

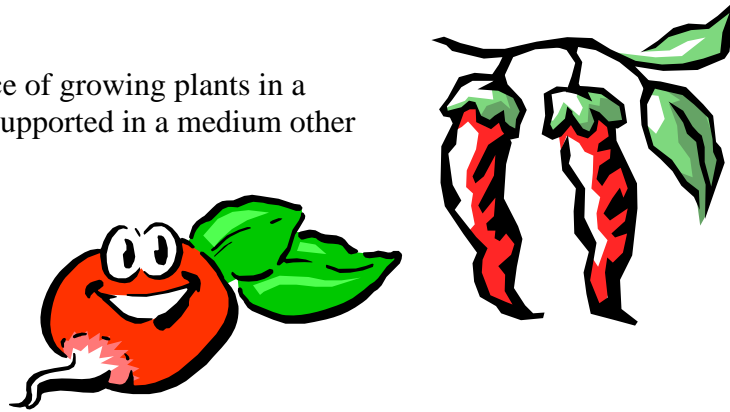
# Hydroponics

## *Growing System Design Activity*

### Situation

Hydroponics is the art and science of growing plants in a nutrient solution, with the roots supported in a medium other than soil.

Design and build a controlled hydroponics plant growing system to be used indoors.



### Resources

Time	15 class periods
People	Entire class
Energy	Electrical
Information	Suggested research topics: Hydroponics, soil, nutrients, pH, water pumps, plants, growing, lighting, etc.
Money	\$75
Tools	Any that can be safely used with teacher permission
Materials	Any available in class, brought from home, or purchased through budget
Space	No limitation, but consider the transportability requirement

### Other Criteria

- The design must be easy to build and reproduce from a set of plans.
- The system must be able to be constructed using readily available materials (home, hardware store, garden center, etc.)
- The system must be well crafted and durable.
- The system must be easily transportable.
- The design must include control and/or monitoring systems for light, temperature, and pH.

### Required

### Documentation

*A comprehensive class documentation portfolio must be handed in at the end of the activity. All information materials collected throughout the activity must be included.*