



## **Exhibit Alignment with SC Science Standards – 8<sup>th</sup> Grade**

### **Scientific Inquiry**

**Standard 8-1: The student will demonstrate an understanding of technological design and scientific inquiry, including process skills, mathematical thinking, controlled investigative design and analysis, and problem solving**

8 – 1.1 – Design a controlled scientific investigation

- WonderWorks Applicable Exhibits: Are you a risk taker?, What are the odds?, Safe Crackers, One In a Million, Coin Orbiter, Space Weight

8 – 1.2 – Recognize the importance of a systematic process for safely and accurately conducting investigations

- WonderWorks Applicable Exhibits: Hurricane Wind Shack, Tesla Coil, Bed of Nails, Virtual Sports, Xtreme 360

8 – 1.3 – Construct explanations and conclusions from interpretations of data obtained during a controlled scientific investigation

- WonderWorks Applicable Exhibits: Are you a risk taker?, What are the odds?, One In a Million, Anti-Gravity Chamber, Space Weight, Coin Orbiter, Earth Tic-Tac-Toe, MindBall

8 – 1.4 – Generate questions for further study on the basis of prior investigations

- WonderWorks Applicable Exhibits: MindBall, Are you a risk taker?, What are the odds?, One In a Million, Anti-Gravity Chamber, Space Weight, Coin Orbiter, Earth Tic-Tac-Toe

8 – 1.5 – Explain the importance of and requirements for replication of scientific investigations

- WonderWorks Applicable Exhibits: Are you a risk taker?, What are the odds?, One In a Million, Safe Crackers, MindBall

[www.wonderworksonline.com](http://www.wonderworksonline.com)



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8 – 1.6 – Use appropriate tools and instruments (including convex lenses, plane mirrors, color filters, prisms, and slinky springs) safely and accurately when conducting a controlled scientific investigation

- WonderWorks Applicable Exhibits: Pulley Power, Coin Orbiter, Space Update

8 – 1.7 – Use appropriate safety procedures when conducting investigations

- WonderWorks Applicable Exhibits: Hurricane Wind Shack, Tesla Coil, Bed of Nails, Virtual Sports, Xtreme 360, Ropes Challenge Course

### **Earth's Biological History**

**Standard 8-2: The student will demonstrate an understanding of Earth's biological diversity over time (Earth Science, Life Science)**

8 – 2.1 – Explain how biological adaptations of populations enhance their survival in a particular environment

- WonderWorks Applicable Exhibits: Roaring Sounds, Earth Tic-Tac-Toe

8 – 2.3 – Explain how Earth's history has been influenced by catastrophes (including the impact of an asteroid or comet, climatic changes, and volcanic activity) that have affected the conditions on Earth and the diversity of its life-forms

- WonderWorks Applicable Exhibits: Natural Disasters, Earth Tic-Tac-Toe , Space Info Center

8 – 2.7 – Summarize the factors, both natural and man-made, that can contribute to the extinction of a species

- WonderWorks Applicable Exhibits: Earth Tic-Tac-Toe

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### **Earth's Structure and Processes**

**Standard 8-3: The student will demonstrate an understanding of materials that determine the structure of Earth and the processes that have altered this structure.**

8 – 3.1 – Summarize the three layers of Earth-crust, mantle, and core-on the basis of relative position, density, and composition

- WonderWorks Applicable Exhibits: Earth Tic-Tac-Toe, Space Info Center

8 – 3.3 – Infer an earthquake's epicenter from seismographic data

- WonderWorks Applicable Exhibits: Natural Disasters

8 – 3.6 – Explain how the theory of plate tectonics accounts for the motion of the lithospheric plates, the geologic activities at the plate boundaries, and the changes in landform areas over geologic time

- WonderWorks Applicable Exhibits: Natural Disasters , Earth Tic-Tac-Toe

8 – 3.7 – Illustrate the creation and changing of landforms that have occurred through geologic processes (including volcanic eruptions and mountain-building forces)

- WonderWorks Applicable Exhibits: Natural Disasters, Earth Tic-Tac-Toe

8 – 3.8 – Explain how earthquakes result from forces inside Earth

- WonderWorks Applicable Exhibits: Natural Disasters, Earth Tic-Tac-Toe



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### **Astronomy: Earth and Space Systems**

**Standard 8-4: The student will demonstrate an understanding of the characteristics, structure, and predictable motions of celestial bodies (Earth Science)**

