The experiments in this book align to the following standards.

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<thead>
<tr>
<th>Cluster/Grade</th>
<th>Next Generation Science Standards and Common Core State Standards</th>
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</table>
| **Matter and its Interactions** | 5-PS1-3. Make observations and measurements to identify materials based on their properties.  
5-PS1-4. Conduct an investigation to determine whether the mixing of two or more substances results in new substances.  
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.  
MS-PS1-4. Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed. |
| **Motion and Stability: Forces and Interactions** | 3-PS2-3. Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.  
5-PS2-1. Support an argument that the gravitational force exerted by Earth on objects is directed down.  
MS-PS2-2. Plan an investigation to provide evidence that the change in an object’s motion depends on the sum of the forces on the object and the mass of the object.  
MS-PS2-5. Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact. |
| **Energy**                     | 4-PS3-2. Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.  
4-PS3-4. Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.  
MS-PS3-5. Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object. |
| **From Molecules to Organisms: Structures and Processes** | 4-LS1-2. Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.  
MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.  
MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.  
MS-LS1-6. Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms. |
| **Ecosystems: Interactions, Energy, and Dynamics** | 3-LS2-1. Construct an argument that some animals form groups that help members survive.  
5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. |
| **Engineering Design**          | 3-5-ETS1-3. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.                                                                                                                                 |
| **Grades 6-8**                 | CCSS ELA-Literacy: RST.6-8.3 Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.                                                                                                                                                     |