

SMART TUBES™

Ages 3+

Space Sand™

Never Gets Wet!



**Just Like
Sand From
Mars!**

Visit www.dunecraft.com
for more information

Contains 30 Grams Each of Black,
White and Red Space Sand

Non-Toxic

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Chagrin Falls, Ohio 44022



DuneCraft



Space Sand™

Space Sand truly is the closest thing to soil from Mars that most of us will ever experience. Reddish in color and very dry and dusty, Space Sand is hydrophobic sand with the same properties as sand on Mars. And it never gets wet—put it in water and take it back out, Space Sand stays completely dry. Space Sand comes with information about its properties and suggestions of tons of fun experiments to do. Use it to make underwater sand sculptures, clean up oil, improve plant growth, and much, much more. Space Sand is currently being used in NASA Mars Exploration Classroom Experiments. This kit comes complete with 35 grams each of black, red, and white Space Sand.

Fun Facts

- Space Sand truly is the closest thing to soil from Mars.
- Space Sand never gets wet.
- Space Sand was originally designed to help clean oil spills in the ocean.
- Space Sand can help plants grow—when mixed with soil, it provides aeration for plant roots.
- Normal sand and soil get wet and have the potential to freeze when the temperature is below 0 degrees Celsius. Since Space Sand does not absorb water, it will not freeze. Because of this, utility companies use Space Sand to protect underground areas.



Experiments With *Space Sand*TM

1 Put 1 teaspoon of Space Sand in water. Did it get wet?

2 Put 1 teaspoon of Space Sand in water with a little soap. What happens to the sand?

3 Put 1 teaspoon of Space Sand in canola oil. Did it get wet?

4 Put all three colors of Space Sand in water. What happens? Did it get wet? Do the colors mix?

5 Fill a cup with water. Slowly sprinkle Space Sand on top to create a "raft" of sand floating on the surface. Put drops of water on top of the "raft." Notice how the water remains beaded, trying not to touch the water. Be careful not to put too much water on top—too much water will force the raft to fall apart, causing the water to fall through.

6 Add a small amount of oil to a glass of water. It forms pools on top. Pour some Space Sand over the oil pools. Watch the oil mix with the Space Sand and fall to the bottom. Space Sand was originally created to clean up oil spills in the ocean.

7 Weigh the mass of one cup of Space Sand. Now add water. Pour the water and Space Sand through a coffee filter so that only the dry Space Sand remains. Weigh again. The mass should be the same, since it will not have absorbed any water.

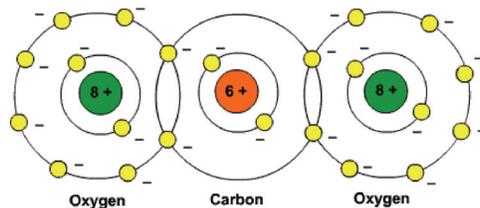
8 If you want to transform your Space Sand into ordinary sand, simply add soap, cooking oil, or alcohol to the water.

How it Works

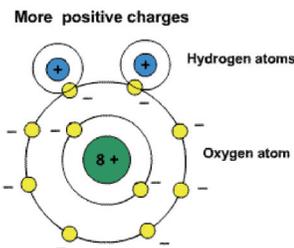
Atoms and Bonding

Atoms are composed of protons, neutrons, and electrons. Two or more atoms bond together to create a molecule by sharing electrons. If the electrons are distributed evenly throughout the molecule, it creates a non-polar molecule. If the protons and electrons are not evenly distributed, this makes the molecule polar. Like a magnet, the molecule has a side that is more positively charged (with more protons) and a part that is more negatively charged (with more electrons). Polar molecules tend to bond only with other polar molecules, and non-polar molecules bond with other non-polar molecules. For example, water is a polar molecule, and oil is non-polar. Therefore, oil and water do not mix. Anything that dissolves or gets wet in water is polar, and anything that does not is non-polar. Likewise, anything that dissolves or gets wet in oil is non-polar.

Space Sand is regular sand treated with silicon vapors. This gives it non-polar properties, so it never gets wet in water.



Carbon Dioxide (CO₂) is a non-polar molecule
www.school-for-champions.com/science/chempolar.htm



More negative charges
Water (H₂O) is a polar molecule
www.school-for-champions.com/science/chempolar.htm