

## **Comparative Analysis of the Revised Content Standards for Science Grades K - 8**

*This document provides a comparison of the main concepts of the previous 2002 Science Academic Content Standards with the 2010 Revised Science Standards.*



## Kindergarten

Content that is new to Kindergarten	Content that is still included at Kindergarten, but may be modified or at a greater depth	Content that is no longer a focus at Kindergarten
<ul style="list-style-type: none"> <li>• <i>Earth and Space Sciences:</i> Weather can be measured and has seasonal patterns (formerly in 2<sup>nd</sup> grade)</li> <li>• <i>Earth and Space Sciences:</i> The moon and sun are observed in different positions in the sky throughout the day/night. The lit portion of the moon is different throughout the month (formerly in 2<sup>nd</sup> grade).</li> <li>• <i>Life Science:</i> Living things have certain characteristics (formerly in 1<sup>st</sup> and 2<sup>nd</sup> grades).</li> <li>• <i>Life Science:</i> Living things use body parts to seek resources (formerly in 1<sup>st</sup> grade).</li> <li>• <i>Physical Science:</i> Some objects and materials can be made to vibrate and produce sound (formerly in 2<sup>nd</sup> grade).</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Earth and Space Sciences:</i> Weather changes are long term and short term.</li> <li>• <i>Earth and Space Sciences:</i> The moon, sun and stars move in patterns and can be seen at different times of the day or night.</li> <li>• <i>Life Science:</i> Living things are different from non-living things.</li> <li>• <i>Life Science:</i> Living things are found in different areas around the world and have physical traits to help them survive.</li> <li>• <i>Physical Science:</i> Objects and materials have physical properties, can be sorted, and are made up of parts</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Earth and Space Sciences:</i> Living things cause changes on Earth (now in LS, 2<sup>nd</sup> grade).</li> <li>• <i>Life Science:</i> Plants and animals resemble their parents. Some variations can exist among individuals (now in LS, 3<sup>rd</sup> grade).</li> <li>• <i>Physical Science:</i> Things move in different ways (now in 1<sup>st</sup> grade).</li> <li>• <i>Physical Science:</i> Pushes and pulls can change how things move (now in 1<sup>st</sup> grade).</li> </ul>

## 1<sup>st</sup> Grade

Content that is new to 1 <sup>st</sup> Grade	Content that is still included at 1 <sup>st</sup> Grade, but may be modified or at a greater depth	Content that is no longer a focus at 1 <sup>st</sup> Grade
<ul style="list-style-type: none"> <li>• <i>Life Science:</i> Living things can only survive in environments that can support their need (formerly in 2<sup>nd</sup> grade).</li> <li>• <i>Physical Science:</i> conservation of matter.</li> <li>• <i>Physical Science:</i> Parts of objects have properties that allow them to carry out specific functions (formerly in 4<sup>th</sup> grade).</li> <li>• <i>Physical Science:</i> Objects can be moved in a variety of ways (formerly in Kindergarten).</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Earth and Space Sciences:</i> The sun is the principal source of energy (formerly in PS).</li> <li>• <i>Earth and Space Sciences:</i> The physical properties of water can change (formerly in PS).</li> <li>• <i>Life Science:</i> Living things have basic needs; many come from the environment in which they live. Seasonal change can impact the availability of resources.</li> <li>• <i>Physical Science:</i> Properties of materials and objects change.</li> <li>• <i>Physical Science:</i> Changes in motion and temperature are a result of changes in energy.</li> <li>• <i>Physical Science:</i> The motion of an object can speed up, slow down, or change direction with a push or pull.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Earth and Space Sciences:</i> Living things cause changes on Earth (now in LS, 2<sup>nd</sup> grade).</li> <li>• <i>Earth and Space Sciences:</i> Identify and describe Earth's resources (now in 3<sup>rd</sup> grade).</li> <li>• <i>Life Science:</i> Living things use body parts to seek resources (now in Kindergarten).</li> <li>• <i>Physical Science:</i> Objects can be classified based on their physical properties (now in Kindergarten).</li> <li>• <i>Physical Science:</i> Energy can make things work and be obtained from many sources (now in 3<sup>rd</sup> grade).</li> <li>• <i>Physical Science:</i> Some objects can affect others, even if the two objects do not touch (now in 2<sup>nd</sup> grade).</li> </ul>