8 – 4.1 – Summarize the characteristics and movements of objects in the solar system (including planets, moons, asteroids, comets, and meteors)

- WonderWorks Applicable Exhibits: Space Trivia, Cosmic Discovery

8 – 4.3 – Explain how the surface features of the Sun may affect Earth

- WonderWorks Applicable Exhibits: Earth Tic-Tac-Toe

8 – 4.4 – Explain the motions of Earth and the Moon and the effects of these motions as they orbit the Sun (including day, year, phases of the Moon, eclipses, and tides)

- WonderWorks Applicable Exhibits: Space Update, Natural Disasters, Earth Tic-Tac-Toe

8 – 4.5 – Explain how the tilt of Earth’s axis affects the length of the day and the amount of heating on Earth’s surface, thus causing the seasons of the year

- WonderWorks Applicable Exhibits: Natural Disasters, Earth Tic-Tac-Toe

8 – 4.6 – Explain how gravitational forces are influenced by mass and distance

- WonderWorks Applicable Exhibits: Pulley Power, How high can you jump?, Xtreme 360, Cosmic Discovery, Space Weight

8 – 4.7 – Explain the effects of gravity on tides and planetary orbits

- WonderWorks Applicable Exhibits: Natural Disasters, Earth Tic-Tac-Toe, Space Info Center

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8 – 4.8 – Explain the difference between mass and weight by using the concept of gravitational force

- WonderWorks Applicable Exhibits: Xtreme 360, Pulley Power, How high can you jump?, Anti-Gravity Chamber, Coin Orbiter, Space Weight

8 – 4.9 – Recall the Sun’s position in the universe, the shapes and composition of galaxies, and the distant measurement unit (light year) needed to identify star and galaxy locations

- WonderWorks Applicable Exhibits: Cosmic Discovery, Space Update

8 – 4.10 – Compare the purposes of the tools and the technology that scientists use to study space (including various types of telescopes, satellites, space probes, and spectroscopes)

- WonderWorks Applicable Exhibits: Space Update, Cosmic Discovery, Space Info Center, Space Weight

### **Forces and Motion**

**Standard 8-5: The student will demonstrate an understanding of the effects of forces on the motion of an object (Physical Science)**

8 – 5.2 – Use the formula for average speed,  $v=d/t$ , to solve real-world problems

- WonderWorks Applicable Exhibits: Virtual Sports

8 – 5.3 – Analyze the effects of forces (including gravity and friction) on the speed and direction of an object

- WonderWorks Applicable Exhibits: Xtreme 360, Pulley Power, How high can you jump?, Anti-Gravity Chamber, Virtual Sports, Coin Orbiter

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8 – 5.4 – Predict how varying the amount of force or mass will affect the motion of an object

- WonderWorks Applicable Exhibits: Pulley Power, Xtreme 360, How high can you jump?, Anti-Gravity Chamber, Virtual Sports, Coin Orbiter

8 – 5.5 – Analyze the resulting effect of balanced and unbalanced forces on an object’s motion in terms of magnitude and direction

- WonderWorks Applicable Exhibits: Pulley Power, Xtreme 360, How high can you jump?, Anti-Gravity Chamber, Virtual Sports, Coin Orbiter

8 – 5.6 – Summarize and illustrate the concept of inertia

- WonderWorks Applicable Exhibits: Pulley Power, Xtreme 360, How high can you jump?, Anti-Gravity Chamber, Virtual Sports, Coin Orbiter

### **Waves**

**Standard 8-6: The student will demonstrate an understanding of the properties and behaviors of waves (Physical Science)**

8 – 6.3 – Summarize factors that influence the basic properties of waves (including frequency, amplitude, wavelength, and speed)

- WonderWorks Applicable Exhibits: Earth Tic-Tac-Toe

8 – 6.5 – Explain hearing in terms of the relationship between sound waves and the ear

- WonderWorks Applicable Exhibits: Floor Piano, Harp



## **Exhibit Alignment with SC Science Standards – 8<sup>th</sup> Grade**

8 – 6.6 – Explain sight in terms of the relationship between the eye and the light waves emitted or reflected by an object

- WonderWorks Applicable Exhibits: Anti-Gravity Chamber, Alien Stomp Dome, Strike a Pose, Recollections

8 – 6.7 – Explain how the absorption and reflection of light waves by various materials result in the human perception of color

- WonderWorks Applicable Exhibits: Alien Stomp Dome, Memory Sequencer, Recollections, Strike a Pose