Objective

- Explore and understand the properties of Magic Sand.
- Discover why Magic Sand was developed.
- Learn about some uses of Magic Sand.
Properties of Matter

• Things all around us have properties that we just know exist.
• For instance, beach sand is fine, and it absorbs water.
• Beach sand sinks when placed on the surface of water.
Properties of Matter

• What do we call things that absorb water?

**Hydrophilic**

• What do we call things that repel water?

**Hydrophobic**
Sand

- On your tray you have two kinds of sand that are colored so you can tell them apart.
- One of the samples is just regular sand that has been colored.
- One of the samples is also colored and has been coated with nano-particles.
Guess!

• Feel both of the samples and guess which one has the nano-particles.
• How are they different?
Magic Sand

• The red sample has the nano-particles.
• It is called MAGIC SAND.
• Carbon has 4 bonds
• Hydrogen has 1 bond
Hydrophobic?

• Now take your water bottle and drop just a few drops of water on each sample.
• Slosh the water around a bit.
• Which one is hydrophobic?
Magic Sand

• Fill each cup with 1/3 water.
• Use a spoon to add a small amount of Magic Sand to one cup of water and regular sand to the other cup.
• Why does the Magic Sand float on the surface?
Magic Sand

- Take a knife and slowly push it through the Magic Sand layer and into the water.
- What happens?
- Now pull the knife out. See what happens.
- Why is the knife dry?
Magic Sand

• Pour all the Magic Sand in one cup and all the regular sand into the other cup.
• Use separate spoons to mix the sand and water.
• What happens?
• Now pour your Magic Sand and water into the coffee filter.
• Feel the sand.
• Is it dry?
What Good is Magic Sand?

• Question - Can you think why scientists and engineers would want to make Magic Sand?
• Answer – It was developed to clean up oil spills.
Other Uses?

• Can you think of some other ways that Magic Sand could be used?
• Be creative!
Summary

• Explored Magic Sand
• Learned about its properties
• Discovered why it was developed
• Learned about other ways it can be used