## 2<sup>nd</sup> Grade

Content that is new to 2 <sup>nd</sup> Grade	Content that is still included at 2 <sup>nd</sup> Grade, but may be modified or at a greater depth	Content that is no longer a focus at 2 <sup>nd</sup> Grade
<ul style="list-style-type: none"> <li>• <i>Earth and Space Sciences:</i> Long and short term weather changes occur due to changes in energy (formerly introduced in Kindergarten and at greater depth in 4<sup>th</sup> grade).</li> <li>• <i>Earth and Space Sciences:</i> The atmosphere is made up of air and water is present in the air (formerly in 4<sup>th</sup> grade).</li> <li>• <i>Life Science:</i> Living things interact with their physical environment.</li> <li>• <i>Physical Science:</i> Forces change the motion of an object; contact and noncontact, including: gravity, magnets, and static electricity (formerly in 3<sup>rd</sup> grade).</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Life Science:</i> Plants and animals live in distinct environments.</li> <li>• <i>Life Science:</i> Some kinds of individuals that once lived on Earth have completely disappeared although they were something like others that are alive today.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Earth and Space Sciences:</i> The moon and sun are observed in different positions in the sky throughout the day/night. The lit portion of the moon is different throughout the month (now in Kindergarten).</li> <li>• <i>Earth and Space Sciences:</i> Weather can be measured and has seasonal patterns (now in Kindergarten)</li> <li>• <i>Life Science:</i> Living things can only survive in environments that can support their needs (now in 1<sup>st</sup> grade).</li> <li>• <i>Physical Science:</i> Some objects and materials can be made to vibrate and produce sound (now in Kindergarten).</li> <li>• <i>Physical Science:</i> Light travels in a straight line until it strikes an object (now in 5<sup>th</sup> grade).</li> </ul>

### 3<sup>rd</sup> Grade

Content that is new to 3 <sup>rd</sup> Grade	Content that is still included at 3 <sup>rd</sup> Grade, but may be modified or at a greater depth	Content that is no longer a focus at 3 <sup>rd</sup> Grade
<ul style="list-style-type: none"> <li>• <i>Earth and Space Sciences:</i> Renewable and nonrenewable resources (formerly in 5<sup>th</sup> grade).</li> <li>• <i>Life Science:</i> Life cycles of plants (formerly in 4<sup>th</sup> grade).</li> <li>• <i>Life Science:</i> Traits and structures of plants, relationship between individual and the environment (formerly in 4<sup>th</sup> grade).</li> <li>• <i>Physical Science:</i> Objects and substances are made of matter; matter exists in different states with different properties (formerly in 4<sup>th</sup> grade).</li> <li>• <i>Physical Science:</i> Energy can cause change (including phase changes) and has different forms (formerly in 1<sup>st</sup> and 4<sup>th</sup> grades).</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Earth and Space Sciences:</i> Earth's non-living resources (soil, water, air, rocks).</li> <li>• <i>Life Science:</i> Life cycles of animals.</li> <li>• <i>Life Science:</i> Traits and structures of animals, relationship between individual and the environment.</li> <li>• <i>Life Science:</i> Offspring resemble parents and each other.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Life Science:</i> Fossils, classification, and flow of energy (now in 4<sup>th</sup> grade).</li> <li>• <i>Physical Science:</i> The position of an object can be described by locating it relative to other objects (now in 1<sup>st</sup> grade).</li> <li>• <i>Physical Science:</i> The motion of an object can be described by tracing and measuring it position over time (now in 6<sup>th</sup> grade).</li> <li>• <i>Physical Science:</i> Forces can affect the motion of objects (now in 2<sup>nd</sup> grade).</li> </ul>

