Earth Science 8 Learning Outcomes

Plate Tectonics (ESc 8 - 1) **this is a natural fit for acknowledging how First Peoples traditional knowledge enhances our understanding of past seismic events.*	
Level 2	
	I know the layers of Earth
	I know what tectonic plates are, and I can explain how and why they move.
	I can identify convergent, divergent, and transform plate boundaries and locate plate boundaries on a map. I know which regions on Earth are most likely to experience seismic events.
	I can compare values on the Richter scale and explain what they tell us about earthquakes.
Level 3	
	I can give evidence to support plate tectonic theory and the existence of Pangaea
	I know which geologic features and events are likely to occur at each of the 3 plate boundaries, and I can explain why they happen. (Ex: trench, volcano, earthquake)
	I can compare and contrast P, S, and L- waves. I know what information they give us about the structure of Earth, and how they help us to locate the epicentre of an earthquake.

Preparing for Earthquakes (ESc8 - 2)	
Level 2	
	I can identify likely effects of a big earthquake in Metro Vancouver
Level 3	
	I understand the principles used to design Earthquake Early Warning Systems, and the value of these systems.
	I know how to prepare for an earthquake, and what to do after an earthquake.

Earth Science 9 Learning Outcomes (Cycles, systems)

***We didn't get this far as a department. These aren't agreed-upon goals, but rather one teacher's first attempt!*

Cycles and systems	
	I can interpret diagrams about the water cycle, carbon cycle, nitrogen cycle, and phosphorus cycle. In these cycles, I can recognizes areas that store matter and processes that store and release it. I can explain how human actions alter these cycles.
	I can explain the greenhouse effect, identify sources of greenhouse gases.
	I can identify "symptoms" of climate change, and connect them to the greenhouse effect or to the abundance of atmospheric CO2 (possible connections here to convection currents - how heat drives wind and ocean currents)
	I can explain how toxic substances move through ecosystems, using terms like bioaccumulation & biomagnification
	I can define sustainability. I can reflect on how our cities and our economy support (or do not support) sustainability goals, and evaluate possible solutions / improvements to unsustainable practices

Earth and Space Science 10 Learning Outcomes

***We didn't get this far as a department. These aren't agreed-upon goals, but rather one teacher's first attempt!*

Planets	
Level 2	
	I know the characteristics of terrestrial, Jovian, and dwarf planets and can name multiple examples of each planet type.
	I can explain rotating vs. orbiting and communicate how our planet moves in our solar system and galaxy.
	I can explain multiple ways exoplanets are being found.
	I know how an astronomical unit, light-years, and SI units relate and can explain when each measure should be referenced.
Level 3	
	I can explain the distances between planets in our solar system using an analogy.
	I can explain what evidence is needed to confirm an exoplanet using multiple searching techniques.

Stars - HR Diagram, Life Cycle, Star Characteristics	
Level 2	
	I can determine the luminosity and temperature of a star using a Hertz-Sprung Russell Diagram.
	I can explain the life-cycle of our sun.
	I can explain multiple ways exoplanets are being found.
	I know the how star temperature relates to star colour.
Level 3	
	I can explain the life-cycle of any main sequence star and explain the regarding how neutron stars, black holes, and black dwarfs are formed.

	I can compare the types of stars based on the luminosity and temperature and predict what phenomena will occur in their life-cycle.

Big Bang Theory	
Level 2	
	I can explain the Big Bang Theory using an analogy.
	I know what technology is used to find evidence relating to the Big Bang Theory.
Level 3	
	I can explain multiple pieces of evidence that support the Big Bang Theory.
	I can explain changes new understanding of the Big Bang Theory based on evidence provided by new technologies and scientific understanding.