

Next Generation Science Standards

The *Next Generation Science Standards* (NGSS) performance expectations that middle and high school students can achieve through completing the *Systems and Scale* Unit are listed below. To read a discussion of how the *Carbon TIME* project is designed to help students achieve the performances represented in the NGSS, please see [Three-dimensional Learning in Carbon TIME](#).

High School

- Chemical Reactions. HS-PS1-4. Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy: <http://www.nextgenscience.org/hspc-cr-chemical-reactions>
- Chemical Reactions. HS-PS1-7. Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction: <http://www.nextgenscience.org/hspc-cr-chemical-reactions>

Middle School

- Structures and Properties of Matter. MS-PS1-1. Develop models to describe the atomic composition of simple molecules and extended structures: <http://www.nextgenscience.org/msps-spm-structure-properties-matter>
- Chemical Reactions. MS-PS1-2. Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred: <http://www.nextgenscience.org/msps-cr-chemical-reactions>
- Chemical Reactions. MS-PS1-5. Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved: <http://www.nextgenscience.org/msps-cr-chemical-reactions>