SCIENCE NORTH SCIENCE NORD
SUDBURY, ONTARIO, CANADA

Forces – Earthquakes Part 1 Rubric (Assessment for Learning)

	1	2	3	4	Mark
Plate boundary explanations	Incomplete descriptions and sketches. It is not clear from the work how different plate boundaries behave.	One of the plate boundaries may not be described correctly. Sketches show some inaccuracies or are missing details.	All three types of plate boundaries are described and have nice sketches with them. Some minor details may be missing.	All three-plate types of plate boundaries are described accurately. Sketches are accurate and detailed. Clear understanding demonstrated.	/5
Understanding of seismograph	Explanation of how a seismograph works is incomplete or not quite accurate. It is not clear how it can be used to measure forces of an earthquake.	Explanation illustrates the basic function of a seismograph though it may be missing some of the details.	Explanation demonstrates mostly accurate understanding of seismographs work to measure the forces of an earthquake. Minor detail may be missing.	Explanation demonstrates accurate and detailed understanding of how seismographs work to measure the forces of earthquakes.	/4
Simulated earthquake experiments	One structure was tested but further work is needed to figure out what makes it more or less stable and how to improve upon it.	Experiments were done for at least one structure under several different conditions. More work is needed to figure out how a more stable structure can be built.	Experiments are creative and were done for at least two structures under a variety of conditions. Correctly identifies a more stable structure.	Experiments are creative and explore a wide variety of scenarios. Correctly identifies more and less stable types of structures.	/10

Understanding of forces	One of the forces is identified but it isn't clear yet how other forces come into play or why a building may be more or less stable.	Some of the forces are correctly identified. The importance of internal forces in a building is not fully demonstrated.	Most of the external and internal forces are considered. Demonstrates a good understanding of how external forces affect the structure.	All the external and internal forces are considered. Demonstrated understanding of how these forces interact with each other to affect the overall stability of the structure.	/5
Earthquake resistant structural modifications	At least one modification was attempted but no improvement was achieved.	Showed creativity in experimenting with at least one modification. May not have been successful in improving stability of structure.	Showed creativity and ingenuity in experimenting with at least two modifications. Some improvement in structures ability to withstand earthquakes.	Showed creativity and ingenuity in experimenting with a variety of modifications. Significantly improved structures ability to withstand earthquakes.	/10
Overall quality	The project needed a bit more attention. The explanations and drawings are incomplete or rushed.	A few area of the project could use a bit more attention. Some of the drawings and explanations are well done and show creativity.	The overall quality of the project meets expectations. Explanations and drawings are good in general and show some creativity. Good visual presentation.	The overall quality of the project exceeds expectations. Detailed explanations and drawings, creative experiments and great visual presentation.	/5

Overall depth of understanding	The project does not clearly show an understanding of how forces act on and in structures during an earthquake.	Shows a basic understanding of forces relevant to structures in an earthquake.	Shows good understanding of forces relevant to structures in an earthquake. Could go a bit more into depth in some areas.	Shows depth of understanding of forces relevant to structures in an earthquake.	/5

Teacher's comments: