

# CCS COURSE MAP

## SUBJECT: SCIENCE

**GRADE LEVEL 4<sup>th</sup> GRADE**  
**COURSE LENGTH YEAR**

**REVIEWED 2018-2019**

Student Goals:					
		I	To gain appreciation for God and the world He created.		
		II	To learn about the world the students are a part of.		
		III	To see God's plan for His creation.		
Student Outcomes:					
		I	Students will be able to identify features and characteristics of the earth we live in and how we can take care of God's earth.		
		II	Students will be able to identify the organs of their bodies and how God has made them work together for life.		
		III	Students will be able to understand that God has created living things with common characteristics, and these living things depend on one another.		
		IV	Students will be able to learn about light, sound, and matter and the part they play in God's creation.		
UNIT/ WEEKS	STANDARD	OBJECTIVES	ACTIVITIES/ASSESSMENT	RESOURCES	BIBLICAL INTEGRATION
Life Science (Design of Life & System of Life)  8 Weeks	MN Science Standards:  5.4.4.1.1  5.4.2.1.2  5.4.2.1.1  5.3.4.1.3  7.4.2.1.2  7.4.2.2.2	Students will: <ul style="list-style-type: none"><li>• observe living things and identify their common characteristics</li><li>• explain how organisms obtain materials and energy and discuss the principle that living things develop and reproduce</li><li>• state how various living things react</li></ul>	<ul style="list-style-type: none"><li>• Read through and discuss the student text</li><li>• Complete pages in student workbooks</li><li>• Classroom discussions</li><li>• Related activities and hands-on experiments</li><li>• Take notes on key information</li><li>• Play a review game at the end of each chapter to review key information</li><li>• Take Chapter 1 Test</li><li>• Take Chapter 4 Test</li><li>• Take the NWEA Science Test</li></ul>	<ul style="list-style-type: none"><li>• <i>Purposeful Design Science: Level Four</i> Student and Teacher Editions</li><li>• <i>Purposeful Design Science: Level Four</i> Workbook</li><li>• Chapter 1 and Chapter 4 Black Line Masters</li><li>• Chapter 1 and Chapter 4 Transparency Masters</li><li>• Chapter 1 and</li></ul>	<ul style="list-style-type: none"><li>• God created all things with unique attributes</li><li>• Living things die. Although this may not have been God's original intention, He designed the universe to accommodate the death of living things</li><li>• The organization of living things is so complex and efficient that one MUST know we are the product of intelligence</li></ul>

