



Student Instructions for Writing and Formatting Their STEM Plan

September 2019

Point #1 – Overall instructions for writing your plan report:

- Your report must be typed. Clear and concise writing is expected.
- Write and re-write your plan until you have what you believe to be a professional presentation of your ideas. Review your plan carefully before you turn it in to your teacher.
- Avoid using personal pronouns in your report (e.g. I, you, he, she, we, they, etc.)
- Do not use cute report titles. The title must reflect the contents of your plan report.
- Use good grammar and punctuation. Spell correctly. Proofread carefully.

Point #2 – Plan formatting instructions:

- Use a text font size no less than 10-point nor greater than 12-point (Prefer 12-point size).
- You may use smaller font sizes in tables or on charts, graphs, sketches or engineering drawings provided they are legible.
- Consider all illustrations such as photos, sketches, graphs, etc. as numbered figures: Figure 1, Figure 2, Figure 3, etc. with legends and captions for each. Data tables should be identified as Table 1, Table 2, etc. and titled.
- Your plan must have 1-inch margins on top, bottom and sides. Not larger, nor smaller.
- Use an easily readable typeface. We suggest using: Times New Roman, Century Schoolbook, Arial, Calibri or Myriad Pro.
- The report may be typed single-spaced, or up to 1.5 spaced. Optionally, you may indent the first lines of paragraphs.
- Your report may not exceed 12 pages in length (including your cover page & any tables, charts, drawings, financial schedules, etc.)
- Type all pages flush left. Do not justify paragraphs (i.e. stretch type to left & right margins)
- Starting from page 2 until the end of your report, you should type continuously (that is, do not start each Part on a separate page). Section headings (Parts) need not be numbered.

Point #3 - Page numbering instructions:

- The first page of the report is the Cover Sheet. Although it is page 1, it should not be numbered.
- The second thru the twelfth page should be sequentially number 2-12.

Point #4 - Instructions to ensure your plan includes all required parts:

A complete STEM Plan will have 8 parts as noted below (plus supporting attachments)

- **Part 1** is the cover sheet. It should only include the following information and no more/no less:
 - o Line 1 – Plan author's name(s)
 - o Line 2 – Grade level of the plan author(s)
 - o Lines 3 & 4 – The title of your plan report *in italics*
 - o Line 5 – The plan judging category (either a STEM Commercialization or STEM Business Plan)
 - o Line 6 – Leave blank
 - o Lines 7-9 – Your Elevator Pitch of no more than three sentences (you may use additional lines if necessary)
- **Part 2** is the Executive Summary which should include 250 words or fewer (250 words is generally about half a page) (This is Milepost 12 on the Roadmap)
 - o This part should always be written last. It should include key information from all the other parts of the plan in a concise summary. It should be written in a manner that a person, who may not be familiar with the topic, can understand your plan's important points.
- **Part 3** provides a short (couple of sentences) summary of the Problem Statement/ Pain Point/ Market Opportunity from Milepost 1 and the Proposed Solution from Milepost 2.
- **Part 4** is a Summary of the STEM Concepts & Principles Underlying Your Solution that is based upon your discussions at Mileposts 3 and 9. In 500 words or less, it should summarize, then explain the application of the key STEM concepts underlying the solution and demonstrate to the reader that the plan's author has a reasonable working knowledge of the key STEM concepts.

- **Part 5** includes the assessment of the commercial feasibility of the plan idea and proposed solution as discussed at Milepost 10. Your assessment should include an individual summary discussion about each of the Mileposts 1 and 2 and 4-8 and conclude with the overall assessment of the plan’s commercial feasibility. This should be a key part of your plan and will likely be 1-2 pages length.
- **Part 6** should be the core of the STEM Plan whether it be a Commercialization Plan or a Business Plan. As such, it will likely need to be several pages in length to adequately cover all the information required in the listed discussion points at Milepost 11 A (for a Commercialization Plan) or at Milepost 11 B (for a Business Plan).
 - o For a Commercialization Plan (11 A), it is essentially a “Science & Technology Proof of Concept” that includes a statement of a single, clear and compelling (1) testable hypothesis or (2) engineering design.
 - o For a Business Plan (11 B), it is essentially a “Business & Financial Proof of Concept” that is justified by market analysis and includes a three-year Excel financial projection spreadsheet.
- **Part 7** - Acknowledgements – This should identify those who helped the student and what they did.
- **Part 8** – References Cited – See Point 8 that follows for a full discussion about how references should be properly cited.

Point #5 – Instructions for electronically submitting a STEM plan to Believe in Ohio:

- If and when you are requested to submit your completed Plan to the Academy office in Columbus, submit all the pages of your plan, up to the maximum 12 pages for in a single electronic Adobe PDF file.
 - o This rule also applies when sending a STEM Business Plan where at least one of its pages (the Financial Projection Schedule) will be in an Excel/spreadsheet file format. This may require scanning all 12 plan pages into one PDF document.
- To allow Believe in Ohio to know which plan is which, the name of the plan’s author must be included in the PDF file name as follows: LastnameFirstname.pdf For example: SmithCarol.pdf
 - o If the plan was developed by a team, the file name should include the name of one of the plan authors, followed by the word team. For example: JonesSallyTeam.pdf
- If and when you are requested to submit your Plan to the Academy office, you will be instructed how to do so at that time.

Point #6 – Prototypes, Models, Drawings or Sketches:

- Prototypes or models and their testing are expected within reason in that both and cost may prohibit their full development.
- At a minimum however, well-labeled, scaled and described engineering or other drawings or 3-D sketches are required.
- You may use a CAD program or Google SketchUp which is available for free at <http://www.sketchup.com>

Point #7 – Apps:

- Students proposing “apps” must describe the functions in detail.
- Validation of an idea for an app idea means that students must provide a schematic or flow chart with symbols portraying how the user will navigate the app as well as all features envisioned.
- Snippets of source code or working prototypes even with limited functionality will enhance a plan and should be included to demonstrate a student’s computer science general knowledge and skills.

Point #8 – Instructions for properly citing references:

- Best practice for writing a scientific research paper, such as a STEM Commercialization Plan, requires that references be cited with the text and that there be a 1:1 concordance between in-text citations and the list of cited references at the end of the plan. The safest way to avoid plagiarism is to cite all references within the text.
- While best practice for citing references within a business plan is less specific and may not take the form of in-text citations, students must document and show attribution for the ideas of others within their business plans.
- Make sure you cite references in text like these examples: Smith (1993) or (Smith 1993).
- List cited references from the text alphabetically by last name at the end of the plan.
- Complete citation information only for literature or sources actually cited within your plan.
- Web references must cite accessed date and fully retrievable URL.
- Please do not use footnotes in the body of your plan.
- Do not use the term “Bibliography” to refer to a list of cited references. They are two different things.
- Please note an excerpt from an actual student plan that is included on page 4 in the *STEM Plan Instruction Booklet* that illustrates how in-text citations and 1:1 concordance with full references should be written.