

Science Experiment - In Which Environments Do Plants Grow Best?

During the experiment, have students record predictions prior to the experiment. Ask students for ideas on what plants to use. Have students brainstorm for a list of additives to use in the experiment. Point out that the additives are non-living things. Then have students record the procedure, draw pictures of results, and record conclusions.

Materials

1. Plants: Choose 4 different types

Examples:

- A. Asparagus Plumosa
- B. Madagascar Palm
- C. Dutch Treat Ficus
- D. Pink Polka- Dotted Plant

2. Additives: Choose 4 different types.

Examples:

- A. Sand
- B. Apple cider vinegar
- C. Salt
- D. None

Procedure

Sample Experiment:

1. All the Asparagus Plumosa (#1) were transplanted into pots filled with sand.
2. All the Madagascar Palms (#2) were given vinegar
3. All the Dutch Treat Ficus (#3) were given salt.
4. No additives were added to The Pink Polka-Dotted plants (#4).

Four types of environments were created in which one of each plant could grow:

1. An environment with light, water, and air for plants 1-4.
2. An environment with only water and air. A paper bag with holes covered this sample of plants 1-4.
3. An environment with only water. Plants #1&2 were sealed in one zip lock bag, plants 3&4 in another. All plants were then covered with a paper bag.
4. An environment with nothing, no light, no air, no water. Plants 1& 2 were sealed in a zip

lock bag. Plants 3 & 4 in another. All four plants were placed in a shopping bag. Top of shopping bag was kept shut with paper clips. Plants would be removed only for examining and recording data.

Conclusion Sample Conclusions:
The best environment for the growth of plants was the one where there was light, water and air . The worst environment was the one that received no light, no water, nor air.

It was hard to decide which additive had the worst effect on plants.

The students decided that the vinegar had the worst effect; second worst was the salt. The asparagus in sand did not do badly under the best conditions.

Corresponding State Standards:

GLE 0107.Inq.2 Ask questions, make logical predictions, plan investigations, and represent data.

GLE 0107.Inq.3 Explain the data from an investigation.

0007.Inq.2 Communicate interest in simple phenomena and plan for simple investigations.

GLE 0107.2.1 Distinguish between living and non-living things in an environment.

0107.2.2 Record information about living or non-living objects in local environments.

0107.3.1 Conduct investigations and record data about the growth of different plants under varying conditions.