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		<p>and adapt to their environment</p> <ul style="list-style-type: none"> <li>• draw pictures of their observations in order to identify the similarities and differences between three types of cells</li> <li>• label and describe the levels of organization of an organism from cell to biosphere</li> <li>• determine whether yeast obtains materials and energy, reacts, and adapts</li> <li>• determine if yeast is alive</li> <li>• identify and describe commonality, uniqueness, and dependence among living things</li> <li>• identify systems and system functions by considering the individual parts and</li> </ul>		<p>Chapter 4 Computer Presentations</p> <ul style="list-style-type: none"> <li>• Various teacher resources</li> <li>• Experiment materials</li> </ul>	<ul style="list-style-type: none"> <li>• Similarities seen among organisms clearly point to a Creator</li> <li>• The world is an open system – open to God’s creation, provision, intervention, redemption, and miracles</li> <li>• Creation itself cries out for us to behold the work that God has done and anticipate what He is yet to do</li> <li>• According to the biblical account, God created the world and the organisms in it, then pronounced His creation good. This informs how we should interact with it</li> <li>• As Christians, it is important that we not only avoid being taken captive by secular culture, but also avoid mindlessly rejecting it</li> </ul>
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		<p>how these parts work together</p> <ul style="list-style-type: none"> <li>• explain the concepts of cooperation and competition in nature</li> <li>• describe relationships in populations and communities</li> <li>• analyze how a species is dependent on and affected by its habitat and ecosystem</li> <li>• evaluate the factors that help balance an ecosystem</li> <li>• identify and describe types of activities that cause ecological imbalance</li> <li>• analyze and describe cause and effect relationships between environmental changes and</li> </ul>			<ul style="list-style-type: none"> <li>• Humans were created in the image of God, and we must rule accordingly</li> <li>• As stewards of creation, our rule must mirror the Master's</li> <li>• Restoration of ecosystems can be a costly effort, but it ensures a healthy future for God's creation</li> <li>• God created the world to bless humans beyond their imagination</li> </ul>
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		<p>populations of organisms</p> <ul style="list-style-type: none"> <li>• identify specific ways that people help restore damaged ecosystems and prevent further damage</li> </ul>			
<p>Physical Science (Light and Sound &amp; Matter and Its Uses)</p> <p>8 Weeks</p>	<p>MN Science Standards:</p> <p>4.2.3.2.3</p> <p>4.2.1.2.2</p> <p>4.2.1.2.1</p> <p>3.2.3.1.3</p> <p>3.2.3.1.1</p> <p>6.2.3.1.3</p>	<p>Students will:</p> <ul style="list-style-type: none"> <li>• Identify some of the properties of waves, light, and sound</li> <li>• compare and contrast light and sound, using wave parts and properties</li> <li>• contrast the speeds, types, and sources of waves for light and sound</li> <li>• describe electromagnetic radiation and contrast the parts of the electromagnetic spectrum</li> <li>• analyze and describe how light and sound interact with matter</li> </ul>	<ul style="list-style-type: none"> <li>• Read through and discuss the student text</li> <li>• Complete pages in student workbooks</li> <li>• Classroom discussions</li> <li>• Related activities and hands-on experiments</li> <li>• Take notes on key information</li> <li>• Play a review game at the end of each chapter to review key information</li> <li>• Take Chapter 6 Test</li> <li>• Take Chapter 8 Test</li> <li>• Take the NWEA Science Test</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Purposeful Design Science: Level Four</i> Student and Teacher Editions</li> <li>• <i>Purposeful Design Science: Level Four</i> Workbook</li> <li>• Chapter 6 and Chapter 8 Black Line Masters</li> <li>• Chapter 6 and Chapter 8 Transparency Masters</li> <li>• Chapter 6 and Chapter 8 Computer Presentations</li> <li>• Various teacher resources</li> <li>• Experiment materials</li> </ul>	<ul style="list-style-type: none"> <li>• We will recognize the limits of human knowledge and stand in awe of the all-knowing One who spoke and set the universe in motion</li> <li>• God fixed the sun in the heavens as an unmovable source of energy. We use the sun for many purposes, but cannot stare directly into its brightness without going blind. Is it any wonder the psalmist calls his God a “sun and shield”? (Psalm 84:11)</li> <li>• Christians are called to burn brightly and</li> </ul>

