marketplace. | The overview of procedure accurately reflects the steps a company would use to conduct research and development of a product to prepare it for marketplace. |
| **Timeline** | The timeline includes steps from the overview with unrealistic deadlines. | The timeline, presented in a clear manner, includes steps from the overview, with deadlines. | The timeline, presented in a clear manner, includes all steps from the overview, with realistic deadlines. |
| **Budget** | The budget is missing one component. | The budget reflects costs associated with creating the invention, testing the invention, and paying employees for the development of the invention. | The budget accurately reflects costs associated with creating the invention, testing the invention, and paying employees for the development of the invention. |
| **Summary** | Summary is no longer than one paragraph and represents some of the information presented in the design proposal. | Summary is no longer than one paragraph and represents most of the information presented in the design proposal. | Summary is no longer than one paragraph and concisely represents all of the information presented in the design proposal. |