

# Project Summary / Abstract

## Explanation:

This page is filled with information that you have already completed. When you begin this page you will have already written your hypothesis, problem, procedure, conducted your experiments and have your results. This should be easy!

## Sunflowers vs. Crown Gall

**Objective:** The experiment was to measure the effects of beta-carotene (a nutrient commonly found in carrots) on the growth of sunflowers infected with the crown gall plant disease. It was expected that since crown gall impairs the plant's ability to take in nutrients, the more nutrients provided, the more of a chance that some will be absorbed.

**Materials and Methods:** Five groups of four plants each with relatively consistent heights were inoculated with *Agrobacterium tumefaciens* (crown gall). Twice a week for two and a half weeks, each group was watered with different amounts of beta-carotene, from 0 to 8,200 mg. The plants were measured twice a week until the end of the testing period.

**Results:** The group of sunflowers with the highest dosage of beta-carotene had the highest survival rate, while the group with no beta-carotene survived the least.

**Conclusions:** The conclusion is that the more beta-carotene an infected plant receives (up until a point undetermined by this experiment), the taller and healthier it becomes.

### The abstract must have the following parts: (Each part is labeled, the bold words!)

- ✦ **Objective:** State the objective, goal, or hypothesis upon which the project is based. This is the experimental question!
- ✦ **Materials and Methods:** Indicate the materials, methods, and experimental design used in the project. Briefly describe the experiment or engineering methods.
- ✦ **Results:** Summarize the results of the experiment and indicate how they pertain to the objective. Brief data can be included here.
- ✦ **Conclusions:** Indicate if the results supported the hypothesis or enabled you to attain your objective. Discuss briefly how information from this project expands knowledge about the category subject

### Project Summaries/ Abstracts should use the following criteria.

- ✓ The title of the summary is the title of the project: *what is on your board?*
- ✓ It is written in 3<sup>rd</sup> person: this is scientific writing.
- ✓ It is 1.5 spaced
- ✓ One inch margins
- ✓ **12 point font** (Times, Tahoma, Century Gothic, or Arial)
- ✓ Black ink; do not use colors
- ✓ There is one extra return between each section
- ✓ 175-250 words: keep it simple...
- ✓ **DO NOT** cut and paste from a word processing program! If you *must* paste, paste as "text only."