What are we going to do in science during Quarter 2?

These are the CT Science Frameworks that will guide our class activities.

GRADE 8		
Forces and Motion 8.1 — An object's inertia causes it to continue to moving the way it is moving unless it is acted upon by a force.		
State Framework	**Grade-Level Expectations**	**CMT Correlation**
8.1.a The motion of an object can be described by its position, direction of motion and speed. **8.1.b An unbalanced force acting on an object changes its speed and/or direction of motion.** **8.1.c Objects moving in circles must experience force acting toward the center.**	1. Demonstrate how forces (pushes/pulls) act upon an object to change its position over time in relation to a fixed point of reference. 2. Calculate the average speed of an object and distinguish between instantaneous speed and average speed of an object. 3. Create and interpret distance-time graphs for objects moving at constant and nonconstant speeds. 4. Predict the motion of an object given the magnitude and direction of forces acting upon it (net force). 5. Justify in writing why an object will not change its motion when forces acting upon it are balanced. 6. Investigate and demonstrate how unbalanced forces cause acceleration (change in speed and/or direction of an object's motion). 7. Distinguish between scalar and vector quantities as they relate to motion of an object (speed vs. velocity). 8. Assess in writing the relationship between an object's mass and its inertia when at rest and in motion. 9. Express mathematically how the mass of an object and the force acting on it affect its acceleration. 10. Design and conduct an experiment to determine the relationship between gravitational acceleration and fluid friction (air resistance) on a falling object. 11. Illustrate how the circular motion (centripetal motion) of an object is caused by a center seeking force resulting in the object's constant acceleration.	**C22.** Calculate the average speed of a moving object and illustrate the motion of objects in graphs of distance over time. **C23.** Describe the qualitative relationships among force, mass and changes in motion. **C24.** Describe the forces acting on an object moving in a circular path.

GRADE 8		
The Earth in the solar system 8.3 — The solar system is composed of planets and other objects that orbit the sun.		
State Framework	**Grade-Level Expectations**	**CMT Correlation**
8.3.a Gravity is the force that governs the motions of objects in the solar system. **8.3.b The motion of the Earth and moon relative to the sun causes daily, monthly and yearly cycles on the Earth.**	12. Relate the strength of gravitational force between two objects to their mass and the distance between the centers of the two objects and provide examples. 13. Describe in writing how gravitational attraction and the inertia of objects in the solar system keep them on a predictable elliptical pathway. 14. Distinguish between rotation of Earth on its axis and its elliptical revolution around the sun. 15. Demonstrate the impact of Earth's rotation on its axis on daylight and tidal cycles. 16. Investigate and report in writing the impact of Earth's revolution around the Sun on changes in daylight, tides and seasons. 17. Compare the revolution times of all the planets and relate it to their distance from the sun. 18. Conduct and report on an investigation that shows how the Earth's tilt on its axis and position around the sun relates to the angle of incidence of light and the subsequent intensity of light striking the Earth's surface. 19. Use a model to demonstrate the phases of the moon relative to the position of the sun, Earth and moon. 20. Develop a model or illustration to show the relative positions of the Earth, sun and moon during a lunar and solar eclipse and explain how those positions influence the view from Earth. 21. Interpret daily and monthly tidal data and analyze the patterns in terms of the gravitational attraction between the Earth, sun and moon. 22. Investigate the technologies in use and research projects underway in space science today and assess the implications for everyday life on Earth.	**C28.** Explain the effect of gravity on the orbital movements of planets in the solar system. **C29.** Explain how the relative motion and relative position of the sun, Earth and moon affect the seasons, phases of the moon and eclipses.