

## **New for 2016-17**

### **6<sup>th</sup> Grade Solar System**

The 6<sup>th</sup> Grade Solar System kit will be revised to better align with the NC Essential Science Standards. The revised Solar System kit will be available August 2016. The following NC Essential Standards will be addressed:

#### **6.E.1 Understand the earth/moon/sun system, and the properties, structures, and predictable motions of celestial bodies in the Universe.**

- 6.E.1.1 Explain how the relative motion and relative position of the sun, Earth and moon affect the seasons, tides, phases of the moon, and eclipses.
- 6.E.1.2 Explain why Earth sustains life while other planets do not based on their properties (including types of surface, atmosphere and gravitational force) and location to the Sun.
- 6.E.1.3 Summarize space exploration and the understandings gained from them.

### **7th Grade Genetics / Cells / Systems**

Building off of CIBL's popular Genetics kit, CIBL will add additional activities to address all of the 7<sup>th</sup> grade Life Science standards. The **Genetics / Cells / Systems** will be available in August of 2016 and will address the following NC Essential Standards:

#### **7.L.1 Understand the processes, structures and functions of living organisms that enable them to survive, reproduce and carry out the basic functions of life.**

- 7.L.1.1 Compare the structures and life functions of single-celled organisms that carry out all of the basic functions of life including:
  - Euglena
  - Amoeba
  - Paramecium
  - Volvox
- 7.L.1.2 Compare the structures and functions of plant and animal cells, including major organelles (cell membrane, cell wall, nucleus, chloroplasts, mitochondria, and vacuoles).
- 7.L.1.3 Summarize the hierarchical organization of multi-cellular organisms from cells to tissues to organs to systems to organisms.
- 7.L.1.4 Summarize the general functions of the major systems of the human body (digestion, respiration, reproduction, circulation, and excretion) and ways that these systems interact with each other to sustain life.

#### **7.L.2 Understand the relationship of the mechanisms of cellular reproduction, patterns of inheritance and external factors to potential variation and survival among offspring.**

- 7.L.2.1 Explain why offspring that result from sexual reproduction (fertilization and meiosis) have greater variation than offspring that result from asexual reproduction (budding and mitosis).
- 7.L.2.2 Infer patterns of heredity using information from Punnett squares and pedigree analysis.
- 7.L.2.3 Explain the impact of the environment and lifestyle choices on biological inheritance (to include common genetic diseases) and survival.

## **7<sup>th</sup> Grade Machines, Energy, Forces and Motion \*NEW for 2016 - 2017\***

CIBL will develop a new kit to address all the Physical Science Standards for 7<sup>th</sup> grade kit. **Machines, Energy, Forces and Motion** kits will be available in January of 2017 and will address the following NC Essential Standards:

- 7.P.1 Understand motion, the effects of forces on motion and the graphical representations of motion.**
- 7.P.1.1 Explain how the motion of an object can be described by its position, direction of motion, and speed with respect to some other object.
  - 7.P.1.2 Explain the effects of balanced and unbalanced forces acting on an object (including friction, gravity and magnets).
  - 7.P.1.3 Illustrate the motion of an object using a graph to show a change in position over a period of time.
  - 7.P.1.4 Interpret distance versus time graphs for constant speed and variable motion.
- 7.P.2 Understand forms of energy, energy transfer and transformation and conservation in mechanical systems.**
- 7.P.2.1 Explain how kinetic and potential energy contribute to the mechanical energy of an object.
  - 7.P.2.2 Explain how energy can be transformed from one form to another (specifically potential energy and kinetic energy) using a model or diagram of a moving object (roller coaster, pendulum, or cars on ramps as examples).
  - 7.P.2.3 Recognize that energy can be transferred from one system to another when two objects push or pull on each other over a distance (work) and electrical circuits require a complete loop through which an electrical current can pass.
  - 7.P.2.4 Explain how simple machines such as inclined planes, pulleys, levers and wheel and axels are used to create mechanical advantage and increase efficiency.