



Get nosey!



Astronauts on the Space Shuttle or the International Space Station must live for days, weeks, or months in very small spaces. They breathe the same air over and over. A machine cleans the air and tries to keep the right balance of gases. However, if something nasty like rocket fuel began to leak into the cabin, the air might become very dangerous very fast.

That's where a good nose would come in handy. A super-human, even super-dog, nose could alert the crew as soon as the tiniest amount of the wrong stuff was loose in the cabin air.

How well do you smell? Is your nose in the know? Would you be able to smell those first few molecules of rocket fuel that leaked into the air?

You can train your nose (and brain) to know what smells. You can practice on some very nice smells that you might already have bottled up in your kitchen cupboards—namely, the lovely aromas of spices and herbs.

Here's what you need:

- Several small air-tight, opaque (non-see-through) containers that all look alike. You will need least 6 or 8 containers. The more samples you have, the more fun it will be. Examples of some good containers are:
 - Plastic film canisters with lids.
 - Small envelopes placed inside self-sealing plastic snack bags (so you can't smell the contents until you open them).
 - Plastic pill bottles with lids.
 - Plastic margarine containers with lids.
- Some kind of stick-on labels (unless you're using envelopes).
- Several kinds of dried herbs and spices, just a pinch or two of each.
 - For example: tarragon, cardamom, celery seed, coriander, dill, mint, rosemary, thyme, sage, bay leaf, basil, oregano, garlic powder, cinnamon, nutmeg, cloves, cumin, curry, ginger, vanilla bean, and anything else you see in the spice cupboard.

Avoid things that could irritate your nose like pepper and chili powder!



Here's what you do:

1. Put a small amount (a couple of pinches or about 1/4 teaspoon) of a different herb or spice into each of the containers, labeling each container so that you can't see the label unless you turn the container over. (For example, put the label on the bottom of the bottles or the back of the envelopes.)



2. Now, with the labels hidden, mix up the bottles or envelopes so you don't remember what spice is in which container.
3. Pick a container, close your eyes, open the container, and sniff **gently**. Don't suck the stuff up your nose!
4. What is the spice or herb you smell? Do you remember the smell from when you put the stuff in the container? Check the label and see if you are right. If not, sniff again and try to link in your mind the smell with the appearance of the material and its name.
5. Close the container, put it back with the others, mix them up again, and pick another.

TAKE NOTE!

For sniffing spices and herbs, this method of sniffing is OK. But if you are not sure what's in the container, smell it the "scientific way:" Hold the open container about six inches away from your face, and with your free hand fan the air over the container toward you. The vapors from the stuff in the container will be mixed with the air and you will get a gentle sample of the material—not enough to hurt your nose or make your eyes water.

If you continue sniffing and guessing for a while, you will get better and better at identifying these substances by their smells.

You can also make up a game for two or more people. Challenge your friends to a smell-a-thon! You might take turns sniffing and guessing. Correct guesses get 2 points added and incorrect guesses get 1 point taken away. See who can reach, say, 15 points first.

Find this activity online and learn about electronic noses by visiting NASA's Space Place website: <http://spaceplace.nasa.gov/e-nose>.
Find more fun activities at <http://spaceplace.nasa.gov/menu/do>.