



STREGA NONA'S MAGIC LESSONS by Tomie dePaola

How does the yeast make the dough rise? If Big Anthony had really understood what was happening, he would never have added *the extra yeast* to make up for lost time.

Through this simple experiment, your students will see the life process of fermentation. They will observe a living one-celled organism, yeast, obtain the energy it needs by turning the sugar in grape juice into alcohol and the gas, carbon dioxide. They will understand that time is necessary for the yeast to make the bread rise.

MATERIALS: 100 unsweetened grape juice, 1/2 pkg Fleischmann's Rapidrise™ yeast, 1 quart Ziploc bag

ACTIVITY: Measure grape juice and pour into bag. Sprinkle yeast into juice in bag. Squeeze air out of bag and seal. Observe what happens to the bag over a 24 hour period. Estimate the amount of carbon dioxide produced. *Could this* amount make the baker's bread rise by six o'clock?

SOURCE: Workshop "Science in a ZIPLOC BAG" given at CSEAC 3/90 by Patricia B. McKean.

TEACHER NOTES:

Put bag in container or *sink* in case it leaks or pops open. It is acceptable to use white grape juice, but the yeast is easier to see with the purple grape juice. However, purple grape juice can stain so be careful. Sometimes it takes a long time for the bag to fill up with carbon dioxide and it can happen in the middle of the night. Students have reported hearing a "popping" sound.

STANDARDS:

BSL: 1.1, 1.2, 1.3, 1.4, 1.5, 1.8, 3.2, 6.1, 6.2, 6.3, 8.1, 11.2, 11.4, 12.1, 12.5, 12.6, 12.11

NCTM: 4d, 10a, 10c

SCS: A1, B1, H2, H5

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