

# Stratigraphy in a Cup

## Summary

Students will create layered sedimentary rocks in a cup

## Time Frame

1 class periods of 60 minutes each

## Group Size

Individual

## Materials

- different types of loose sediments (sand of different types, pea gravel, kitty litter(clay) or others)
- various salts (NaCl, CaCl, CaCO<sub>3</sub>, KCl)
- baking soda
- water
- paper cups
- beaker
- [student worksheet](#)  
(attached)

## Background for Teachers

Time needed is 50 minutes to set up, 30 minutes to finish a few days later.

## Instructional Procedures

- Gather the materials and copy the student pages.
- Hook students with a video clip like: [Grand Canyon Flyover](#)
- Show the students samples you may have of various sedimentary rocks. Discuss the conditions under which they form.
- Mix the various salts in separate solutions. Create saturated solutions by adding the salt, stirring and stopping when no more salt will dissolve.
- Read the introduction and describe the location of materials. Students will make choices concerning the materials they use.
- Allow time for students to create their "rock layers". Provide markers for them to label the cups with their names.
- Provide a location to store the cups and allow them to settle and dry. If they are not drying quickly enough, have the students poke a hole in the bottom to drain for a day or two. The cups should be dry before they are opened.
- Ask students to show their work to the class and report which mineral cement they used and whether it was effective for rock formation or not.
- Allow time for students to finish the analysis. You may wish to provide a key for their rock types.

## Assessment Plan

### Scoring Guide

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Students work cooperatively within their group.....4

Students record data accurately.....4

Students answer analysis questions thoughtfully.....4  
Student "rocks" are made from sediments and mineral cement.  
Student "rocks" are not as hard.  
The bottom layer is oldest.  
Sedimentary rocks form in flat sheets.  
Answers will vary.  
Answer will vary.  
The rock layers are like pages in the book and tell a story.

#### Bibliography

Lesson Design by Jordan School District Teachers and Staff.

#### Authors

[Utah LessonPlans](#)