Earthquake Lesson - 1st & 2nd Grade

Objective
The objective of this lesson is for 1st and 2nd grade students to understand how earthquakes occur and why they occur. This lesson also fosters an understanding of plate tectonics in relation to concepts and terms of geography.

Standards
Indiana State Standards

1.W.3.2: Develop a topic sentence or main idea, provide some facts or details about the topic, and provide a concluding statement.

1.SL.4.2: Add drawings or other visual displays, such as pictures and objects, when sharing information to clarify ideas, thoughts, and feelings.

2.1.6 Observe, demonstrate, sketch and compare how applied force (i.e., push or pull) changes the motion of objects.

2.RV.3.2: Determine the meanings of words and phrases in a nonfiction text relevant to a second grade topic or subject area.

2.W.5: With support, conduct short research on a topic. Identify various visual and text reference sources, Organize, summarize, and present the information, choosing from a variety of formats

Materials
2 boxes of graham crackers, whipped cream, wax paper, notebook, pencil, Youtube video- Plate Tectonic for kids- www.makemegenious.com

Time
1 hour

Procedure
Have students sit on the rug to watch the Youtube video, Plate tectonics for kids about earthquakes http://www.youtube.com/watch?v=tcPghqnnTVk. After the 5-minute video conduct a ten-minute discussion with the students about the following vocabulary words from the video, Subduction, Plate Tectonic, Magma, and fault line for a review. Prompt students with questions about the process of how and why an earthquake happen. Next, tell students to move to their seats and clear their desks. Pass out small sheets of wax paper to each student and then give each student two spoonfuls of whipped cream on top of the wax paper. Explain how the whipped cream represents the magma under the earths crust. Next the teacher will pass out two small squares of graham crackers and tell students to place the graham crackers side-by-side on top of the whipped cream. Explain to students that the graham crackers represent plate tectonics. After the teacher models
his or her own “earthquake” with the materials, tell the students to push down on one graham cracker and see what happens to their model “earthquake”. Have students write down the process in their notebook or journal, step by step. Have students explain the process in full sentences using the appropriate vocabulary words. Students will also be asked to draw and label their individual model of the graham crackers on top of the whipped cream. After students have experimented with their model earthquakes they can eat or throw away the graham crackers and whipped cream. This experiment should take about 30 minutes to complete. For the last 15 minutes have students clean up and then share their observations and inferences in a whole class discussion.

**Differentiation**
For ELL students have them draw and label using different vocabulary words (ie: earthquake, crust, shake, move). Teachers can also provide a graphic organizer for ELL students with a word bank of vocabulary words.

**Assessment**
To conduct a formative assessment, walk around and have conferences with individual students explaining what is happening to their earthquake model during the hands-on activity. Observe student’s drawings by walking around and checking for students understanding of the new vocabulary words.
For summative assessment have a class discussion at the end of the activity prompting students with questions on the process of how an earthquake happens and why.

**Multiple Intelligences**
- A naturalist intelligence is applied in this lesson through the study of weather, and identifying natural occurrences. Students
- Spatial intelligence is also used when students are recreating a 3-D earthquake with a hands on experiment.
- Linguistic intelligence is needed for when students are recording their observations and writing down their inferences.

*Sample graham cracker, whipped cream earthquake models below*