Name _____ Date _____ Period _____

YOU ARE THE ENGINEER

Day 1 – Design

You have been hired as the structural engineers in charge of designing a new 3–story building. There are building codes you **MUST** follow. The building will be located near a strike-slip earthquake fault.

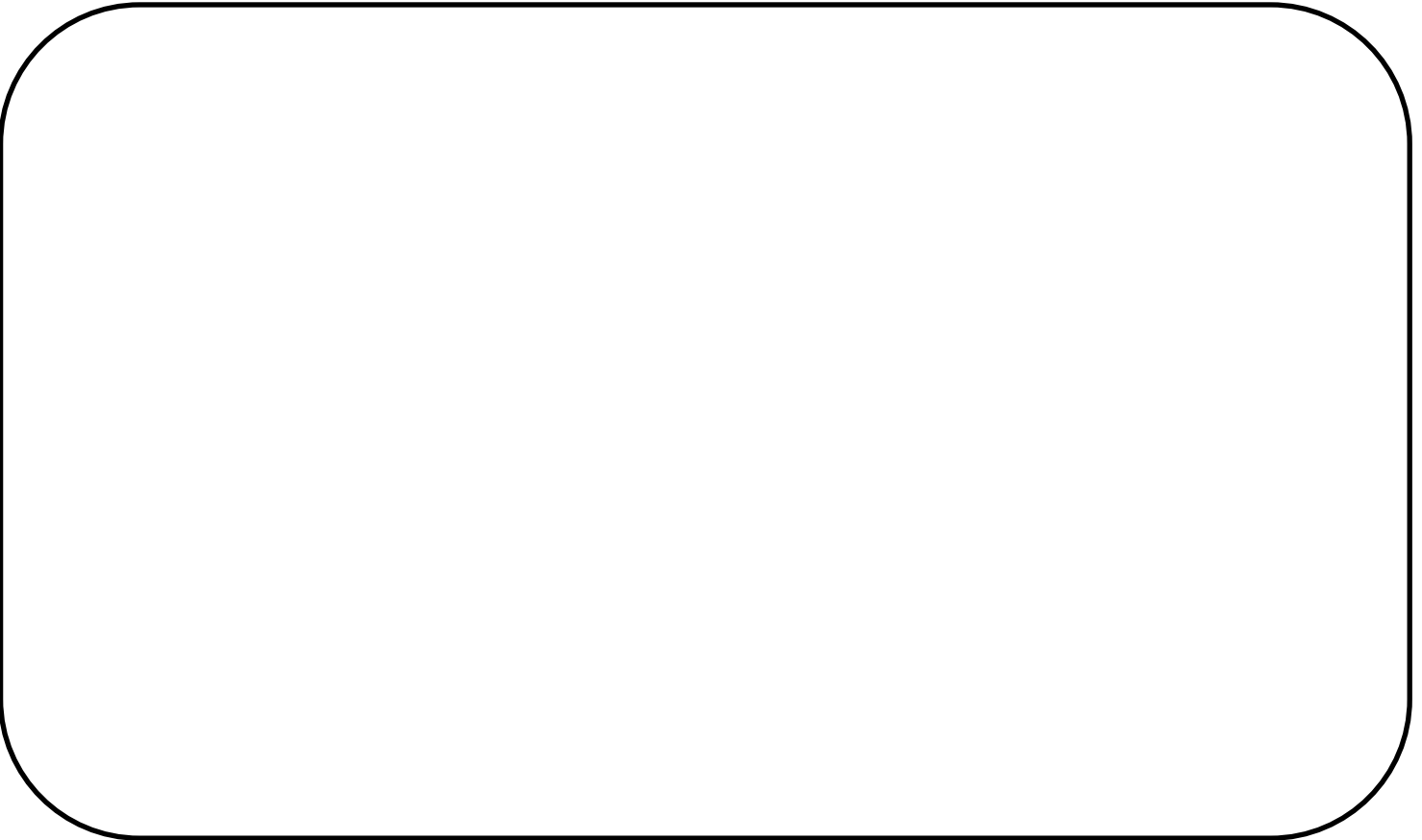1. What type of earthquake is created by strike-slip faults?

Your building must meet the following requirements (codes)
- Must be at least 30 cm tall
- Must have 3 stories at least **10 cm** tall **each** – attics and basements do not count.
- Each story must support at least 1 bag of sand (25 g) without collapsing
- Each floor must be separated from other floors by a minimum of 10cm
- You must include a washer on 2 of the floors (top floors must be able to hold one each; it cannot go on the bottom floor or base!)
- Allow room for clamps on the base (bottom).

You have a budget of **$100** so be careful. Use the data table to figure out what materials you will need to build this prototype next class. Keep in mind, if the first test doesn't work, you can redesign your building and add more materials only **IF** you have money left over

Material	Cost	Quantity	Total
Stir Straw	$3 each		
Drinking Straw	$5 each		
Toothpicks	$2 each		
Marshmallows	$1 Each		
Pipe Cleaners	$8 Each		
1 Meter of Tape	$20 Each meter		
		Grand Total	

In the space below, draw a detailed design of your house. **Remember you have codes you need to follow**. In the details you must label the materials. This will help you to stay within budget. Next class you will actually build and test your design.

Analysis Questions

1. What was the most successful part of your building design?

2. How well did your building design do when tested? Should have 2-3 complete sentence explanation.

3. What could you do to improve your design?

4. Explain how engineers are helping improve home and other buildings to better survive earthquakes.