"How Does Kinetic Sand differ from regular soil?"

3rd Grade

Background

Interesting fact : Magic sand which is like kinetic sand was made first to use in ocean to clean oil spills.It will attach to oil and will sink to ocean floor. Kinetic sand is used a lot by kids like me.

I like playing with kinetic sand. I like how it feels and also how it seems like regular sand but is easier to use as it does not scatter.
I wondered how it is different from regular sand.

Hypothesis

"How Does Kinetic Sand differ from regular sand ? How does it interact with Water, and when Does It Stop Repelling It?"

I think kinetic sand will repel water . It won't be similar to regular sand/ potting soil. Treating it with soaps may change this.

Procedure

Part 1: Water Absorption Test.
Part 2: Water resistance Test.

Part I- I will add water drop wise to kinetic sand and compare it to regular sand. I will also add lots of water and see how kinetic sand interacts with water.

Part 2: I will wash the kinetic sand with soap/ shampoo/detergent and see if it changes the properties of kinetic sand.

Experiment variables

Data and Trials:

Result 1. Kinetic sand can be shaped. Garden soil remains loose.

Result 2
Water Absorption Test.

Time taken for water to be absorbed- Water volume -1ml

Trials	Kinetic sand	Garden soil
Trial 1	2 min, 54 sec	36 sec
Trial 2	1 min, 40 sec	24 sec
Trial 3	1 min, 53sec	15 sec

Time- 0sec

Time- 1minute

Result 3
Water Absorption Test.

Time taken for water to be absorbed- Water volume -1/2cup

Trials	Kinetic sand	Garden soil
Trial 1	5min	1min,10sec
Trial 2	6min,13sec	2 min,15sec
Trial 3	4min,5sec	2min

Time- 0sec

Time- 2minutes

Result 4

Water resistance Durability Test

Time taken for water to be absorbed- Water volume -1ml

Trials	Kinetic sand	Garden soil
Trial 1	8sec	10sec
Trial 2	9sec	12sec
Trial 3	8sec	7sec

Conclusion and Reflection

1. Kinetic sand can be shaped while garden soil does not stick together and so does not make a shape, we form it into
2. Kinetic sand does not allow water to go through
3. After washing with dish washing detergent and drying kinetic sand becomes like regular sand. It does not make a shape and behaves like garden soil. Kinetic sand has a coating of oil which gives it the water repelling property. This also helps it to move/ flow.

Experiments I would like to do to study this more:

1. Test kinetic sand water repelling properties at different temperature
2. Test how kinetic sand repels other liquids like vinegar and oil
3. Compare it to other water-proof play materials like magic sand.

References

https://kids.kiddle.co/Hydrophobic_sand#History

https://steamrocket.co/blogs/news/kinetic-sand-unveiled-the-story-behind-the-sensory-sensation#:~:text=Kinetic%20Sand%20was%20developed%20by,colors%2C%20and%20basic%20engineering%20principles.

https://www.sciencebuddies.org/stem-activities/make-your-own-kinetic-dough

Safety precautions

- I did my experiments under my mom’s supervision
- I cleaned up any water /soap/sand spills
- I avoided using sharp objects for the experiments