## 4<sup>th</sup> Grade

Content that is new to 4 <sup>th</sup> Grade	Content that is still included at 4 <sup>th</sup> Grade, but may be modified or at a greater depth	Content that is no longer a focus at 4 <sup>th</sup> Grade
<ul style="list-style-type: none"> <li>• <i>Physical Science:</i> Matter is conserved (formerly in 7<sup>th</sup> grade).</li> <li>• <i>Physical Science:</i> Heat and electrical energy can be transferred and transformed; electricity and magnetism are related (formerly in 5<sup>th</sup> grade).</li> <li>• <i>Life Science:</i> Environmental changes can be positive, neutral or detrimental (formerly in 5<sup>th</sup> grade).</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Earth and Space Sciences:</i> Geologic processes that affect the surface of Earth, including landform formation.</li> <li>• <i>Life Science:</i> Fossils, the environment, and extinction.</li> <li>• <i>Physical Science:</i> The temperature of objects can be changed.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Earth and Space Sciences:</i> Weather changes that occur over a period of time (now in grades K-2).</li> <li>• <i>Life Science:</i> Life cycles of plants (now in 3<sup>rd</sup> grade).</li> <li>• <i>Life Science:</i> Plant structures, classification, and function (now in 3<sup>rd</sup> grade).</li> <li>• <i>Physical Science:</i> Changes can be classified as chemical or physical.</li> <li>• <i>Physical Science.</i> Objects can be described by the properties of materials from which they are made (now in Kindergarten and 1<sup>st</sup> grade).</li> <li>• <i>Physical Science:</i> Matter has different states with different properties (now in 3<sup>rd</sup> grade).</li> </ul>

## 5<sup>th</sup> Grade

Content that is new to 5 <sup>th</sup> Grade	Content that is still included at 5 <sup>th</sup> Grade, but may be modified or at a greater depth	Content that is no longer a focus at 5 <sup>th</sup> Grade
<ul style="list-style-type: none"> <li>• <i>Life Science</i>: Symbiotic relationships (formerly in 7<sup>th</sup> grade).</li> <li>• <i>Physical Science</i>: The amount of change in movement is based upon the amount of force and mass (formerly in 8<sup>th</sup> and 9<sup>th</sup> grades).</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Earth and Space Sciences</i>: the solar system (including planets, and all celestial bodies, orbital patterns, characteristics of planets and the sun).</li> <li>• <i>Life Science</i>: food webs, chains, and energy flow, roles in an ecosystem.</li> <li>• <i>Physical Science</i>: Light and sound are forms of energy and behave in predictable ways.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Earth and Space Sciences</i>: Renewable and non-renewable energy (now in 3<sup>rd</sup> grade).</li> <li>• <i>Life Science</i>: Plant structures, classification, and function (now in grade 3).</li> <li>• <i>Life Science</i>: Environmental changes can be positive, neutral or detrimental (now in 4<sup>th</sup> grade).</li> <li>• <i>Physical Science</i>: Heat and electrical energy can be transferred and transformed; electricity and magnetism are related (now in 4<sup>th</sup> grade).</li> <li>• <i>Physical Science</i>: Temperature is a measure of thermal energy; thermal energy can be transferred to other objects (now in 6<sup>th</sup> and 7<sup>th</sup> grades).</li> </ul>

## 6<sup>th</sup> Grade

Content that is new to 6 <sup>th</sup> Grade	Content that is still included at 6 <sup>th</sup> Grade, but may be modified or at a greater depth	Content that is no longer a focus at 6 <sup>th</sup> Grade
<ul style="list-style-type: none"> <li>• <i>Earth and Space Sciences:</i> Properties and formation of soil, soil horizons.</li> <li>• <i>Physical Science:</i> Properties and changes in matter can be explained by the properties and movement of atoms and molecules (formerly in 7<sup>th</sup> and 9<sup>th</sup> grades).</li> <li>• <i>Physical Science:</i> Energy can be classified as kinetic or potential (formerly in 7<sup>th</sup> grade).</li> <li>• <i>Physical Science:</i> Motion is described by speed and direction (formerly in 8<sup>th</sup> grade).</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Earth and Space Sciences:</i> Properties of minerals, mineral formation and identification. Characteristics of rocks, rock formation and identification.</li> <li>• <i>Life Science:</i> Modern Cell Theory, cell functions, specialized cells, plant and animal cells, cell structures.</li> <li>• <i>Life Science:</i> Cellular reproduction, conceptual mitosis (further coverage in 8<sup>th</sup> grade).</li> <li>• <i>Life Science:</i> Structure of organism, organization of living things and survival.</li> <li>• <i>Physical Science:</i> Equal volumes of different substances usually have different masses.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Life Science:</i> Ecosystems, organisms interacting with the environment (now in 5<sup>th</sup> grade).</li> <li>• <i>Life Science:</i> Meiosis and inherited traits (now in 8<sup>th</sup> grade).</li> <li>• <i>Physical Science:</i> Energy resources can be classified as renewable and nonrenewable (now in ESS 3<sup>rd</sup> and 7<sup>th</sup> grades).</li> <li>• <i>Physical Science:</i> Changes can be classified as chemical or physical.</li> </ul>

