

# The sea-sand overseas



Our good friend John is a champion sand-castle builder. He won every competition in Europe. But one day he went to a competition in Australia and all he got was this magic sand. At first he was convinced he would lose. But guess what, he built a sand castle after all!!  
Now it's your turn - can you?



**Task:** John provided us with two types of sand: regular and special sand. Add some drops of water to each to see what John saw when trying to build the sand castle in Australia.

**Engage**



**Task 1:** Try building a sand-castle from the special sand. Do you need any extra tools or materials?

**Task 2:** Explore the behavior of the sand with the tools and materials you requested.

**Explore**



**Task 1:** Explain: What are the properties of the "special" sand that prevent water from wetting it?

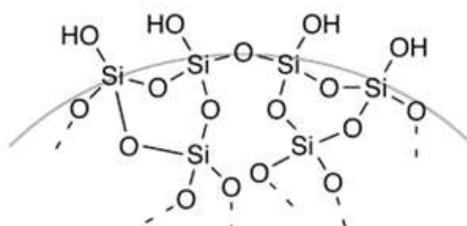
**Task 2:** What do you think is the chemistry underlying the "special" sand?

**Task 3:** Look at the model representing the surface of regular sand at the molecular level. How can you explain the fact that water wets this sand?

**Explain**



Sand surface: molecular level



Cred-

its:[http://commons.wikimedia.org/wiki/File:Schematic\\_silica\\_gel\\_surface.png](http://commons.wikimedia.org/wiki/File:Schematic_silica_gel_surface.png)

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## Extend

**Task 1:** Write five questions that arose while exploring the "special" sand?



**Task 2:** Choose one of the questions that you would like to investigate regarding the "special sand castle" and formulate this question clearly as an inquiry question?

**Task 3:** Clearly formulate a hypothesis that relates to the question that you chose to investigate. Give reasons for your hypothesis, based on correct and relevant scientific knowledge.

**Task 4:** Plan an experiment that will check your hypothesis.

- Detail all the steps of the experiment, including the control stage.
- List the equipment and materials needed on the equipment request form.
- Consult with the teacher and make changes if necessary.
- Submit the list of equipment and materials to the laboratory technician.

## Evaluate

**Task:**

Prepare a lab report.

The results and conclusions can also be presented in a dramatic way.

