Magic Sand

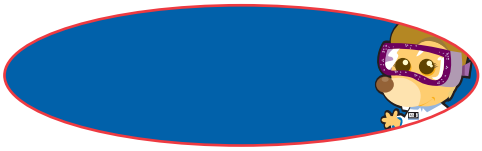
When we play at the beach, we build sandcastles and make sculptures from sand. Sand sinks in water, and when mixed with a lot of water it acts more like a liquid than a solid. In this activity, you will observe how another type of sand, called magic sand, behaves when mixed with water.

Materials

- Paper
- Plastic bowl
- Magic sand
- Water

SAFETY! *Be sure to follow Milli's Safety Tips and do this activity with an adult!*

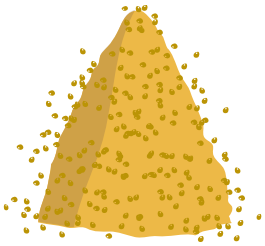
Do not eat the magic sand, and keep it away from your eyes



Procedure

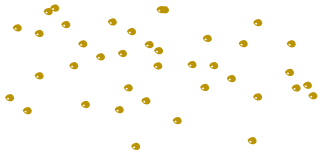
Making a Sand Tower:

1. Wet and roll a small piece of paper into a tube.
2. Hold the paper tube so it is standing upright in the empty bowl.
3. Pour magic sand into the paper tube.
4. While holding the paper tube, carefully pour water into the bowl until it almost reaches the top of the paper tube.
5. Remove the paper tube by unwrapping it slightly, then lifting it out of the bowl. You have now made a sand tower.



Making Magic Sand Cakes:

1. Roll a small piece of paper into a funnel.
2. Use the funnel to place a small mound of magic sand into an empty bowl.
3. Gently pour water down the side of the bowl until the level is just below the top of the sand mound.
4. Add another mound of sand on top of the first, and then repeat step 3. Repeat steps 2 and 3 until your magic sand cake stack as high as you like.

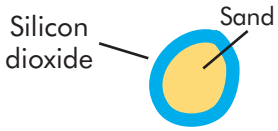


Clean Up:

1. Pour off as much water as possible.
2. Pour the magic sand onto some paper towels or newspapers, and store in a baggy or plastic container. Magic sand may be used over and over again.
3. Thoroughly clean the work area and wash your hands.

Where's the Chemistry?

Magic sand is made from regular sand (silicon dioxide) that has been dyed and coated with tiny particles of pure silica, and exposed to a special chemical treatment making it hydrophobic. Hydrophobic means, "scared of water", so a hydrophobic chemical is one that will not combine easily with water. Oil is a common example of a hydrophobic chemical.



If you pour some oil in a cup of water, it will float on the surface. Magic sand behaves the same way, except it sinks! The coating on the outside of the magic sand pushes the water away. Take the magic sand out of water and it is perfectly dry!

The American Chemical Society develops materials for elementary school age children to spark their interest in science and teach developmentally appropriate chemistry concepts. The *Activities for Children* collection includes hands-on activities, articles, puzzles, and games on topics related to children's everyday experiences.

The collection can be used to supplement the science curriculum, celebrate National Chemistry Week, develop Chemists Celebrate Earth Day events, invite children to give science a try at a large event, or to explore just for fun at home.

Find more activities, articles, puzzles and games at www.acs.org/kids.

Safety Tips

This activity is intended for elementary school children under the direct supervision of an adult. The American Chemical Society cannot be responsible for any accidents or injuries that may result from conducting the activities without proper supervision, from not specifically following directions, or from ignoring the cautions contained in the text.

Always:

- Work with an adult.
- Read and follow all directions for the activity.
- Read all warning labels on all materials being used.
- Wear eye protection.
- Follow safety warnings or precautions, such as wearing gloves or tying back long hair.
- Use all materials carefully, following the directions given.
- Be sure to clean up and dispose of materials properly when you are finished with an activity.
- Wash your hands well after every activity.

Never eat or drink while conducting an experiment, and be careful to keep all of the materials used away from your mouth, nose, and eyes!

Never experiment on your own!

For more detailed information on safety go to www.acs.org/education and click on "Safety Guidelines".