

## Study Resources for the Praxis® Elementary Education: Science Test (5005)

The links below allow you to connect content topics on this *Praxis*® test directly to free Khan Academy study resources.

<i>Praxis</i> Elementary Education: Science (5005) Content Topics	Study Resources
<b>I. Science</b>	<b>Lesson</b>
<b>A. Earth Science</b>	
1. Understands the structure of the Earth system (e.g., structure and properties of the solid Earth, the hydrosphere, the atmosphere)	<a href="#">Structure of the earth</a> <a href="#">Compositional and mechanical layers of the earth</a> <a href="#">How we know about the earth's core</a>
2. Understands processes of the Earth system (e.g., earth processes of the solid Earth, the hydrosphere, the atmosphere)	<a href="#">Plate tectonics: Evidence of plate movement</a> <a href="#">Plate tectonics: Geological features of divergent plate boundaries</a> <a href="#">Plate tectonics: Geological features of convergent plate boundaries</a> <a href="#">Plates moving due to convection in mantle</a> <a href="#">Seismic waves</a> <a href="#">Biogeochemical cycles overview</a> <a href="#">The water cycle</a>
3. Understands Earth history (e.g., origin of Earth, paleontology, the rock record)	<a href="#">Earth formation</a> <a href="#">Beginnings of life</a> <a href="#">Hawaiian islands formation</a> <a href="#">Pangaea</a> <a href="#">Fossils: Rocking the Earth</a>
4. Understands Earth and the universe (e.g., stars and galaxies; the solar system and planets; Earth, Sun, and Moon relationships)	<a href="#">Intro to Moon phases</a> <a href="#">Solar and lunar eclipses</a> <a href="#">Scale of the large</a> <a href="#">Scale of earth and sun</a> <a href="#">Scale of solar system</a> <a href="#">Scale of distance to closest stars</a>

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Understands Earth and the universe (e.g., stars and galaxies; the solar system and planets; Earth, Sun, and Moon relationships) <i>(continued)</i>	<a href="#">Scale of the galaxy</a> <a href="#">Big bang introduction</a>
5. Understands Earth patterns, cycles, and change	<a href="#">Seasons aren't dictated by closeness to sun</a> <a href="#">How Earth's tilt causes seasons</a> <a href="#">Biogeochemical cycles overview</a> <a href="#">The water cycle</a>
6. Understands science as a human endeavor, process, and career	
7. Understands science as inquiry (e.g., questioning, gathering data, drawing reasonable conclusions)	<a href="#">The scientific method</a> <a href="#">Data to justify experimental claims examples</a> <a href="#">Introduction to experimental design</a>
8. Understands how to use resource and research material in science	
9. Understands the unifying processes of science (e.g., systems, order, and organization)	
<b>B. Life Science</b>	
1. Understands the structure and function of living systems (e.g., living characteristics and cells, tissues and organs, life processes)	<a href="#">Biology overview</a> <a href="#">Scale of the small</a> <a href="#">The discovery of the double helix structure of DNA</a> <a href="#">DNA replication and RNA transcription and translation</a> <a href="#">Introduction to metabolism: Anabolism and catabolism</a> <a href="#">ATP: Adenosine triphosphate</a> <a href="#">Enzymes</a> <a href="#">Scale of cells</a> <a href="#">Cell theory</a> <a href="#">Prokaryotic and eukaryotic cells</a>

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<p>Understands the structure and function of living systems (e.g., living characteristics and cells, tissues and organs, life processes) <i>(continued)</i></p>	<p><a href="#">Overview of animal and plant cells</a>  <a href="#">Cellular respiration introduction</a>  <a href="#">Photosynthesis</a>  <a href="#">Interphase</a>  <a href="#">Mitosis</a>  <a href="#">Comparing mitosis and meiosis</a>  <a href="#">Cancer</a></p>
<p>2. Understands reproduction and heredity (e.g., growth and development, patterns of inheritance of traits, molecular basis of heredity)</p>	<p><a href="#">Fertilization terminology: gametes, zygotes, haploid, diploid</a>  <a href="#">Zygote differentiating into somatic and germ cells</a>  <a href="#">Introduction to heredity</a>  <a href="#">Alleles and genes</a>  <a href="#">Worked example: Punnett squares</a>  <a href="#">Thomas Hunt Morgan and fruit flies</a>  <a href="#">Cellular specialization (differentiation)</a></p>
<p>3. Understands change over time in living things (e.g., life cycles, mutations, adaptation and natural selection)</p>	<p><a href="#">Introduction to evolution and natural selection</a>  <a href="#">Variation in a species</a>  <a href="#">Evidence for evolution</a>  <a href="#">DNA spells evolution</a>  <a href="#">Species</a>  <a href="#">Biodiversity and natural selection</a>  <a href="#">Genetic variation, gene flow, and new species</a></p>
<p>4. Understands regulation and behavior (e.g., life cycles, responses to external stimuli, controlling the internal environment)</p>	<p><a href="#">Homeostasis</a>  <a href="#">Animal communication</a>  <a href="#">Animal behavior: foraging</a></p>
<p>5. Understands unity and diversity of life, adaptation, and classification</p>	<p><a href="#">Variation in a species</a>  <a href="#">Fossils: Rocking the Earth</a></p>