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		<ul style="list-style-type: none"> <li>• construct simple instruments to identify some properties of light and sound</li> <li>• investigate how light and sound are used in communication and will practice using a communication code</li> <li>• compare the physical properties of various liquids, solids, and semisolids</li> <li>• name and define the four main parts of an atom</li> <li>• distinguish between elements, molecules, and compounds</li> <li>• evaluate differences in density and categorize physical and chemical properties</li> <li>• describe the physical properties</li> </ul>			<p>reflect their hope in Jesus, the Light of the World.</p> <ul style="list-style-type: none"> <li>• Finding ways to receive and transmit the Light of the World can be difficult, so we need to purposefully abide in His light</li> <li>• We are made of the same elements that compose the dirt, the stars, and every other thing in creation. Yet, human life is immeasurably greater than the building blocks of matter</li> <li>• We bear the image of God and are infused with the breath of life fresh from His lips; we are more than mere matter</li> <li>• No spiritual reality can be broken down into smaller particles as matter can. God Himself is Spirit, and He dwells beyond this physical world in a</li> </ul>
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		<p>of reactants and will differentiate between physical and chemical changes</p> <ul style="list-style-type: none"> <li>• construct a model of an atom</li> <li>• observe and distinguish between physical and chemical changes</li> <li>• assess how technology has impacted the world today</li> </ul>			<p>way we cannot comprehend. Despite this, He still chooses to be our loving Father, victorious Savior, and intimate Friend</p>
<p>Earth and Space Science (The Lithosphere &amp; The Hydrosphere)</p> <p>8 Weeks</p>	<p>MN Science Standards:</p> <p>4.3.4.1.1</p> <p>4.3.2.3.1</p> <p>5.3.1.2.2</p> <p>5.3.1.2.1</p> <p>4.3.1.3.1</p> <p>8.3.1.1.1</p>	<p>Students will:</p> <ul style="list-style-type: none"> <li>• analyze the different soil components and explain how and why they settle in layers</li> <li>• name and describe the layers of the earth</li> <li>• explain how Earth's plates interact</li> <li>• differentiate between physical and chemical weathering</li> </ul>	<ul style="list-style-type: none"> <li>• Read through and discuss the student text</li> <li>• Complete pages in student workbooks</li> <li>• Classroom discussions</li> <li>• Related activities and hands-on experiments</li> <li>• Take notes on key information</li> <li>• Play a review game at the end of each chapter to review key information</li> <li>• Take Chapter 9 Test</li> <li>• Take Chapter 10 Test</li> <li>• Take the NWEA Science Test</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Purposeful Design Science: Level Four</i> Student and Teacher Editions</li> <li>• <i>Purposeful Design Science: Level Four</i> Workbook</li> <li>• Chapter 9 and Chapter 10 Black Line Masters</li> <li>• Chapter 9 and Chapter 10 Transparency Masters</li> <li>• Chapter 9 and Chapter 10</li> </ul>	<ul style="list-style-type: none"> <li>• Through discovering the miracle of a world just right for living things, we will sense the overwhelming power and gentle mercy of the One who fashioned the universe</li> <li>• There are Christians on both sides of the age of the earth debate. God knows that all people are limited in their understanding and for this reason directs</li> </ul>

