COURSE OF STUDY

SCIENCE DEPARTMENT

I. SCIENCE

A. Courses Offered
   1. Elementary Science (K-6)
   2. Science 7
   3. Science 8
   4. Physical Science (9)
   5. Biology (10)
   6. Health (8-10)
   7. Chemistry (10-12)
   8. Physics (11-12)
   9. PSO Chemistry (10-12)
   10. PSO Anatomy (10-12)
   11. Senior Science (11-12)

B. Courses to be developed
   1. Advanced Placement Biology
   2. Nutrition & Wellness
   3. Medial Terminology

II. PHILOSOPHY OF SCIENCE

We believe that the underlying principle in science is the concept taught by the Apostle in his letter to the Colossians (1:16-17), "For by HIM (God) were all things created that are in heaven, and that are in earth, visible and invisible, whether they be thrones, or dominions, or principalities, or powers: all things were created by Him: and He is before all things, and by Him all things consist.

We believe that all of the disciplines within the science department should present a strong foundation of science experiences and concepts that establish that God is the Designer, Creator, and Sustainer, of all substance. They should also give students the opportunity to see the handiwork of God in the structure and function of the natural world.

We believe, therefore, that whether we study organic or inorganic concepts, matter, or spirit; we must impress upon our students that the highest achievement they can reach is a more personal fellowship with this God of Love.

We believe that the literal view of creation is foundational to a Biblical World View.

III. MAJOR OBJECTIVES OF THE SUBJECT AREA

1. View God as Creator and Sustainer of the universe.
2. See the accuracy of God's Word in relation to principles of Science and laws of nature while studying the Earth and Space Sciences, the Life Sciences, Physical Sciences, as well as Science and Technology, Scientific Inquiry, and Scientific Ways

of Knowing according to the Academic Content Standards established by the State of Ohio, yet whose cause is God according to Psalm 19:1-7.

3. Learn to be good stewards with the resources God has given them including treating their body as His temple.
4. Demonstrate competency in the scientific method and mathematical calculations as well as molecular relationships. Genesis 19:24-26
5. Demonstrate safety and skill in investigative laboratory procedures.
6. Display critical thinking skills while studying biotic and abiotic systems.
7. Become proficient in gaining and understanding knowledge in each of the aforementioned scientific disciplines.
8. Understand, and be able to apply, a "World Biblical View" as well as the historical development of science and the influence which science has today and will have until our Lord Jesus Christ returns.

Mansfield Christian School
Early Education
Science Curriculum Guide

Performance Scale Key Introduced Developed Reinforced Not Addressed		**Instructional Method Key** Circle time Resource Person Presentation Individual Book Recess Experiment Flannel Graph Field Trip Story time Snack time Centers Whole Group Service Project Show N' Tell Small Group Work Daily Calendar Homework Dramatic Play Class Tour					
Standard	**Indicator & Objectives**	**Performance Scale**	**Time Frame**	**Instructional Method**	**Instructional/ Activities & Resources**	**Assessment of Learning**	**Biblical Integration**
Earth and Space Sciences	1. Begin to use terms such as night and day, sun and moon to describe personal observations.	Introduced	Science Night	Experiment	Families make a constellation of stars by punching holes in film canister	Participation	Creation God created everything. Genesis1:14 Day, night, seasons.
		Introduced	Week 19	Circle time Experiment & Learning Center	Demonstration to decide what materials will allow light to pass through	Oral Evaluation	
		Introduced	Week 20	Learning Center	Classify which activities occur in morning or night – cut and paste pictures from magazines on T chart	Evaluation of Chart	Genesis 1:3-5 Creation
		Introduced	Week 27	Whole Group Art Project	Paint a sunset to display in hall	Student Participation and	Jesus never sleeps

						ability to follow directions	Psalm 145:5 "I will meditate on the glorious splendor of your majesty" Jesus never sleeps
	2. Observe and represent the pattern of day and night through play, art materials or conversation.	Introduced	Week 24	Whole Class Activity	Students wear their pajamas to school for a day of doing things one might do at a slumber party. (video, popcorn, doing night time activities)	Student Participation	
		Introduced	Week 28	Whole Group and Centers	Students learn how to tell time on the hour and practice this at a center	Simulation	
	3. Observe, explore and compare changes that animals and plants contribute to in their surroundings (e.g., humans building roads and houses, holes left by worms or squirrels).	Introduced	Week 2	Whole Group Activity	Teacher leads the children on a nature walk around the school grounds observing nature with the home-made binoculars	Student Participation	Genesis 9:13-17 God uses His Creation to teach people eternal truth.
		Introduced	Week 7	Field Trip and Activities	Students learn fire safety rules and the permanent dangers of fire	Oral Evaluation	Genesis 3 (The Fall) There will be weeds, pain, consequences, etc.)
		Introduced	Week 11	Learning Center	Students will match animal with its home	Student ability to match	

					(picture cards)		
		Introduced	Week 18	Whole Group Discussion	Discussion and pictures of polar bear's habitat and feeding and sleeping habits	Student Attentiveness	God cares about living things
		Introduced	Week 19	Whole Class Experiment	Students observe that plants are drawn to light with the classroom plant	Student Observation	God makes plants grow
		Introduced	Week 26	Whole Class Activity	Through books and picking up trash around the school grounds. Students notice how little can destroy the beauty of God's world.	Student Participation	God made a beautiful world and we should take care of it
	4. Explore and compare changes in the environment over time (e.g., soil erosion, fossils, outdoor temperature).	Introduced	Week 2	Whole Class Activity	Students observe God's world on a nature walk during the camping unit.	Student Participation	
		Introduced	Week 9	Whole Class Activity	Students walk the school grounds to notice the changes in seasons and signs of	Student Participation	God makes the change of seasons

					Fall		
		Introduced	Week 18	Whole Class Activity	Together we record the temperature inside the classroom and outside and compare the two	Student Participation	God is in charge of nature
		Introduced	Week 18	Whole Class Demonstration	Together we gather snow and filter it using a coffee filter as it melts and observe the liquid	Student Participation	Jesus washed us white as snow
		Introduced	Week 25	Field Trip	The class went to Dolce's Sugar Shack to see how maple syrup is made and sample maple syrup with French toast	Student Participation	
		Introduced	Week 28	Individual Activity	Students cut and paste by matching the tree with its season	Teacher accesses the ability of the student to match	God makes the seasons change
	5. Explore how their actions may cause changes in the environment that are sometimes	Introduced	Week 7	Circle time/Field Trip	Students learn about fire safety through songs and rules and first hand seeing what fire can do	Student Participation	

	reversible (e.g., hand in flowing water changes the current) and sometimes irreversible (e.g., rock dropped that breaks).	Introduced	Week 11	Circle time/ Centers	Students look at books and learn by class discussion about animal homes and how pollution, wastefulness, etc. can affect animal homes	Student Attentiveness	It is sin to waste our resources
		Introduced	Week 18	Art project	Students make a "melted snowman" for display in the hall. They learn the affects that sun and warm have on snow.	Student Participation	
		Introduced	Week 26	Visit from Lucky Ladybug Circle time and Litter Pick up	Students learn the affects of pollution on our earth and how to be good stewards of God's creation through recycling and litter pick up	Student Attentiveness and Participation	It is sin to waste our resources
		Introduced	Week 28	Class Project	Student observe the growth of a sunflower plant growing in the classroom	Student Participation	God makes plants grow

	6. Demonstrate understanding of fast and slow relative to time, motion and phenomena (e.g., ice melting, soil eroding, water running quickly down a steep hill compared to running slowly down a gentle hill).	Introduced	Week 1-38	Free play	Through play of cars, ramps, blocks, etc. students learn about speed and the relationship to the angle of the ramp	Student Participation	
		Introduced	Week 9	Walk and Deliberate Observation	Students notice the changes of Fall especially the color changes of leaves	Student Observation	God created for His own pleasure
		Introduced	Week 10	Whole Group Experiment	We left ice outside of the freezer and watched as it became room temperature	Student Attentiveness	
		Introduced	Week 16	Whole Group Activity	Students flew grocery bag kites outside and watch what wind can do	Student Participation	God is powerful. He controls the wind
		Introduced	Week 16	Whole Group Experiment	As a class we made the chalkboard wet with water and fanned it and watched evaporation	Student Attentiveness	Jeremiah 10:13 "…He causes the vapors to ascend from the ends of the earth
		Introduced	Week 18	Whole Group Experiment	The class collected snow outside and brought it inside to	Student Attentiveness	

					room temperature. We filtered it to see dirt in snow and what would happen if we refroze it		
		Introduced	Week 27	Individual Activity	Students sprouted sunflowers by placing the seed in their baggie greenhouse, placing it at the window, and watched sprouting and growth	Student Participation	God makes plants grow
		Introduced	Week 33	Circle time Discussion	Talked about wind (what they knew about its purpose and who created it)	Student Attentiveness	The wind obeys God
	7. Observe and use language or drawings to describe changes in the weather (e.g., sunny to cloudy day).	Introduced	Weeks 1-38	Circle time Songs and Activities	Students sing the weather song each day and weatherman/woman chooses a weather puppet which corresponds to the type of weather day and we thank God for it	Student Participation	Psalm 118:24 "This is the day the Lord has made, let us rejoice and be glad in it."
		Introduced	Week 9	Individual	Students draw the	Student	Psalm 104:24

				Activity	changes in the season from summer to fall	Participation	…the earth is full of possession
		Introduced	Week 30	Individual Activity	Students draw the changes in the season from winter to spring	Student Participation	Exodus 14: 21-28 It is God who controls the flow of rivers…
		Introduced	Week 32	Individual Activity	Student complete their own weather book	Student Thoroughness	
Life Sciences	1. Identify common needs (e.g., food, air, water) of familiar living things.	Introduced	Week 3	Whole Group Experiment	Teacher places white carnation in colored water. Students watch what happens to the flowers over a period of several days as it absorbs the colored water	Student Attentiveness	Matthew 6: 26-34 God clothes the grass, but how much more He cares for you
		Introduced	Week 14	Field Trip	Students go to Gorman Nature Center to find and learn about the needs of turkeys	Student Attentiveness	Job 28:1-2, 5-6 …riches in the earth.
		Introduced	Week 18	Circle time Discussion	Students learn from the teacher and books about polar bears and penguins in the winter unit	Student Attentiveness	

		Introduced	Week 18	Whole Group Activity and Story	Teacher reads Tree in the Night and the students feed the birds and other animals (peanut butter and bird seed on bagel, etc.) and hang on the tree	Student Participation	God cares about the birds, but cares for you more
		Introduced	Week 19	Small Group Activity	Groups of students cut out pictures of living and non-living things out of magazines and glue on poster paper and present posters to the class	Student Participation	Creation is for God's pleasure
		Introduced	Week 24	Circle time Lesson/Individual Activity	Teacher talks and shows from Pet Book the needs of pets and they color their own book	Student Attentiveness and Participation	
		Introduced	Week 27	Individual Activity	Students plant sprouted sunflower and care for it giving it water and sun.	Student Participation	It's God who causes plants to grow
		Introduced	Week 31	Resource Person	Students enjoyed a visit from a local	Student Attentiveness	

					veterinarian learning about the needs and care of animals		
		Introduced	Week 34	Individual Worksheet	Taking care of me – Students color items needed by people	Student Participation	God cares for animals but loves us more
	2. Begin to differentiate between real and pretend through stories, illustrations, play and other media (e.g., talking flowers or animals).	Introduced	Weeks 1-38	Whole Group/ Devotions	Students learn truth from Bible stories and biblical principles	Student Attentiveness	Thy Word is truth. Genesis 2:1-3
		Introduced	Week 4	Whole Group Activity	Students follow bear tracks around the school grounds which lead them to a bear treat	Student Participation	Our knowledge of the origin of life comes from God Alone.
		Introduced	Week 10	Story time	Student listen to the story of <u>The Gingerbread Man</u> and discuss the truth behind the story	Student Attentiveness	
		Introduced	Week 21	Individual Worksheet	Students trace letter Nn and mark the nine things that are wrong with the picture	Student's ability to find the nine things wrong or silly with the picture	There is a time for everything laugh, cry…

	3. Observe and begin to recognize the ways that environments support life by meeting the unique needs of each organism (e.g., plant/soil, birds/air, fish/water).	Introduced	Week 2	Whole Group Activity	Students learn about the needs of living things in our environment in a Nature Walk on the school grounds	Student Participation	Psalm 104: 9-30 God provides…
		Introduced	Week 3	Whole Group Activity	Students learn the need of water for flowers in the absorb experiment	Student Participation	Origin of life comes from God
		Introduced	Week 10	Whole Group Discussion	Teacher gives interesting facts about giraffes	Student Attentiveness	
		Introduced	Week 11	Whole Group Discussion/ Individual Center	Through books and teacher lecture, students learn about different animal homes	Student Participation	
		Introduced	Week 12	Circle time Lesson	Students view poster about animals and safety through camouflage	Student Attentiveness	
		Introduced	Week 13	Field Trip	Mr. McKee at Gorman Nature teach us about the needs of turkey	Student Attentiveness	God cares about the animals

		Introduced	Week 18	Whole Group Activity	Students feed the birds and learn the difficulty in finding food because of snow covering	Student Participation	
		Introduced	Week 19	Whole Group Discussion	Student learn the differences in needs between non –living and living things	Student Attentiveness	God cares about the birds but cares for you more
		Introduced	Week 19	Whole Class Experiment/ Center	Students learn what materials allow light to pass through and test some materials on their own	Student Participation	
		Introduced	Week 21	Bible Story/ Learning Center	Students learn about the needs of animals and the necessity of the Ark because of The Flood – They reenact the Bible story with flannel graph	Student Participation	
		Introduced	Week 23	Individual Worksheet	Students determine a proper "Valentine gift" for each animal (Eg. Bird nest, bone, flower, etc.)	Teacher evaluated the number correct	God's promises are sure

		Introduced	Week 24	Whole Group Discussion	Students learn the needs of pets	Student Attentiveness	
		Introduced	Week 24	Individual Book	Students learn what lives in the pond	Student Participation	God provides our needs
		Introduced	Week 27	Whole Group Activity	Students learn the needs of a sunflower and observe its growth	Student Participation	
		Introduced	Week 31	Resource Person	Students listen to a veterinarian talk about the needs of animals	Student Attentiveness	God made the animals
	4. Match familiar adult family members, plants and animals with their young (e.g., horse/colt, cow/calf).	Introduced	Weeks 1-38	Play Center	Students are able to play with farm animals and zoo animals, observing mommy and baby	Student Participation	
		Introduced	Week 11	Individual Worksheet	Students learn the name for baby horse, foal and paint the picture	Student Participation	God creates everything different and unique. Genesis 1:2-22 "…each according to their own kind."
		Introduced	Week 13	Reading Center	Students observe adult turkeys, babies, and eggs	Student Participation	
		Introduced	Week	Individual	Student learn the	Student	

			16	Worksheet	name Joey as being the baby kangaroo and paint a picture of a Joey	Participation	
		Introduced	Week 20	Matching Game	Students match pictures of mommy animals with their baby	Teacher Observation	
		Introduced	Week 37	Field Trip	Students go to Malabar Farm to view animals first hand	Student Participation	
	5. Recognize physical differences among the same class of people, plants or animals (e.g., dogs come in many sizes and colors).	Introduced	Week 5	Individual Book	Students learn and make a book teaching them about animal coverings	Teacher Observation	
		Introduced	Week 10	Learning Center	Sort bugs/insects according to common characteristics	Student Participation	God creates everything different and unique. Genesis 1:2-22 "…each according to their own kind."
		Introduced	Week 11	Worksheet	Students cut, paste, and match the 3 sizes of hippo hats to the corresponding hippos	Teacher Evaluation	

		Introduced Introduced Introduced Introduced	Week 11 Week 22 Week 24 Week 32	Learning Center Whole Group Activity Individual Book Resource Person	Sort big and little items Compare bird eggs (ostrich and chicken) Students learn about the needs of pets through ”reading” their individual books Local veterinarian comes to talk about his/her profession	Student Participation Student Attentiveness Student Participation Student Attentiveness	Care for God’s creatures
Physical Sciences	1. Explore and identify parts and wholes of familiar objects (e.g., books, toys, furniture).	Introduced Introduced	Week 12 Week 19	Book/Whole Group Activity Whole Group Experiment/ Learning Centers	Students learn the three parts of the insect Teacher show refraction of light through prisms and student see the colors included in white light	Student Attentiveness Student Attentiveness/ Participation	God has created an orderly world. (Results will always be the same. (I.e. gravity, push, pull etc.) Exodus 14:21-28

		Introduced	Week 21	Worksheet	Students cut and paste and match the correct nose with the animal or person	Teacher Evaluation of Worksheet	God saw that Everything He Made was perfect
		Introduced	Week 24	Worksheet	Students cut and paste and attach the parts of a bird	Teacher Evaluation of Worksheet	
		Introduced	Week 28	Whole Group Activity	Students identify the animal only by its tail	Student Participation	
	2. Explore and compare materials that provide many different sensory experiences (e.g., sand, water, wood).	Introduced	Week 7	Learning Center	Student experience the water table	Student Participation	God gave us our senses to enjoy His creation
		Introduced	Week 18	Learning Center	Students experience snow in the sensory table	Student Participation	
		Introduced	Week 26	Learning Center	Students experience rice in the rice table	Student Participation	
		Introduced	Week 27	Learning Center	Student “write,” “draw,” and experience shaving crème on the table	Student Participation	

		Introduced	Week 28	Learning Center	Students experience the touch and feel box and determine the contents and compare texture	Student Participation	
	3. Sort familiar objects by one or more property (e.g., size, shape, function).	Introduced	Week 2	Learning Center	Students sort bugs according to common characteristics	Teacher Observation	God creates everything different and unique. Genesis 1:2-22 "…each according to their own kind."
		Introduced	Week 3	Learning Center	Students sort big and little apples	Teacher Observation	
		Introduced	Week 4	Learning Center	Student sort buttons and beans according to common characteristics	Teacher Observation	
		Introduced	Week 5	Whole Group Activity	Students sort animals according to their covering (fur, feathers, scales)	Teacher Observation	
		Introduced	Week 9	Learning Center	Students sort gourds, leaves, and pumpkins according to common characteristics	Teacher Observation	
		Introduced	Week	Learning	Students sort insects	Teacher	

			12	Center	and non-insects	Observation	
		Introduced	Week 16	Learning Center	Students sort keys according to common characteristics	Teacher Observation	
		Introduced	Week 22	Learning Center	Students sort shells according to common characteristics	Teacher Observation	
		Introduced	Week 25	Learning Center	Students sort reptiles according common characteristics	Teacher Observation	
		Introduced	Week 26	Whole Group Activity	Together as a class students graph types of shoes (Velcro, tie, buckle, etc.)	Student Participation	
		Introduced	Week 27	Learning Activity	Students sort vehicles according to common characteristics	Teacher Observation	
	4. Demonstrate understanding of motion-related words (e.g., up, down, fast, slow, rolling, jumping,	Introduced	Week 35	Learning Center	Students sort farm and zoo animals	Teacher Observation	
		Introduced	Feb. Evening	Family Science	Quick Quackers (Partner drops reflex	Student Participation	

	backward, forward).			Night	rating strip and student grasps the paper strip to determines quickness of reflex)		
		Introduced	Feb. Evening	Family Science Night	Faster Than the Eye Can See (Students see the "trick" of object moving fast)	Student Participation	
		Introduced	Feb. Evening	Family Science Night	Spinning in Place (Students view a spinning disc and experience the "trick" of the eye	Student Participation	
		Introduced	Week 13	Whole Group Activity	Students "act out" emotions of a turkey (I.e. Sad turkey, fast turkey, fat turkey…)	Student Participation	
		Introduced	Week 15	Circle time	As the students review the recognition of the alphabet they jump up when they come to letter J	Student Participation	
		Introduced	Week 18	Circle time	Snowball Poem Students "act out" the poem throwing	Student Participation	

					the snowball using motion words		
		Introduced	Week 26	Whole Group Activity	Students wave “praise ribbons” to the rhythm of the music	Student Participation	
		Introduced	Week 31	Whole Group Experiment/ Learning Center	Using a ruler, rubber band, triangle, etc. to talk about vibration (fast and slow)	Student Attentiveness/ Participation	
	5. Explore ways of moving objects in different ways (e.g., pushing, pulling, kicking, rolling, throwing, dropping).	Introduced	Week 32	Individual Activity	Students move worm in and out of apple	Teacher Observation	
		Introduced	Feb. Evening	Family Science Night	Moving Marbles (Students learn about transferred energy)	Student Participation	
		Introduced	Feb. Evening	Family Science Night	Wonderwhirler (Students create a “helicopter” and drop it from height and observe its fall comparing weight and height	Student Participation	
		Introduced	Week 32	Learning Center	Students play with wheels (vehicles) and ramps	Student Participation	

		Introduced	Feb. Evening	Family Science Night	Soda Bottle Symphony (Students fill bottles with different levels of water and then tap with a spoon to create a "song"	Student Participation	
	6. Explore musical instruments and objects and manipulate one's own voice to recognize the changes in the quality of sound (e.g., talk about loud, soft, high, low, fast, and slow).	Introduced	Week 5	Song "Oh, Jesus Loves You So…"	Students sing adjusting their volume as the song indicates	Student Participation	
		Introduced	Week 6	Circle time	Students beat the drum to the rhythm of the music	Student Participation	
		Introduced	Week 8	Circle time	Students shake the egg shakers to the rhythm of the music	Student Participation	
		Introduced	Week 12	Learning Center	Student experience a variety of musical instruments and their sounds	Student Participation	
		Introduced	Week 26	Whole Group Activity	Students copy and clap the rhythm of the teacher	Student Participation	
		Introduced	Week	Whole Group	Students observe a	Student	

			31	Activity/Learning Center	vibration demonstration lead by the teacher and experiment with vibration using rubber bands, rulers, musical instruments, etc.	Attentiveness and Participation	
		Introduced	Week 5	Circle time	Students participate with the proper color of crayon during the song	Student Participation	Genesis 9:12-17 Flood; rainbow. God set a rainbow in the sky.
	7. Explore familiar sources of the range of colors and the quality of light in the environment	Introduced	Week 15	Circle time	Students hold up the proper color of jelly bean indicated by the song	Student Participation	
		Introduced	Week 16	Learning Center	Students combine color paddles to create different colors	Student Participation	
		Introduced	Week 19	Whole Group Activity	Students learn about the sources of light and the colors that make up light	Student Attentiveness	Genesis 9:12-17 Flood; rainbow. God set a rainbow in the sky.
		Introduced	Week 26	Individual Activity	Students create rainbows on letter Rr using rainbow	Student Participation	

		Introduced	Week 27	Whole Group Activity	crayons Students create and observe changes in locations of shadows	Student Attentiveness	
Science and Technology	1. Identify the intended purpose of familiar tools (e.g., scissors, hammer, paintbrush, cookie cutter).	Introduced	Feb. Evening	Family Science Night	Grapes and Raisins (Students learn to use a scale by doing this experiment)	Student Participation	Conservation of resources is part of man's responsibility to God. God cares about the resources He has provided.
		Introduced	Week 7	Learning Center	Students learn how to use equipment that a firefighter may use in the dramatic play area	Student Participation	
		Introduced	Week 10	Learning Center	Students learn how to use a rolling pin and cookie cutter to make Gingerbread Men Cookies	Student Participation	
		Introduced	Week 11	Individual Worksheet	Students learn to use scissors by cutting our hippo hats	Teacher Observation	
		Introduced	Week 12	Small Group Activity	Students learn to use rulers to measure	Teacher Observation	God commanded men to

							measure Zech. 2:2 Ezekiel 40:2-42 Deut. 21:1-9
		Introduced	Weeks 1-38, 17	Individual Activity	Students learn to use a paint brushes properly	Teacher Observation	
		Introduced	Week 18	Whole Group Activity	Students learn to use a shovel to collect snow	Teacher Observation	
		Introduced	Week 20	Learning Centers	Students learn to use magnets (bar, horseshoe, and wands)	Student Participation	
		Introduced	Week 28	Learning Centers	Students learn to use different building tools in the dramatic play center with construction worker material	Student Participation	God gives us all different jobs to do
		Introduced	Week 29	Circle time	Students learn the purpose of umbrellas through a poem <u>Umbrellas Go Up</u>	Student Participation	
	2. Explore new uses for familiar materials through play, art or drama	Introduced	Week 2	Whole Group Activity	Students make and use paper towel roll binoculars to go on walk to hunt bugs	Student Participation	

