

# EFFECT OF ENVIRONMENT ON PLANT GROWTH

## Student Activity

1. Inspect all of the plants that your teacher has prepared for this demonstration and record your observations in the chart shown on the next page. Record separate information for each of the two plants in each treatment.

Treatment	Plant height		No. of leaves		Wilting? Yes/No		Color of leaves		Other stress symptoms	Root length	
	1	2	1	2	1	2	1	2		1	2
Control											
Drought											
Cold											
Saline											
Heat											

2. Compute the average for each category of measurements (plant height, number of leaves, root length) for each treatment and the control.

3. The vigor of a plant is directly correlated with its ability to flower and to set viable seeds. If crops such as rice are forced to grow in areas that are affected by environmental changes such as increased heat, cold or drought what do you think will happen to the production of seeds and other plant parts for human and animal consumption?
4. Salinity of soils is increasing across many regions of the world particularly in areas that are prone to drought and have low natural precipitation. As the limited water evaporates from the soil any minerals contained in the water become more concentrated in the soil near the surface and thus affect crop growth. Similarly as soils become poorer in quality we add more fertilizers to them and this also results in an increase in the salt level of the soil. Given your observations of plants grown in a saline environment what do you think will happen to world food production as soil salinity changes?
5. Discuss how you think biotechnology could be used to increase food production throughout the world if our climate and hence environment are altered. Do you agree or disagree that the use of biotechnology is justified? Explain your answer and present alternative plans of action that you think could be used to solve these problems.