

**WCS Summer Scholar Guide**  
**For Rising First Graders**

<b>Relevant Prior Learning</b>	<ul style="list-style-type: none"><li>● Living and Nonliving Things</li><li>● Plants and Animals</li><li>● Using the Five Senses</li><li>● Properties of Matter (Solids &amp; Liquids)</li><li>● Weather &amp; the Seasons</li></ul>
<b>Upcoming Topics in 1st Grade Science</b>	<ul style="list-style-type: none"><li>● Understanding the Day &amp; Night Sky</li><li>● Light and Opacity</li><li>● Engineering Design</li><li>● Parts of Plants</li><li>● What Plants Need to Grow</li></ul>
<b>Potential Challenges</b>	<ul style="list-style-type: none"><li>● Analyzing Data - Looking at Information in a Table or a Simple Graph</li><li>● The Engineering Design Process</li><li>● Using Evidence to Support Our Claims</li></ul>
<b>Suggestions for Summer Reading and Assignments</b>	<ul style="list-style-type: none"><li>● Go on a nature walk and compare the living vs nonliving things that you find.</li><li>● Spend time in a garden and notice varieties of plants and their parts (flowers, seeds, roots, fruits, etc.)</li><li>● Check out age-appropriate texts/media from the library on upcoming 1st grade science topics listed above.</li><li>● Use age-appropriate measuring tools (ruler, balance scale, magnifying glass, etc.)</li></ul>

## WCS Summer Scholar Guide For Rising Second Graders

<p style="text-align: center;"><b>Relevant Prior Learning</b></p>	<ul style="list-style-type: none"> <li>● Understanding the Day &amp; Night Sky</li> <li>● Light and Opacity</li> <li>● Parts of Plants</li> <li>● What Plants Need to Grow</li> </ul>
<p style="text-align: center;"><b>Upcoming Topics in 2nd Grade Science</b></p>	<ul style="list-style-type: none"> <li>● Animals and How They Depend on Their Surroundings</li> <li>● Slow &amp; Fast Earth Processes</li> <li>● Sound Waves</li> <li>● Forces of Motion</li> </ul>
<p style="text-align: center;"><b>Potential Challenges</b></p>	<ul style="list-style-type: none"> <li>● Vertebrates vs. Invertebrates <ul style="list-style-type: none"> <li>○ Vertebrates: Reptiles, Mammals, Fish, Birds, Amphibians</li> <li>○ Invertebrates: Insects</li> </ul> </li> <li>● Carrying out Controlled Investigations to Answer a Testable Question</li> <li>● Constructing Explanations (for science) and Evaluating Solutions (for engineering)</li> </ul>
<p style="text-align: center;"><b>Suggestions for Summer Reading and Assignments</b></p>	<ul style="list-style-type: none"> <li>● Check out age-appropriate texts/media from the library on upcoming 2nd grade science topics listed above.</li> <li>● Visit a local zoo or park and observe differences and similarities among animals.</li> <li>● Look at simple maps to identify land and water.</li> <li>● Play a game of tug-of-war with a partner to explore how forces of motion interact.</li> </ul>

## WCS Summer Scholar Guide For Rising Third Graders

<p style="text-align: center;"><b>Relevant Prior Learning</b></p>	<ul style="list-style-type: none"> <li>● Animals and How They Depend on Their Surroundings</li> <li>● Slow &amp; Fast Earth Processes</li> <li>● Sound Waves</li> <li>● Forces of Motion</li> </ul>
<p style="text-align: center;"><b>Upcoming Topics in 3rd Grade Science</b></p>	<ul style="list-style-type: none"> <li>● Biomes &amp; Plant/Animal Adaptations</li> <li>● Weather &amp; Climate</li> <li>● Natural Hazards</li> <li>● The Water Cycle</li> <li>● Physical Properties &amp; States of Matter (Solid, Liquid, Gas)</li> <li>● The Solar System - Planets</li> <li>● Electricity &amp; Magnetism</li> <li>● Human Respiratory &amp; Circulatory Systems</li> <li>● Structure and Function of the Ear</li> </ul>
<p style="text-align: center;"><b>Potential Challenges</b></p>	<ul style="list-style-type: none"> <li>● Constructing arguments from evidence</li> <li>● Developing and using models for making sense of phenomena</li> <li>● Recognizing parameters and limitations of systems (weather systems, water cycle, solar system, circuitry, respiratory, circulatory, auditory, etc.)</li> </ul>
<p style="text-align: center;"><b>Suggestions for Summer Reading and Assignments</b></p>	<ul style="list-style-type: none"> <li>● Visit the zoo or a local park and observe/record plant or animal features that benefit it in its habitat.</li> <li>● Track the daily weather.</li> <li>● Experiment with magnets to see how they interact with objects.</li> <li>● Visit an observatory or use a home telescope to look for planets.</li> <li>● Visit the library for age-appropriate texts/media related to the 3rd grade science topics listed above.</li> </ul>

