

Classroom activities in Middle School will look less like this:	And look more like this:
Physical Sciences 	Physical Sciences 
Students memorize Newton’s Law of Gravity.	Students gather and analyze evidence about gravity’s effect on objects with different masses.
Students follow scripted chemistry experiments.	Students use chemistry knowledge to design and explain a heat pack.
Students memorize the difference between Fahrenheit and Celsius.	Students construct arguments about the relationship between particle motion and temperature.
Life Sciences 	Life Sciences 
Students memorize the equation for photosynthesis.	Students explain the chemistry behind photosynthesis and how it relates to the growth of a plant.
Students build a model of a cell out of gelatin and label its parts.	Students design a new cell to optimize a particular function, such as energy production.
Students draw an ecosystem on paper.	Students conduct research to identify significant changes in local ecosystem(s).
Earth & Space Sciences 	Earth & Space Sciences 
Students memorize the water cycle.	Students analyze real data to determine how water moves through the cycle.
Students build a papier-mâché volcano.	Students conduct research to learn how scientists observe and monitor volcanic activity on a continuous or near-real-time basis.
Students paint and position Styrofoam balls to represent planets in the solar system.	Students give presentations describing evidence that gravity controls the motion of the planets around the sun.
Engineering Design 	Engineering Design 
Students learn engineering separately from other science disciplines.	Students consider or apply engineering design principles throughout each science course.
Engineering lessons are only offered to some students.	Engineering lessons are offered to all students and each student is encouraged to connect lessons to their own personal experiences.
Students use trial and error to build a bridge out of popsicle sticks.	Students research various bridge designs, select a design that best aligns to their scientific knowledge about forces, and finally test their selected design.