

Magic[®] Garden



Introduction

The Magic[®] Garden is a miniature, artificial landscape that grows causing the flowers to bloom, trees to bud, and snow to appear on the mountain. In about three hours, the landscape will begin blossoming.

The Magic Garden consists of blotter paper, cut to be assembled into trees, flowers, and a mountain. A solution is placed in the Magic Garden container and over a period of time, crystals will grow on the blotting paper trees, flowers and mountain. After about 10 hours, the Magic Garden will be fully grown. After all the solution is used up, the garden will dry and, if protected, can last for months.

Concepts

- Crystal growth

Procedure

The blotting paper has colored tips of red, yellow, and blue. The colors are dyes consisting mainly of commonly available food colors. The blotting paper, after assembly, is placed in a small amount of growing solution containing a salt solution. In operation, the solution moves up the blotting paper by capillary action. The blotting paper becomes permeated by the solution; however, the tapered or pointed tips experience the most rapid rate of evaporation resulting in crystal formation.

Tips

- During the growth of the Magic Garden, it is commonly observed that the “buds” or initial crystals usually form on the second from the bottom branches first, rather than the bottom branches. This is probably due to increased humidity close to the growing solution which slows the rate of evaporation from the branch tips. This is a similar effect to supplying humidity to house plants by placing them on damp stones or pebbles.
- There are several factors that will affect the rate of crystal growth on the Magic Garden. The side of the “garden” facing the incoming air will experience a greater rate of evaporation, similar to the effect where water in a puddle will evaporate faster on a windy day. Sunlight will also affect the growth since the heat from the sun, which may be imperceptible to an observer, will create a rapid rate of evaporation on the side of the “garden” receiving the most light.
- The Magic Garden can be reused. If crystals fall off the finished Magic Garden, the experiment can be repeated by dissolving the crystals in a teaspoon of water and placing the blotting paper in the solution. The crystals will re-grow on the trees, flowers and mountain.

Acknowledgment

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The Magic[®] Garden is available from Flinn Scientific, Inc.

Catalog No.	Description
AP1953	Magic [®] Garden

Consult your *Flinn Scientific Catalog/Reference Manual* for current prices.