## 7<sup>th</sup> Grade

Content that is new to 7 <sup>th</sup> Grade	Content that is still included at 7 <sup>th</sup> Grade, but may be modified or at a greater depth	Content that is no longer a focus at 7 <sup>th</sup> Grade
<ul style="list-style-type: none"> <li>• <i>Earth and Space Sciences:</i> Introduction of global climate and air/ocean currents (formerly in 9/10<sup>th</sup> grades). Properties of the atmosphere.</li> <li>• <i>Earth and Space Sciences:</i> Patterns and cycles in the Solar system, including moon phases, eclipses, and tides (formerly in 5<sup>th</sup> and 8<sup>th</sup> grades).</li> <li>• <i>Life Science:</i> Transfer of matter between organisms and between organisms and their physical environment (food chains and food webs are in 5<sup>th</sup> grade).</li> <li>• <i>Physical Science:</i> Elements and compounds can be classified by their properties (formerly in 9<sup>th</sup> grade).</li> <li>• <i>Physical Science:</i> Energy can be transferred in many ways, including waves (formerly in 8<sup>th</sup> and 9<sup>th</sup> grades).</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Earth and Space Sciences:</i> Biogeochemical cycles (including the hydrologic cycle). Environmental impacts and effects as they relate to the cycles.</li> <li>• <i>Life Science:</i> Ecosystems, biomes and transfer of energy and matter, populations, photosynthesis (including the chemical formula).</li> <li>• <i>Physical Science:</i> Energy can be transferred and transformed but is always conserved.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Earth and Space Sciences:</i> Weather, clouds (now throughout grades K-5).</li> <li>• <i>Life Science:</i> Body plans and internal structures of multi-cellular organisms (now in 6<sup>th</sup> grade).</li> <li>• <i>Life Science:</i> Diversity among organisms (now throughout grades K-5).</li> <li>• <i>Life Science:</i> Symbiotic relationships, food webs/food chains, introductory photosynthesis (now in 5<sup>th</sup> grade).</li> <li>• <i>Physical Science:</i> Matter is conserved (now in 6<sup>th</sup> grade).</li> <li>• <i>Physical Science:</i> Energy can be classified as kinetic or potential (now in 6<sup>th</sup> grade).</li> </ul>

## 8<sup>th</sup> Grade

Content that is new to 8 <sup>th</sup> Grade	Content that is still included at 8 <sup>th</sup> Grade, but may be modified or at a greater depth	Content that is no longer a focus at 8 <sup>th</sup> Grade
<ul style="list-style-type: none"> <li>• <i>Earth and Space Sciences:</i> History of plate tectonics (including sea-floor spreading and continental drift). Formerly in 9<sup>th</sup> grade. History of Earth and the geologic record.</li> <li>• <i>Life Science:</i> diversity of species occurs over many generations, fossil records provide evidence of number and types of species.</li> <li>• <i>Life Science:</i> Mendelian Genetics.</li> <li>• <i>Physical Science:</i> Gravitational, magnetic, and electric forces can be described in terms of fields.</li> <li>• <i>Physical Science:</i> Potential energy can take different forms (gravitational, magnetic, chemical, and elastic).</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Earth and Space Sciences:</i> Plate Tectonics, Earth's interior, and Earth's surface.</li> <li>• <i>Life Science:</i> Reproduction, meiosis and inherited traits.</li> <li>• <i>Physical Science:</i> Forces have magnitude and direction; net forces change the motion of objects.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Earth and Space Sciences:</i> Patterns and cycles in the Solar system, including moon phases, eclipses, and tides (now in 7<sup>th</sup> grade). Life cycles of stars (now in HS Physical Science course).</li> <li>• <i>Life Science:</i> Body plans and internal structures of multi-cellular organisms (now in 6<sup>th</sup> grade).</li> <li>• <i>Physical Science:</i> Reference points, changes in position and time are used to describe motion (now in 6<sup>th</sup> grade).</li> <li>• <i>Physical Science:</i> Waves are produced by vibrations and transfer energy (now in 7<sup>th</sup> grade).</li> </ul>