	(e.g., paper towel rolls as kazoos, pan for a hat).	Introduced	Week 16	Whole Group Activity	Students use waxed paper and combs to create “kazoos”	Student Participation	We can praise God many ways
		Introduced	Week 18	Whole Group Activity	Students use paper plates as skis to skate to the music	Student Participation	
	3. Use familiar objects to accomplish a purpose, complete a task or solve a problem (e.g., using scissors to create paper tickets for a puppet show, creating a ramp for a toy truck).	Introduced	Weeks 1-38	Free play Dramatic Play	Students use blocks for roads, paper for mail, tickets for puppet show, scarf for a belt, etc.	Student Participation	
	4. Demonstrate the safe use of tools, such as scissors, hammers, writing utensils, with adult	Introduced	Week 10	Small Group Activity/ Cooking	Students learn to use a rolling pin and cookie cutter when making cookies	Student Participation	
		Introduced	Week	Individual	Students learn to cut	Student	

	guidance.		11	Activity	with scissors when cutting out hippo	Participation	
		Introduced	Week 17	Individual Activity	hats Students use scissors and glue to make a Christmas wreath	Student Participation	
		Introduced	Week 19	Learning Center	Students learn the safe use of a flashlight with finding materials light passes through	Student Participation	
Scientific Inquiry	1. Ask questions about objects, organisms and events in their environment during shared stories, conversations and play (e.g., ask about how worms eat).	Introduced	Week 2	Whole Group Activity	Teacher leads the children on a walk around the school grounds observing nature	Student Participation	God controls nature. Psalm 104:6-7
		Introduced	Week 4	Whole Group Activity	Students follow "bear prints" throughout the school in search of a bear	Student Participation	
		Introduced	Week 12	Learning Center	Students observe, learn about, and sort insects	Teacher Observation	
		Introduced	Week 14	Field Trip	Students go to Gorman Nature and learn about turkeys and ask questions to	Student Participation	

					find out answers		
		Introduced	Week 18	Circle time/ Story time/ Centers	Students question and learn about polar bears and penguins and other cold weather animals	Student Attentiveness	
	2. Show interest in investigating unfamiliar objects,	Introduced	Week 22	Story time/ Centers	Students question and learn about octopus	Student Participation	God controls nature and the weather
	organisms and phenomena during shared stories, conversations and play (e.g., Where	Introduced	Week 2	Whole Group Activity	Teacher leads the class on a nature walk around the school grounds	Student Participation	
	does hail come from?).	Introduced	Week 4	Whole Group Activity	Students experiment by using different utensils to make bubbles and determine if the shape of the bubble is changed	Student Participation	God created an orderly world Eccl. 1:6-7
		Introduced	Week 18	Whole Group Experiment	The class experiments with different means of insulation to determine the rate at which ice melts	Student Participation	

		Introduced	Week 19	Learning Center	Students use color paddles to combine to make new colors	Student Participation	
		Introduced	Week 26	Field Trip	Student learn about making maple syrup by visiting Dolce's Sugar Shack	Student Participation	God gave us Food from His creation
		Introduced	Week 31	Whole Group Experiment/ Learning Center	Students experiment musical instruments and other "tools" to learn about vibration	Student Participation	
	3. Predict what will happen next based on previous experiences (e.g., when a glass falls off the table and hits the tile floor, it probably will break).	Introduced	Week 7	Circle time	Students learn about fire safety (what happens when there is a fire) through songs and finger plays and teacher discussions	Student Attentiveness	God created an orderly world. Ecclesiastes 1: 6-7
		Introduced	Week 8	Whole Group Experiment	Students predict whether the eggs will sink or float (salt water/fresh water)	Student Participation	God never changes
		Introduced	Week	Circle time	Students learn about	Student	

			9	Discussion	why leaves fall off trees	Attentiveness	
		Introduced	Week 11	Whole Group Experiment	Students learn about the heart and how physical activity affects heart rate	Student Participation	Take care of our body… the temple of the Holy Spirit
		Introduced	Week 18	Whole Group Experiment	Students learn the affects of snow when brought indoors	Student Attentiveness	
		Introduced	Week 26	Whole Group Activity	Teacher reads the book Wump World and students learn the affects of pollution and the necessity of recycling	Student Attentiveness	We need to care for the world God gave us
	4. Investigate natural laws acting upon objects, events and organisms (e.g., repeatedly dropping objects to observe the laws of gravity, observing the life cycle of insects).	Introduced	February	Family Science Night	Prediction is needed for all experiments throughout the night	Student Participation	God created an orderly world. Ecclesiastes 1: 6-7
		Introduced	Week 4	Whole Group Experiment	Students predict the shape of a bubble using different "tools" to form a bubble	Student Participation	
		Introduced	Week 8	Whole Group Experiment	Students predict whether the egg with	Student Participation	

					sink or float (salt/fresh water)		
		Introduced	Week 8	Whole Group Experiment	Students learn why water evaporates (experiment using wind)	Student Participation	God controls the wind
		Introduced	Week 9	Learning Center	Students use tadpole to frog figures to learn about the stages of growth in a frog	Teacher Evaluation	Genesis 1:2-22 "…each according to their own kind."
		Introduced	Week 12	Learning Center	Students create the 4 stages of the butterfly using craft supplies	Student Participation	
		Introduced	Week 16	Whole Group Game	Keep it Up Game – Students work as a class by tapping a balloon to keep it up off the ground (gravity)	Student Participation	
		Introduced	Week 18	Whole Group Experiment	Students are taught about what materials light can be penetrated through and a prism is used to bend light.	Student Attentiveness	God sent a rainbow Noah's Ark

		Introduced	Week 26	Field Trip	Students visit Dolce's Sugar Shack and learn where maple sugar comes from	Student Attentiveness	
		Introduced	February	Family Science Night	Experiments Spinning in Place (yarn balls remain in place) and Center of Gravity (balance) teach the concept of gravity	Student Participation	God created an orderly world. Ecclesiastes 1: 6-7
		Introduced	Week 33	Whole Group Experiment	Students moisten the sidewalk and "watch" wind evaporate the water	Student Participation	
	5. Use one or more of the senses to observe and learn about objects, organisms and phenomena for a	Introduced	Week 11	Whole Group Experiment	Students learn about the 5 senses and especially notice sounds using hearing	Student Participation	God gave us our senses to enjoy God's creation
		Introduced	Week	Whole Group	The class records the	Student	

	purpose (e.g., to record, classify, compare, and talk about).		18	Experiment	indoor and outdoor temperatures for the week	Participation	
		Introduced	Week 19	Whole Group Activity	Teacher leads the class on a listening walk and return and talk about what they heard	Student Participation	
		Introduced	Week 22	Whole Group Activity	Students use their olfactories (noises) to guess the item only by its smell	Student Participation	I Corinthians 15:39 All flesh is not the same flesh, one kind of
		Introduced	Week 28	Whole Group Activity	Students participate in a test taste and graph likes and dislikes	Student Participation	flesh of men, another flesh of beasts, another of fish.
	6. Explore objects, organisms and events using simple equipment	Introduced	Week 2	Learning Center	Students examine bugs by using a magnifying glass	Student Participation	Genesis 1:20-25 Variety of animals
	(e.g., magnets and magnifiers, standard and non-	Introduced	Week 3	Learning Center	Students use magnets to sort what materials attract and	Teacher Observation	

	standard measuring tools).				which repel		
		Introduced	Week 10	Learning Center	Students use a magnifying glass to observe insects	Student Participation	
		Introduced	Week 12	Learning Center	Students measure different lengths using “inchworms” and rulers	Teacher Observation	
		Introduced	Week 19	Learning Center	Students use prisms, flashlights, and translucent and opaque materials to see which light can pass through	Student Participation	God gives us light
		Introduced	Week 20	Learning Center	Students experiment with magnets to see what materials attract and are repel	Student Participation	
		Introduced	February	Family Science Night	Students use a scale to weigh the difference between grapes and raisins and they work with magnets in the experiment Attractive	Student Participation	
	7. Begin to make	Introduced	Week	Resource	Mr. McKee from	Student	God made

	comparisons between objects or organisms based on their characteristics (e.g., animals with four legs, smooth and rough rocks).		2	Person	Gorman Nature Center comes to the room to show and tell about critters you might see camping	Attentiveness	all the animals
		Introduced	Week 5	Circle time	Fur, Feathers, or Hair Class discussion on animal coverings	Student Participation	God gives animals clothes
		Introduced	Week 12	Learning Center/ Story time	Students learn about the characteristics of insects through books and plastic "bugs"	Student Participation	
		Introduced	Week 14	Field Trip	Students visit Gorman Nature and learn the characteristics of birds (esp. turkeys)	Student Attentiveness	
		Introduced	Week 28	Whole Group Game	Students guess the animal only by viewing its tail	Student Participation	
		Introduced	Week 35	Learning Center	Students sort animals by where they live - farm or zoo	Teacher Observation	

	8. Record or represent and communicate observations and findings through a variety of methods (e.g., pictures, words, graphs, dramatizations) with assistance.	Introduced	Week 3	Whole Group Activity	Students graph their favorite – apple juice, applesauce, or apple	Student Participation	God made us all different
		Introduced	Week 9	Field Trip	Students walk the school grounds and draw what they saw as far as signs of Fall (On my walk I saw…)	Student Participation	God causes seasons to Change
		Introduced	Week 18	Whole Group Activity	The class records the indoor and outdoor temperature for the week and notices such things as colder/hotter, etc.	Student Participation	
		Introduced	Weeks 27-30	Learning Center	Students sprout, plant, and measure their very own sunflower	Student Participation	God makes plants grow
		Introduced	Week 28	Whole Group/ Small Group Activity	Taste Test – Students experience sweet, salty, and sour and then create a poster showing	Student Participation	God gives us senses fro enjoyment

					each		
Scientific Ways of Knowing	1. Offer ideas and explanations (through drawings, emergent writing, conversations, movement) of objects, organisms and phenomena, which may be correct or incorrect.	Introduced	Week 2	Whole Group Activity	On My Walk I Saw… Students walk the school grounds and journal what they see on their walk, and then talk about what they "drew."	Student Participation	Study plants/animals. Job 12:7-10 "…they will teach you."
		Introduced	Week 6	Circle time Discussion	Students learn through posters how to be safe around dogs	Student Attentiveness	Treat creation with kindness. Exodus 21:33-34 Genesis 33:17
	2. Recognize the difference between helpful and harmful actions toward living things (e.g., watering or not watering plants).	Introduced	Week 7	Circle time / Field Trip	Through discussion and visit to the fire station, students learn how to be safe in case of a fire	Student Attentiveness	Proverbs 12:10
		Introduced	Week 8	Circle time	Students learn about enemies of animals and provisions God gave to protect themselves	Student Attentiveness	God cares for the animals
		Introduced	Week 11	Circle time/ Books	Students learn about animal homes	Student Attentiveness	

		Introduced	Week 19	Individual Work	Students learn the differences in needs of living and non-living things through their individual book and painting picture	Teacher Assessment	
		Introduced	Week 19	Class Experiment/ Learning Center	Students learn the purpose of light and what materials will allow light to pass through	Student Attentiveness	God made light
		Introduced	Week 24	Individual Book	Students learn the needs of pets	Student Participation	We are to care for God's creation – animals
		Introduced	Week 26	Resource Person	Lucky the Ladybug comes to talk about Planting Pride, Not Litter	Student Attentiveness	We are to care for God's creation – the earth
		Introduced	Week 27	Individual Experiment	Students sprout and plant a sunflower seed and learn the needs of plants	Student Participation	God makes plants grow
		Introduced	Week 32	Resource Person	Students listen and learn about the job of a veterinarian	Student Attentiveness	
		Introduced	Week 34	Individual Book	Students learn about the healthy needs of	Student Participation	We are to care for the body

					us		God gave us
		Introduced	Week 4	Individual Experiment	Students experiment with different utensils to determine if it changes the shape of the bubble	Student Participation	
	3. Participate in simple, spontaneous scientific explorations with others (e.g., digging to the bottom of the sandbox, testing materials that sink or float).	Introduced	Week 8	Group Experiment	Students predict if an egg will sink or float by using fresh and salt water	Student Attentiveness	
		Introduced	Week 18	Group Experiment	The class will bring in snow and note changes at the end of the day (melting snow) (insulation) – They will wrap ice in different coverings and determine the differences in the rate of melting	Student Attentiveness	God created an orderly world Eccl. 1:6-7
			Week 19				
		Introduced	Week 27	Group Experiment/ Learning Center	Students predict what materials light will pass through	Student Participation	
		Introduced	February Evening	Group Experiment/ Learning Center	Students will predict what items will sink and which will float in fresh water	Student Participation	God created an orderly world Eccl. 1:6-7

		Introduced		Family Science Night	In all 20+ experiments students/families predict outcomes of different experiments	Student Participation	

Mansfield Christian School
1st Grade
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Performance Scale Key I=Introduced D=Developed R=Reinforced NA=Not Addressed		**Instructional Method Key** Observation Formal Check sheet Worksheet Presentation Report					
Standard	**Indicator**	**Performance Scale**	**Time Frame**	**Instructional Method**	**Instructional Resources/Activities**	**Assessment of Learning**	**Biblical Integration**
Earth and Space Sciences	1. Identify that resources are things that we get from the living (e.g., forests) and nonliving (e.g., minerals, water) environment and those resources are necessary to meet the needs and wants of a population.	I and D	Week 6-Week 7	1. Teacher Guided	1. Students will investigate living resources by looking through magazines and gluing pictures onto paper.	1. Teacher looking over papers.	The environment which God provided for man was designed with his needs in mind and for his goods. (Psalm 104:9-30; 1 Timothy 6:17)
		I, D, and R	Week 26-Week 27	2. Teacher Guided	2. Students will investigate nonliving resources by looking at various pictures of minerals, water, etc.	2. Observation with check sheet.	Man must recognize that God is still the owner of the earth; men are God's stewards over it. (Psalm

							24:1; Ezekiel 29:3, 9-10)
	2. Explain that the supply of many resources is limited but the supply can be extended through careful use, decreased use, reusing and/or recycling.	I I and D	Week 26	1. Teacher Directed 2. Whole Class Participation 3. Class Discussion	1. Teacher instruction with students sorting pictures of recycling. 2. Class recycling project. 3. Read aloud with discussion.	1. Sorting worksheet. 2. Observation with participation check sheet. 3. Observation	God controls the contour of the earth, the flow of the rives, the hills and the valleys, the earthquakes. (Job 28:9-11; Psalm 95:45)
	3. Explain that all organisms cause changes in the environment where they live; the changes can be very noticeable or slightly noticeable, fast or slow (e.g., spread of grass cover slowing soil erosion, tree roots slowly breaking sidewalks).			1. Teacher Guided	1. Teacher will show students several examples of fast and slow changes in the environment through pictures on overhead. Students will then discuss each picture and describe the change.	1. Teacher Observation	
Life Sciences	1. Explore that organisms, including	I and D	Week 30-32	1. Teacher Directed	1. Read aloud with discussion.	1. Teacher observation	The environment

	people, have basic needs which include air, water, food, living space and shelter.			2. Cultural Exploration 3. Animal/Human Comparison Chart	2. Groups work investigating various cultures and the similarities seen. 3. Do class chart comparing human and animal needs.	2. Checklist with observation 3. Observation	in which God provided for man was designed with his needs in mind, and for his good. (Psalm 104:9-30; Genesis 9:3)
	2. Explain that food comes from sources other than grocery stores (e.g., farm crops, farm animals, oceans, lakes and forests).	I	Week 28	1. Teacher Directed with Group Work	1. Read aloud with groups making flow charts of farm to store.	1. Presentation from groups	The environment in which God provided for man was designed with his needs in mind, and for his good. (Isaiah 45:18; Acts 14:17)
	3. Explore that humans and other animals have body parts that help to seek, find and take in food when they are hungry (e.g., sharp teeth, flat teeth, good nose and sharp vision).	I, D, and R	Week 33-Week 34	1. Class Discussion 2. Teacher Directed with Chart 3. Partner Work	1. Read aloud with class discussion. 2. Make class chart with various teeth, eyes, etc. 3. Each set of partners picks an	1. Observation 2. Observation 3. Graded Report	Plants, animals, and man were created with specific purposes. (Genesis 1:26,28; Psalm 104:4-15)

					animal and describes it.		
	4. Investigate that animals eat plants and/or other animals for food and may also use plants or other animals for shelter and nesting.	I and R	Week 35-Week 36	1. Teacher Directed 2. Class Discussion and Chart	1. Read aloud with discussion. 2. Discuss different animals and what they eat. Also discuss where these animals live and why they live there.	1. Observation 2. Observation	Plants, animals, and man were created for specific purposes. (Genesis 2:9; Genesis 1:22)
				3. Small Group Work	3. Each group will choose an animal and write a small report on what the animal eats, where it lives, and draw a picture.	3. Presentation with Check sheet	
	5. Recognize that seasonal changes can influence the health, survival or activities of organisms.	I	Week 15-Week 16	1. Teacher Directed 2. Student Project	1. Read aloud with discussion. 2. Students will create their own den for hibernation from cardboard boxes and various supplies.	1. Observation 2. Graded Project	God cares about all living things. (Psalm 104:14-30; Job 38:39-41)

					Students will then write a short story about why his/her bear need to hibernate.		
Physical Sciences	1. Classify objects according to the materials they are made of and their physical properties.	I and R	Week 12	1. Open Discovery, Chart, and Discussion	1. Students will be given magnets and directed to find objects that the magnet will and will not attach to. When finished, the class will make a chart comparing the items that were magnetic and the ones that were not.	1. Teacher Observation and Checklist	God desires that we study science, the details of His creation. (Job 12:7-8; Genesis 1:28)
	2. Investigate that water can change from liquid to solid or solid to liquid.	I, D, and R	Week 17	1. Class Experiment with Predictions	1. After placing water in a bucket, students will make prediction of what they think will happen if the bucket is left outside. The bucket will be left outside overnight, and students will check their predictions.	1. Teacher will look over predictions	Changes in form of matter and energy are continuously occurring, with a downward trend. (James 1:11; Psalm 102:25-26)
				2. Class Experiment with	2. Students will again make predictions of what they think will	2. Teacher will look over predictions	

				Predictions	happen to the bucket if it is placed near the heater all day. Prediction will again be checked at the end of the day.		
	3. Explore and observe that things can be done to materials to change their properties (e.g., heating, freezing, mixing, cutting, wetting, dissolving, bending and exposing to light).	I, R, and D	Week 18 and Week 22	1. Class Experiment with Predictions	1. Students will make predictions of what they think will happen to water when it is placed outside over night, and also what will happen when it is brought back into the heat.	1. Teacher will look over predictions	Changes in the form of matter and energy are continuously occurring, with a downward spiral. (2 Peter 3:10-12; Isaiah 51:6)
				2. Mixing ingredients to make pancakes (National Pancake Day)	2. Students will assist the teacher with mixing ingredients together to make pancakes. Students will observe how all the ingredients mix together to form one entity.	2. Teacher observation	
	4. Explore changes that greatly change the properties of an	I	Week 19	1. Salt/sugar experiment	1. Students will make predictions of what they think will	1. Teacher observation	God controls every part of the natural

	object (e.g., burning paper) and changes that leave the properties largely unchanged (e.g., tearing paper).				happen if sugar or salt is placed in water. Students will then perform the experiment to see how the property is greatly changed through dissolving.		world-His creation-the world we study in science. (Job 9:5-7; Psalm 104:6-7)
		I, D, and R	Week 12-Week 13	2. Tearing paper activity	2. The teacher will direct students to try to completely change their paper by only tearing it. Discussion to follow.	2. Observation with check sheet for participation	Chemical and physical laws are reactions frequently illustrate spiritual laws. (James 3:4-5)
	5. Explore the effects some objects have on others even when the two objects might not touch (e.g., magnets).	I and D	Week 37-Week 38	1. Magnet hunt	1. Students will go around the room with magnets looking for objects that the magnet is attracted to.	1. Teacher observation	Man can never know all there is to know about the universe and about life. (Job 37)
		I and R	Week 37	2. Magnet pulling activity	2. Students will try to "pull" several items toward their magnet without touching it.	2. Teacher observation	
	6. Investigate a variety of ways to make things move and what			1. Ramp activity	1. Students will explore various objects and test	1. Teacher checklist	All energy comes from God and was

	causes them to change speed, direction and/or stop.				whether they can go down a ramp or not and why.		created by Him. (Genesis 1:3-4, 16-17; Isaiah 45:4-5)
				2. Incline activity	2. Students will work in groups to determine what incline creates the slowest speed and the fastest speed.	2. Teacher will talk with students and use a check sheet	
		I	Week 38	3. Ramp activity with stopping	3. Students will work with a partner to figure out what objects cause things to stop both slowly and suddenly.	3. Teacher observation	
	7. Explore how energy makes things work (e.g., batteries in a toy and electricity turning fan blades).	I and D	Week 37	1. Read aloud with discussion	1. Teacher will read story about how energy makes things work. Students will then identify what makes various objects (toys, hairdryer, etc.) work.	1. Teacher observation	All energy comes from God and was created by Him. (Isaiah 45:5-7; Genesis 1:3-4, 16-17)
				2. Balloon activity	2. Students will blow up a balloon and then let it go to	1. Teacher observation with	

					demonstrate how energy is needed to help the balloon go on its way.	participation check sheet	
	8. Recognize that the sun is an energy source that warms the land, air and water.	I, D, and R	Week 23-Week 24	1. Thermo-meter activity	1. Teacher will remind students that they should never look directly at the sun. Students will go with a small group and find a place outside to put their thermometer. They will then record their findings. They will again do this procedure 4-5 times. The class will then come together to discuss what places had the highest temperature and why they think that.	1. Teacher check sheet	All energy comes from God and was created by Him. (Isaiah 45:5-7; Genesis 1:3-4, 16-17)
	9. Describe that energy can be obtained from many sources in many ways (e.g., food, gasoline, electricity or batteries).			1. Food pyramid discussion and activity	1. Teacher will read a story about the food pyramid with a discussion about how food is fuel to follow. Students will then get to draw their own food pyramid and put	1. Teacher will look over food pyramids.	

					their favorite foods in the correct spot. 2. The teacher will hold up pictures of various objects (cars, toys, etc.) and students must decide what is being used as energy for the object. These will then be charted together.	2. Teacher observation	
Science and Technology	1. Explore that some kinds of materials are better suited than others for making something new (e.g., the building materials used in the *Three Little Pigs*).	I and D	Week 4 Week 3	1. Read aloud with house building activity	1. Teacher will read aloud *The Three Little Pigs* followed by a discussion of the book. Students will then work in small groups to construct their designated house (straw, sticks, and small stones). Each group will then decide which material would create the strongest house and why.	1. Teacher observation with checklist 1. Teacher	God controls every part of the natural words-His creation-the world we study in science. (Amos 4:6-10)

	2. Explain that when trying to build something or get something to work better, it helps to follow directions and ask someone who has done it before.	I		1. Crazy directions activity	1. Teacher will give each group of students a puzzle to assemble without any directions or pictures to go with it. After several minutes, the teacher will give the picture. As a class, there will be a discussion of whether it was easier with or without the picture to help.	observation	God preserves His creation so that it continues to function as He planned. (Psalms104:5, 9-10, 12-15)
	3. Identify some materials that can be saved for community recycling projects (e.g., newspapers, glass and aluminum).	I, D, and R	Week 1-Week 2	1. Read aloud with writing	1. Teacher will read aloud *The Lorax* followed by a discussion on why recycling is important. The students will then write a story about what they would create with the recyclable items they would find.	1. Teacher will look over creative writing pieces	The conservation of natural resources is part of man's responsibility to God. God cares about the resources he provided. (Genesis 2:15; Deuteronomy 20:19-20)
				2. Class recycling project	2. Students will go collect extra paper from other classrooms	2. Teacher observation	

					throughout the school and sort it correctly to be taken to the local recycling facility.		
	4. Explore ways people use energy to cook their food and warm their homes (e.g., wood, coal, natural gas and electricity).	I	Week 5	1. Comparison chart between Indians and people of today.	1. Students will help to complete a Venn diagram that compares how Indians kept warm compared to how people in the U.S.A keep warm now.	1. Teacher observation	All energy comes from God and was created was Him (Psalm 74:16; Acts 17:25)
	5. Identify how people can save energy by turning things off when they are not using them (e.g., lights and motors).	I, D, and R	Week 1- Week 38	1. Weekly "lights off" helper	1. At the beginning of the year, the teacher will explain how it is important to always turn off the lights when leaving the room because it helps save energy. Each week a new student will be in charge of turning off the lights when the class leaves the room.	1. Teacher observation	The conservation of natural resources is part of man's responsibility to God. God cares about the resources he has provided. (Genesis 2:15, Exodus 23:10-11)

	6. Investigate that tools are used to help make things and some things cannot be made without tools.	I	Week 20-Week 21	1. Sensory Table 2. Read aloud with discussion	1. Teacher will set up table with several child tools on it (for safety). Students will get the opportunity to look at, feel, and use tools. 2. Teacher will read aloud a story about using tools to build a house. Discussion will follow.	1. Teacher observation 2. Teacher observation	God gave man the ability to create tools to help with taking care of His creation. (Genesis 1:27)
	7. Explore that several steps are usually needed to make things (e.g., building with blocks).	I and R	Week 23-Week 24	1. Instruction Exercise 2. Group Project	1. Students will work with a partner to follow a set of directions to assemble a specific building from blocks. Discussion will follow. 2. Students will work in small groups to come up with directions on how to make a peanut butter and jelly sandwich.	1. Teacher observation with check sheet 2. Teacher observation	God's creative work took place in six solar days. (Genesis 1:5; Exodus 20:8-11)

