

Experiment with "Quicksand"

Have you ever watched an old movie where the actor falls into a pit of quicksand? He struggles and struggles until someone finally throws a rope to get him out. But just what makes quicksand so sticky and dangerous? Why can't he simply swim out of it?

Quicksand is a soupy mixture of sand and water where sand is floating in and on the water. It is both a solid and a liquid at the same time, making it a trap to moving animals and people. Quicksand occurs when water has flooded an area of sand and then is trapped in that area. Floods, underground springs, or an earthquake can create ideal environments for quicksand which usually occurs around river beds. In this activity, your child will make her own quicksand to get a feel of how it can be fluid and solid at the same time.



What You Need:

- 1 box of cornstarch
- 1-2 cups water
- Large mixing bowl
- Pitcher of water
- Spoon
- Gallon size zipper lock bag

What You Do:

1. Have your child pour $\frac{1}{4}$ of the box of cornstarch into the bowl, add $\frac{1}{2}$ cup of water and stir. It might be easier to mix with your bare hands.
2. Continue adding cornstarch and water in small amounts until it is roughly the consistency of honey. You should use the entire box of cornstarch and 1-2 cups of water in all.
3. Now encourage her to move her hands through the "quicksand". Have her move her hands slowly, then fast. What's the difference? Is it harder to move quickly?
4. Now have her sink her whole hand into the mix and try to pull it out. That's the sensation of being trapped in quick sand!
5. Finally, drop a toy animal into the quicksand, then try to pull it out. What happened?

Is there any way out of quicksand? Did you find the best way to get across your quicksand? Thrashing around in quicksand is instinctive but it's the worst thing you can do. Instead you should try to level out and float on your back in order to paddle to firmer ground. Knowing how to survive in quicksand may not be the most practical lesson, but it could come in handy, and provides an interesting experiment in the liquid and solid states of matter.

CAUTION: At the end of the experiment, place the quicksand into the gallon-sized zip lock bag and throw it away. DO NOT put it down a drain.