Type the research plan for your project using the following example. Double space between sections. The highlighted sections are the explanation. You did not need to include the explanation in your research plan.

A**. Rationale/Problem** Type the letter A – then two spaces and then a brief summary of your problem, explain why this is important and explain any impact this would have on society. This is where you put your problem and purpose. Your purpose is your rationale.

Example:

A. **Problem/Rationale**: What is the effect of thermal pollution on the germination rate of grass seeds? There are many plants/factories located on the rivers of Georgia. Many of these plants pour heated/cooled water into our waterways. This experiment is to see how heated, cooled and room temperature water affects the germination of grass seeds. This could lead to further studies on the impact of thermal pollution on natural species of vegetation.

B. **Hypothesis/Research questions(s), Engineering Goals(s), Expected Outcomes**. Type B – two spaces and then your hypothesis and any other goals or expected outcomes.

Example:

B. **Hypothesis/Research questions(s), Engineering Goals(s), Expected Outcomes**: If boiling, frozen and room temperature water was poured on planted grass seeds, then more of the seeds receiving room temperature water would germinate in ten days because seeds germinate in the spring when the water temperature would be mild. It is expected that few seeds receiving the boiling water would germinate and about half of the seeds receiving the frozen water (ice) would germinate.

C. **Procedure** Type C – two spaces and using numbers type the steps of your procedure being specific and giving specific amounts of materials and describing how data will be analyzed.

C. **Procedure**

1. Put 500 g of potting soil in each of 8 plastic size 10 pots.
2. Put 100 grass seeds in each pot covering with 2cm of dirt.
3. Label pots 1 and 2 Control – no water.
4. Label pots 3 and 4 Boiling water
5. Label pots 5 and 6 Frozen water
6. Label pots 7 and 8 Room temperature water
7. Put 15 ml of 100 degree water (boiling) in pots 3 and 4.
8. Put a 15 ml ice cube in pots 5 and 6.
9. Put 15 ml of room temperature water in pots 7 and 8.
10. Check pots twice daily counting total number of seeds germinated in each pot. Record data.
11. Repeat steps 7 through 9 every other day for ten days.
12. Compare results after ten days.

Risk and Safety

Care will be taken when handling boiling water. Plastic measuring spoon and cup will be used, along with a heat mitt.

Data Analysis

The total number of seeds germinated in each pot will be used to determine if the temperature of the water used on a seed affects its germination.

D. **Bibliography** Type D – two spaces and using numbers type your sources – you must have at least five.

D. Bibliography

1. conservation. (2014). In *Encyclopædia Britannica*. Retrieved from http://school.eb.com/levels/middle/article/273782
2. environmental pollution. (2014). In *Encyclopædia Britannica*. Retrieved from http://school.eb.com/levels/middle/article/276492
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