	8. Investigate that when parts are put together they can do things that they could not do by themselves (e.g., blocks, gears and wheels).	I	Week 25	1. Gear Center	1. Students will have the opportunity to visit a center set up with single gears and gears that are arranged to work together. The students will then write about the difference between the single gear and the ones that work together.	1. Teacher will look over student writing	God has provided an orderly world. (Genesis 1:14; Ecclesiastes 1:4-5)
Scientific Inquiry	1. Ask "what happens when" questions.	I, D, and R	Week 1- Week 38	1. Extended thinking during science	1. Teacher will introduce "what happens when" activities at the beginning of year, with students beginning to ask questions mid-year.	1. Teacher observation	God desires that we study science, the details of His creation. (Matthew 6:26-30; Job 12:7-8)
	2. Explore and pursue student-generated "what happens when" questions.	I, D, and R	Week 1- Week 38	1. Extended thinking during science	1. Students will ask "what happens when" questions during and after science activities to further their understanding and interest in science.	1. Teacher observation	Man can never know all there is to know about the universe and about life. (Job 26:7-14; Romans 11:33-34)
	3. Use appropriate safety procedures when completing	I and R	Week 1-	1. Common practice	1. Before every investigation, the	1. Teacher observation	God has provided an

	scientific investigations.		Week 38		teacher will explain the importance of following directions and using the proper safety equipment.		orderly world. (Genesis 8:22; Ecclesiastes 1:6-7)
	4. Work in a small group to complete an investigation and then share findings with others.	I, D, and R	Week 1-Week 38	1. Constant practice	1. Students will continually practice working in groups for activities and will develop their skills of sharing findings.	1. Teacher observation	God has at various times command men to count, measure, and record their findings. (Numbers 3:14-30)
	5. Create individual conclusions about group findings.	I	Week 1-Week 38	1. Teacher introduction with student practice	1. Teacher will explain that even though they are working in a group, students are still allowed to form their own conclusion. This will be done through writing, drawing pictures, and sharing.	1. Teacher observation	Man's ability to understand science is a gift from God. (Job 32:8-9)
	6. Use appropriate tools and simple equipment/instruments to safely gather scientific data (e.g., magnifiers, timers and	I, D, and R	Week 1-Week 38	1. Weekly practice	1. After initial teacher modeling, the students will work weekly with various equipment and instruments in order	1. Teacher observation	Man's ability to use scientific tools effectively is a skill given by God.

	simple balances and other appropriate tools).				to gather scientific data.		(Proverbs 1:7)
	7. Make estimates to compare familiar lengths, weights and time intervals.	I, D, and R	Week 5 and Week 8	1. Initial introduction to length, weight, and time	1. Teacher will show students how to measure things to properly find length, weight, and time. Teacher will then explain what an estimate is.	1. Teacher observation	God uses the concept of measurement to express men's failures and His plan for man. (Jeremiah 30:11; John 3:34-35)
				2. Estimation Experiments	2. Students will work with a partner to make various estimates about length, weight, and time.	2. Teacher observation with checklist	
	8. Use oral, written and pictorial representation to communicate work.	I, D, and R	Week 1-Week 38	1. Weekly Practice	1. Students will have several opportunities weekly to communicate their work orally, with writing, and artistically.	1. Teacher observation	God desires that we study science, the details of His creation. (Genesis 1:28; Matthew 6:26-30)

	9. Describe things as accurately as possible and compare with the observations of others.	1, D, and R	Week 10-Week 11	1. Teacher demonstration of accuracy with student practice 2. Comparison Activities	1. Teacher will demonstrate what accuracy means and why it is important. Students will then have the opportunity to practice their accuracy by measuring an object several times. 2. Students will perform an experiment (to be determined by teacher), and will then compare their findings with a small group to see how their findings differ and to discuss why.	1. Teacher observation 2. Teacher observation with participation check sheet	Men by nature are not neutral or objective observers of God's universe; man's ability to understand the truth is impaired by sin. (Romans 1:18-32; I Corinthians 2:14)
Scientific Ways of Knowing	1. Discover that when a science investigation is done the same way multiple times, one can expect to get very similar results each time it is performed.	I	Week 14	1. Repeated Experiment	1. Students will perform an experiment (chosen by teacher), several times during the week. The students will then look over their findings to see if	1. Teacher observation	God has provided an orderly world. (Genesis 1:24; Job 38:31-33)

					they are similar.		
	2. Demonstrate good explanations based on evidence from investigations and observations.	I	Week 1-Week 38	1. Weekly Practice	1. Students will have opportunities weekly to practice good explanations using their investigations and observations.	1. Teacher observation	God desires that we study science, the details of His creation. (Job 12:7-8)
	3. Explain that everybody can do science, invent things and have scientific ideas no matter where they live.	I, D, and R	Week 1-Week 38	1. Weekly Practice	1. Teacher will reinforce weekly the fact that anyone can do science.	1. Teacher observation	All of creation is meant to praise God and bring glory to Him. (Psalm 103:20-22; Romans 11:36)

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Performance Scale Key I=Introduced R=Reinforced D=Developed NA=Not Addressed		Instructional Method Key					
Standard	Indicator	Performance Scale	Dates	Instructional Method	Instructional Resources and Activities	Assessment of Learning	Biblical Integration
Earth and Space Sciences	1. Recognize that there are more stars in the sky than anyone can easily count.	I	Week 20	Interactive Read Aloud Lecture/Discussion Demonstration	Chapter 9 Icicle lights	The assessment of learning is done through problem solving with-in groups, working together to complete a project, reproducing what has been learned through written and poster reports, along with question and answer, and testing.	Gen. 15:5-6 Jer. 33:19-26 (22)
	2. Observe and describe how the sun, moon and stars all appear to move slowly across the sky.	I	Week 20	Interactive Read Aloud Lecture Demonstration	Chapter 9 Flashlight/globe		Job 38:31-33
	3. Observe and describe how the moon appears a little different every day but looks nearly the same again about every four weeks.	I	Week 23	Multi-Media (Video) Power point Data Collected	Chapter 6 Internet Moon Phase project		Ps. 104:19
	4. Observe and describe that some weather changes occur throughout the day and some changes occur in a repeating seasonal pattern.	D	Weeks 19 & 26	Interactive Read Aloud Discussion Multi-media	Chapter 9 Seasons DVD		Lev. 26:4 Gen 8:22 Gen. 1:14

	5. Describe weather by measurable quantities such as temperature and precipitation.	I	Week 27	Multi-media Data collected	Weather journal		Gen. 8:22 Ecc. 1:6-77
Life Sciences	1. Explain that animals, including people, need air, water, food, living space and shelter; plants need air, water, nutrients (e.g., minerals), living space and light to survive.	D	Week 2	Interactive Read Aloud Discussion Field trip Experiment	Chapter 7 Farm field trip Grow seeds	The assessment of learning is done through problem solving with-in groups, working together to complete a project, reproducing what has been learned through written and poster reports, along with question and answer, and testing.	Gen. 1:29-30 Ps. 104:14-15
	2. Identify that there are many distinct environments that support different kinds of organisms.	I	Week 26	Verbal Explanation	Visual posters		Gen. 1:28 (Subdue)
	3. Explain why organisms can survive only in environments that meet their needs (e.g., organisms that once lived on Earth have disappeared for different reasons such as natural forces or human-caused effects)	D	Week 26	Interactive Read Aloud Verbal Explanation	Chapter 2 Visual Representations		Gen. 8:22
	4. Compare similarities and differences among individuals of the same kind of plants and	I	Week 3	Field Trip Group Work Classification	Chapter 7 Farm field trip Visual comparison	The assessment of learning is done	Gen. 1:11-12

	animals, including people.				activity	through problem solving with-in groups, working together to	
	5. Explain that food is a basic need of plants and animals (e.g., plants need sunlight to make food and to grow, animals eat plants and/or other animals for food, food chain) and is important because it is a source of energy (e.g., energy used to play, ride bicycles, read, etc.).	I	Weeks 3 & 4	Interactive Read Aloud Discussion Observation	Chapter 7 Plant growth	complete a project, reproducing what has been learned through written and poster reports, along with question and answer, and testing.	Gen. 1:16-18 Ps. 74:14 sun (source of energy)NLT
	6. Investigate the different structures of plants and animals that help them live in different environments (e.g., lungs, gills, leaves and roots).	I	Week 34	Interactive Read aloud Observation Multi-media Discussion	Chapter 12 Visual posters		Mark 4:26-29
	7. Compare the habitats of many different kinds of Ohio plants and animals and some of the ways animals depend on plants and each other.	I	Week 36	Field Trip Illustration	Field trip to Gorman Nature Center		Gen. 1:25 Job 12:7
	8. Compare the activities of Ohio's	I	Week 36	Field Trip Interactive Read	Chapter 12	The assessment of learning is done through problem solving with-in groups, working	

	common animals (e.g., squirrels, chipmunks, deer, butterflies, bees, ants, bats and frogs) during the different seasons by describing changes in their behaviors and body covering. 9. Compare Ohio plants during the different seasons by describing changes in their appearance	 I	 Week 36	Aloud Field Trip Interactive Read Aloud Illustration	Field trip to Gorman Nature Center Chapter 12 Field trip to Gorman Nature Center	together to complete a project, reproducing what has been learned through written and poster reports, along with question and answer, and testing.	Ps. 50:6-8 (MSG) Ps. 50:6-8 (MSG)
Physical Sciences	1. Explore how things make sound (e.g., rubber bands, tuning fork and strings). 2. Explore and describe sounds (e.g., high, low, soft and loud) produced by vibrating objects. 3. Explore with flashlights and shadows that light travels in a straight line until it strikes an object.	NA (Music Dept.) NA (Music Dept.) I	NA NA Week 18	NA NA Demonstration Lecture Descriptive Presentation	NA NA Chapter 6 Flashlight experiment	NA NA	NA NA 2 Kings 20:8-10 Ecc. 8:12-14
Science and Technology	1. Explain that developing and using technology involves	I	Week 11	Weeks 11-12 include the following;	Weeks 11-12 include the following;	The assessment of learning is done through problem	Man is responsible to subdue the

	benefits and risks. 2. Investigate why people make new products or invent new ways to meet their individual wants and needs. 3. Predict how building or trying something new might affect other people and the environment. 4. Communicate orally, pictorially, or in written form the design process used to make something.	 I I I	 Week 11 Week 11 Week 12	Lecture Observation Discussion Prediction Science Fair	Attend the Jr. High Science fair Observe and Critique each entry	solving with-in groups, working together to complete a project, reproducing what has been learned through written and poster reports, along with question and answer, and testing.	earth, working to provide out of it for his physical needs. Ps. 8:5-8 Ex. 25:31,33
Scientific Inquiry	1. Ask "how can I/we" questions. 2. Ask "how do you know" questions (not "why" questions) in appropriate situations and attempt to give reasonable answers when others ask questions. 3. Explore and pursue student-generated "how" questions.	I I I	Weeks 9-10 Weeks 9-10 Weeks 9-10	Demonstration Lecture Descriptive Presentation Descriptive Presentation Group Work	Participation through question/answer time Visit and observe Jr. High Science Fair	The assessment of learning is done through problem solving with-in groups, working together to complete a project, reproducing what has been learned through written and poster reports, along with question and answer, and testing.	Queen of Sheba with Solomon Neh. 6:10 Acts 23:1-11 (MSG)

	4. Use appropriate safety procedures when completing scientific investigations.	I	Weeks 9-10		Visual Representations		
	5. Use evidence to develop explanations of scientific investigations. (What do you think? How do you know?)	I	Weeks 9-10	Participation Experiment	Participation through question/answer time	The assessment of learning is done through problem solving with-in groups, working together to complete a project, reproducing what has been learned through written and poster reports, along with question and answer, and testing.	Gen. 15: 7-9 Job. 1:11 (MSG)
	6. Recognize that explanations are generated in response to observations, events and phenomena.	I	Week 28	Participation Recreate	Participation through question/answer time		Ex. 16:22 Ecc. 7:25 NASB Matt. 13:18 NLT
	7. Use appropriate tools and simple equipment/instruments to safely gather scientific data (e.g., magnifiers, non-breakable thermometers, timers, rulers, balances and calculators and other appropriate tools).	D	Weeks 26-29	Participation	Model using equipment properly Hands on		NASB Deut. 23:13
	8. Measure properties of objects using tools such as rulers, balances and	D	Week 25	Weeks 25-29 Include the	Group work Experiments		Ex. 16:36 NLT Ex. 26:1-3 KJV

	thermometers. 9. Use whole numbers to order, count, identify, measure and describe things and experiences. 10. Share explanations with others to provide opportunities to ask questions, examine evidence and suggest alternative explanations.	 D I	 Week 25 Week 28	following: Collect data Experiment Manipulatives Demonstration Group Work	Observation Illustration Group work Group writing Group presentation	The assessment of learning is done through problem solving with-in groups, working together to complete a project, reproducing what has been learned through written and poster reports, along with question and answer, and testing.	Num. 35: 4-6 NIV 1 Kings 4:25-34
Scientific Ways of Knowing	1. Describe that scientific investigations generally work the same way under the same conditions. 2. Explain why scientists review and ask questions about the results of other scientists' work. 3. Describe ways in which using the solution to a problem might affect other	I I I	Week 12 Week 12 Week 12	Discussion Interactive Read Aloud Descriptive Presentation Experiment Discuss View	Experiment with plant life, light/shadows, gravity, and magnets Group discussion Group work Assembly line	The assessment of learning is done through problem solving with-in groups, working together to complete a project, reproducing what has been learned through written and poster reports, along with question and answer, and testing.	Matt. 9:14 Mark 2:18 Luke 5:33 Mark 11:27 Matt. 12:10 Gen. 3:17-19 Gen. 6:7 Neh. 4:5-7 NLT

	people and the environment. 4. Demonstrate that in science it is helpful to work with a team and share findings with others.	D	Week 14	Discuss Group Work Group Writing			2. Cor. 1:23-24

Mansfield Christian School
3rd Grade
Science Curriculum Guide

Performance Scale Key		**Instructional Method Key**					
		AR—Accelerated Reader		A—Assemble		BD—Build & Describe	
		Cl—Classification		C—Construct		CC—Compare & Contrast	
		Co—Collaboration		Col—Collect		Com—Complete	
		Cr—Create		D—Drama		Dem—Demonstration	
		Dis—Discuss		DP—Descriptive Presentation		Dr—Draw	
		E—Experiment		FT—Field Trip		G—Games	
		GR—Guided Reading		GS—Guest Speaker		GW—Group Work	
		GWr—Group Writing		ID—Identification		I—Illustration	
		In—Investigation		IW—Independent Writing		IR—Independent Reading	
		IRA—Interactive Read Aloud		L--Lecture		M—Manipulative	
		MI—Managed Independent		MM—Multi Media (Video, Audio)		NC—Number Cards	
		Pa—Participation		P—Prediction		PR—Peer Review	
		PP—Power Point		R—Read		Re—Recreation	
		S—Songs		So—Sort		SR—Shared Reading	
		SRT—Star Reading Test		TM—Teacher Modeling		VE—Verbal Explanation	
		V—View		WP—Written Practice		WS—Word Study	

Standard	**Indicator**	**Performance Scale**	**Time Frame**	**Instructional Method**	**Instructional Activities and Resources**	**Assessment of Learning**	**Biblical Integration**

Earth and Space Sciences	1. Compare distinct properties of rocks (e.g., color, layering and texture).	Developed	Wk. 34-38	Compare and Contrast, Investigation, Discuss, classification of rocks	Chapter 4 Science textbook (**Science 3 Bob Jones),** Different rocks identification (students will use compare and contrast chart to group the different rocks)	Completion compare and contrast chart, chapter 4 science notes	Riches within the earth (Job 28: 1-2, 5-6)
	2. Observe and investigate that rocks are often found in layers.	Developed	Wk. 34-38	Discuss, Investigation,	Chapter 4 Lesson 15 Science textbook (Science 3 Bob Jones), Different layers of the earth worksheet and investigation	Different layers of earth worksheet, Class discussion and investigation	
	3. Describe that smaller rocks come from the breakdown of larger rocks through the actions of plants and weather.	Developed	Wk. 34-38	Experiment/Investigation, Demonstration, Discuss	Chapter 4 Lesson 16 Science textbook (Science 3 Bob Jones) (students will identify rocks that have been weathered and ones that haven't)	Science notes and discussion, Labeled chart on weathered rocks and ones that haven't been weathered	Earth's contour is described (mountains and valleys, sea and dry land, rivers, rocks, etc.) (Job 28: 9-10)
	4. Observe and describe the composition of soil (e.g., small pieces of rock and decomposed	Introduced	Wk. 34-38	Discuss, Investigation, Experiment, group work	Chapter 4 Lesson 16, Soil dessert experiment (Science 3 Bob Jones) (students will "dig" through their given	Soil/dessert worksheet / experiment, chapter 4 Lesson 16 discussion	

	pieces of plants and animals, and products of plants and animals).				dessert soil to find out what soil is made of)		
	5. Investigate the properties of soil (e.g., color, texture, capacity to retain water, ability to support plant growth).	Introduced	Wk. 34-38	Discuss, Investigation, Experiment	Chapter 4 Lesson 16 (Science 3 Bob Jones), Discuss how weathering helps make new soil	Chapter 4 Lesson 16 notes, Outside observation of soil Unit test over rocks and soil	
	6. Investigate that soils are often found in layers and can be different from place to place.	Introduced	Wk. 34-38	Power Point (soils from different countries), Investigation, Discuss	Power Point questions and notes, In-class discussion on the different layers and what is special about Ohio's soil?	Colored sand activity (layer sand based on different layers of soil) and identification of different layers	
Life Sciences	1. Compare the life cycles of different animals including birth to adulthood, reproduction and death (e.g., egg-tadpole-frog, egg-caterpillar-chrysalis-	Introduced/Developed	Wk.30-33	Investigation, Experiment, Power Point Demonstration, Discuss	Class Discussion, Power point notes, Categorize animals based on reproduction (animal scrapbook – invertebrate vs. vertebrate,)	Verbal explanation of different animal categories of reproduction (class discussion and notes), Animal scrapbook	Living things have their origin in God's work (Genesis 1: 11-13, 20-27, 31; John 1:3-4)

	butterfly).					rubric	
	2. Relate animal structures to their specific survival functions (e.g., obtaining food, escaping or hiding from enemies).	Introduced/Developed	Wk.30-33	Investigation, Discuss (different shelters compared to the animal), Identification	Chart animals shelters vs. the animal and answer questions to determine why they use a specific shelter	Animal chart and questions, class discussion and verbal explanation	God cares about all living things (Psalm 104: 14 -30; Matthew 6:26, 28-30)
	3. Classify animals according to their characteristics (e.g., body coverings and body structure).	Introduced/Developed	Wk. 30-33	Identification, Discuss	Chapter 5, 7, 8 Science book (Science 3 Bob Jones) Animal scrapbook project (children will classify animals into vertebrates/ invertebrates, warm blooded, cold blooded, etc.)	Animal class notes, Animal scrapbook rubric	
	4. Use examples to explain that extinct organisms may resemble organisms that are alive today.	Introduced/Developed	Wk. 26-29	Investigation, Power Point (pictures of animals in the past and pictures of animals today),	Power Point notes, Class discussion on extinction	Compare and Contrast extinct animals with animals today (class activity)	Plants and animals are affected by God's judgments upon man throughout history (Genesis 6: 5-7, 17)
	5. Observe and explore how fossils provide evidence about	Developed	Wk. 26-29	Investigation, Discuss, Identification (identifying what	Class discussion and notes, Identification of fossils and what may have left the	Fossil identification worksheet – match the	

	animals that lived long ago and the nature of the environment at that time. 6. Describe how changes in an organism's habitat are sometimes beneficial and sometimes harmful.	 Developed	 Wk.30-33	different fossils look like) Investigation, Discuss	fossil Class discussion and notes (how does a change in where we live effect us as human beings)	fossil with the item or animal that made it Class notes and verbal explanation (living in the country vs. the city)	
Physical Sciences	1. Describe an objects position by locating it relative to another object or the background.	Developed	Wk.11-15	Investigation, Experiment, Dicuss	Chapter 12 Science book (Science 3 Bob Jones) (location of the planets as compared to Earth), Geography Unit (where is our continent as compared to the other continents around us)	Chapter 12 science notes, Labeled maps, Directional worksheets (north, south, east, west)	Though the physical world usually functions in predictable ways (because God is consistent), God at times intervenes in unpredictable fashion (Exodus 14:21-22)
	2. Describe an objects motion by tracing and measuring its	Developed	Wk. 11-15	Investigation, Experiment, Discuss	Chapter 12 Science book (Science 3 Bob Jones) (orbit of the Earth around the sun	Planets orbit around the sun activity (students line	God controls every part of the natural world – His

	position over time.				and rotation on its axis)	up and rotate based on how far planets are from the sun), teacher observation, Chapter 12 notes	creation – the world we study in science. (Job 9:5-7)
	3. Identify contact/noncontact forces that affect motion of an object (e.g., gravity, magnetism and collision).	Developed	Wk. 11-15	Investigation, Experiment, Discuss	Chapter 9 textbook (Science 3 Bob Jones) Class Discussion and notes (discuss how the force we apply to an object will cause it to move), Experiment with different forces on different objects	Teacher observation during discussion time and class notes, Experiment worksheet (ex: Hypothesize how far an object will go based on the amount of force applied)	
	4. Predict the changes when an object experiences a force (e.g., a push or pull, weight and friction).	Developed	Wk.11-15	Group Work/Experiment, Discuss	Chapter 9 textbook (Science 3 Bob Jones) Class Discussion and notes (discuss how the force we apply to an object will cause it to move), Experiment with different forces on different objects	Teacher observation during discussion time and class notes, Experiment worksheet (ex: Hypothesize how far an object will go	

						based on the amount of force applied)	
Science and Technology	1. Describe how technology can extend human abilities (e.g., to move things and to extend senses).	Developed	Wk.8-10	Discuss, Demonstrate	Chapter 6 textbook (Science 3 Bob Jones) – different machines used to weigh items, Discussion and examples of different types of technology that helps the human population.	Teacher observation during machine experiment (How does this machine help you?), Class discussion and verbal explanation	Man can never know all there is to know about the universe and about life. (Ecclesiastes 3:11)
	2. Describe ways that using technology can have helpful and/or harmful results.	Developed	Wk.8 -10	Discuss, Investigation	Class Discussion and notes on different inventors and inventions and the results of the inventions.	Class notes	
	3. Investigate ways that the results of technology may affect the individual, family and community.	Developed	Wk. 8-10	Discuss, Compare and Contrast (technology in our homes)	Class Discussion and notes on how technology affects our lives and the people around us. Compare and Contrast different technological items from home.	Class discussion and Class notes, Compare and Contrast chart (how are the items similar and how are they different)	Man's daily living depends on God (Job 10: 8-12)
	4. Use a simple design process to solve a problem	Developed	Wk.2-5	Discuss, Investigation, Experiment with	Marshmallow tower/team-building problem (sketch	Hypothesis and Conclusion	

