



# **FUN PALACE 2018 non newtonian fluid**

**SLQ Wiki Fabrication Lab 2024/10/15 17:36**

# 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 to get some out!

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

### - QLD collection:

[http://onsearch.slq.qld.gov.au/primo-explore/fulldisplay?docid=slq\\_alma21223288740002061&context=L&vid=SLQ&search\\_scope=SLQ\\_PCI\\_EBSCO&tab=all&lang=en\\_US](http://onsearch.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 know 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-newtonian>

## 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

### Gallery