TRAINING MATERIAL

Mystery Sand

Materials

- Blue mystery sand
- Green ordinary sand
- Plastic trays (2)
- Plastic cup
- Eye droppers
- Water

The mystery sand, often called Space Sand, is made by DuneCraft and is available from many online retailers, such as www.amazon.com.

Notes to the presenter

Before beginning this activity, put about half a cup of each of the colored sands into the plastic trays (one color per tray). Fill the small plastic container with water. You don't want to have too much water available because you don't want to encourage visitors to soak the sand. All you need is a drop to see the effect. You many need to demonstrate how to use an eyedropper for some younger visitors.

To reuse the hydrophobic sand when the activity is over, carefully pour out most the water. Shake the tray and use a sheet of paper towel to absorb the last drops of water. To reuse the ordinary sand, let it dry in the tray.

Staff training resources

Video: *Mystery Sand,* vimeo.com/album/3636993

Credits and Rights

The original version of this activity was adapted from two sources. 1. *Magic Sand,* developed by the Materials Research Science and Engineering Center (MRSEC) on Nanostructured Materials and Interfaces at the University of Wisconsin-Madison for the NISE Network. 2. "Magic Sand," JCE Classroom Activity #23, *Journal of Chemical Education* 77(1): 40A-40B, January 2000. Available at www.JChemEd.wisc.edu. It is a modified version of the NISE Network's educational products *Exploring Products—Nano Sand* and *DIY Nano Mystery Sand*, available on www.nisenet.org. Photo of oil spill, iStock.com/ all rights reserved.

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Tips for leading hands-on science activities

Greet your guests
Say “hello,” make eye contact, and smile. People will come over if you look welcoming, available, and friendly.

Let them do the activity
As much as possible, let your guests do the hands-on parts of the activity, and let them discover what happens. (If your activity has a surprise, don’t give it away!)

Encourage exploration
Provide positive feedback and assistance when people need it, but let them experiment and learn for themselves. Don’t insist people do things the “right” way—sometimes learning how something doesn’t work is just as valuable as learning how it does work.

Ask questions
Help people observe and think about the activity. Try to use questions that have more than one answer, such as: “What do you see happening?” “Why do you think that happened?” “What surprised you about what you saw?” “Does this remind you of anything you’ve seen before?”

Be a good listener
Be interested in what your guests tell you, and let their curiosity and responses drive your conversation forward.

Share what you know
Use clear, simple language. Focus on one main idea—you don’t need to explain everything at once! Keep the information basic for starters, and share more with interested learners.

Use examples from everyday life
Familiar examples can help explain abstract concepts. Be aware of different abilities, keeping in mind that children do not have the same skills or vocabulary as adults.

Offer positive responses
If people haven’t quite grasped a concept, you might say, “That’s a good guess,” or “Very close, any other ideas?” Never say, “No” or “Wrong.” You can offer hints or suggestions for things to think about or watch carefully.

Share accurate information
If you aren’t sure about something, it’s ok to say, “I don’t know. That’s a great question!” Suggest ways that people can learn more, by trying another activity or looking up information at the library or online.

Remain positive
Maintain an inviting facial expression, positive tone, and open body language throughout the interaction.

Thank your guests
As your interaction ends, suggest other activities that you think your guests might enjoy.

Have fun!
A positive experience will encourage learning.