## WCS Summer Scholar Guide For Rising Fourth Graders

<p><b>Relevant Prior Learning</b></p>	<ul style="list-style-type: none"> <li>● Biomes &amp; Plant/Animal Adaptations</li> <li>● Weather &amp; Climate</li> <li>● Natural Hazards</li> <li>● The Water Cycle</li> <li>● Physical Properties &amp; States of Matter (Solid, Liquid, Gas)</li> <li>● The Solar System - Planets</li> <li>● Electricity &amp; Magnetism</li> <li>● Human Respiratory &amp; Circulatory Systems</li> <li>● Structure and Function of the Ear</li> </ul>
<p><b>Upcoming Topics in 4th Grade Science</b></p>	<ul style="list-style-type: none"> <li>● Ecosystems</li> <li>● Photosynthesis</li> <li>● Food Chains/Webs</li> <li>● Fossils</li> <li>● Weathering, Erosion, Deposition</li> <li>● Renewable/Nonrenewable Energy</li> <li>● Properties of Waves</li> <li>● Kinetic/Potential Energy</li> <li>● Human Skeletal &amp; Muscular Systems</li> </ul>
<p><b>Potential Challenges</b></p>	<ul style="list-style-type: none"> <li>● Creating an argument from evidence using research</li> <li>● Recognizing factors that cause stability &amp; change in a system</li> <li>● Designing models and evaluating them according to specified criteria</li> </ul>
<p><b>Suggestions for Summer Reading and Assignments</b></p>	<ul style="list-style-type: none"> <li>● Visit the library for age-appropriate texts/media related to the 4th grade science topics listed above.</li> <li>● Visit a local museum fossil exhibit.</li> <li>● Experiment with a prism, hand lens, eyeglasses and/or other devices that bend light waves.</li> <li>● Design a homemade roller coaster track or Rube Goldberg device.</li> </ul>

## WCS Summer Scholar Guide For Rising Fifth Graders

<b>Relevant Prior Learning</b>	<ul style="list-style-type: none"> <li>● Ecosystems</li> <li>● Photosynthesis</li> <li>● Food Chains/Webs</li> <li>● Fossils</li> <li>● Weathering, Erosion, Deposition</li> <li>● Renewable/Nonrenewable Energy</li> <li>● Properties of Waves</li> <li>● Kinetic/Potential Energy</li> <li>● Human Skeletal &amp; Muscular Systems</li> </ul>
<b>Upcoming Topics in 5th Grade Science</b>	<ul style="list-style-type: none"> <li>● Inherited &amp; Learned Traits</li> <li>● Fossils of Organisms &amp; Environments from Long Ago</li> <li>● Phase Changes (solid, liquid, gas)</li> <li>● Mixtures &amp; Solutions</li> <li>● Balanced/Unbalanced Forces</li> <li>● Gravity</li> <li>● Systems of Motion (pendulums)</li> <li>● Astronomy</li> <li>● Engineering in Society</li> <li>● Human Nervous &amp; Digestive Systems</li> </ul>
<b>Potential Challenges</b>	<ul style="list-style-type: none"> <li>● Planning and carrying out investigations</li> <li>● Analyzing and interpreting data</li> <li>● Using mathematical thinking</li> <li>● Using failure to lead to success in the Engineering Design Process</li> </ul>
<b>Suggestions for Summer Reading and Assignments</b>	<ul style="list-style-type: none"> <li>● Visit the library for age-appropriate texts/media related to the 5th grade science topics listed above.</li> <li>● Observe pets or other animals to recognize learned behaviors vs. instinctual behaviors.</li> <li>● Visit an observatory or look for planets, the moon, constellations, meteor showers, etc. using a telescope.</li> <li>● Tinker with an invention with the mindset to improve it.</li> </ul>

# WCS Summer Scholar Guide

## For Rising Sixth Graders

<p><b>Relevant Prior Learning</b></p>	<ul style="list-style-type: none"> <li>● Inherited &amp; Learned Traits</li> <li>● Fossils of Organisms &amp; Environments from Long Ago</li> <li>● Phase Changes (solid, liquid, gas)</li> <li>● Mixtures &amp; Solutions</li> <li>● Balanced/Unbalanced Forces</li> <li>● Gravity</li> <li>● Systems of Motion (pendulums)</li> <li>● Astronomy</li> <li>● Engineering in Society</li> <li>● Human Nervous &amp; Digestive Systems</li> </ul>
<p><b>Upcoming Topics in 6th Grade Science</b></p>	<ul style="list-style-type: none"> <li>● Energy Storage &amp; Transformation</li> <li>● Ocean Currents, the Atmosphere, and Convection Patterns</li> <li>● Land, Air, and Water Factors that Affect Weather/Climate Conditions</li> <li>● Interactions in an Ecosystem and Variables on Population Size</li> <li>● Environmental Design Challenges</li> <li>● Maintaining Biodiversity of Ecosystems</li> <li>● Renewable &amp; Nonrenewable Resources and Human Activity on the Biosphere</li> </ul>
<p><b>Potential Challenges</b></p>	<ul style="list-style-type: none"> <li>● Planning and carrying out investigations</li> <li>● Analyzing and interpreting data</li> <li>● Using mathematical thinking</li> <li>● Using failure to lead to success in the Engineering Design Process</li> </ul>
<p><b>Suggestions for Summer Reading and Assignments</b></p>	<ul style="list-style-type: none"> <li>● Visit the library for age-appropriate texts/media related to the 6th grade science topics listed above.</li> <li>● Note any living organisms in your area and draw a food web based on your observations.</li> <li>● In which biome do we live in middle Tennessee? Go to your local library or the internet to match our area with one of the world's biomes. Make a list of evidence that you see around you to support your claim.</li> <li>● What are the sources of the electricity that power your house? Find out through your local library or contact your electricity provider (such as MTEMC).</li> <li>● Imagine you are a grain of salt in the ocean. Write a story of your travels as you move through the ocean. Be sure to include the effect of the sun and salt on the ocean current that is moving you.</li> </ul>