



Inquiring Minds Want to Know

Science Activities for Young Minds

Dancing Kernels

WHAT YOU'LL NEED

- Any clear carbonated beverage (enough for each child)
- Water (enough for each child)
- Kernels of unpopped popcorn for each child
- Two small clear glasses for each child
- Raisins (optional) for each child
- Short pieces of dry spaghetti (optional) for each child

WHAT TO DO

Remember: The purpose is NOT to teach a specific topic but to help children experience the excitement of **science exploration!**

GETTING READY

Prepare two small glasses for each child. Pour at least 1 inch of water in one and 1 inch of carbonated beverage in the other.

LET'S GO

1. Distribute the small glasses of clear carbonated beverage and water, but don't tell the children what is in them.

*What do you **observe** in each glass? What do you think is in each glass? What senses could you use to find out what is in the glasses?*

Do you think it would be safe to taste the liquids to figure out what they are? Why or why not? Explain that it is never all right to taste something unless you know that it is safe to eat or drink.

Observe how the two liquids are alike. How are they different?

2. Give each child several kernels of popcorn.

*What do you **predict** will happen if you drop the popcorn kernels into each liquid? Will each liquid react the same? Why or why not? Help children record their predictions.*

How can we find out if your predictions are right? What do you think we should do?

3. Have children drop half of their kernels into one of the glasses.

*What did you **observe** happening to the kernels? What do you think will happen when you drop the rest of the kernels into the other liquid?*



4. Have the children drop kernels into the clear carbonated beverage.

*What did you **observe** when you dropped the kernels into the clear carbonated beverage? What happened to the kernels? Was it the same as what happened to the kernels dropped into the water?*

When the kernels in the clear carbonated beverage went to the bottom, did they stay on the bottom? Why do you think they came back to the top?

Observe the kernels, after they come to the top of the clear carbonated beverage. Do they stay there? What did you see happen? Why do you think the kernels fall to the bottom again?

*Why do you **predict** the kernels didn't pop up when you put them in the water?*

*Were your **predictions** about what would happen correct? Why or why not?*

5. (Optional) Give each child a couple of raisins and a piece of dry spaghetti. You can also try the experiment with other small objects.

*Do you **predict** the same thing will happen if you put a raisin in the water and in the clear carbonated beverage? What if you put a piece of dry spaghetti in the water and in the clear carbonated beverage? Try it.*

Have children share their observations. Were the results the same or different?

THE SCIENCE BEHIND IT

Making carbonated beverages involves dissolving carbon dioxide gas into a liquid under pressure. This process is called carbonation. When the popcorn kernel is dropped into the carbonated beverage, it sinks to the bottom, where carbon bubbles attach to it and lift it to the top of the beverage. The kernel floats on the top until the bubbles break, releasing the gas and allowing the kernel to fall to the bottom again. The process continues until the carbonated beverage goes flat – the carbon dioxide escapes. The carbonation bubbles attach to the surfaces of the various items. The rougher the surface, the more locations there are for the bubbles to attach.

RESOURCES

- ▶ Your local university Extension office – <http://msue.anr.msu.edu/county>.
- ▶ Science Blast website – http://4h.msu.edu/programs/science_technology/science_blast.
- ▶ Steve Spangler website – <http://www.stevespanglerscience.com/>.

GOOD TO KNOW

5- to 8-year-olds:

Follow the original directions with clear carbonated beverage and water. Then add additional liquids such as fruit juice or punch, tea, diet soda and caffeine-free soda. Have children predict the results with each of these liquids on the basis of what they learned in the original experiment. Then conduct the experiment with each liquid and discuss the similarities and differences.

9- to 12-year-olds:

Do all versions of the experiment. Observe and record what happens. Drop a nickel into the soda and observe what happens. Create a bar chart to record the results. Discuss any differences in results. Encourage children to select another readily available item and try the experiment. What are the similarities and differences between the things that rise in the soda and those that don't?

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