

# Educational Innovations<sup>INC</sup><sup>®</sup>

GB-1

## Gro-Beast Dinosaur

Incredible Growing Dinosaur

When this small, colorful toy dinosaur is placed in water, it will increase in length, mass, and volume. The dinosaur will take about a week to reach its full size, which may depend upon the type of container the dinosaur is placed in and the purity of the water used.

### Explanation

The dinosaur is made from a polymer that readily absorbs water. Materials of this type are said to be hydrophilic, water loving. Materials with the opposite property are said to be hydrophobic, water fearing. An example of a hydrophobic substance is Magic Sand, (EI#SS-2), which repels water and never seems to be “wet.”

### Activity #1: The Growing Dinosaur

Remove the dinosaur from its package and have your students observe its original size. Ask them to estimate its original mass and height. You will need a balance for determining its mass. Ask students to predict how large the dinosaur will be when placed in water.

Place the dinosaur in a container of water and continue making measurements of mass and length every day (preferable at about the same time of day) until the dinosaur reaches its maximum size. In some parts of the country, bottled water may increase the size of the dinosaur. It is necessary to keep the dinosaur out of direct sunlight as UV radiation degrades the polymer.

A fun activity for younger students is to measure the height of the dinosaur with string, and then use those strings to make a string bar graph.

### Activity #2: The Shrinking Dinosaur

Place the expanded dinosaur on paper towels or newspapers out of direct sunlight. Continue making measurements as the water slowly evaporates. Notice that the shrinkage of the dinosaur is a much slower process than its growth.

### Activity #3: Further Experimentation – Science Projects

Investigate the effect of the growth of the dinosaur by using:

- different water sources: pond water, salt water, bottle water, distilled water, etc.
- different concentrations of a dissolved substance, such as sugar, baking soda, or salt
- different solutions with varying pH, such as different concentrations of vinegar, baking soda, etc.
- different temperatures
- different exposures to direct sunlight
- different carbonated beverages, sugar vs. sugar free



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