	(e.g., identify a problem, identify possible solutions and design a solution).			problem and solution	design format and build with spaghetti noodles and marshmallows	sheet (fill-in before and after construction of design)	
	5. Describe possible solutions to a design problem (e.g., how to hold down paper in the wind).	Developed	Wk.2-5	Discuss, Identification	Marshmallow tower/team-building problem (sketch design format and build with spaghetti noodles and marshmallows	Hypothesis and Conclusion sheet (fill-in before construction of design and after construction of design)	
Scientific Inquiry	1. Select the appropriate tools and use relevant safety procedures to measure and record length and weight in metric and English units.	Introduced	Wk. 22-25	Discuss, Teacher modeling, manipulatives, group work	Math book chapter 8 Math book Chapter 12 (Sadlier-Oxford), No-bake cookie project using appropriate measurements, Using and identifying different measurement tools	Students will use In-class discussion, no-bake cookie worksheet / directions, Measurement identification worksheet to understand and use appropriate measurement tools	
	2. Discuss observations and measurements	Developed	Wk. 2-38	Discuss, Investigation	Experiment worksheets (students will make note of	Students will use in-class discussion	God desires that we study science, the

	made by other people.				observations as a class based on other students' observations	after each experiment to make note of different observations	details of His creation (Job 1:28)
	3. Read and interpret simple tables and graphs produced by self/others.	Developed	Wk.17-18	Discuss, Identification	Chapter 7 math textbook (Sadlier-oxford), chocolate bar graphs	Students will create and interpret graphs using pencil and paper. Students will taste each chocolate bar (4 different kinds) and vote on the one they liked. The results will be graphed.	
	4. Identify and apply science safety procedures.	Developed	Wk.2-38	Discuss, create	Rules (poster board/chart paper and markers to make rules) hung in classroom during any science experiment	Students will discuss as a class what appropriate science safety procedures are and why they are important.	
	5. Record and organize observations (e.g., journals, charts	Developed	Wk.2-38	Discuss, Investigation, Teacher modeling	Class experiments, Science notes, Animal scrapbook (book of different	Class experiment WS, Animal scrapbook	

	and tables).				animals and their classifications)	rubric and discussion in class	
	6. Communicate scientific findings to others through a variety of methods (e.g., pictures, written, oral and recorded observations).	Developed	Wk. 6-7(sound experiments), Wk.30-33 (animal scrapbook)	Discuss, Teacher modeling, observe	Animal scrapbook, experiment (sound-plastic wrap, bowl, crushed pretzels, spoon, and loud music; cornstarch and water)	Animal scrapbook rubric and discussion in class; Hypothesis and Conclusion sheets during each experiment	God uses His creation – what we observe in nature – to teach people eternal truth (Psalm 8:3-4)
Scientific Ways of Knowing	1. Describe different kinds of investigations that scientists use depending on the questions they are trying to answer.	Introduced	Wk.12-20	Teacher modeling, discuss, investigation,	Power Point (what do scientists do), Discuss different experiments and observations made in class (link to how scientists make different observations)	Hypothesis and Conclusion sheets, completion of class notes	
	2. Keep records of investigations and observations and do not change the records that are different from someone else's	Introduced	Wk. 2-38	Written practice, Teacher modeling, discuss, Experiment	Experiments (cornstarch and water; sound – crushed pretzels, plastic wrap, bowl, spoon, and loud music; soap and water; seed to plant	Completion of Hypothesis and Conclusion worksheets when given, and completion of	

	work.				investigation)	charts over a period of time (seed to plant investigation)	
	3. Explore through stories how men and women have contributed to the development of science.	Developed	Wk. 12-20	Power Point (different men and women who are "awesome scientists"), discuss, investigation	Class notes, discussion, and presentation of some "awesome" inventions (light bulb, telephone, computer, etc.)	Completion of class notes	God expects us to recognize Him as we study His creation, and as we make use of it. (Proverbs 3: 9-10)
	4. Identify various careers in science.	Introduced	Wk. 12-20	Discuss, Investigation, speaker	Power point presentation on different careers in science	Worksheet on matching the different careers with the different scientists	
	5. Discuss how both men and women find science rewarding as a career and in their everyday lives.	Introduced	Wk. 12-20	Discuss, speaker	Science speaker – what does the person do and why is it rewarding	Worksheet on matching the different inventors with the different inventions	Man is responsible to subdue the earth, working to provide out of it for his physical needs. (Psalm 8:5-8)

Mansfield Christian School
4th Grade
Science Curriculum Guide

Performance Scale Key Introduced Developed Reinforced		**Instructional Method Key** Discussion Experiment Group Work Discussion Group Work Power Point Presentations					
Standard	**Indicator**	**Performance Scale**	**Time Frame**	**Instructional Method**	**Instructional Activities and Resources**	**Assessment of Learning**	**Biblical Integration**
Earth and Space Sciences	1. Explain that air surrounds us, takes up space, moves around us as wind, and may be measured using barometric pressure.	Developed	Weeks 4-8	Discussion	Abeka Ch. 5	Worksheet Weather chart Quiz/test	The weight of air is mentioned Job 28:24-27
	2. Identify how water exists in the air in different forms (e.g., in clouds, fog, rain, snow and hail).	Reinforced	Weeks 4-8	Discussion	Abeka Ch. 5	Worksheet	
	3. Investigate how water changes from one state to another	Reinforced	Weeks 4-8	Discussion	Abeka Ch. 5	Experiment Worksheet	The water cycle is described

	(e.g., freezing, melting, condensation and evaporation).						Job 36:27-28 Eccl. 1:7 Jeremiah 10:13 Amos 5:8
	4. Describe weather by measurable quantities such as temperature, wind direction, wind speed, precipitation and barometric pressure.	Introduced	Weeks 4-8	Group work discussion	Abeka Ch. 5	Weather Chart	
	5. Record local weather information on a calendar or map and describe changes over a period of time (e.g., barometric pressure, temperature, precipitation symbols and cloud conditions).	Introduced	Weeks 4-8	Group work	Abeka Ch. 5	Weather Chart	God has at various times commanded men to count, measure, and record their findings
	6. Trace how weather patterns generally move from west to east	Developed	Weeks 4-8	Group work	Abeka Ch. 5	Weather Chart	Though the world usually functions in predictable

	in the United States.						ways, God sometimes intervenes in an unpredictable fashion: Jonah 1:15 Matthew 8:23-27
	7. Describe the weather which accompanies cumulus, Cumulonimbus, cirrus and stratus clouds.	Introduced Developed	Weeks 4-8	Power point presentation	Abeka Ch. 5 Make the different clouds out of cotton balls	Weather Chart Worksheet	
	8. Describe how wind, water and ice shape and reshape Earth's land surface by eroding rock and soil in some areas and depositing them in other areas producing characteristic landforms (e.g., dunes, deltas and glacial moraines).	Introduced	Weeks 1-3	Power point presentation (Magic School Bus Video)	Bob Jones Ch. 9	Worksheet Quiz/test	The flood Genesis 6-8

	9. Identify and describe how freezing, thawing and plant growth reshape the land surface by causing the weathering of rock.	Introduced	Weeks 1-3	Power point presentation Ice demonstration	Bob Jones Ch. 9	Worksheet	
	10. Describe evidence of changes on Earth's surface in terms of slow processes (e.g., erosion, weathering, mountain building and deposition) and rapid processes (e.g. volcanic eruptions, earthquakes and landslides).	Introduced	Weeks 1-3	Power point presentation Landslide demonstration	Bob Jones Ch. 9	Worksheet	Volcanoes and earthquakes are mentioned in scripture Exodus 19:18 Job 19:6 Psalm 18:7-8 Psalm 104:32
Life Sciences	1. Compare the life cycles of different plants including germination, maturity, reproduction and death.	Developed	Weeks 27-31	Discussion	Abeka Ch. 3	Worksheet Quiz/test	When first created, they were perfect: Genesis 1
	2. Relate plant structures to their	Developed	Weeks 27-31	Discussion	Abeka Ch. 3	Worksheet	Plants were created with

	specific functions (e.g., growth, survival and reproduction).						specific purposes Genesis 2:9 Psalm 104:14-15
	3. Classify common plants according to their characteristics (e.g., tree leaves, flowers, seeds, roots and stems).	Developed	Weeks 27-31	Discussion	Abeka Ch. 3 Make poster of different kinds of plants by their leaves, seeds, etc.	Worksheet Observation	Living things have their origin in God's work Genesis 1
	4. Observe and explore that fossils provide evidence about plants that lived long ago and the nature of the environment at that time.	Developed	Weeks 27-31	Power point presentation	Abeka Ch. 3	Observation	The Flood Genesis 6-8
	5. Describe how organisms interact with one another in various ways (e.g., many plants depend on animals for carrying pollen or dispersing seeds).	Developed	Weeks 27-31	Discussion	Abeka Ch. 3	Worksheet	God controls the ecological system Genesis 3:18 Genesis 4:12 Deuteronomy 7:12-14
Physical Sciences	1. Identify characteristics of a	Introduced	Weeks 4-8	Experiment (ice, water,	Abeka Ch. 5	Observation	Chemical and physical laws

	simple physical change (e.g., heating or cooling can change water from one state to another and the change is reversible).			steam)			and reactions frequently illustrate spiritual truth Prov. 17:3 Ezekiel 22:18-22
	2. Identify characteristics of a simple chemical change. When a new material is made by combining two or more materials, it has chemical properties that are different from the original materials (e.g., burning paper, vinegar and baking soda).	Introduced	Weeks 1-3	Volcano experiment	Bob Jones Ch. 9	Observation	
	3. Describe objects by the properties of the materials from which they are made and that these properties can be used to separate or sort a	Developed	Weeks 18-20	Discussion	Bob Jones Ch. 10	Worksheet Quiz/test	

	group of objects (e.g., paper, glass, plastic and metal).						
	4. Explain that matter has different states (e.g., solid, liquid and gas) and that each state has distinct physical properties.	Reinforced	Weeks 4-8	Discussion Group Work	Abeka Ch. 5	Observation	changes in the form of matter are continuously occurring Psalm 102:25-26 Isaiah 51:6
	5. Compare ways the temperature of an object can be changed (e.g., rubbing, heating and bending of metal).	Reinforced	Weeks 12-14	Discussion	Bob Jones Ch. 5	Worksheet Quiz/test	
Science and Technology	1. Explain how technology from different areas (e.g., transportation, communication, nutrition, healthcare, agriculture, entertainment and manufacturing) has improved human lives.	Developed	Weeks 22-26	Discussion on heathcare (nutrition, digestion, vitamins, etc)	Bob Jones Ch. 11-12 See also Ch. 9 Ohio Adventure	Worksheets Quiz/test Construct food pyramid	
	2. Investigate how technology and	Developed	Weeks 12-14	Discussion	Bob Jones Ch. 5	worksheets	God gives man the ability to

	inventions change to meet peoples' needs and wants.						study and learn
	3. Describe, illustrate and evaluate the design process used to solve a problem.	Developed	Weeks 9-11	Experiment on page 80 & 88	Bob Jones Ch. 4	Observation Quiz/test	
Scientific Inquiry	1. Select the appropriate tools and use relevant safety procedures to measure and record length, weight, volume, temperature and area in metric and English units.	Developed	Weeks 9-11 Weeks 4-8	Experiment on page 80 & 88 Daily Weather	Bob Jones Ch. 4 Abeka Ch. 5	Observation Group work	God has at various times commanded men to count, measure, and record their findings
	2. Analyze a series of events and/or simple daily or seasonal cycles, describe the patterns and infer the next likely occurrence.	Developed	Week 32 Weeks 15-17	Monarch Butterfly Ocean tides	Abeka Ch. 2:3 Bob Jones Ch. 8	Observation/Daily Journal Worksheets Quiz/test	
	3. Develop, design and conduct safe, simple investigations or experiments to answer questions.	Developed	Weeks 1-3	Volcano experiment	Bob Jones Ch. 9	Observation	God desires that we study science Genesis 1:28 Job 12:7-8

							Matthew 6:26-30
	4. Explain the importance of keeping conditions the same in an experiment.	Developed	Weeks 1-3	Volcano Experiment	Bob Jones Ch. 9	Observation	
	5. Describe how comparisons may not be fair when some conditions are not kept the same between experiments.	Developed	Weeks 4-8	Surface tension experiment (needle floating on water)	Abeka Ch. 5	Observation	
	6. Formulate instructions and communicate data in a manner that allows others to understand and repeat an investigation or experiment.	Introduced	Weeks 9-11	Experiment on page 80 & 88	Bob Jones Ch. 4	Construct chart	
Scientific Ways of Knowing	1. Differentiate fact from opinion and explain that scientists do not rely on claims or conclusions unless they are backed by observations that can be confirmed.	Introduced	Weeks 4-8	Discussion	Abeka Ch. 5	Worksheet	The Bible is our source for Truth Psalm 1:1 Proverbs 19:27 Colossians 2:8

	2. Record the results and data from an investigation and make a reasonable explanation.	Introduced	Weeks 4-8	Surface tension experiment (needle floating on water)	Abeka Ch. 5	Worksheet/graph	God has at various times commanded men to count, measure, and record their findings
	3. Explain discrepancies in an investigation using evidence to support findings.	Introduced	Weeks 9-11	Experiment on page 80 & 88	Bob Jones Ch. 4	Observation	
	4. Explain why keeping records of observations and investigations is important.	Introduced	Weeks 4-8	Discussion on Weather Chart	Abeka Ch. 5	Observation Weather Chart	God has at various times commanded men to count, measure, and record their findings.

Mansfield Christian School
5th Grade
Science Curriculum Guide

Performance Scale Key Introduced Developed Reinforced Not Addressed		**Instructional Method Key** Lecture Discussion Smartboard Power Point Centers Group Work Video Experiment					
Standard	**Indicator**	**Performance Scale**	**Time Frame**	**Instructional Method**	**Instructional Activities and Resources**	**Assessment of Learning**	**Biblical Integration**
Earth and Space Science	1. Describe how night and day are caused by Earth's rotation.	Reinforced	Weeks 27-28	Lecture Discussion Video Group Work	Science Text Film Draw Illustration	Test Illustration	Genesis 1:5 God called the light day and the darkness He called night. So the evening and the morning were the first day.
	2. Explain that Earth is one of several planets to orbit the sun, and that the moon orbits Earth	Reinforced	Weeks 27-28	Lecture Discussion Group Work Video	Science Text Buckle Down Poster of Solar System	Poster Test	Hebrews 1:2 He has spoken to us by his son whom He appointed heir of all things and through whom He made the

							universe.
	3. Describe the characteristics of Earth and its orbit about the sun (e.g., three-fourths of Earth's surface is covered by a layer of water [some of it frozen], the entire planet surrounded by a thin blanket of air, elliptical orbit, tilted axis and spherical planet).	Reinforced	Weeks 27-30	Lecture Video Power Point Discussion Group Work	Computer Poster of Earth's orbit Brochure of Earth's characteristics Buckle Down	Test Brochure poster	Genesis 1:9 And God said; let the waters under the heavens be gathered together into one place.
	4. Explain that stars are like the sun, some being smaller and some larger, but so far away that they look like points of light.	Reinforced	Weeks 31-33	Lecture Discussion Power Point Video Group Work	Buckle Down Constellation Notebook with black paper and whiteout	Notebook Tests	II Corinthians 4:6 For it is God who commanded light to shine out of darkness…
	5. Explain how the supply of many non-renewable resources is limited and can be extended through reducing, reusing and recycling but cannot be extended indefinitely.	Reinforced	Weeks 31-33	Lecture Discussion Power Point Smartboard Group Work	Science Text Buckle Down Recycling poster	Poster Test	Genesis 1:26 …let them rule …over all the earth.

	6. Investigate ways Earth's renewable resources (e.g., fresh water, air, wildlife and trees) can be maintained.	Reinforced	Weeks 35-37	Lecture Discussion Video Group Work	Computer Science Text Report using Power Point on maintaining Earth's resources Buckle Down	Power Point report Test	Genesis 1:26 …let them rule over the fish of the sea and the birds of the air, over the livestock, and over all the creatures that move along the ground.
Life Sciences	1. Describe the role of producers in the transfer of energy entering ecosystems as sunlight to chemical energy through photosynthesis.	Developed	Weeks 19-21	Discussion Lecture Power Point	Science Text Buckle Down	Test	
	2. Explain how almost all kinds of animals' food can be traced back to plants.	Reinforced	Weeks 19-21	Discussion Lecture Smartboard	Poster of Food Chain and Food Web Buckle Down Science Text Experiment on p. 125 -126 in Buckle Down.	Discussion Lecture Smartboard	Genesis 2:9 And out of the ground the Lord God made every tree grow that is pleasant to the sight and good for food.
	3. Trace the organization of simple food chains and food webs (e.g., producers, herbivores,	Reinforced	Weeks 19-21	Discussion Lecture Smartboard	Poster of Food Chain and Food Web Buckle Down Science Text Experiment on p. 125	Discussion Lecture Smartboard	

	carnivores, omnivores and decomposers).				-126 in Buckle Down.		
	4. Summarize that organisms can survive only in ecosystems in which their needs can be met (e.g., food, water, shelter, air, carrying capacity and waste disposal). The world has different ecosystems and distinct ecosystems support the lives of different types of organisms.	Developed	Weeks 22-24	Lecture Discuss	Science Text Buckle down Library Computer Group Work Report of ecosystem and needs of its animals	Report Test	
	5. Support how an organism's patterns of behavior are related to the nature of that organism's ecosystem, including the kinds and numbers of other organisms present, the availability of food and resources, and the changing physical characteristics of the	Developed	Weeks 25-27	Lecture Discussion	Science Text Buckle Down	Test	Leviticus 26-5 If you walk in my statutes, then I will give you rain….the land shall yield its produce, and the trees of the field shall yield their fruit.

	ecosystem.						
	6. Analyze how all organisms, including humans, cause changes in their ecosystems and how these changes can be beneficial, neutral or detrimental (e.g., beaver ponds, earthworm burrows, grasshoppers eating plants, people planting and cutting trees and people introducing a new species).	Developed	Weeks 25-27	Lecture Discussion Smartboard	After reading novel, Out of the Dust, research how Dust Bowl affected the ecosystem and write a paragraph about it.	Paragraph Test	
Physical Sciences	1. Define temperature as the measure of thermal energy and describe the way it is measured.	Introduced	Weeks 10-12	Lecture Discussion Group Work Experiment	Experiment p. 65 Buckle Down Beakers Paper Tape 2 thermometers Piece of black and white paper Science Text	Test observation	The fact that God is Creator of all things is taught all through the scriptures.
	2. Trace how thermal energy can transfer from one object to another by conduction.	Lecture Discussion	Weeks 10-12	Lecture Discussion Power Point Smartboard Experiment	Buckle Down Science Text Experiment with hot water and metal spoon Summary entry in	Observation Test Journal Entry	

					journal of experiment		
	3. Describe that electrical current in a circuit can produce thermal energy, light, sound and/or magnetic forces.	Introduced	Weeks 13-15	Lecture Discussion Power Point Experiment	Science Text Buckle Down	Test	The fact that God is Creator of all things is taught all through the scriptures.
	4. Trace how electrical current travels by creating a simple electric circuit that will light a bulb.	Introduced	Weeks 13-15	Lecture Discussion Experiment Power Point	Buckle Down Experiment on p. 102-103 Summary in journal	Test journal	
	5. Explore and summarize observations of the transmission, bending (refraction) and reflection of light.	Developed	Weeks 16	Lecture Discussion Experiment Power Point Video	Buckle Down Science Text experiment on p. 250 Summary of experiment	Summary Test	John 8:12 He said, "I am the light of the world."
	6. Describe and summarize observations of the transmission, reflection, and absorption of sound	Developed	Weeks 17-18	Lecture Discussion Power Point Video	Buckle Experiment p. 86 Science Text experiment p. 231	Observation Summary of experiments	
	7. Describe that changing the rate of vibration can vary the pitch of a sound	Developed	Weeks 17-18	Lecture Discussion Experiment	Science Text Buckle Down Experiment p. 89	test	
Science and Technology	1. Investigate positive and negative impacts of	Developed	Weeks 5-6 and 14-16	Lecture Discussion Power Point	Buckle Down 'Explore it Yourself' p. 54	Check p. 54 test	Discuss how God gave the responsibility of

	human activity and technology on the environment.						taking care of His creation. Note the implications when we do not abide by his commands
	2. Revise an existing design used to solve a problem based on peer review	Introduced	Weeks 8-9	Lecture Discussion Group Work	Buckle Down complete 'Designing Technology' p. 52 Invent and draw a design of an object to solve a problem	Design	
	3. Explain how the solution to one problem may create other problems.	Developed	Weeks 8-9	Lecture Discussion Group Work	Complete p. 50 in Buckle Down	Check p. 50	
Scientific Inquiry	1. Select and safely use the appropriate tools to collect data when conducting investigations and communicating findings to others (e.g., thermometers, timers, balances, spring scales, magnifiers, microscopes and other appropriate tools).	Developed	Weeks 3-4 and 6-7	Lecture Discussion Experiment	Science Text Buckle Down 'Explore it Yourself p. 30-31	Check p. 30-31	
	2. Evaluate observations and	Introduced	Weeks 3-4 and	Lecture Discussion	Buckle Down experiment p. 8 and	List of discrepancies	

	measurements made by other people and identify reasons for any discrepancies.		6-9	Experiment Group Work	list reasons for any discrepancies		
	3. Use evidence and observations to explain and communicate the results of investigations	Introduced	Weeks 3-4 and 6-9	Lecture Discussion	Buckle Down p. 27-48	Test	
	4. Identify one or two variables in a simple experiment.	Developed	Weeks 1	Lecture Discussion Experiment	Plant experiment p. 11-12 in Buckle Down	Identify the variables in the experiment	
	5. Identify potential hazards and/or precautions involved in an investigation.	Developed	Weeks 2	Lecture Discussion Group Work	Complete "Explore it Yourself" p. 24-26 in Buckle Down	Grade pages 24-26	Discuss the rules and regulations given by God recorded in the Old Testament to His people on cleanliness and dietary rules.
	6. Explain why results of an experiment are sometimes different (e.g., because of unexpected differences in what is being investigated,	Introduced	Weeks 3-4	Lecture Discussion	Complete "Explore it Yourself" p. 30-31 in Buckle Down Complete p. 32-33 in Buckle Down "Science Achievement Practice"	Check p. 30-31 Grade p. 32-33	

	unrealized differences in the methods used or in the circumstances in which the investigation was carried out, and because of errors in observations).						
Scientific Ways of Knowing	1. Summarize how conclusions and ideas change as new knowledge is gained	Introduced	Weeks 1-2 and 5-7	Lecture Discussion	Buckle Down List what new knowledge is gained after each experiment in science journal	Science journal	Proverbs 4:7 Wisdom is supreme; therefore get wisdom.
	2. Develop descriptions, explanations and models using evidence to defend/support findings.	Developed	Weeks 1, 4-5, and 13-15	Lecture Discussion Group Work	Buckle Down Experiment and create different types of graphs on findings	Graphs	
	3. Explain why an experiment must be repeated by different people or at different times or places and yield consistent results before the results are accepted.	Developed	Weeks 1-9	Lecture Discussion	Conduct experiment on cricket on p. 8 in Buckle Down Explain in a paragraph why the experiment must be repeated by different people and times to	Paragraph	

					get accurate results.		
	4. Identify how scientists use different kinds of ongoing investigations depending on the questions they are trying to answer (e.g., observations of things or events in nature, data collection and controlled experiments).	Introduced	Weeks 1-9	Lecture Discussion	Review p. 6-19 in Buckle Down	Observation	II Samuel 22:31 As for God, his way is perfect; the word of the Lord is flawless.
	5. Keep records of investigations and observations that are understandable Weeks or months later.	Introduced	Weeks 1 and 3-6	Lecture Discussion	Perform "Explore it Yourself" p. 41-43 in Buckle Down Complete Science Achievement Test p. 44-48 in Buckle Down	Grade p. 44-48 in Buckle Down	The Bible is an accurate recording of history.
	6. Identify a variety of scientific and technological work that people of all ages, backgrounds and groups perform.	Introduced	Weeks 1-9	Lecture Discussion Group Work	Buckle Down Make a poster of different technological works	Poster	

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6th Grade
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Performance Scale Key		**Instructional Method Key**					
Introduced Developed Reinforced Not Addressed		Chart Investigation Textbook Verbal Explanation Multimedia PowerPoint Guest Speaker	Lecture Discussion Guided Reading Classify Notes	Experiment Model Demonstration Construct Collect Data	Build and Describe Prediction Group Work Simulation Compare and Contrast		
Standard	**Indicator/ Objectives**	**Performance Scale**	**Time Frame**	**Instructional Method**	**Instructional Activities & Resources**	**Assessment of Learning**	**Biblical Integration**
Earth and Space Sciences	1. Describe the rock cycle and explain that there are sedimentary, igneous and metamorphic rocks that have distinct properties (e.g., color, texture) and are formed in different ways.	Introduced Developed	Week 7-10	- Chart - Textbook - Multimedia - PowerPoint - Guest speaker	- Rock cycle poster - Rock cycle song - Manipulatives - Pet Rock activity - Experiment - Notes	- Soil illustrations - Written evaluation - Participation - Lab	The earth was covered with water before there was dry land. The Flood was of major significance causing great disturbances of the earth.
	2. Explain that rocks are made of one or more minerals.	Introduced	Week 7-10	- Chart - Textbook - Multimedia	- Investigation - Notes	- Observation	
		Introduced	Week 7-10	- Chart - Textbook	- Investigation - Notes	- Observation	

	3. Identify minerals by their characteristic properties. 4. Explain natural disasters such as earthquakes, volcanoes and how the earth is affected. 5. Compare and Contrast Mechanical and Chemical Weathering and its affect on our world	Developed Reinforce	Week 1-4 Week 5-7	- Text - Multimedia - Newspaper - Vocab - Text - Multimedia	- Investigate - Notes - Multimedia - Investigate - Charts - Compare/Contrast	- Participation - Written Evaluation - Written Evaluation	Job 9:5-7 God preserves His creation so that it continues to function as planned.

