FUN PALACE 2018 non newtonian fluid

SLQ Wiki Fabrication Lab 2026/01/15 03:07

FUN PALACE 2018 non newtonian fluid

Solid? Liquid? Or something else entirely? Play with custard's weird cousin and take home the recipe.

Activity Details

Type

Duration

 # Deliveries

Duration

Activity Criteria

Learning Outcomes & Facilitator notes

- **Fun fact** - A non-newtonian fluid is a thixotropic fluid which changes its viscosity when the forces on it change

- **Interesting fact for a child/teenager** –If you filled an entire swimming pool with custard (which is a Non Newtonian Fluid) , you would be able to walk across it!

- **Interesting fact for an Adult** - Ketchup becomes thinner and runnier under impact, that's why it helps to bang the end of a ketchup bottle when you're struggling the get some out!

- Image - https://goo.gl/images/kkCio4 or https://goo.gl/images/X2nko6 Lets You Walk On Water

- **QLD collection:**
http://onesearch.slq.qld.gov.au/primo-explore/fulldisplay?docid=slq_alma21223288740002061&context=L&vid=SLQ&search_scope=SLQ_PCI_EBSCO&tab=all&lang=en_US The Big Book of Glues, Brews, and Goos : 500+ Kid-Tested Recipes and Formulas for Hands-On Learning. Diana F. Marks E-Books are great for learning through play at home

Session Plan

Part 1-What is Non Newtonian Fluid? And how does it work?

What is Non Newtonian Fluid? Interesting question… before we answer that we need to who was Newton and **what he thought about fluids** See this link that provides a great summary? https://blog.viscosity.com/blog/picking-up-where-sir-isaac-newton-left-off-newtonian-vs.-non-newtonia

n-fluids

The moral of the story is that even Newton got stuff wrong and thats why science is still important.

But How Does It work Well we still don't really know but lets run an experiment. and see if we can come up with a theory.

Experiment

Control - drop something into a container of Newtonian Fluid (water) From a from the surface and from a standard height of metre

https://en.wikipedia.org/wiki/Viscosity#/media/File:Viscosities.gif who first described Non newtonian Fluid

Materials Req

Begin with 500mL water per kilogram of cornstarch, and gradually add more water until the mixture has the consistency of honey.

Equipment Req

Files

https://blog.viscosity.com/blog/picking-up-where-sir-isaac-newton-left-off-newtonian-vs.-non-newtonian-fluids https://www.sciencelearn.org.nz/resources/1502-non-newtonian-fluids https://phys.org/news/2011-09-physicists-capture-microscopic-thinning-thickening.html

Reflections Learnings

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