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<p>Understands unity and diversity of life, adaptation, and classification (<i>continued</i>)</p>	<p><a href="#">Taxonomy and the tree of life</a>  <a href="#">Biodiversity and natural selection</a>  <a href="#">Discovering the tree of life</a>  <a href="#">How biodiversity is distributed globally</a>  <a href="#">Why biodiversity is distributed globally</a>  <a href="#">Prokaryotic and eukaryotic cells</a>  <a href="#">Bacteria</a></p>
<p>6. Understands the interdependence of organisms (e.g., ecosystems, populations, communities)</p>	<p><a href="#">Ecology introduction</a>  <a href="#">Interactions between populations</a>  <a href="#">Predator-prey cycles</a>  <a href="#">Ecosystems and ecological networks</a>  <a href="#">Ecosystems and biomes</a>  <a href="#">Flow of energy and matter through ecosystems</a>  <a href="#">Example identifying roles in a food web</a></p>
<p>7. Knows about personal health (e.g., nutrition, communicable diseases, substance abuse)</p>	<p><a href="#">LeBron Asks: Why does sweating cool you down?</a>  <a href="#">Viruses</a>  <a href="#">Cancer</a></p>
<p>8. Understands science as a human endeavor, process, and career</p>	
<p>9. Understands science as inquiry (e.g., questioning, gathering data, drawing reasonable conclusions)</p>	<p><a href="#">The scientific method</a>  <a href="#">Data to justify experimental claims examples</a>  <a href="#">Introduction to experimental design</a></p>
<p>10. Understands how to use resource and research material in science</p>	
<p>11. Understands the unifying processes of science (e.g., systems, order, and organization)</p>	

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<b>C. Physical Science</b>	
1. Understands the physical and chemical properties and structure of matter (e.g., changes of states, mixtures and solutions, atoms and elements)	<ul style="list-style-type: none"> <li><a href="#">Elements and atoms</a></li> <li><a href="#">Elements and atoms</a></li> <li><a href="#">Introduction to the atom</a></li> <li><a href="#">Groups of the periodic table</a></li> <li><a href="#">Ionic, covalent, and metallic bonds</a></li> <li><a href="#">Chemical reactions introduction</a></li> <li><a href="#">Hydrogen bonding in water</a></li> <li><a href="#">Water as a solvent</a></li> <li><a href="#">Liquid water denser than solid water (ice)</a></li> <li><a href="#">Definition of pH</a></li> <li><a href="#">Introduction to buffers</a></li> </ul>
2. Understands forces and motions (e.g., types of motion, laws of motion, forces and equilibrium)	<ul style="list-style-type: none"> <li><a href="#">Introduction to physics</a></li> <li><a href="#">Calculating average velocity or speed</a></li> <li><a href="#">Position vs. time graphs</a></li> <li><a href="#">Acceleration</a></li> <li><a href="#">Newton's first law of motion introduction</a></li> <li><a href="#">Newton's second law of motion</a></li> <li><a href="#">Newton's third law of motion</a></li> <li><a href="#">Balanced and unbalanced forces</a></li> <li><a href="#">Unbalanced forces and motion</a></li> <li><a href="#">Introduction to gravity</a></li> <li><a href="#">Mass and weight clarification</a></li> <li><a href="#">Gravity for astronauts in orbit</a></li> <li><a href="#">Would a brick or feather fall faster?</a></li> <li><a href="#">Archimedes principle and buoyant force</a></li> </ul>

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3. Understands energy (e.g., forms of energy, transfer and conservation of energy, simple machines)	<a href="#">Introduction to energy</a> <a href="#">Conservation of energy</a>
4. Understands interactions of energy and matter (e.g., electricity, magnetism, sound)	<a href="#">Triboelectric effect and charge</a> <a href="#">Introduction to magnetism</a> <a href="#">Introduction to waves</a> <a href="#">Production of sound</a> <a href="#">Sound Properties: Amplitude, period, frequency, wavelength</a> <a href="#">Doppler effect introduction</a>
5. Understands science as a human endeavor, process, and career	
6. Understands science as inquiry (e.g., questioning, gathering data, drawing reasonable conclusions)	<a href="#">The scientific method</a> <a href="#">Data to justify experimental claims examples</a> <a href="#">Introduction to experimental design</a>
7. Understands how to use resource and research material in science	
8. Understands the unifying processes of science (e.g., systems, order, and organization)	