Life Sciences	1. Explain that many of the basic functions of organisms are carried out by or within cells and are similar in all organisms.	Introduced Developed	Week 15-18	- Lecture - Classify - Textbook - Discussion - Guided reading - Multimedia	- Notes - Cell project - Oral presentation	- Project - Written evaluation	A great variety of life exist.
	2. Explain that multicellular organisms have a variety of specialized cells, tissues, organs and organ systems that perform specialized functions.	Introduced Developed	Week 15-18	- Lecture - Classify - Textbook - Discussion - Guided reading - Multimedia	- Cell project - Oral presentation - Notes	- Project - Written evaluation	All tissue is not the same 1 Cor. 15:39
	3. Identify how plant cells differ from animal cells (e.g., cell wall and chloroplasts).	Introduced Developed	Week 15-18	- Lecture - Classify - Textbook - Discussion - Guided reading	- Cell project - Oral presentation - Notes	- Project - Written evaluation	
	4. Recognize that an individual organism does not live forever; therefore reproduction is necessary for the continuation of	Developed	Week 15-18 Week 34-38	- Lecture - Classify - Textbook - Discussion - Guided reading - Multimedia	- Compare and contrast - Collect data	- Written evaluation	God preserves his creation so that it continues to function as He planned

	every species and traits are passed on to the next generation through reproduction. 5. Describe that in asexual reproduction all the inherited traits come from a single parent. 6. Describe that in sexual reproduction an egg and sperm unite and some traits come from each parent, so the offspring is never identical to either of its parents. 7. Recognize that likenesses between parents and offspring (e.g., eye color, flower color) are inherited. Other likenesses, such as table manners are	Introduced Developed Introduced Developed Introduced Developed Developed	Week 15-18 Week 15-18 Week 34-38 Week 20 – 21	- Lecture - Textbook - Discussion - Notes - Lecture - Textbook - Discussion - Notes - Lecture - Textbook - Discussion - Notes - Multimedia - Experiment - Lecture - Discussion	- Cell division poster - Comparing - Cell division poster - Dichotomous key - Observation - Punnett Squares - Simulation - Puzzles - Creature feature activity - Genetics lab - Discussion - Textbook	- Graded poster - Written evaluation - Graded poster - Written evaluation - Participation - Written evaluation - Lab	Organisms when first created were mature, complete and perfect Living things have their origin in God's work Gen. 1:11-12, 22, 28 Living things are characterized by common traits all of which are recognized in the Bible

	learned. 8. Describe how organisms may interact with one another. 9. Identify how animals are classified and their characteristics.	Developed	Week 19-22	- Notes - Lecture - Discussion - Notes - Multimedia	- Word Study - Discussion - Notes	- Observation - Participation - Written Evaluation	Living things have their own origin in God's work We are made in God's likeness Genesis 1:24-27 Genesis 2:7
Physical Sciences	1. Explain that equal volumes of different substances usually have different masses. 2. Describe that in a chemical change new substances are formed with different properties than the original substance (e.g., rusting, burning). 3. Describe that in a physical change (e.g., state, shape	Developed Introduced Developed Introduced Developed	Week 22-29 Week 22-29 Week 22-29	- Demonstration - Experiment - Lecture - Demonstration - Experiment - Lecture - Multimedia - Lab Book - Demonstration - Experiment - Lecture - Multimedia	- Notes - Textbook - Notes - Textbook - Brainstorming - Collect data - Lab - Notes - Textbook - Brainstorming - Collect data	- Participation - Lab - Written evaluation - Participation - Lab - Written evaluation - Participation - Lab	It is by God's power that matter holds together within the atom and the universe Chemical and physical laws and reactions frequently illustrate spiritual truth Psalm 102: 25-26

	and size) the chemical properties of a substance remain unchanged. 4. Describe that chemical and physical changes occur all around us (e.g., in the human body, cooking and industry). 5. Explain that the energy found in nonrenewable resources such as fossil fuels (e.g., oil, coal and natural gas) originally came from the sun and may renew slowly over millions of years. 6. Explain that energy derived from renewable resources such as wind and water is assumed to be available indefinitely.	Introduced Developed Introduced Developed Developed Reinforced Developed Reinforced	Week 22-29 Week 11-14 Week 11-14 Week 11-14	- Demonstration - Experiment - Lecture - Multimedia - Lecture - Discussion - Multimedia - Discussion - Experiment - Demonstration - Discussion - Experiment - Multimedia	- Lab - Notes - Textbook - Brainstorming - Collect data - Lab - Textbook - Oral explanation - Textbook - Notes - Textbook - Notes	- Written evaluation - Participation - Lab - Written evaluation - Written evaluation - Lab - Written evaluation - Oral explanation	Changes in the form of matter and energy are continuously occurring, with a downward trend All matter was created by God The water and wind cycle are described Ecclesiastes 1:7 Ecclesiastes 1:6 All energy

	7. Describe how electric energy can be produced from a variety of sources (e.g., sun, wind and coal). 8. Describe how renewable and nonrenewable energy resources can be managed (e.g., fossil fuels, trees and water).	Introduced Developed	Week 31-33 Week 11-14	- Demonstration - Discussion - Experiment - Multimedia - Demonstration	- Textbook - Guest speaker - Notes	- Written evaluation - Lab - Written evaluation - Lab	comes from God and was created by Him Energy cannot be created or destroyed, but it is forever
Science and Technology	1. Explain how technology influences the quality of life. 2. Explain how decisions about the use of products and systems can result in desirable or undesirable consequences (e.g., social and environmental). 3. Describe how	Introduced Developed Introduced Developed Developed	Week 1-38 Week 11-14 Week	- Discussion - Experiment - Multimedia - Classify - Discussion - Prediction - Group work - Verbal explanation - Follow up to	- Textbook - Newspaper - Internet - DVDs - Newspaper - Internet - Participation - Simulations - Field Trip	- Written evaluation - Oral discussion - Project - Oral Discussion - Reaction paper - Participation	God desires that we study science, the details of His creation All creation is effected by man's sin Genesis 3:15-19

	automation (e.g., robots) has changed manufacturing including manual labor being replaced by highly-skilled jobs.		30-33	Economics unit - Contrast and comparisons using nature models - Discussion	- Experiment - Construct models	- Oral discussion - Observation of activity	The natural world, God's creation is constantly changing
	4. Explain how the usefulness of manufactured parts of an object depend on how well their properties allow them to fit and interact with other materials.	Introduced Developed	Week 22-28	- Science integration with Economics unit - Multimedia - Discussion - Simulation	- Vocabulary - Model - Experiment - Discussion - Simulation	- Observation - Participation	God has provided an orderly world
	5. Design and build a product or create a solution to a problem given one constraint (e.g., limits of cost and time for design and production, supply of materials and environmental effects).	Introduced Developed	Week 1-4	- Model - Demonstration - Build and describe - Construct - Collect data	- Experiment - Participation - Re-create	- Written lab sheet - Observation	God uses His creation- what we observe in nature- to teach people eternal truth
	5. Demonstrate	Introduced Developed	Week 35-38	- Investigation - Demonstration	- Participation - Problem Solving	- Observation	

	knowledge of concepts of motion/ simple machines 6. Demonstrate knowledge of concepts of Electricity	Introduced	Week 30-31	- Illustration - Manipulatives - Demonstration - Identifying	- Experiments - Investigation	- Written Evaluation - Project - Written Evaluation - Observation	Recognizing God's use of man's curiosity.
Scientific Inquiry	1. Explain that there are not fixed procedures for guiding scientific investigations; however, the nature of an investigation determines the procedures needed. 2. Choose the appropriate tools or instruments and use relevant safety procedures to complete scientific investigations. 3. Distinguish between	Introduced Developed Reinforced Introduced Developed Reinforced Introduced Developed Reinforced	Week 1-38 Week 1-38 Week 1-38	- Manipulatives - Demonstration - Verbal Explanation - Identifying - Manipulatives - Demonstration - Verbal Explanation - Identifying - Demonstration - Illustration	- Manipulatives - Sort - Classify - Collect data - Experiment - Participation - Problem solving - Participation - Discussion - Problem Solving	- Lab - Project - Observation - Lab - Observation - Participation - Observation - Use in predictions	God uses His creation- what we observe in nature- to teach people eternal truth God has provided an orderly world Man can never know all there is to know about the

	observation and inference. 4. Explain that a single example can never prove that something is always correct, but sometimes a single example can disprove something.	Introduced Developed Reinforced	Week 1-38	- Classification - Investigation - Discussion	- Participation	- Observation - Proofs	universe and about life
Scientific Ways of Knowing	1. Identify that hypotheses are valuable even when they are not supported. 2. Describe why it is important to keep clear, thorough and accurate records. 3. Identify ways scientific thinking is helpful in a variety of everyday settings.	Introduced Developed Introduced Developed Developed Developed	Week 1-38 Week 1-38 Week 1-38 Week	- Discussion - Discussion - Lab - Discussion - Discussion	- Experiment - Group work - Written practice - Lab journals - Collect data - Participation - Participation	- Observation - Participation - Observation - Participation - Observation - Participation - Observation	Man can never know all there is to know about the universe and about life Job 38:41 God desires that we study science, the details of his creation

	4. Describe how the pursuit of scientific knowledge is beneficial for any career and for daily life. 5. Research how men and women of all countries and cultures have contributed to the development of science.	Developed	1-38 Week 1-38	- Discussion - Multimedia	- Guest speaker - Research - Reports	- Participation - Observation - Participation - Report	Men by nature are not neutral or objective observers of God's universe; man's ability to understand the truth is impaired by sin Romans 1:18-32

Mansfield Christian School
7th Grade
Science Curriculum Guide

Performance Scale Key	**Instructional Method Key**		
Introduced	AR—Accelerated Reader	A—Assemble	BD—Build & Describe
Developed	Cl—Classification	C—Construct	CC—Compare & Contrast
Reinforced	Co—Collaboration	Col—Collect	Com—Complete
Not Addressed	Cr—Create	D—Drama	Dem—Demonstration
	Dis—Discuss	DP—Descriptive Presentation	Dr—Draw
	E—Experiment	FT—Field Trip	G—Games
	GR—Guided Reading	GS—Guest Speaker	GW—Group Work
	GWr—Group Writing	ID—Identification	I—Illustration
	In—Investigation	IW—Independent Writing	IR—Independent Reading
	IRA—Interactive Read Aloud	L--Lecture	M—Manipulative
	MI—Managed Independent	MM—Multi Media (Video, Audio)	NC—Number Cards
	Pa—Participation	P—Prediction	PR—Peer Review
	PP—Power Point	R—Read	Re—Recreation
	S—Songs	So—Sort	SR—Shared Reading
	SRT—Star Reading Test	TM—Teacher Modeling	VE—Verbal Explanation
	V—View	WP—Written Practice	WS—Word Study

Standard	**Indicator**	**Performance Scale**	**Time Frame**	**Instructional Method**	**Instructional Resources**	**Assessment of Learning**	**Biblical Integration**
Life	Explain that the basic functions of organisms are carried out in cells.	Developed	1. Week 2 days	Lectures	Text	Diagram	Heb 11:3 We can know origins only by believing in God
	Groups of specialized cells form tissues.	Introduced	4 day	Demonstration	Models	Quiz on skeleton	

	Multi-cellular organisms have organs.	Developed	2. Week 2 day	Power point	Text Models	Student response	Gen 2:7 God breathed life into man
	Groups of organs form systems.	Developed	4 days	Power point	Internet Text	Test	
	Describe characteristics of organisms in terms of inherited traits.	Developed	3. Week 2 day	Bulletin board	Pictures of many dog varieties	Student response	Psalm 139:14 God made us wonderfully
	Recognize reproduction as a characteristic of living organisms essential to the continuation of the species.	Introduced	2 days	Resource person Or Lecture	Video / DVD	Quiz	
	Investigate the great variety of body plans and internal structures found in multi-cellular organisms.	Introduced	4. Week 3 days	Laboratory	Specimens	Lab practicum	Job 39 Where you there…?
	Investigate the great diversity among organisms.	Introduced	3 days	Laboratory	Specimens	Lab practicum	
	Explain how energy enters the ecosystem as sunlight and how it supports life through photosynthesis.	Reinforced	5. Week 2 days	Power point	Internet	Student response	Mat 6:26-30 God takes care of plants and animals

	Energy transfers through the interactions of organisms and the environment.	Introduced	2 days	Lecture	ABeka text	Report	
	Investigate how organisms or populations may interact with one another through symbiotic relationships.	Introduced	6. Week 2 days	Lecture	ABeka text	Report	Psalm 65:9-11 God made everything to work together.
	Study how some species have become so adapted to each other that neither could survive without the other (e.g., predator-prey, parasitism, mutualism)	Introduced	2 days	Discuss	Multimedia	Report	
	Explain how the number of organisms an ecosystem can support depends on adequate biotic (living) resources (e.g., plants, animals) and abiotic (non-living) resources (e.g.,	Reinforced	7. Week 4 days	Read	Multimedia	Report	Psalm 65:12-13 All creation supports and depends on all other parts

	light, water and soil).						
	Summarize the ways that natural occurrences and human activity affect the transfer of energy in Earth's ecosystems (e.g., fire, hurricanes, roads and oil spills).	Introduced	2 days	Multi-media	Lecture	Student response	
	Explain that photosynthetic cells convert solar energy into chemical energy that is used to carry on life functions or is transferred to consumers and used to carry on their life functions.	Introduced	8. Week 2 days	Read/Lecture	Power point	Student response	Psalm 104:14 Food for cattle and for man
	Explain how extinction of a species occurs when the environment changes and its adaptive characteristics are insufficient to allow survival (as	Introduced	2 days	Read/Lecture	Multimedia	Worksheet	

	seen in evidence of the fossil record).						
	Investigate how overpopulation impacts an ecosystem	Reinforced	9. Week 2 days	Drama	Lecture	Student response	Ecc 1:4 Generations replace generations
	Explain that some environmental changes occur slowly while others occur rapidly (e.g., forest and pond succession, fires and decomposition).	Reinforced	2 days	Small group work	Student written drama	Drama performance	
	Restate the impact that early scientists had on our present understanding of science	Reinforced	10. Week 4 days	Research on Laptops	Oral Presentation	Student-made visual	Gen 1:26 Man has dominion over creation
	Construct an experiment that uses the scientific method.	Reinforced	11. Week 5 days	Laptop research	Laptop	Report	Psalm 8:6-8 Science investigates the dominion man has over creation
	Test for pH levels.	Reinforced	12. Week 2 days	Laboratory	Lab material	Worksheet	
	Explain the function of each flower structure	Reinforced	4 days	Demonstration	Model	Quiz	1 Kings 4:29-34 Solomon was a biologist
	Classify plants	Introduced	13. Week	Drama	Student-written	Presentation	Job 12:8-9

	according to flower family.		3 days		scripts		The earth will teach us
	Classify plants according to leaves.	Reinforced	2 days	Laboratory	Outdoor lab	Lab paper	
	Explain the differences and similarities of various arthropods	Introduced	14. Week 4 days	Observation	Specimens	Student response	Proverbs 30:24-28 The ant and the locust are wise
	Investigate the components of soil that make it fertile for various plants	Introduced	3 days	Laboratory	Test materials for N, K, P	Worksheet	
	Identify differences and similarities of dicots and monocots.	Developed	15. Week 2 days	Samples	Lab samples	Lab paper	Lev 19:23-25 Give first fruits to the Lord
	Restate the process of respiration in plant life	Introduced	1 day	Read/ Lecture	ABeka	Student response	
	Examine illustrations of the stages of development of a human during gestation	Introduced	16. Week 3 days	Text and Multimedia	Abeka and power point	Student response	Gen 5:1-2 We are made in his likeness
Earth and Space	Explain that the universe is composed of vast amounts of matter, most of which is at incomprehensible	Introduced	3 days	Read/Lecture	ABeka	Student response	

	distances and held together with gravity.						
	Describe interactions of matter and energy throughout the lithosphere, hydrosphere and atmosphere.	Reinforced	17.Week 3 days	Read/Lecture	ABeka	Student response	Job 36:27-28 Water cycle recorded in the oldest book before science recognized it
	Analyze weather and water cycle.	Reinforced	18. Week 4 days	Multimedia	Power point	Quiz	Ecc 1:7 Rivers run but never fill the sea
	Explain the cycles between the lithosphere (land) hydrosphere. (water), and atmosphere (air).	Reinforced	19. Week 3 days	Lecture	ABeka	Student response	Jere 10:13water vapor lightning wind
	Explain earth's capacity to absorb and recycle smoke, smog, and sewage naturally depending on the length of time.	Introduced	2 days	Lecture	ABeka	Student response	
	Describe the availability of fresh water that is essential for life, agriculture, and industry.	Reinforced	20. Week 2 days	Lecture	ABeka	Student response / test	Amos 5:8 God pours the waters out

	Analyze ground water in rivers, lakes, and groundwater for micro-organisms and pollution.	Introduced	3 days	Laboratory	Lab material	Lab paper	
	Make simple weather predictions based on the changing cloud types associated with frontal systems	Reinforced	21.Week 3 days	Homework	Power point	Worksheet	Ecc 1:6 Wind cycles to form clouds
	Determine the cause of wind	reinforce	1 day	Computer search	Laptops	Student written response	
	Examine the effect of Coriolis Effect on wind patterns around the Globe	introduce	2 days	Read/Lecture	ABeka text	Student response	
	Know the names and the latitudes that are affected by the tilted axis	Reinforced	22.Week 2 days	Demonstration	Globe	Verbal response	Job 26:7God arranged north and the earth's tilt
	Determine how weather observations and measurements are combined to produce weather maps and that data for a specific location at one point in time can	Introduced	2 days	Illustrate Power point	Weather channel	Student response	

	be displayed in a station Model						
	Read a weather map to interpret local, regional and national weather	Reinforced	23.Week 3 days	View/discuss	ABeka	Worksheet	Gen 8:22 Seasons and temperature shall not cease
	Describe how temperature and precipitation determine climatic zones (biomes) (e.g., desert, grasslands, forests, tundra and alpine).	Reinforced	3 days	Predict	ABeka	Student response	
	Describe the connection between the water cycle and weather-related phenomenon (e.g., tornadoes, floods, droughts and hurricanes).	Introduced	24.Week 2 days	investigation	DVD	Written response	Job 5:10 god gives rain Job 12:15 God sends drought
	Site examples how the geologic table is an example of circular reasoning.	Introduced	1 day	Investigation	Answers in Genesis	Quiz	
Science and Technology	Give examples of how technological advances, influenced by scientific knowledge, affect	Reinforced	2 days	Discuss	Internet	Written response/ class Presentation	

	the quality of life.						
	Explain how needs, attitudes and values influence the direction of technological development in various cultures.	Introduced	25.Week 2 days	Read / discuss	Internet	Written response/ class Presentation	Psalm 115:16 God gave earth to man and it is our responsibility to care for it
	Describe how decisions to develop and use technologies often put environmental and economic concerns in direct competition with each other.	Introduced	2 days	Multimedia	DVD	Verbal response	
	Recognize that science can only answer some questions and technology can only solve some human problems.	Developed	26.Week 3 days	Lecture	Guest speaker	Written response/ take notes	Gen 3 17-18 Ground is cursed because of Adam
	Design a solution or product taking into account needs (e.g., cost, time, trade-offs, properties of materials,)	Developed	3 days	Build and describe	Sepup material	Lab paper	
	Design a solution or product taking	Developed	27.Week 2 days	Prediction	Sepup material	Lab paper	Gen 2:15 Man is on earth to

	into constraints (e.g., safety and aesthetics).						care for it not tear it down
Scientific Inquiry	Explain that there are differing sets of procedures for guiding scientific investigations and procedures are determined by the nature of the investigation, safety considerations and appropriate tools.	Reinforced	3 days	Lecture Multimedia	DVD	Student response	
	Explain that variables and controls can affect the results of an investigation and that ideally one variable should be tested at a time; however it is not always possible to control all variables.	Reinforced	28.Week 2 days	Experiment	Lab material	Lab paper	Ecc11:5 There are many things that we cannot know
	Identify simple independent and dependent variables	Developed	2 days	Experiment	Lab material	Lab paper	
	Choose the appropriate tools	Reinforced	29.Week 2 days	Experiment	Lab material	Lab paper	

	and instruments and use relevant safety procedures to complete scientific investigations.						
	Classify samples into Carolas Linnaeus' divisions of Kingdom, phyla, class, order, family genus, specie	Introduced	3 days	Classify	Lab material	Lab paper	Gen 1:11-13, 20-27 God classified during creation
	Analyze and interpret data from scientific investigations using appropriate mathematical skills in order to draw valid conclusions.	Developed	30.Week 3 days	Analyze experimental results	Lab material	Lab paper	Psalm 19:1-7 heavens declare the glory of God. He is predictable and precise.
	Analyze alternative scientific explanations and predictions and recognize that there may be more than one good way to interpret a given set of data.	Developed	3 days	Prediction	Oral Presentation	Student response	
	Identify faulty reasoning and statements that go beyond the	Developed	31.Week 3 days	Group work	Answers in Genesis	Student response	Job 37 Much of science is beyond man's understanding

	evidence or misinterpret the evidence.						
	Use graphs, tables and charts to study physical phenomena and infer mathematical relationships between variables (e.g., speed and density).	Developed	32.Week 4 days	Experiment	Lab material	Lab paper	
Scientific Ways of Learning	Use skills of scientific inquiry processes (e.g., hypothesis, record keeping, description and explanation).	Developed	2 days	Experiment	Lab material	Lab paper	Job 12:7,8 God invites us to study scientifically
	Explain the importance of reproducibility and reduction of bias in scientific methods.	Developed	33.Week 2 days	Lecture	Internet	Written response	
	Show that the reproducibility of results is essential to reduce bias in scientific investigations.	Developed	2 days	Discuss	Answers in Genesis	Written response	Isaiah 40:7 God's Word is reliable even if we develop bias toward scientific findings
	Describe how repetition of an	Developed	34.Week 2 days	Discuss	Answers in Genesis	Written response	

	experiment may reduce bias.						
	Give examples of how thinking scientifically is helpful in daily life.	Developed	3 days	Group work	Internet	Drama script	
	Describe how the work of science requires a variety of human abilities and qualities that are helpful in daily life (e.g., reasoning, creativity, skepticism and openness).	Developed	35.Week 3 days	Group work	Internet	Drama script	Ecc 3:11 No one can find out the work of the Lord unless He reveals hidden secrets to us.
	State the events on each day of creation as recorded in Genesis chapter 1.	Reinforced	2 days	Illustrate	Pictures/ manipulative	Quiz	
	Describe the works of early Christian scientists.	Introduced	2 days	Drama	ABeka	Oral Presentation	
	Compare creation and evolution according to the laws of logic, thermodynamics, and mathematics.	Introduced	36.Week 2 days	Power point	ABeka	Written notes	

	Consider the laws of biogenesis, and heredity as they relate to creation and evolution	Introduced	2 days	Power point	ABeka	Written notes	1 Cor 15: 47,49 We have Adam's image

Mansfield Christian School
8th Grade
Science Curriculum Guide

Performance Scale Key	**Instructional Method Key**		
Introduced	AR—Accelerated Reader	A—Assemble	BD—Build & Describe
Developed	Cl—Classification	C—Construct	CC—Compare & Contrast
Reinforced	Co—Collaboration	Col—Collect	Com—Complete
Not Addressed	Cr—Create	D—Drama	Dem—Demonstration
	Dis—Discuss	DP—Descriptive Presentation	Dr—Draw
	E—Experiment	FT—Field Trip	G—Games
	GR—Guided Reading	GS—Guest Speaker	GW—Group Work
	GWr—Group Writing	ID—Identification	I—Illustration
	In—Investigation	IW—Independent Writing	IR—Independent Reading
	IRA—Interactive Read Aloud	L--Lecture	M—Manipulative
	MI—Managed Independent	MM—Multi Media (Video, Audio)	NC—Number Cards
	Pa—Participation	P—Prediction	PR—Peer Review
	PP—Power Point	R—Read	Re—Recreation
	S—Songs	So—Sort	SR—Shared Reading
	SRT—Star Reading Test	TM—Teacher Modeling	VE—Verbal Explanation
	V—View	WP—Written Practice	WS—Word Study

Standard	**Indicator**	**Performance Scale**	**Time Frame**	**Instructional Method**	**Instructional Resources**	**Assessment of Learning**	**Biblical Integration**
Earth and space	Describe how the positions and motions of the objects in the universe cause predictable and cyclic events.	develop	Week 1 3 days	Demonstration/ cards	ABeka Textbook	quiz	Psalm 136:1, 5-9 and Isaiah 40:12 measures heaven in his hand Give thanks for He is good to control day and night
	Describe how objects in the solar	develop	Week 2 5 days	Demonstration/ cards	ABeka text Cards with sun	Student place cards in room	Isaiah 48:13 God laid the

	system are in regular and predictable motions that explain such phenomena as days, years, seasons, eclipses, tides and moon cycles.				model	around sun model	foundation and stood them together by gravity
	Explain that gravitational force is the dominant force determining motions in the solar system and in particular keeps the planets in orbit around the sun.	develop	Week 3 3 days	Descriptive presentation	Globe and sun models	quiz	Jeremiah 32:17 Nothing is too hard for God. Job 9:8-10
	Compare the orbits and composition of comets and asteroids with that of Earth.	introduce	Week 4 3 days	multimedia	Internet Demonstration using fan and tissue strips	Written essay	Psalm 89:11 The heavens include many objects that were made by Him
	Describe the effect that asteroids or meteoroids have when moving through space and sometimes entering planetary atmospheres (e.g., meteor-"shooting star" and meteorite	introduce	2 day	discuss	ABeka	Teacher observation	

