

## Logbooks

While a logbook is not required by the K-12 InVenture Prize State Competition, it's encouraged to keep a logbook as an accurate record of your invention. All scientists and inventors keep detailed records of their work to be able to recreate what they have done. If they invent something novel, their records also serve to prove that they were the inventor. Students that compete at NICEE, the national competition, will be judged on their logbooks.

A logbook is a record of your invention process. It contains your original idea as well as a day to day record of how your idea progressed and changed based on your research and prototyping. You can organize your logbook in the following way:

1. **Title Page** that includes your name, school, state, and the dates of your project beginning and end
2. **Table of Contents**
3. **Background Research** - present your original idea or the problem that you want to focus on solving and then describe your background research. Identify and define key terms that are relevant to the technology you are using or the industry it is involved in. Be sure to provide context to the problem you're solving to communicate the importance and social relevance of your invention. Don't forget to cite your sources!!
4. **Patent Searches or Proof of Novelty** – research past patents to make sure that your invention is original. If your idea has been done before, see what you can do to improve it. Cite the relevant past patents or state that there are no patents similar to your invention.
5. **Daily Log** – keep a record of when you work on your project. It doesn't have to be extensive - write down the date and a few sentences about what you did that day. Your research and results will be in another section.
6. **Designs/Prototypes** – Include drawings, photos, or CAD screenshots of your prototype. Illustrate the prototyping process in these pictures. Show all iterations.
7. **Testing and Results** – Describe the experiment you designed to test your prototype. Report the results of the experiment and any notes you have about it – i.e. if it broke, if it works but could use improvement, if it produced the desired results. Present this for each iteration of the prototype.
8. **Discussion/Conclusion** – include an analysis of the results and conclude how your invention fulfills your initial goal. Add an analysis of the cost of production and ease of manufacture of your invention.
9. **Acknowledgements** – make sure to acknowledge and thank those that helped you in your process!
10. **Citations** – Cite your sources!

### **K-2 Logbook Guidelines**

K-2 students won't be expected to have a full report typed up, but they should have a handwritten journal or log. Their logbook should follow the outline above, but the information they present can be scaled to their level (i.e. nothing extremely technical about patents, rather that they had help looking for similar things to their idea and something like X, Y, and Z exist).

### **Elementary 3<sup>rd</sup>-5<sup>th</sup> Logbook Guidelines**

Elementary students should bring a typed version of their logbook, but they can do the majority of their work in their handwritten journal. Following the outline above, they should have all aspects but they do not need to have technical discussions of patents or technical mock-ups. They can include neat drawings.

### **Middle 6<sup>th</sup>-8<sup>th</sup> Logbook Guidelines**

Middle school students should bring both a typed report and their original handwritten notebook. The content of the discussions should be specific and as technical as their work is – present any code, specify dimensions and compositions of materials, etc.

### **High 9<sup>th</sup>-12<sup>th</sup> Logbook Guidelines**

High school students should bring both a typed report and their original handwritten notebook. The typed report can be the logbook submitted and can include more discussion than the notebook contains. The handwritten notebook is considered a primary source of data, since it should be a record of all notes, experiments, and results. Discussions of the ideas and results should be technical and supported by evidence.