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		<ul style="list-style-type: none"> <li>• identify natural forces that contribute to each</li> <li>• name and describe the layers of a soil profile</li> <li>• demonstrate how plate tectonic plate movement can cause an earthquake</li> <li>• explain the importance of conserving natural resources and give examples of specific events</li> <li>• explain how the earth, its water, the atmosphere, and the universe act as a system</li> <li>• calculate the amount of water in living and nonliving items and list important uses of water</li> <li>• explain the composition and density of water and its ability to</li> </ul>		<p>Computer Presentations</p> <ul style="list-style-type: none"> <li>• Various teacher resources</li> <li>• Experiment materials</li> </ul>	<p>them to walk in humility with one another</p> <ul style="list-style-type: none"> <li>• We know that God is the Maker of the earth and all who dwell in it</li> <li>• Caring for others' physical needs is a great demonstration of our love for Christ</li> <li>• The anthropic principle describes the observation that Earth is surprisingly suitable for life. This principle expresses a belief that so many of these factors coming together at once is the result of a careful design</li> <li>• All living things need water. Jesus compares Himself to water so we can understand our dependence on Him and our need for Living Water</li> <li>• Water is not readily available to all people on earth. We will talk</li> </ul>
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		<p>dissolve other substances</p> <ul style="list-style-type: none"> <li>• name and summarize the stages of the water cycle</li> <li>• substantiate how groundwater accumulates and what effects different soil types have on groundwater</li> <li>• cite the benefits of protecting estuaries and describe how wind and density differences affect ocean currents</li> <li>• categorize the salinity of water and quantify the usable portion of earth's water</li> <li>• describe how pollution affects a watershed and suggest ways to prevent water pollution</li> </ul>			<p>about responsible ways to use water and ways to help those who do not have access to water</p>
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<p>Human Body            (Body Systems I &amp; Body Systems II)</p> <p style="text-align: center;">8 Weeks</p>	<p>MN Science Standards:</p> <p style="padding-left: 20px;">4.4.4.2.2</p> <p style="padding-left: 20px;">4.4.4.2.1</p> <p style="padding-left: 20px;">7.4.1.1.2</p>	<p>Students will:</p> <ul style="list-style-type: none"> <li>• classify levels of organization in living and nonliving systems</li> <li>• cite the three main parts and describe each of the three main functions of the cardiovascular system</li> <li>• name, describe, and illustrate the four main components of blood</li> <li>• state the function of the components of blood</li> <li>• compare and contrast the</li> </ul>	<ul style="list-style-type: none"> <li>• Read through and discuss the student text</li> <li>• Complete pages in student workbooks</li> <li>• Classroom discussions</li> <li>• Related activities and hands-on experiments</li> <li>• Take notes on key information</li> <li>• Play a review game at the end of each chapter to review key information</li> <li>• Take Chapter 13 Test</li> <li>• Take Chapter 14 Test</li> <li>• Take the NWEA Science Test</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Purposeful Design Science: Level Four</i> Student and Teacher Editions</li> <li>• <i>Purposeful Design Science: Level Four</i> Workbook</li> <li>• Chapter 13 and Chapter 14 Black Line Masters</li> <li>• Chapter 13 and Chapter 14 Transparency Masters</li> <li>• Chapter 13 and Chapter 14 Computer Presentations</li> <li>• Various teacher resources</li> </ul>	<ul style="list-style-type: none"> <li>• People share some characteristics of living things, but they are set apart by God as His special creation.</li> <li>• Through studying body systems, we can adore the One who carefully crafted and intimately knows every fiber of our being</li> <li>• Just as our physical bodies have essential parts and cannot function without each other, the body of Christ is also made up of parts that are</li> </ul>

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		<p>structure and function of the three types of blood vessels</p> <ul style="list-style-type: none"> <li>• recall the immune system's four lines of defense and differentiate between antibodies and vaccines</li> <li>• locate and record their own pulse rate and analyze how it changes with activity</li> <li>• illustrate their understanding of heart-healthy habits by preparing a written plan for a balanced diet and exercise</li> <li>• analyze the relationship between body systems and teamwork</li> <li>• generalize the basic steps in the process of digestion</li> <li>• label the parts and</li> </ul>		<ul style="list-style-type: none"> <li>• Experiment materials</li> </ul>	<p>essential to the function of the whole body</p> <ul style="list-style-type: none"> <li>• Cardiovascular fitness is important in taking care of the bodies that we are given. We know that our bodies are temples to the Holy Spirit, and we honor God with our bodies; we must take care of them and exercise them</li> <li>• Both physical and spiritual fitness take self-discipline and dependence on God</li> <li>• Our bodies suffer from the consequences of sin; we can redeem our bodies by taking care of them and learning to heal our bodies</li> <li>• God has given us our bodies to do good works out of gratitude to Him. We should use our bodies to do something useful</li> </ul>
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		<p>model the functions of the digestive system</p> <ul style="list-style-type: none"> <li>• explain the path of air as it moves through the respiratory system</li> <li>• label three parts of the urinary system and describe the filtering process of kidneys</li> <li>• collect and analyze data about their vital capacity</li> <li>• recognize the importance of nutrition, exercise, and relaxation in the context of osteopathic medicine</li> </ul>			<ul style="list-style-type: none"> <li>• We know that the food we eat ultimately comes from God and is a blessing from Him</li> <li>• We can use the brain God has given us to make wise choices regarding our bodies</li> </ul>
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