	Explain that the universe is composed of vast amounts of matter, most of which is at incomprehensible distances and held together by gravitational force	developed	Week 5 2 days	multimedia	Louis Guglio DVD	Student response	Isaiah 42:5 God stretched the heavens out Isa 44:24
	Describe how the universe is studied by the use of equipment such as telescopes, probes, satellites and spacecraft.	introduced	4 days	Read aloud	ABeka	test	Psalm 8:3-4 We are to consider the heavens and can do so better than any generation before us.
	Explain that the universe consists of billions of galaxies that are classified by shape	introduced	Week 6 2 days	Multimedia	Guglio DVD	observation	Psalm 33: 6 all the host of heaven were created by His word
	Explain interstellar distances are measured in light years, AU, and parsecs (e.g., the nearest star beyond the sun is 4.3 light years away).	introduced	3 days	Independent reading	ABeka Louis Guglio	quiz	Job 22:12 The "highest star" Just how lofty did God get?
	Examine the life cycle of a star and predict the next likely stage of a	introduced	Week 7 2 day	research	Internet laptops	Written response	Amos 5:8 He made Pleiades and Orion. Job 9:9

	star.						
	Name and describe tools used to study the universe (e.g., telescopes, probes, satellites and spacecraft).	introduced	5 days	Lecture Independent reading	ABeka	test	
	Describe interactions of matter and energy throughout the lithosphere, hydrosphere and atmosphere (e.g., water cycle, weather and pollution).	developed	Week 8 2 days	Power point	Abeka and internet to enhance lecture	diagram	Jeremiah 10:13 Amos 5:8 The water cycle is necessary for life and is God's design
	Use models to analyze the size and shape of Earth, its surface and its interior (e.g., globes, topographic maps, satellite images).	developed	3 days	Demonstration	globes	observation	
	Identify constellations in the Northern Hemisphere by major star groups	introduced	Week 9 5 days	investigation	Internet ABeka text	Oral presentation student made posters	Amos 5:8 He made Pleiades and Orion. Job 9:9
	Debate the space programs cost effectiveness	introduced	Week 10 2 days	discussion	Teacher presentation from NASA statistics	discussion	God desires that we study science, the details of his

							creation, yet true religion is to take care of poor people.
	Predict future space programs and their validity.	introduced	3 days	prediction	internet	Written essay	
Life	Describe the characteristics of an organism in terms of a combination of inherited traits and recognize reproduction as a characteristic of living organisms essential to the continuation of the species	developed	Week 11 3 days	Guided reading lecture	Internet and Guest speaker form Gorman Nature Center with specimens	observation	Genesis 1:11-13, 20-27, 31 All life reproduced after their own kind Job: 39: 13-17 the instincts of the ostrich
	Recognize that in sexual reproduction new combinations of traits are produced which may increase or decrease an organism's chances for survival.	developed	2 days	Guided reading	article	Student response	
	Explain how variations in structure, behavior	developed	Week 12 2 days	Guest speaker	Gorman Nature Center	Student response essay	Job 39:26-30 Description of a hawks instincts

	or physiology allow some organisms to enhance their reproductive success and survival in a particular environment.						Mark 10:6 He created them male and female
	Explain how extinction of a species occurs when the environment changes and its adaptive characteristics are insufficient to allow survival (as seen in evidence of the fossil record).	developed	2 days	Guest speaker Lecture	Gorman Nature Center ABeka	quiz	Psalm 104:14-30 God causes grass to grow and provides food for his cattle and man. The fall caused death and extinction.
	Explain that evolution believes that diversity of species is developed through gradual processes over many generations (e.g., fossil record).	introduced	Week 13 2 days	Interactive oral reading	Geologic time chart	quiz	The created work was complete in 6 days and the fossil records show sudden mass burial. Mat 18:6 don't listen to false teaching
	Investigate how an organism adapted to a particular	introduced	2 days	Verbal explanation	article	Student lead discussion	Deut 7:12-14 God causes drought and

	environment may become extinct if the environment changes.						harvest if Israel would obey him.
	Use the fossil record to show the Cambrian layer and the rapid explosion of life.	introduced	2day	Compare and contrast	Geologic time chart	Chart and worksheet	Genesis 1:11-12,22, and 28 Animals were made as mature creatures that could reproduce. The fossil records show distinguishing characteristics Psalm 1:1 listen to godly counsel
	Identify avian body characteristics that make flight possible	introduced	Week 14 5 days	Models and specimen	Guest speaker	Verbal response	Birds of the air created on day 5. Job 39:13 Comparing ostrich and stork
	Develop techniques to improve bird watching as a lifelong activity	introduced	Week 15 2 days	demonstration	Guest speaker Lecture	Worksheet and monthly chart	Tyron Edwards "Nature and revelation are alike God's books; each may have mysteries, but in each there are plain practical lessons for everyday

							life.”
	Identify bird calls	Introduced	2 days	demonstration	Bird call imitator tool	Listening quiz	
	Investigate unique bird behavior and adaptation.	introduced	Week 16 3 days	multimedia	Guest speaker Lecture DVD	quiz	Job 12:7-10 ask the beasts, birds, earth, and fish to teach us
Physical science	Relate uses, properties and chemical processes to the behavior and/or arrangement of the small particles that compose matter	developed	4 days	Read aloud multimedia	DVD	observation	
	In simple cases, describe the motion of objects and conceptually describe the effects of forces on an object.	introduced	Week 17 3 days	Read experiment	Lab materials	Lab paper	Psalm 119:90 God established earth and it abides so that the laws are consistent
	Describe how the change in the position (motion) of an object is always judged and described in comparison to a reference point.	developed	2 days	Demonstration	Science materials	quiz	
	Explain that motion describes the change in the	developed	Week 18 2 days	demonstration	Science material	observation	Isaiah 45:18 God formed and established earth

	position of an object (characterized by a speed and direction) as time changes.						in time.
	Explain that an unbalanced force acting on an object changes that object's speed and/or direction.	developed	2 days	experiment	Lab material	Lab paper	
	Describe renewable and nonrenewable sources of energy (e.g., solar, wind, fossil fuels, biomass, hydroelectricity, geothermal and nuclear energy) and the management of these sources.	developed	Week 19 4 days	Experiment Lecture Reading	Lab materials internet	quiz	Psalm 111:2, 4 God's works are great and are a pleasure to study. Each generation remembers discoveries and passes them on to the next generation so we can extract energy for our use.
	Describe that energy takes many forms, some forms represent kinetic energy and some forms represent potential energy; and during energy	developed	Week 20 4 days	Read Lecture Demonstration	ABeka	Teacher observation during Q and A	Col 1:16 All creation praises God. Visible, invisible, thrones…powers.

	transformations the total amount of energy remains constant.						
	Demonstrate that waves transfer energy.	developed	1 day	Demonstration	Water in tray	Lab paper	
	Demonstrate that vibrations in materials may produce waves that spread away from the source in all directions (e.g., earthquake waves and sound waves).	developed	Week 21 2 days	demonstration	One blindfolded person in the middle of the room and have several people clap one at a time to see if they can tell the location the clap came from. Plug one ear.	Lab paper	Job 9:6 God shakes the earth in predictable waves that spread out in all directions
	Manipulate magnets and visualize their lines of force.	introduced	2 days	lab	Abeka Lab materials	Lab paper	
	Uncover the laws of thermodynamics and how they relate to creation.	introduced	Week 22 3 days	Lecture Interactive Read aloud	ABeka	quiz	1st law matter was created at on point in time. 2nd everything is winding down
	Understand the nature of heat expansion	introduced	2 days	demonstration	Lab material Ring and ball	Lab paper	
	Examine heat as a form of energy	developed	Week 23 2 days	demonstration	Coil of paper and heat source	Student response	
	Compare the	introduced	3 days	lab	Lab material	Lab paper	

	molecular activity in each state of matter due to heat transfer				Chocolate and pretzels		
	Examine the laws of fluids. (flight, buoyancy, siphoning, vacuum,)	introduced	Week 24 4 days	ABeka Lab	Lab materials Siphon and bucket	Lab paper	
	Uncover the laws of electricity and know the dangers.	introduced	Week 25 3 days	Lab ABeka read	Lab materials Battery, wire and light bulb	Lab paper	
	Examine simple machines and put them to use.	introduced	4 days	lab	Lab materials 6 stations around the room	Lab paper	Man is instructed as part of the curse to hard labor. Simple machines make it possible to accomplish more work. Our attitude toward work needs to be one that glorifies God.
Science and technology	Give examples of how technological advances, influenced by scientific knowledge, affect the quality of life	developed	2 days	Group work Compare and contrast early 1900's and 2000's	Internet	Drama Student generated script	
	Examine how science and	developed	Week 26	Peer review of previous	Bulletin board-Black history	Write contributions on a	Ecclesiastes 1:4-5

	technology have advanced through the contributions of many different people, cultures and times in history.		5 days	knowledge		flip chart	Continuance from generation to generation
	Examine how choices regarding the use of technology are influenced by constraints caused by various unavoidable factors (e.g., geographic location, limited resources, social, political and economic considerations).	developed	Week 27 2 days	Power point	Teacher researched presentation including world map or resources, population, and political factors	Essay	We are walking a road laid out by God. There is nothing that can happen to us that cannot be used to glorify God. See unavoidable factors as challenges to represent God to an unbelieving world.
	Design a solution or product taking into account needs and constraints (e.g., cost, time, trade-offs, properties of materials, safety and aesthetics).	introduced	3 days	Create and assemble a new product	Sepup material	Final product	
	Design and build a product or create a solution to a	introduced	Week 28 3 days	Experiment and record progress in a log book	Internet and student participation	Science fair judging	Job 14:7-9 When circumstances

	problem given more than two constraints (e.g., limits of cost and time for design and production, supply of materials)						constrain us, like a tree being cut down, look for a productive solution
	Evaluate the overall effectiveness of a product design or solution.	introduced	1 day	Class presentation	Internet and student participation	Science fair judging	
Scientific inquiry	Explain that there are differing sets of procedures for guiding scientific investigations and procedures are determined by the nature of the investigation, safety considerations and appropriate tools.	developed	Ongoing I day	Collaborate research and independent writing	Internet and other student contributions	Science fair	We are created in His image with imagination. What one person sees as a solution, is not the only way to solve a problem.
	Choose the appropriate tools or instruments and use relevant safety procedures to complete scientific	developed	Week 29 Ongoing 1 day	Lab Experiment Lecture Read	Lab materials throughout the year	Teacher observations	

	investigations.						
	Describe the concepts of sample size and control and explain how these affect scientific investigations.	developed	Ongoing 1 day	Experiment	ABeka Flinn Scientific Internet	Science fair judging	
	Analyze and interpret data from scientific investigations using appropriate mathematical skills in order to draw valid conclusions.	developed	Ongoing 1 day	Experiment	Convert their results into a graph or chart	Science fair judging	Because God made the universe orderly and dependable, we can interpret results to draw conclusions.
	Read, construct and interpret data in various forms produced by self and others in both written and oral form (e.g., tables, charts, maps, graphs, diagrams and symbols).	introduced	Ongoing 1 day	Experiment Construct Create	Poster on using the correct graph to represent certain information internet	Science Fair	
	Apply appropriate math skills to interpret quantitative data (e.g., mean, median, mode, and range).	developed	Ongoing 1 day	Experiment	Lab materials Peripheral vision disc	Chart, mean, mode, median and range	

Scientific ways of knowing	Use skills of scientific inquiry processes (e.g., hypothesis, record keeping, description and explanation).	developed	Week 30 Ongoing 1 day	Experiment	ABeka ACSI Science Fair Manual	Science Fair judging, log book, research paper	Colossians 2:8 Begin with the Word of God when inquiring, not the thoughts of men
	Identify the difference between description (e.g., observation and summary) and explanation (e.g., inference, prediction, significance and importance).	developed	Ongoing 2 day	Experiment Read Research Teacher lecture	ABeka Internet	Lab paper worksheet	
	Explain why it is important to examine data objectively and not let bias affect observations.	develop	Ongoing 1 day	Lecture DVD	Answers in Genesis	Debate	Colossians 2:8 Begin with the Word of God when inquiring, not the thoughts of men
	Give examples of how thinking scientifically is helpful in daily life.	develop	Ongoing 1 day	collaboration	internet	Write contributions on the flip chart	
	Interpret numerical data and illustrate as a graph.	develop	Week 31 3 days	Investigate facts and written practice	OGT Material	worksheets	
	Interpret scientific	develop	3 days	Experiment	Rainfall worksheet	worksheet	

	records and present them as a chart.			gather rainfall data over several weeks.	Weather channel		
	Convert charts to graphs and know which graph best illustrates the information	develop	Week 32 3 days	Read, sort through charts provided by teacher	Poster explaining use of proper graph	Student creates own graph to illustrate given information	
	Identify the Bible as the inerrant word of God and that it never contradicts science.	develop	Ongoing 1 day	discuss	Bible Answers in Genesis	Student response	2 Timothy 3:16 All scripture is given by inspiration
	Compare and contrast evolution and creation	introduce	Week 33 5 days	Lecture Guided reading	Bible ABeka Answers in Genesis	Debate Note cards	Genesis 1 Know the order of creation and the order of evolution
	Propose the unlikelihood of evolution with mathematical probabilities	Introduced	2 days	Lecture Guided reading Power point internet	Bible ABeka Answers in Genesis	Debate Written Essay	Be ready to give an account to the hope we have
	Restate evolutionary ancestors of man and the evidence that surrounds them.	Introduced	Week 34 3 days	Lecture Guided reading Power point internet	ABeka Answers in Genesis	Debate Test	Proverbs 19:27 God created one man and one woman. Start with the Bible so you do not stray from the truth

	Debate the issue of creation verses evolution.	Introduced	4 days	Lecture Guided reading Power point internet	ABeka Answers in Genesis	Debate	Romans 1:18-32 God manifested himself to all men, even evolutionists. They are without excuse.
	Identify the components of evolution that requires faith to believe it.	Introduced	Week 35 4 days	Lecture Guided reading Power point internet	ABeka Answers in Genesis	Debate Student response	Faith is believing in something that is unseen.
	Explain the basic details of DNA that show information that had to have originated with an intelligent source.	Introduced	Week 36 3 days	Lecture Guided reading Power point internet	DVD ABeka Answers in Genesis		Where there is a design it implies a designer. Information demands an informer.

Mansfield Christian School
Biology
Curriculum Guide

Performance Scale Key	**Instructional Method Key**		
Introduced	L – Lecture	NT – Note taking	Q & A – Question and Answer
Developed			
Reinforced	Demo – Demonstration	P - Project	M - Model
Not Addressed	Lab – Lab/Experiment	FT – Field Trip	I - Investigation
	G – Group Activity	R –Research	PP – Power Point
	D – Discussion	WP – Written Practice/Homework	GS – Guest Speaker
	MM – CD/Video/Smart Board	CT – Chart/Table	
	SP – Student Presentation	CS – Current Science Magazines	VLab – Virtual Lab

Standard	**Indicator**	**Performance Scale**	**Time Frame**	**Instructional Method**	**Instructional Resources**	**Assessment of Learning**	**Biblical Integration**
Life Science	1. Explain that living cells are the basic unit of structure and function for all living things and come from pre-existing cells	Reinforced	Week 4	L, NT	Text Bible	Quiz/Test	1 Cor. 12:12-26 "The body is a unit, though it is made of many parts…"
	2. Describe the different types of cells	Reinforced	Week 5	Lab, CT, NT	Text Chart Model	Quiz/Test	
	3. Explain that cells are composed of key chemical elements	Developed	Week 3 & 6	L, NT	text	Quiz/Test	
	4. Compare the structure, function, and interrelatedness of cell organelles in eukaryotic and prokaryotic cells	Developed	Week 5	L, NT, MM, Lab	Text CD-Rom Microscopes Slides Chart	Edible Cells Project Quiz Test Lab report	Living things are characterized by common traits, all of which are recognized in the Bible

	Describe the levels of cellular organization	Reinforce	Week 5	L, NT	text	Quiz/Test Student response	
	Explain the process of homeostasis in living organisms	Reinforced	Week 6 & 7	L, NT, MM, Lab	Text table	Written Response Q &A	
	Describe the import and export of molecules and disposal of wastes in cells	Developed	Week 6	MM	CD-Rom	Quiz/Test	
	Summarize the processes of cell division and differentiation	Developed	Week 10 & 11	Chart, NT, Model	Model Chart CD-Rom	Mitosis Poster Test	
	Investigate the variety of body plans and internal structures in multi-cellular and colonial organisms	Developed Reinforced	Week 23 - 35	L, NT, WP, Lab, SP, R, MM, Q & A, CT, Demo	Text Specimens Lab equipment Internet Videos Models	Lab quizzes Tests Student response Student presentations	Designs from the biological world were designated by God as patterns in the construction of the Tabernacle in Wilderness, and the garments of the high priest
	Investigate the physiology of a variety of multicellular organisms	Developed	Week 23 - 35	L, NT, MM	Text Video	Written Response Quiz/Test Q & A	Plants, animals, and man were each created with specific purposed
	Investigate the different forms of asexual and sexual reproduction in organisms	Developed	Week 16-19, 24-35	L, NT, MM	Text Video CD-Rom	Quiz/Test	A great variety of forms of life exist: Ability to reproduce is w/in limits set by God

	Investigate the structures, uses, and control of single celled organisms including bacteria, protozoans, and viruses	Developed	Week 16, 17, 18, 19	L, NT, MM, Lab	Text Microscopes Pond water Slides/CD-Rom Video	Quiz/Test Lab Report Q & A	A great variety of forms of life exist
	Examine a variety of human diseases caused by viruses and bacteria	Developed	Week 16 & 17	L, NT, R, G	Text Laptops/internet Safe Water Science – Group activity illustrating how a waterborne illness is transmitted Chemicals	Lab Report Oral Presentations Quiz/Test	Plants and animals are affected by God's judgment upon man throughout history and all affected by sin
	Illustrate the relationship of the structure and function of DNA to protein synthesis	Developed	Week 4 & Week 7	MM, L, NT	Text Video ELMO Model	Quiz/Test Q & A	There is order in creation
	Illustrate the relationship of DNA to the characteristics of an organism	Reinforced	Week 9 & 12	D, Q & A, MM	Text Diagrams	Q& A Quiz/Test	Living things are characterized by common traits
	Explain that a unit of hereditary information is called a gene, and genes may occur in different forms called alleles (e.g., gene for pea plant height has two alleles, tall and short).	Developed	Week 9	L, NT, WP	Text Worksheet Diagram Punnett Square	Quiz/Test Project	Living things are characterized by common traits

	Describe that spontaneous changes in DNA are mutations, which are a source of genetic variation. When mutations occur in sex cells, they may be passed on to future generations; mutations that occur in body cells may affect the functioning of that cell or the organism in which that cell is found	Introduced	Week 11 & 12	D	Text Pictures	Q & A Quiz/Test	Man's heredity is affected by the sin of Adam
	Use the concepts of Mendelian and non-Mendelian genetics to explain inheritance	Developed	Week 12 & 13	L, NT, WP, WS, D, Demo	Text Internet Punnett squares	Quizzes, Test, Trihybrid Cross Project, Worksheets	The human body is wonderfully made Living things characterized by common traits
	Describe how matter cycles and energy flows through different levels of organization in living systems and the environment	Reinforced	Week 23 - 37	D, L, NT, Chart	Text Diagram-Food Web Diagrams of cellular processes	Quizzes/Tests Activities	Interrelationships exist among the various forms of life; no organism exists completely independent of all else
	Explain how some energy is stored and much is dissipated into the environment	Reinforced	Week 3	D, Demo	Text Lab material	Student Responses	Changes in the form of matter and energy are continuously occurring

	Describe how cells and organisms acquire and release energy	Reinforced	Week 7	L, NT	Text	Quiz/Test Activity	All energy comes from God; All animals were originally herbivores
	Describe how cells and organisms use matter and energy to synthesize a variety of organic molecules	Developed	Week 4, 7, & 8	L, NT, MM	Text Video CD-Rom	Quiz/Test	Living things have their origin in God's work
	Describe that biological classification systems represent how organisms are similar with species being the most fundamental unit	Reinforced	Week 16	D, NT, L, PP	Text Bible Internet	Quiz/Test Q & A	Living things are characterized by common traits
	Relate how biologists arrange organisms into a hierarchy of groups and subgroups based on similarities and differences	Reinforced	Week 16 & 17	L, D, NT, G, Lab, Demo, PP – 5 kingdoms	Text Class participation-Demo Lab material-new "species" for classification	Quiz/Test Dichotomous Key	Living things are characterized by common traits
	Explain that the variation of organisms within a species increases the likelihood that at least some members will survive under gradual changing environ.	Reinforced	Week 17	D	Text Answers in Genesis	Q & A Student Response	The natural world, God's creation, is constantly changing
	Explain the structure and function of ecosystems	Reinforced	Week 36 & 37	L, NT, D, FT	Text Gorman Nature	Quiz/Test Presentations	God preserves His creation;

	and relate how ecosystems change over time				Center Mr. McKee		Interrelationships exist among the various forms of life; no organism exists completely independent of all else;
	Explain how living things interact with biotic and abiotic factors	Reinforced	Week 36 & 37	L, NT, G, FT, GS	Text Nature Center Mr. McKee	Quiz/Test Presentations	Interrelationships exist among the various forms of life; no organism exists completely independent of all else
	Relate how distribution and abundance of organisms and populations in ecosystems are limited by the ability of the ecosystem to recycle materials and the availability of matter, space and energy	Reinforced	Week 36 & 37	D, FT, GS	Text Nature Center Mr. McKee	Student Response	Interrelationships exist among the various forms of life; no organism exists completely independent of all else; God controls the ecological system
	Describe ways that human activities can deliberately or inadvertently alter the equilibrium in ecosystems.	Reinforced	Week 36 & 37	D, FT, GS	Text Nature Center Mr. McKee Environmental Science-Issues workbook	Written Response	Man given dominion over plants and animals
	Explain how changes in technology/biotechnology can cause significant	Reinforced	Week 36 & 37	D	Internet Periodicals	Student Response	God desires that we study science, the

	changes, either positive or negative, in environmental quality and carrying capacity						details of His creation
	Recognize that a change in gene frequency (genetic composition) in a population over time is a foundation of the **theory** of biological evolution	Reinforced	Week 14	D, L, NT	text	Quiz/Test Student Presentations	Men by nature are not neutral or objective observers of God's universe; man's ability to understand truth is impaired by sin
	Explain the theory of natural selection	Reinforced	Week 15	R, SP	Text Answers in Genesis	Quiz/Test Student Presentations	God designed organisms w/ a great amount of genetic diversity that could be selected for or against
	Give biblical support for a literal interpretation of Creation	Reinforced	Week 14	L, D, NT, MM	Text Bible Answers in Genesis	Quiz/Test Student Response	Our knowledge of the origin of life comes from God alone
	Describe the Non-Literal Interpretations of Creation	Introduced	Week 14	R, SP, D	Text Answers in Genesis	Quiz/Test Student Presentation	
	Differentiate between a Christian worldview and non-Christian worldview	Developed	Week 14	D, NT	Text Bible	Quiz/Test Q & A	Organisms created perfect, sin entered world resulting in death, God sent a redeemer

							Gen. 3:12
	Describe the 3 major components of the theory of evolution (cosmological beginnings, biological evolution, philosophy of)	Reinforced	Week 14 & 15	L, NT	Text	Quiz/Test	Men by nature are not neutral or objective observers of God's universe; man's ability to understand truth is impaired by sin
	Describe Lamarck and Darwin's theories of evolution	Reinforced	Week 15	R, SP	Text	Quiz/Test Student Presentations	No person was present or had any knowledge of His work at the beginning
	Discuss the fossil record	Reinforced	Week 14 & 15	L, MM	Text Video/Answers in Genesis	Quiz/Test	The Flood was of major significance, causing great disturbances of the earth
	Describe the advances in life sciences that have imp. long-lasting effects on science & society	Introduced		D	Text Internet Periodicals	Presentations	God desires that we study science, the details of His creation
	Analyze and investigate emerging scientific issues	Developed	Throughout year	D, CS, R, SP, GS	Internet Periodicals Guest Speaker	Written Response	God desires that we study science, the details of His creation
Earth and Space	Summarize the relationship between the		Week 36 & 37	D, R, P, SP	Text Internet	Quiz/Test Biome	The environment which God

