

## **PSPP 105 Miracle Growing: An Introduction to Horticulture**

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Is it really a miracle that plants will grow better if you put fertilizer on them? Students get their hands dirty in an effort to explore the myths and realities behind the horticultural industry touting of better plants through growth-enhancing products. We first explore the five environmental factors affecting plant growth: light, water, temperature, gas exchange, and nutrients, and tie them to the three basic plant processes: photosynthesis, respiration, and transpiration. A semester-long project is growing plants in 'high' and 'low' conditions for each of the five environmental factors (for example, low and high water). Students keep a journal of their observations, as well as charting the growth of the plants. Students are always surprised that plants can look healthy and normal with sub-optimal environmental conditions, but optimal conditions can make a HUGE difference in the pace of development and growth.

Students also explore horticultural careers in two ways. Individually, they are required to interview an owner or employee in the horticulture industry. As a class, industry leaders are invited into the classroom to share their experiences or provide some hands-on training on an aspect of their industry.

The last facet of Miracle Growing is the exploration of current issues in horticulture. This year students worked on a project entitled 'Two Sides'. Students were surveyed at the beginning of the semester for their opinions on current issues in horticulture, such as 'organic food is more nutritious' and 'greenwalls are environmentally friendly'. Students were assigned a topic and asked to research a position that agreed or disagreed with the topic (they were generally assigned the opposite of what they indicated on the survey). The project included searching first the mass media of the internet and then digging through those websites to find references to scientific literature to back up their claims. Students presented the scientific literature in class to kick off discussion on these topics. This year's outstanding discussion led to addressing a belief that many students have that scientists get results that agree with the company's stance from which they are receiving grants. A healthy dose of skepticism on 24 topics was handed out to this year's class.