Engineering for Strength!

Mixtures and Solutions – Day 1

Have you ever heard these words before?

Mixture

A combination of two or more different substances – you can see each of the different ingredients

Solution

A combination of two or more different substances – you cannot see the different ingredients – uniform

Concentration

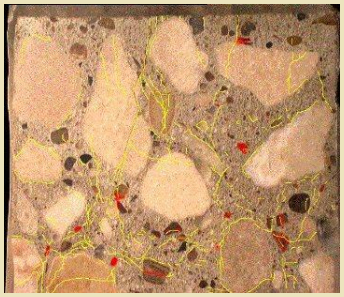
The percent amount of one part compared to the whole in a mixture or solution.

vinegar

soil

dirty water

Many different construction materials are mixtures:



concrete

asphalt

adobes

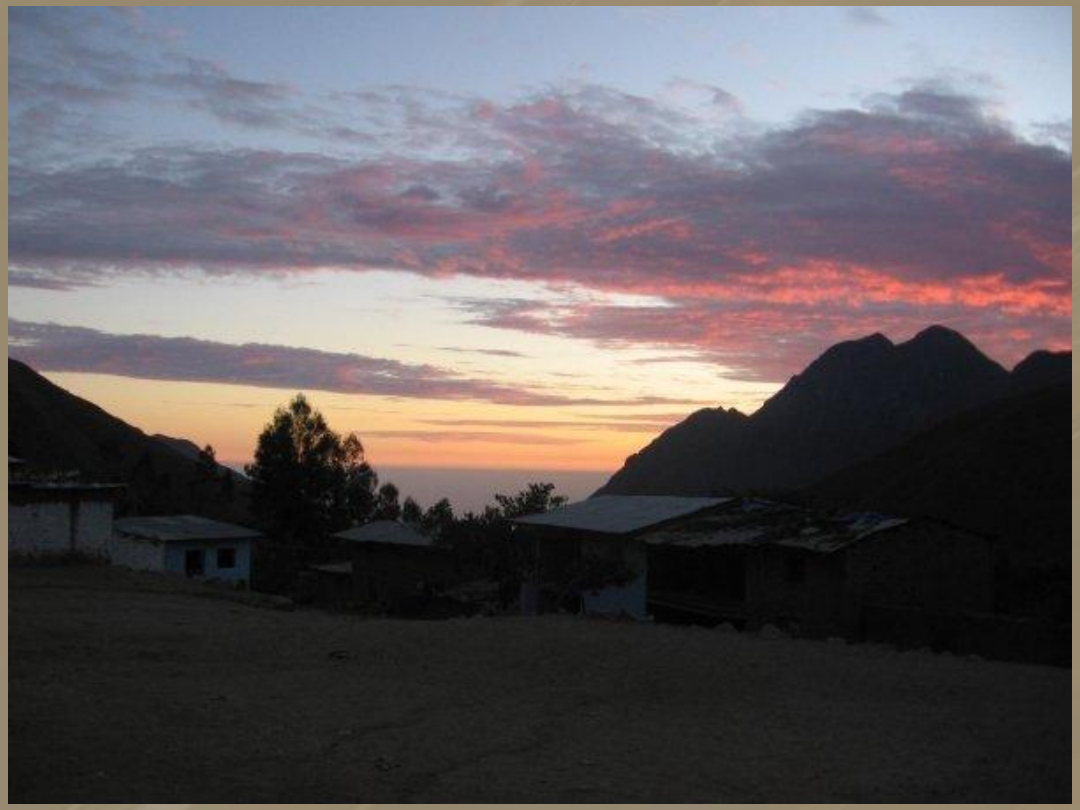
bricks

Engineers make sure the concentration of each ingredient is right and that the material is strong enough!!

Other types of engineers must know about mixtures as well…

Adobe is a very important construction material around the world…

In a village
in the mountains of Peru…



The villagers use adobes to build everything…

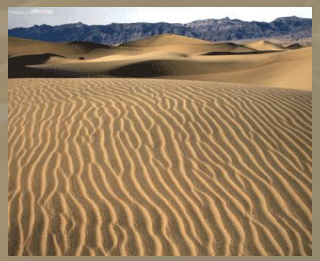
They need your help!!!

They want to know how to make their adobes stronger!

adobe ingredients

clay soil

straw



sand

water

Today we will be working with variables…

- A variable is something that you choose to change during an experiment.
- We will learn more about variables later…

Vocabulary List

- mixture
- solution
- concentration
- material
- control
- variable
- independent variable
- dependent variable

Image sources

From: State of Kansas

URL: http://www.kansas.gov/business/

From: EPA

URL: http://www.epa.gov/kidshometour/decoys/vinegar.htm

From: Town of Wake Forest, NC

URL: http://www.wakeforestnc.gov/residents/engineering_soilanderosion101.aspx

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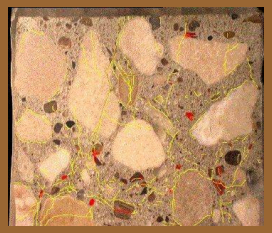

From: U.S. Department of Transportation

URL: http://www.fhwa.dot.gov/PAVEMENT/concrete/reactive/issue03.cfm

Image sources

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URL: http://www.wsdot.wa.gov/Projects/QuieterPavement/Photos.htm

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URL:
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