Sciences	climatic zone and the resultant biomes					Project	provided for man was designed w/ his needs in mind and for his good
	Examine the geologic record	Reinforced	Week 15	L, D	Text Answers in Genesis	Quiz/Test	The flood was of major significance, causing great disturbances of the earth; The earth will experience major physical changes
	Explain how geologic time can be estimated by multiple methods	Reinforced	Week 15	L, D	Text Answers in Genesis	Quiz/Test Student Response	
	Explain how the acquisition and use of resources, urban growth and waste disposal can accelerate natural change and impact the quality of life.	Reinforced	Week 16	D, R, G	Safe Water Curriculum Internet Activity Supplies- "Typhoid comes to Town"	Presentations Written Responses	Men must realize that God is still the owner of earth; men are God's stewards over it
	Describe ways that human activity can alter biogeochemical cycles (e.g., carbon and nitrogen cycles) as well as food webs and energy pyramids (e.g., pest control, legume rotation crops vs. chemical	Reinforced	Week 36 & 37	D, R	Text Internet	Student Response Report	Men must realize that God is still the owner of earth; men are God's stewards over it; The conservation of natural resources is part of man's

	fertilizers).						responsibility to God
	Present evidence to support a universal flood	Reinforced	Week 14	D, L, NT, MM	Text Video Answers in Genesis	Quiz/Test Student Response	A flood sent by God covered the whole earth
	Compare and contrast dating methods to support old earth and young earth	Developed	Week 14 & 15	D	Text Answers in Genesis	Quiz/Test	God created the earth and everything on it in 6 days; Based on geneology in Bible, earth can be dated to about 6000 yrs
Physical Science	Describe that matter is made of minute particles called atoms	Reinforced	Week 3	L, NT	Text	Quiz/Test	God's power that matter holds together, w/in atom and universe
	Explain the structure and properties of matter	Reinforced	Week 3	L, NT, Demo	Text Lab materials-chemicals	Test/Quiz	Chemical and physical laws and reactions frequently illustrate spiritual truth
	Demonstrate that energy can be either potential or kinetic	Reinforced	Week 3	D, Demo	Text Book, springs, ball	Quiz/Test	Energy is neither created or destroyed, but is forever
	Describe covalent and ionic bonds	Reinforced	Week 3	L, NT, CT,	Text Diagram Student Demo	Quiz/Test	It is by God's power that matter holds together, w/in

							the atom and the universe
	Differentiate betw. Chemical and physical changes	Reinforced	Week 3	L, NT, Demo	Text Lab materials-chemicals, thermometer	Quiz/Test Student Response	Changes in the form of matter and energy are continually occurring
	Differentiate betw. Diffusion and osmosis	Reinforced	Week 3 & Week 6	L, NT, Demo, Lab	Text Demo – aerosol spray, food coloring & water Dialysis tubing Diff. conc. Of glucose water	Quiz/Test Lab report	
Science and Technology	Cite examples of ways that scientific inquiry is driven by the desire to understand the natural world and how technology is driven by the need to meet human needs and solve human problem	Reinforced	Week 1, 26	D, G, R, L, NT	Internet Safe Water Science-Research several waterborne illnesses and activity illustrating how spread	Quiz/Test Oral Presentations Lab Report	God desires that we study science; God preserves His creation so that it continues to function as He planned
	Describe examples of scientific advances and emerging technologies and how they may impact society.	Reinforced	Week 10	D, R, CS, G	Periodicals Guest Speaker Safe Water Science Internet	Q & A Lab Report	God desires that we study science; God preserves His creation so that it continues to function as He

							planned
	Describe parts of microscope and proper use of microscope	Reinforced	Week 2	Demo, Lab	Text Lab manual Microscope	Quiz/Test Lab Report Use of microscope in lab	God desires that we study science
	Define DNA fingerprinting and describe some uses of the technology	Introduced	Week 10	L, NT, VLab, G	Text Internet – website with virtual lab-gel electrophoresis "Who Killed Rockina Lab"	Quiz/Test Lab report	God desires that we study science and recognize Him; Living things characterized by common traits, but are unique
Scientific Inquiry	Research and apply appropriate safety precautions when designing and conducting scientific investigations	Reinforced	Week 2	D	Lab Manual	Quiz Observing Students during Lab	
	Present scientific findings using clear language, accurate data, appropriate graphs, tables, maps, and technology.	Reinforced	Week 1	D, Lab, P	Text Lab Manual	Oral Presentations Lab Reports Written Reports	God desires that we study science
	Draw conclusions from inquiries based on scientific knowledge and principles, the use of logic and evidence (data) from investigations	Reinforced	Week 1	Lab, P	Text Lab Manual Safe Water Science	Oral Presentations Lab Reports	
	Explain how new scientific data can cause any existing scientific	Developed	Week 1	L, NT, D	Text Internet	Student Response	

	explanation to be supported, revised or rejected						
Scientific Ways of Knowing	Investigate how the knowledge, skills and interests learned in science classes apply to the careers students plan to pursue	Reinforced	Week 1	D, R	Internet		
	Describe that scientists may disagree about explanations of phenomena, about interpretation of data or about the value of rival theories, but they do agree that questioning, response to criticism and open communication are integral to the process of science.	Reinforced	Week 1	D	Text Internet Answers in Genesis		Men by nature are not neutral or objective observers of God's universe; man's ability to understand the truth is impaired by sin
	Recognize that science is a systematic method of continuing investigation, based on observation, hypothesis testing, measurement, experimentation, and theory building, which leads to more adequate explanations of natural phenomena	Reinforced	Week 1-38	L, NT	Text All Investigations or Projects	Observe students during Labs and Group Activities Lab Reports	God desires that we study science

	Explain how scientific inquiry is guided by knowledge, observations, ideas and questions	Reinforced	Week 1 & 2	L, D			
	Recognize that ethical considerations limit what scientists can do	Introduced	Week 1 & 2	D		Student Response	We are to be wise stewards of what God gave us authority over: there is absolute truth
	Recognize that research involving voluntary human subjects should be conducted only with the informed consent of the subjects and follow rigid guidelines and/or laws	Introduced	Week 1 & 2	D, R	Foundation for Biomedical Research	Student Response Report	Bible gives us absolute truth; only God has authority to play God
	Recognize that animal-based research must be conducted according to currently accepted professional standards and laws	Introduced	Week 1 & 2	R, SP	Text Internet Foundation for Biomedical Research	Student Presentations	We are to be wise stewards of what God gave us authority over: there is absolute truth
	Explain a Christian philosophy of science	Reinforced	Week 1	L, NT, D	Text Bible	Quiz/Test Student Response	We are to be wise stewards of what God gave us authority over: there is absolute truth

Mansfield Christian School
Health 8th & 10th Grades
Curriculum Guide

Performance Scale Key Introduced Developed Mastered		**Instructional Method Key** **Lecture** **Note Taking** **Chapter Tests** **Assignments** **Observations** **Group Work** **Reports** **Quizzes** **Class Discussions** **Journals** **Power Point Presentations** **Oral Presentations** **Guest Speakers** **Homework**					
Standard	**Indicator**	**Performance Scale**	**Time Frame**	**Instructional Method**	**Instructional Activities and Resources**	**Assessment of Learning**	**Biblical Integration**
NHES Standard 1: Students will comprehend concepts related to health promotion and disease prevention to enhance health.	*PHYSICAL HEALTH:* *Human Body*	Introduced Developed	3 weeks	Power Point Presentations Lecture Class Discussions Homework Assignments Chapter Tests Guest Speakers	List needs of the human body List the characteristics of a cell Name the eleven systems of the body Lifeline Organ Donation Presentation	Ch. 1 Test Ch. 1 Study Guide Notes Current Event Articles	Romans 12:1 Genesis 9:6; Leviticus 24:17-21 Matthew 6:25-34 • God created man's body and is responsible for both Adam's body and ours. • God places high value on man's body. • God will provide for man because He cares. • God claims the bodies of believers as His own.
NHES Standard 1: Students will comprehend	*PHYSICAL HEALTH:*	Introduced Developed	3 weeks	Power Point Presentations Lecture	Name the eleven major body systems and explain the function of each	Ch. 2 Test Ch. 2 Study Guide/Notes	Romans 12:4,5; I Cor. 12:12-27

concepts related to health promotion and disease prevention to enhance health.	*Body Systems*			Class Discussions Homework Assignments Chapter Tests	Identify problems in each of the eleven systems and explain how they are treated Explain how to avoid food poisoning Explain how teens can show respect for one another in the area of sexuality	Current Event Articles	• God places high value on man's body. • God will provide for man because He cares. • God claims the bodies of believers as His own.
NHES Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.	*PHYSICAL HEALTH:* *Nutrition*	Introduced Developed	3 weeks	Power Point Presentations Lecture Class Discussions Homework Assignments Chapter Tests	Describe the role of each nutrient and identify a food source for each Explain how the food pyramid can be incorporated into a teen's diet List and explain the 10 items on the Prescription for Good Nutrition Identify the principles of weight loss and weight gain in relationship to a teen's overall diet Explain the importance of keeping a food journal Explain the keys to reading food product labels Explain key eating disorders and explain how to get help	Ch. 3 Test Ch. 3 Study Guide/Notes Current Event Articles	Genesis 1:29; Genesis 2:9; Genesis 9:3; Matt. 15:32-38; I Corinthians 10:31 • Our eating and drinking must be with awareness of God's concern. • God commands moderation, warning against overeating. • God forbids drunkenness, and warns against alcoholism • God gives freedom to eat all foods without defilement, though this was not true for

							Israel under the Law.
NHES Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.	PHYSICAL HEALTH: Fitness & Exercise	Introduced Developed	2 weeks	Power Point Presentations Lecture Class Discussions Homework Assignments Chapter Tests	Identify the four parts to physical fitness Explain the difference between skill-related fitness and health-related fitness List and explain the principles of exercise Identify and explain the six components of every exercise program List tips for the prevention	Ch. 4 Test Ch. 4 Study Guide/Notes Current Event Articles	I Timothy 4:8; Ecclesiastes 5:12 • The value of physical achievement and fitness is implied in Scripture.

					of injuries Identify the meaning of the acronym RICE		
NHES Standard 1: Students will comprehend concepts related to health promotion and disease prevention to enhance health.	PHYSICAL HEALTH: Infectious Disease/Noninfectious Disease	Introduced Developed	4 weeks	Power Point Presentations Group Work Oral Presentations Class Discussions Chapter Tests	• Identify the cause of infectious disease • Explain the process of infectious disease • Explain how the human body fights disease • Explain the role of spiritual defenses in fighting disease • Name the types of sexually transmitted diseases and explain the dangers of each • List the five consequences of becoming sexually active • Identify the causes of noninfectious disease • Explain the role of lifestyle in the prevention of noninfectious disease • List the preventative measures against heart disease • Identify the factors contributing to the development of cancer	Ch. 5 & 6 Tests Ch. 5 & 6 Study Guide/Notes Current Event Articles Ch. 5 & 6 Presentations with Rubric Grading	Gen. 2:7 Romans 5:12 Ex. 15:26 Ps. 38:3 Proverbs 11:9;14:30; 16:24; 17: 22; 18:14 • Sin can be the cause of sickness and death • Disease may be caused by lack of emotional and/or spiritual health • Physical affliction may have as its ultimate purpose the glory of God, whether or not other factors contribute. • Physicians and medicines have a rightful place in healing. • God both prevents and heals disease, sometimes in answer to prayer, sometimes without our

							asking. • God tells us to pray for our own healing, and for the healing of others, but He does not heal every ailment.
NHES Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.	MENTAL HEALTH: Stress and Anxiety	Introduced Developed	2 weeks	Power Point Presentations Lecture Class Discussions Homework Assignments Chapter Tests	• List the factors that affect a person's reaction to stress • Explain the ways to deal with stress • Identify the signs of depression • Identify the warning signs of suicide • Explain how to get help if one is considering suicide	Ch. 7 Test Ch. 7 Study Guide/Notes Current Event Articles	Proverbs 3:5-10 Philippians 4:5-9 Ps. 144:5; 27:1; 34:4 • God's refining process may necessitate our passing through some difficult places and even some low times emotionally. • God intends that, in general, a joyful and optimistic spirit should characterize believers. • Confidence and strength depend on a proper trust in the Lord and in His promises. • Discerning and considerate friends are valuable assets in times of

							mental and emotional distress.
NHES Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on behavior.	MENTAL HEALTH: L.I.F.E. Management	Introduced Developed	2 weeks	Power Point Presentations Lecture Class Discussions Homework Assignments Chapter Tests	• Explain the acronym G.I.G.O. • Explain the role of conduct, character, and conviction in successfully managing one's life • Identify peer pressure and explain how to deal with it • Explain the role of the friendship pyramid • Identify and explain the emotional earthquakes teens experience	Ch. 8 Test Ch. 8 Study Guide/Notes Current Event Articles	I Corinthians 13:1-13 I John 3:16-18 • God's refining process may necessitate our passing through some difficult places and even some low times emotionally. • God intends that, in general, a joyful and optimistic spirit should characterize believers. • Confidence and strength depend on a proper trust in the Lord and in His promises. Discerning and considerate friends are valuable assets in times of mental and emotional distress.
NHES Standard 4: Demonstrate the ability to use interpersonal communication skills to enhance	MENTAL HEALTH: Made in His Image	Introduced Developed	2 weeks	Power Point Presentations Lecture Class Discussions Homework Assignments	• Explain the meaning of the "one-liner" and identify why it can be so powerful • Identify the three main attributes that are	Ch. 9 Test Ch. 9 Study Guide/Notes Current Event Articles	Genesis 1;26, 27 Psalm 139:14-18 I Thess. 5:16-18 • God's refining process may

health and avoid or reduce health risks.				Chapter Tests	highly respected by society and explain how these can cause an unhealthy view of oneself • Explain what is negative self-talk and identify ways a person can overcome negative self-talk • List eight ways to improve self-image • Explain the importance of knowing that you are made in God's image		necessitate our passing through some difficult places and even some low times emotionally. • God intends that, in general, a joyful and optimistic spirit should characterize believers. • Confidence and strength depend on a proper trust in the Lord and in His promises. Discerning and considerate friends are valuable assets in times of mental and emotional distress.
NHES Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.	SOCIAL HEALTH: Head to Toes	Developed	2 weeks	Power Point Presentations Lecture Class Discussions Homework Assignments Chapter Tests	• Explain how to care for your skin, hair, hands, eyes, ears, teeth, and feet • Explain why acne is a common problem for teens and how teens can care for acne • Identify common problems of the skin, hair, hands, eyes, ears, teeth, and feet • Explain why good posture is important	Ch. 10 Test Ch. 10 Study Guide/Notes Current Event Articles	Exodus 19:10-11 Lev. 14:8-10 Num. 8:21-22 • Personal cleanliness in Scripture usually represents spiritual purity in the light of God's holiness.

NHES Standard 1: Students will comprehend concepts related to health promotion and disease prevention to enhance health.	SOCIAL HEALTH: Risky Business	Introduced Developed	3 weeks	Power Point Presentations Lecture Class Discussions Homework Assignments Chapter Tests Guest Speakers	• Identify the relationship between risk taking and accidents • Describe how to prevent unnecessary accidents • List the precautions to take to avoid being a victim of crime • Explain how to act safely at home, at school, on the road, and in the water • List, in order of importance, actions to take if in a crisis situation • Explain proper first aid for artificial respiration, severe bleeding, shock, burns, and other common emergencies • Explain how to save a choking victim • Describe when CPR may be needed • Explain what action to take if you see someone collapse • List eight tips for baby-sitters • Complete Red Cross CPR/First Aid/AEDTraining/ Certification	Ch. 11 Test Ch. 11 Study Guide/Notes Current Events CPR/First Aid/AED Certification Test	Gen. 2:7 Romans 5:12 Ex. 15:26 Ps. 38:3 Proverbs 11:9;14:30; 16:24; 17: 22; 18:14 • Sin can be the cause of sickness and death • Disease may be caused by lack of emotional and/or spiritual health • Physical affliction may have as its ultimate purpose the glory of God, whether or not other factors contribute. • Physicians and medicines have a rightful place in healing. • God both prevents and heals disease, sometimes in answer to prayer, sometimes without our asking. • God tells us to pray for our

							own healing, and for the healing of others, but He does not heal every ailment. • The desires of our bodies are not to be the controlling factor in our lives.
NHES Standard 8: Demonstrate the ability to advocate for personal, family, and community health.	SOCIAL HEALTH: What's Your Responsibility	Introduced Developed	2 weeks	Power Point Presentations Lecture Class Discussions Homework Assignments Chapter Tests	• Identify the relationship between your attitude and your actions • Explain the principle that freedom without responsibility will not work • Summarize what it means to be a responsible Christian, person, and citizen • Explain what causes air, water, and solid-waste pollution and how these can affect your health • Explain what you can do to help make the environment healthy • Explain what it means to be a wise consumer	Ch. 12 Test Ch. 12 Study Guide/Notes Current Event Articles	Prov. 28:19 Prov. 31: 10-31 2 Thes. 3:8, 10-12 • God expects that man will work to provide for the needs of the body. Work is part of God's plan for man.

NHES Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on behavior.	SOCIAL HEALTH: Maturity: What's It All About	Introduced Developed	3 weeks	Power Point Presentations Lecture Class Discussions Homework Assignments Chapter Tests Guest Speakers	• Identify the relationship between wisdom, common sense and making choices • Explain what it means to be mature physically, emotionally, socially and spiritually • Explain the purpose of setting boundaries in life • Explain why abstinence from intercourse is not the only goal • Explain why purity is important and how teens can remain pure before marriage • Participate in the Abstinence Till Marriage (ATM)	Ch. 13 Test Ch. 13 Study Guide/Notes Current Event Articles ATM Presentation Notes	Proverbs 1:7 I Thess. 5:23 II Peter 1:3-8 Galatians 5:22-23 Proverbs 11:1 Exodus 20:14 Deuteronomy 5:18 Ephesians 5:3-5 I Peter 2:11 I Thessalonians 4:3-5 • God established marriage to meet the needs of mankind; marriage and sex within marriage relationship. • Sexual activity is to be limited to the marriage relationship.

					Program		• The timing of sexual activity within marriage should be based on concern for mutual needs, both physical and spiritual. • God sets high standards for the believer's thought life because thoughts lead to actions. • God offers forgiveness for every kind of sin, including that in the sexual realm. • Pregnancy and childbearing have been affected by sin. • God controls conception. • Life begins at conception.

NHES Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on behavior.	SOCIAL HEALTH: Changing Relationships	Introduced Developed	3 weeks	Power Point Presentations Lecture Class Discussions Homework Assignments Chapter Tests	• List excuses that compromise your dating standards • Identify the real purpose of dating • Identify the difference between Kingdom relationships and the culture's way of "dating" • List five reasons for marriage as given by Dennis Rainey • Explain why teens are generally not ready for parenthood • List hints for getting along with family members • Explain how you can show respect for adults and senior citizens • List physical signs of aging • List and explain five common reactions people may have when experiencing the death of a loved one	Ch. 14 Test Ch. 14 Study Guide/Notes Current Event Articles	Genesis 2:18-25 Proverbs 18;22 Genesis 9:1 • God established marriage to meet the needs of mankind; marriage and sex within marriage are honorable • God's design for marriage includes the production of children; the desire for children is normal. • Pregnancy and childbearing have been affected by sin. • God is able to give children even when the physical conditions would make pregnancy and childbirth impossible. God can do miracles. • God controls conception • Life begins at conception • Death is

							universal • Death for the believer means being in the immediate presence of the Lord • Death for the unbeliever means being in a place of torment. • Life is short; we must use it wisely.
NHES Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on behavior.	SPIRITUAL HEALTH: Building Your Spiritual Muscles	Introduced Developed	2 weeks	Power Point Presentations Lecture Class Discussions Homework Assignments Chapter Tests	• Explain what it means to riding the "spiritual fence" • List signs of spiritual atrophy • List the basic keys to training in righteousness • List the practical steps to Bible reading and prayer • List and explain the keys to consistent Christian living	Ch. 15 Test Ch. 15 Study Guide/Notes Current Event Articles	Prov. 29:18, 25 Matt. 6:33 Psalm 34:4; 55:22 Luke 9:23 Jeremiah 29:11 Romans 8:12-9:9 John 3:16 I John 5:11-13 • The body only represents only one part of man; we must not overempha-size the physical, but be concerned with

							the whole man.

Mansfield Christian School
Chemistry
Curriculum Guide

Performance Scale Key		**Instructional Method Key**					
Introduced Developed Reinforced Not Addressed		AC-Accelerated Reader Cl-Classification Co-Collaboration Cr-Create Dis-Discuss E-Experiment Gr-Guided Reading GWr-Group Writing In-Investigation IRA-Interactive Reading Aloud MI-Managed Independent Pa-Participation PP-Power Point S-Songs SRT-Star Reading Test V-View		A-Assemble C-Construct Col-Collect D-Drama DP-Descriptive Presentation Ft-Field Trip Gs-Guest Speaker ID-Identification IW-Independent writing L-Lecture MM-Multi Media (Video, Audio) P-Prediction R-Read So-Sort TM-Teaching Modeling WP-Written Practice		BD-Build-Describe CC-Compare & Contrast Com-Complete Dem-Demonstration Dr-Draw G-Games GW-Group Work I-Illustration IR-Independent Reading M-Manipulative NC-Number Cards PR-Peer Review Re-Recreation SR-Shared Reading VE-Verbal Explanation WS-Word Study
Standard	**Indicator**	**Performance Scale**	**Time Frame**	**Instructional Method**	**Instructional Activities and Resources**	**Assessment of Learning**	**Biblical Integration**
Physical Science SO3.	1.Describe that matter is made up of minute particles called atoms and atoms are comprised of even smaller components.	Developed Reinforced	Week 1 4 days Week 1 Thru Week 36	L-Lectures DEM-Demonstration E-Experimentation	Text Lecture Notes Internet Models	Student Response Diagrams Models Quiz	Psalm 19:1 The heavens declare the Glory of God and the firmament shows his handy work

	Explain the structure of and properties of atoms (09-10)			PP-Power Point	Modern Applications ELMO	Test Exam	(God has provided an orderly world)
	01. Recognize that all atoms of the same element contain the same number of protons, and elements with the same number of protons, may or may not have the same mass. Those with different masses (different number of neutrons) are called isotopes. (09)	Reinforced	Week 2 2 days Weeks 1-36	L-Lecture DEM-Demonstration PP-Power Point MM- Multi Media	Lecture Notes Models Elmo – Computer Technology Display Examples Text Lab	Student Response Quiz Test Exam	Job 12: 9 & 10
	02. Illustrate that atoms with the same number of positively charged protons and negatively charged electrons are electrically neutral (09)	Reinforced	Week 3 (3 days) Thru Week 36	Models DEM-Demonstration L-Lecture	Lecture Notes Descriptive Presentation Text	Student Interaction Lecture Response Recognition of Molecular Origin Quiz Test - Exam	Genesis 1:1

	04. Show that when elements are listed in order according to the number of protons (called the atomic number); the repeating patterns of physical and chemical properties identify families of elements. Recognize that the periodic table was formed as a result of the repeating pattern of electrons. (09)	Reinforced	Week 3 and Week 4 (5 days) Thru Week 36	L-Lecture Models E-Experiments DEM-Demonstration	Text Lecture Notes Outside Sources Via Internet College References MIT-Ohio State-Cal Poly-FIT Lab ELMO	Student Interaction Quiz Test Exam	! Samuel 2:8
	05. Describe how ions are formed when an atom or a group acquire an unbalanced charge by gaining or losing one or more electrons. (09)	Develop Reinforce	Week 5 (2 days) Week 5 Thru Week 36	L-Lecture DEM-Demonstration E-Experiments MM-Multi Media	Text Lecture Notes Additional College Texts Lab	Lab Quiz Lecture Quiz Student Interaction Oral Test over Periodicity Games	Job 8 : 3&4
	B. Explain how atoms react with	Develop	Week 6	L-Lecture	Lab Implementation	Lab	Nehemiah 9:6

	each other to form other substances and how molecules react with each other and other atoms to form even different substances. (09-10)	Reinforce	Week 6 thru Week 36	MM-Multi Media Lab PP-Power Point	Text ELMO	Lab Practical Lecture Test & Quizzes Periodicity Reviews Test	
	06. Explain that the electric force between the nucleus and the electrons hold an atom together. Relate that on a larger scale, electric forces hold solid and liquid materials together (e.g., salt crystals and water) (09)	Develop Reinforce	Week 5 Week 7 Thru Week 36	DEM-Demonstration L-Lecture MM-Multi Media PP-Power Point	Text Lecture Notes Additional Texts Lab	Lab Practical Student Interaction Lecture Response Test	Psalm 8:3&4
	07. Show how atoms may be bonded together by losing, gaining or sharing electrons and that in a chemical reaction, the number, type of	Develop Reinforce	Week8 (5 days) Week 9 thru Week 36	L-Lecture MM-Multi Media DEM-Demonstration PP-Power Point	Text Lecture Handouts Internet ELMO Lab	Observational Interaction Quiz Test Exam	Colossians 1:16

	atoms and total mass must be the same before and after the reaction (e.g., writing correct chemical formulas and writing balanced chemical equations). (09)						
	08. Demonstrate that the pH scale (0-14) is used to measure acidity and classify substances or solutions as acidic, or basic, or neutral. (09)	Reinforce	Week 22 (2 days)	L-Lecture DEM-Demonstration Lab	Text Lecture Note Handouts Additional Text Internet Industrial Applications	Student Interaction Observational Response Test Exam	Revelations 4:8
	C. Describe the identifiable physical properties of substances (e.g., writing correct chemical formulas and writing balanced chemical	Develop Reinforce	Week 10 (5days) Week 11 thru Week 36	DEM-Demonstration L-Lecture Lab PP-Power Point	Text Additional Texts Internet Periodicity Review	Testing Quizzes Observational Responses Practice Problems Test	Psalms 3:19

	equations). (09)					Exam	
	09. Investigate the properties of pure substances and mixtures (e.g., density, conductivity, hardness, properties of alloys, superconductors and semiconductors) (09)	Reinforce Introduce	Week 15 (5days) Week 5 (1 day) Thru Week 36	L-Lecture DEM-Demonstration Lab (Week 18)	Text Lab Manual Periodic Table	Lab Practical Student Responses Quiz Test Exam	Genesis 1:6-7 and 14
	10. Compare the conductivity of different materials and explain the role of electrons in the ability conduct electricity.	Develop Reinforce	Week 12 (1 day) Week 13 Thru Week 36	L-Lecture DEM-Demonstration	Text Demonstrations ELMO Labs	Lecture Responses Quizzes Test Exam	Hebrews 1:3
	E. Demonstrate that energy can be considered to be either Kinetic (motion) or Potential (stored). (09-10)	Reinforce	Week 2 (1 day) Week 14 thru Week 36	L-Lecture DEM-Demonstration MM-Multi Media	Text Lecture Handouts and additional Notes Demonstrations	Student Interaction Quizzes Test Exam	Isaiah 45:5-7

