8th Grade Science Checklist

- ❑ MS-LS3-1: I can create a model to show how genetic mutations on chromosomes can affect an organism's proteins. I can explain that these changes may be helpful, harmful, or have no effect on the organism.
- ❑ MS-LS4-1: I can look closely at patterns in fossil records. I know that these records show the existence, diversity, extinction, and changes in life forms throughout history.
- ❑ MS-LS4-2: I can make inferences about evolutionary relationships by comparing modern organisms to fossil organisms.
- ❑ MS-LS4-3: I can look closely at and compare pictures that show the early growth of different organisms. I can use this information to identify relationships across multiple species.
- ❑ MS-LS4-4: I can tell you how and why some traits help an individual survive and reproduce.
- ❑ MS-LS4-5: I can talk about the ways that technology has made it possible to increase desired traits in organisms.
- ❑ MS-LS4-6: I can use math to help explain how natural selection can lead to more or less of specific traits over time.
- ❑ MS-ESS1-1: I can use the Earth-sun-moon system to describe lunar phases, eclipses of the sun and moon, and seasons.
- ❑ MS-ESS1-2: I can describe the role of gravity in the motions within galaxies and the solar system.
- ❑ MS-ESS1-3: I can use data to compare properties of objects in the solar system.
- ❑ MS-ESS1-4: I can explain how the geologic time scale is used to organize Earth's 4.6-billion-year-old-history.
- ❑ MS-ESS3-4: I can talk about the ways that the increases in human population and use of natural resources impact Earth's systems.
- ❑ MS-PS2-1: I can apply Newton's Third Law to make a solution to a problem involving the motion of two colliding objects.
- ❑ MS-PS2-2: I can plan an investigation to prove that the change in an object's motion depends on the total forces on the object and the mass of the object.
- ❑ MS-PS2-3: I can ask questions about data to figure out what affects the strength of electric and magnetic forces.
- ❑ MS-PS2-4: I can tell you what I know about gravitational interactions. I know that they depend on the masses of interacting objects.
- ❑ MS-PS2-5: I can carry out and evaluate an investigation to show that fields exist between objects that exert forces on each other even though the objects do not touch.
- ❑ MS-PS3-1: I can make and interpret graphs to show the relationship of kinetic energy to the mass of an object, and the relationship of kinetic energy to the speed of an object.
- ❑ MS-PS3-2: I can make a model to demonstrate that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.
- ❑ MS-PS3-3: I can design, construct, and test a device that will either minimize or maximize thermal energy transfer.
- ❑ MS-PS3-4: I can conduct experiments to find out more about the relationships among energy transfer, matter, mass, and kinetic energy of the particles as measured by the temperature of the sample.

- ❑ MS-PS3-5: I can develop and present arguments to demonstrate that when the kinetic energy of an object changes, energy is transferred to or from the object.
- ❑ MS-PS4-1: I can talk about what models for waves would look like. I can describe how the amplitude of a wave is related to the energy in that wave.
- ❑ MS-PS4-2: I can make a model to show that waves are reflected, absorbed, or transmitted through different materials.
- ❑ MS-PS4-3: I can use scientific and technical information to prove that digitized signals are a more reliable way to encode and communicate information than analog signals.
- ❑ MS-ETS1-1: I can develop a successful solution to a design problem using scientific principles. I can compare the pros and cons of my solution in order to determine if it is reasonable.
- ❑ MS-ETS1-2: I can test my design solutions to determine whether or not they will solve the problem.
- ❑ MS-ETS1-3: I can use the data gathered from tests to determine which design solution will best solve the problem.
- ❑ MS-ETS1-4: Develop a model of the design that can be tested and modified to create a successful prototype.
- ❑ MS-PS1-1: I can make models to show how atoms are arranged in simple molecules (like ammonia), as well as extended structures (like sodium chloride).
- ❑ MS-PS1-2: I can tell you if a chemical reaction has occurred by looking closely at data on the properties of substances before and after they interact with each other.
- ❑ MS-PS1-3: I can gather and understand information to explain that synthetic materials are actually made from natural resources.
- ❑ MS-PS1-4: I can make a model that predicts and describes how a pure substance changes when thermal energy is added or taken away.
- ❑ MS-PS1-5: I can make and use a model to show that the total number of atoms does not change during a chemical reaction. I know that mass is conserved during a chemical reaction.
- ❑ MS-PS1-6: I can build, test, and modify a device that either releases or absorbs thermal energy by chemical processes.