

Seventh Grade Science Standards (9/20)

Science Process Skills & Practices:

Students can recognize scientifically testable questions and make plausible predictions. Students can carry out safe investigations, control variables, recognize controls, measure accurately, and record data in a table that they can design themselves. Students can analyze data, graph results, draw conclusions based on evidence, and communicate these results. (All above based on Appendix H of NGSS--Nature of Science.)

Energy: Students can define energy. They can also identify specific types of energy in everyday situations (i.e. Not just potential or kinetic, but more specifically mechanical, electrical, sound, light, thermal, chemical, nuclear, gravitational, elastic.) Students can explain how energy is able to change forms, and how energy moves through an ecosystem. They can also explain that energy can be neither created nor destroyed (Law of Conservation of Energy.)

Matter: Students can define matter and identify its three common states. Students can explain that matter is made of tiny constituent pieces (atoms and molecules). They can also explain that matter can change forms, but cannot be created or destroyed (Law of Conservation of Matter.) Students can use their knowledge of the Law of Conservation of Matter to explain how Earth's materials cycle through the environment.

Motion & Stability--Forces and Interactions: Students can identify the forces that change an object's motion (or act on an object at rest). Students can demonstrate that some forces act at a distance (have fields) and some forces require contact. Students can use their understanding of forces to explain the Earth's tectonic plate, as well as the motion of astronomical bodies.

Interrelationships between Organisms and their Environment: Students can explain how availability of resources affects organism populations. Students can identify and explain how both biotic and abiotic factors influence ecosystems. Students can create and explain food webs. Students can explain how adaptations affect organisms and that these are the result of natural selection over many generations.

Earth-Sun-Moon Interrelationships: Students can develop and use a model of the Earth-sun-moon system to describe such things as day and night, seasons, eclipses. Students can analyze and interpret data to determine scale properties of objects in the solar system.