

Toxic Jello Diffusion Lab

Purpose

To observe the process of diffusion, using a gelatinous substance in place of living tissue.

Materials

toxic pink jello (jello mixed with phenolphthalein and ammonia), cut into cube shapes.

glass beakers (size TBD)

wooden sticks

plastic knife

vinegar

timing device

safety glasses

Procedure

Perform each of the following tasks as a Table Group:

Notice the Table below which is meant to record the time elapsed, as well as contain additional observations made while waiting for any changes to occur in the jello.

Obtain a sufficient enough amount of jello to be cut into three cubes - one as a 1 cm cube, one as a 2 cm cube, and another as a 3 cm cube. Use a plastic knife to carefully cut the jello.

Obtain 3 appropriately-sized glass beakers (as small as possible) to contain the cubes, and carefully put one in each beaker using wooden sticks (it is best not to have skin contact with the cubes).

At precisely the same time, add just enough vinegar to cover the cubes and record the time.

Note any changes that take place in the cubes, and record these findings (together with the time) in the Table. *Divide the available class time evenly to fill the table!*

Continue noting any changes that take place over the class period. Record these in the Table.

Observations

Complete the Table on the next page while observing the changes to the cubes.

Discussion Questions

What is the total surface area and volume of each of the cubes used in this lab?

Based on observations made, is there a connection between the surface area and the diffusion of substance(s) through the jello cubes?

Is there a connection between the volume and the diffusion of substance(s) through the jello cubes?

Describe how this lab demonstrates the concept of diffusion in your own words.