	03. Describe radioactive substances as unstable nuclei that undergo random spontaneous nuclear decay emitting particles and/or high-energy wavelike radiation. (09)	Reinforce	Week 34 (5 days)	Lecture MM-Multi Media	Text	Lecture Response Test	Jeremiah 27:5
	11. Explain how thermal energy exists in the random motion and vibrations of atoms and molecules. Recognize that the higher the temperature, the greater the average atomic or molecular motion, and during changes of state the temperature remains constant. (09)	Reinforce Develop	Week 14 (2 days) Week 16 thru Week 38	Lecture Lecture Notes and Handouts DEM-Demonstration Lab	Text Internet ELMO Additional Text	Student Interaction Quiz Test Exam	Isaiah 40:26

	14. Summarize how nuclear reactions convert a small amount of matter into a large amount of energy. (Fission involves the splitting of a large nucleus into smaller nuclei; fusion is the joining of two small nuclei into a larger nucleus at extremely high energies. (09)	Reinforce	Week 30 (2 days)	L-Lecture	Text	Lecture Response Quiz Test Exam	John 1:3-4
	15. Trace the transformations of energy with a system (e.g., chemical to electrical to mechanical) and recognize that energy is conserved. Show that these transformations involve of thermal energy. (09)	Reinforce	Week 18 (2 days)	L-Lecture MM-Multi Media	Text Additional Texts Internet/Cal Tech	Student Participation Lecture Response Test	Acts17:24&25

	16. Illustrate that chemical reactions are either endothermic or exothermic (e.g., cold packs, hot packs, and the burning of fuels. (09)	Reinforce	Week 17 (3 days) thru week 36	L-Lecture DEM-Demonstration	Text Lecture Handouts and Notes Lab	Lab Practical Quiz Student Response Test Exam	James 1:17
	H. Trace the historical development of scientific theories and ideas, and describe emerging issues in the study of physical sciences. (09-10)	Reinforce	Week 1 thru Week 36	Lecture MM-Multi Media IR-Independent Reading VE-Verbal Explanation	Text Internet ELMO Additional Text	Student Response	Hebrews 11:1-3
	C. Describe the identifiable physical Properties of substances (e.g., color, hardness, conductivity, density, concentration and ductility). Explain how changes in these properties can	Develop Reinforce	Week 3 (1 day) Week 16 Thru Week 33	L-Lecture MM-Multi Media DEM-Demonstrations MI-Managed Independent	Text Internet Additional Texts	Student Response Student Self Discovery Labs Quiz Test	Isaiah 45:5-7

	occur without changing the chemical nature of the substance. (09-10)						
	F. Explain how energy or be redistributed but the total quantity of energy is conserved.	Develop Reinforce	Week 19 (2 days) Week 20 thru Week 36	L-Lecture DEM-Demonstration	Text Internet Additional Texts P-Prediction	Text Quizzes Tests Lab Demonstrations	Isaiah:40:26
	H. Trace the historical development of scientific theories and ideas, and describe emerging issues of study of physical Sciences (09-10)	Reinforce	Week 1 thru Week 36	L-Lecture MM-Multi Media MI-Managed Independence	Text Internet CC-Compare & Contrast	Text Research References Lab	Proverbs 17:3
SO4 Science and Technology	A. Explain the ways in which the processes of technology design respond to the needs of society (09-10)	develop	Week 1 thru Week 36	L-Lecture FT-Trip MM-Multi Media MI-Managed Independent	Text Internet Technology Periodicals PP-Power Point	Student Interaction Assorted Quizzes Test Exam	Job 38:4

	03. Explain that when evaluating a design for a device or processes, thought should be given to how it will be manufactured, operated, maintained, replaced and disposed of in addition to who will sell, operate and take care of it. Explain how the costs associated with these considerations may introduce additional constraints on design. (10)	Develop Reinforce	Week 1 thru Week 36 (Special concentration during week 25- Current Trends in Applied Chemistry)	(Same as above)	(Same as above) Additional Professional Periodicals (Pharmacology, Health Care, Industrial, Biotechnology, - - -)	Student Interaction	Isaiah 41:5
	01. Cite examples of ways that scientific inquiry is driven by the desire to understand the natural world and how technology	Develop Reinforce	Week 1 thru Week 36 Special Concentration During Week 22	(Same as above)	(Same as above)	Student Interaction Models Internet	John 1:3-4

	is driven by the need to meet human needs and solve human problems. (10)		(Biochemistry and Biotechnology: Industry and Health Care)			Labs Student Handouts and Notes Samples of Past Technology and Present Technology (from delivery systems of medications to ecological factors)	
	02. Describe examples of scientific advances and emerging technologies and how they may impact society. (10)	Reinforce	(Same as above)	(Same as above)	(Same as above)	(Same as above) with the addition of at two Labs (pH and delivery systems of medications) Thrust and Combustion	Isaiah 43:7
SO5. **Scientific Inquiry**	A. Participate in and apply the processes of scientific investigation to create models and to design conduct, evaluate	Develop Reinforce	Week 3 Introduction Week 3 thru Week 38	L-Lecture DEM-Demonstration MI-Managed Independent	Text Handouts ELMO Lab	Student Interaction Lab Lab Quizzes	Psalm 100:3

	and communicate the results of these investigations. (09-10)						
	01. Research and apply the appropriate safety precautions when designing and conducting scientific investigations (e.g., OSHA, MSDS, eyewash, goggles and ventilation). (10)	Develop Reinforce	Week 10 (3 days) All Year	DEM-Demonstration Labs	Lab Intro Professional Periodicals Additional Labs	Student Interaction Quizzes Tests	Mark 10:6
	02. Present scientific findings using clear language, accurate data, appropriate graphs, tables, maps and available technology. (10)	Reinforce	Week 7 thru Week 36	DEM-Demonstrations L-Lecture MM-Multi Media	Lab Manual Demonstrations Handouts Internet Text	Student Demonstrations Student Interaction Quizzes	Acts 17:24
	03. Use mathematical models to predict and analyze natural	Develop Reinforce	Week 1 Week 1 thru Week 36	DEM-Demonstrations L-Lecture	Text Student Notes and Handouts	Lecture Responses Student Interaction	Jeremiah 27:5

	phenomena. (10)			MM-Multi Media		Student Demonstration Quizzes Tests Exam	
	04. Draw conclusions from inquiries based scientific knowledge and principles, the use of logic and evidence (data) from investigations. (10)	(Same as Above)	(Same as Above)	(Same as Above)	(Same as Above)	(Same as Above)	Amos 7:1
	05. Explain how new scientific data can cause any existing scientific explanation to be supported, revised or rejected. (10)	(Same as 03)	(Same as 03)	(Same as 03)	(Same as 03)	(Same as 03)	Acts 17:24&25
SO3. **Physical Sciences**	A. Explain how variations in the arrangement and motion of atoms	Develop Reinforce	Week 9 thru Week 36 Week 21	L-Lecture DEM-demonstrations	Text Lecture Notes	Lecture Response Quizzes	Ecclesiastes 3:11

	and molecules form the basis of biological, chemical and physical phenomena (11-12)		(Special attention and modern research	MI-Managed Independent	Power Point Student Research ELMO	Exam	
	01. Explain that elements with the same number of protons may or may not have the same mass and those with the different masses (different numbers of neutrons) are called isotopes. Some may be radioactive. (11)	Develop Reinforce	Week 5 Week 8 thru week 36	L-Lecture DEM-Demonstrations PP-Power Point	Text Lecture Notes Lab	Student Interaction Quizzes Tests Lab quiz Exam	Job 26:14
	B. Recognize that some atomic nuclei are unstable and will spontaneously break down (11-12)	Develop Reinforce	Week 16 Week 23 thru week 36	DEM-Demonstration L-Lecture GW-Group Work	Internet Lecture Notes Text Lab	Quiz Exam Oral Review	Job 14:7-9
	C. Describe how atoms and molecules can	Develop Reinforce	Week 11 thru rest of academic year	L-Lecture IR-Independent Reading	Text Lecture Notes	Student Response	Psalm 95:3-5

	gain or lose energy only in discrete amounts. (11-12)			MM-Multi Media PP-Power Point	Lab	Quizzes Test Exam	
	03. Describe real world examples showing that all energy transformations tend toward disorganized states (e.g., fossil fuel combustion, food pyramid and electrical use) (11)	Develop Reinforce	Week 8 Week 24 and week 25 (4 days)	L-Lecture PP-Power Point MM-Media MI-Managed Independent DEM-demonstration	Text Additional Modern Information for Modern Application	Lecture Interaction Test	Job 37:5
	D. Apply principles of forced and motion to mathematically analyze, describe and predict the net effects on objects or systems. (11-12)	Develop Reinforce	Week 13 (1 day) Week 15 thru rest of year (4 days)	L-Lecture DEM-demonstration PP-Power Point	Text Lecture Notes Internet ELMO	Student Response Problem Solving Quiz Exam	Ecclesiastes 3:11
	04. Explain how electric motors and generators work (e.g., relate that electricity	Reinforce	Week 28 (3 days)	L-Lecture DEM-demonstration	Text Lecture Notes Internet	Lecture Response and Interaction	Isaiah 55:9

	and magnetism are two aspects of a single electromagnetic force). Investigate that electric charges in motion produce magnetic fields and a changing magnetic field creates an electric field. (11)			PP-Power Point	Lab	Exam	
	E.Summarize the historical development of scientific theories and ideas within the study of physical sciences. (11-12)	Reinforce	Week 1 thru the rest of the academic year	L-Lectures DEM-demonstrations PP-Power Point MM-Multi Media	Text Lecture Notes Internet Outside Sources College Curriculum	Lecture and Student Interaction Lab Quizzes Lab Observation	Romans 11:33
	02.Explain that humans have used unique bonding of carbon atoms to make a variety of molecules. (e.g., plastics). (11)	Develop Reinforce	Week 8 (2 days) Week 24 – Week 36	L-Lecture DEM-demonstrations PP-Power Point MM-Multi Media	Lecture Notes Text Internet Models Lab	Student and Lecture interaction Student Response Oral Review and Response	Romans 11:34

				Dis-Discuss In Investigation Ws- Word Study (Latin)	Visual Technologies ELMO	Quizzes Test Exam Lab observation	
S03. Physical Sciences (12)	A. Explain how variations in the arrangement and motion of atoms and molecules form the basis of a variety of biological, chemical and physical phenomena. (11-12)	Introduce Develop Reinforce	Week 2 (1 day) Week 8 (2 days) Week 24 thru the rest of the academic year	L-Lectures DEM-demonstrations PP-Power Point MM-Multi Media	Text Lecture Internet Lab	Student Interaction Quizzes Tests Exams	Colossians 2:8
	01. Explain how atoms join with another in various combinations in distinct molecules or in repeating crystal patterns.	Develop Reinforce	Week 18 (2 days) Week 19 thru week 36	L-Lecture DEM-Demonstrations	Text Lecture Notes Lab	Quiz Exam	Psalm 39:4
	02. Describe how a physical, chemical or ecological system in equilibrium may return to the same state of equilibrium if the	Introduce Develop Reinforce	Week 7 2 days Week 22	L-Lecture MM-Multi Media PP-Power Point DEM-	Text Lecture Notes Lab Outside Sources And Science and	Student Interaction and Response Lab Observations Quizzes	Psalm 90:12

	disturbances it experiences are small. Large disturbances may cause it to escape that equilibrium and eventually settle into some other state of equilibrium. (12)		Week 23 and 24 thru rest of year.	Demonstration	Medical Journals Internet	Test Exam	
	04. Recognize that at low temperatures some materials become super conducting and offer little no resistance to the flow of electrons. (12)	Develop Reinforce	Week 26 Week 26 thru week 36	L-Lecture DEM-Demonstration MM-Multi Media	Text Lecture Notes Internet Outside Sources – Periodicals and Texts Lab	Lab Observations Student Response both oral and written Quizzes Exam	James 4:4
	B. Recognize that some atomic nuclei are unstable and will spontaneously break down. (11-12)	Develop Reinforce	Week 17 (1 day) Week 33-36	L_Lecture DEM-Demonstration MM-Multi Media	Lab Lecture Notes Text Internet	Lecture Response Quiz Test Exam	Psalm 27:1
	10. Explain the characteristics of isotopes. The	Introduce	Week 5 1 day	L-Lecture MM-Multi	Text Internet	Quizzes Test	Psalm 89:47

	nuclei of radioactive isotopes are unstable and spontaneously decay emitting particles and/or wavelike radiation. It cannot be predicted exactly when, if ever, an unstable nucleus will decay, but a large group of identical nuclei decay at a predictable rate. (12)	Develop Reinforce	Week 14 1 day Week 30-36	Media	Outside Text Historical Data Lecture Notes	Exam	
	11. Use the predictability of decay rates and the concept of half-life to explain how radioactive substances can be used in estimating the age of materials. (12)	Develop Reinforce	Week 25 Week 31	L-Lecture MM-Multi Media PP-Power Point	Text Lecture Notes Internet ELMO	Student interaction Quiz Exam	Job 34:15

	C. Describe how atoms and molecules can gain or lose energy only in discrete amounts. (11-12)	Develop Reinforce	Week 6 Week 17 thru week 36	L-Lecture MM-Multi Media DEM-Demonstrations Lab	Text Lecture Notes Internet Lab	Lab Observations and student interaction Quiz Test Exam	Isaiah 40:7
	12. Describe how different atomic energy levels are associated with the electron configurations of atoms and electron configurations ((and/or conformations) of molecules. (12)	Reinforce	Week 4 thru week 36	L-Lecture DEM-Demonstrations MM-Multi Media Lab WP-Written Practice	Text Lecture Notes Internet Lab Outside Periodicals Lab Practical	Student Interaction Quizzes Test Exam	Job 14:5
	13. Explain how atoms and molecules can gain or lose energy in particular discrete amounts (quanta or packets), therefore they can only absorb or	Develop Reinforce	Week 5 Week 19 thru Week 36	L-Lecture DEM-Demonstrations PP-Power Point	Text Lecture Notes Lab Internet Outside Texts and Periodicals	Lab Practical Quiz Exam	Genesis 3:19

	emit light at the wavelengths corresponding to these amounts. (12)						
	D. Apply principles of forces and motion to mathematically analyze, describe and predict the net effects on objects or systems. (11-12)	Develop Reinforce	Week 19 Week 19 thru week 36	L-Lecture MI-Managed Independent I-Illustration DEM-Demonstrations	Lab Text Practice competitions Formula Oral Reviews	Quizzes Tests Exam Lab Practical	Revelation 27:7
	03. Explain ho all matter tends toward more disorganized states and describe real world examples. (e.g., erosion of rocks and expansion of the universe) (12)	Reinforce	Week 22	L-Lecture DEM-demonstrations MM-Multi Media	Text Practical Review	Student Interaction Quiz	I John 5:12
	05. Use and apply the laws of motion to analyze, describe and predict the	Develop	Week 16	L-Lecture DEM-Demonstrations	Lab Text Lecture Notes	Quizzes Exam	Ecclesiastes 3:4

	effects of forces on the motions of objects mathematically. (12)			PP-Power Point			
	06. Recognize that the nuclear forces that hold the nuclear together, at nuclear distances, are stronger than the electric forces that would make it fly apart. (12)	Develop Reinforce	Week 6 Week 6 thru week 36	L-Lecture PP-Power Point MM-Multi Media	Text Lecture Notes Lab	Lecture Interaction Quizzes Test Exam	I Corinthians 9:27
	07. Recognize that nuclear forces are much stronger than electromagnet forces, and electromagnetic forces are vastly stronger than gravitational forces. The strength of the nuclear forces explains why greater amounts of energy are	Develop Reinforce	Week 33 Week 33 thru Week 34	L-Lecture PP-Power Point	Text Lecture Notes Internet	Interaction of students Class discussion	Proverbs 8:30-31

	released from nuclear reactions (e.g., from atomic and hydrogen bombs and in the sun and other stars). (12)						
	08. Describe how the observed wavelength of a wave depends upon the relative motion of the source and the observer (Doppler effect). If either is moving towards the other, the observed wavelength is shorter, if either is moving away, the observed wavelength is longer (e.g., from atomic and hydrogen bombs and in the sun and other stars.)	Develop Reinforce	Week 19 Week 34	L-Lecture DEM-Demonstration MM-Multi Media Models	Text Lecture Notes Interned	Lecture Response Lab Practical App. Quiz	II Timothy 2:15

	09. Describe how gravitational forces act between all masses and always create a force of attraction. Recognize that the strength of the force is proportional to the masses and weakens rapidly with increasing distance between them. (12)	Develop Reinforce	Week 3 Week 19	L-Lecture MM-Mass Media DEM-Demonstration	Lecture Notes Text Internet Lab	Quiz Student Observation	Philippians 13:14
	E. Summarize the historical development of scientific theories and ideas within the study of physical sciences. (11-12)	Reinforced	Week 1 thru Week 36	L-Lecture MM-Mass Media	Text Internet Lecture Notes	Student Response	I Corinthians 9:25
	14. Use historical examples to explain how new ideas are limited by the context in which they are conceived, are	reinforce	Week 1 through end of the year	L-Lecture MM-Mass Media DEM-Demonstration	Text Internet Lecture Notes Outside Sources	Quiz Lecture Response Lab	Philippians 3:12

	often initially rejected by the scientific establishment, sometimes spring from unexpected findings, and usually grow slowly through contributions from many different investigators. (e.g., nuclear energy, quantum theory and theory of relativity). (12)				– Guest Speakers	Lab Demonstration	
	15. Describe the concepts/ideas in physical sciences that have important, long-lasting effects on science and society. (e.g., quantum theory, theory of relativity, age of universe). (12)	Reinforce	Week 1 through the end of the Year	L-Lecture MM-Mass Media DEM-Demonstrations	Text Lecture Notes Internet Additional Texts University and College References and additional curriculum	Quiz Lecture Response Student Interaction	Hebrews 12:2

Mansfield Christian School
Physics Curriculum Guide

Performance Scale Key **Introduced** **Developed** **Reinforced** **Not Addressed**		**Instructional Method Key** **L - Lecture** **D – Demonstration** **Lab – Labratory** **G – Group Activity**					
Standard	**Indicator**	**Performance Scale**	**Time Frame**	**Instructional Method**	**Instructional Resources**	**Assessment of Learning**	**Biblical Integration**
Earth and Space Sciences	1. Explain how scientists obtain information about the universe by using technology to detect electromagnetic radiation that is emitted reflected or absorbed by stars and other objects.	Introduced	Week 36	Lecture and Power Point	33-1 "Stars and Galaxies" (text) and Smart Board	Homework, Test	Is 13:10 Without star light (electromagnetic radiation), we know nothing about them
		Introduced	Week 36	Lecture and Power Point	33-2 "Birth and Death of Stars" (text) and Smart Board	Homework, Test	
	2. Explain how the large-scale motion of objects in the universe is	Developed	Week 8	Lecture and Power Point	5-6 "Newton's Law of Universal Gravitation" (text) and Smart Board	Homework, Test	I Cor 15:41 Each star tells its own story by its light

	governed by gravitational forces and detected by observing electromagnetic radiation.						
		Introduced	Week 33	Lecture and Power Point	25-4 “Telescopes” (text) and Smart Board	Homework, Test	
	3. Explain how astronomers infer that the whole universe is expanding by understanding how light seen from distant galaxies has longer apparent wavelengths than comparable light sources close to earth.	Introduced	Week 22	Lecture, Power Point, and Demonstration	12-8 “Doppler Effect” (text), Smart Board, and Demo: Siren on string	Homework, Test	Job 22:12 The expanse of the heavens is no greater than God’s heaven
Physical Sciences	1. Explain how atoms join with one another in various combinations in distinct molecules or in repeating crystal patterns.	Reinforced	Week 23	Lecture and Power Point	13-1 “Atomic Theory of Matter” (text) and Smart Board	Homework, Test	Rom 1:20 God works mightily and invisibly

	2. Describe how a physical, chemical or ecological system in equilibrium may return to the same state of equilibrium if the disturbances it experiences are small. Large disturbances may cause it to escape that equilibrium and eventually settle into	Developed	Week 18	Lecture, Power Point, and Demonstration	11-1 "Simple Harmonic Motion" (text), Smart Board, and Marble in a bowl, Pendulum, spring, ect.	Homework, Test	II peter 3:4 Disturbances *seem* to quiet themselves, showing no progress toward a climax
	3. Explain how all matter tends toward more disorganized states and describe real world examples (e.g., erosion of rocks and expansion of the universe).	Reinforced	Week 24	Lecture and Power Point	15-4 "Second Law of Themodynamics" (text) and Smart Board	Homework, Test	Ecc 12:7 The very building blocks of the earth lose their form
	4. Recognize that at low temperatures some materials become superconducting	Introduced	Week 28	Lecture, Power Point, and Video	18-5 "Superconductivity" (text), Discovery Channel – Magnetism (video)	Homework, Test	

	and offer little or no resistance to the flow of electrons.						
	5. Use and apply the laws of motion to analyze, describe and predict the effects of forces on the motions of objects mathematically.	Developed	Week 5	Lecture, Power Point, and Demonstration	4-1 "Force" (text), Smart Board, and Students experiencing *pushes and pulls*	Homework, Test	Math 11:12 Forces cause movement
		Developed	Week 5	Lecture, Power Point, and Demonstration	4-2 "Newton's First Law of Motion" (text), Smart Board, and bowling ball	Homework, Test	
		Developed	Week 5	Lecture, Power Point, and Demonstration	4-3 "Newton's Second Law of Motion" (text), Smart Board, and toy trucks on level surface	Homework, Test	
		Developed	Week 5	Lecture, Power Point, and Demonstration	4-4 "Newton's Third Law of Motion" (text), Smart Board, and Students experiencing reaction forces	Homework, Test	
		Introduced	Week 6	Lecture and Power Point	4-7 "Solving Problems with Newton's Laws" (text) and Smart Board	Homework, Test	

		Introduced	Week 7	Lecture, Power Point, and Demonstration	5-2 “Dynamics of Uniform circular Motion” (text), Smart Board, and swing heavy weight on string	Homework, Test	
		Developed	Week 8	Lecture and Power Point	5-6 “Newton’s Law of Universal Gravitation” (text) and Smart Board	Homework, Test	
		Developed	Week 5	Lab	“Ticker-Tape”	Lab Report	
	6. Recognize that the nuclear forces that hold the nucleus of an atom together, at nuclear distances, are stronger than the electric forces that would make it fly apart.	Introduced	Week 31	Lecture	30-2 “Binding Energy and Nuclear Forces” (text)	Homework, Test	Col 1:17 God holds all matter together
	7. Recognize that nuclear forces are much stronger than electromagnetic forces and electromagnetic forces are vastly stronger than gravitational	Introduced	Week 31	Lecture, Power Point, and Demonstration	21-3 “EMF Induced in a Moving Conductor” (text),Smart Board, and show movement of current-carrying wire in magnetic field	Homework, Test	

	forces. The strength of the nuclear forces explains why greater amounts of energy, are released from						
	8. Describe how the observed wavelength of a wave depends upon the relative motion of the source and the observer (Doppler effect). If either is moving towards the other, the observed wavelength is shorter; if either is moving away, the observed wavelength is longer (e.g., weather radar, bat echoes and police radar).	Reinforced	Week 22	Lecture, Power Point, and Demonstration	12-8 "Doppler Effect" (text), Smart Board, and Demo: Siren on string	Homework, Test	
	9. Describe how gravitational forces act between all	Developed	Week 8	Lecture and Power Point	5-6 "Newton's Law of Universal Gravitation" (text) and Smart Board	Homework, Test	II Kings 23:5 Planets do not move independent of God's laws

	masses and always create a force of attraction. Recognize that the strength of the force is proportional to the masses and weakens rapidly with increasing distance between them.						
	10. Explain the characteristics of isotopes. The nuclei of radioactive isotopes are unstable and spontaneously decay emitting particles and/or wavelike radiation. It cannot be predicted exactly when, if ever, an unstable nucleus will decay, but a large group of identical nuclei decay at a	Reinforced	Week 35	Lecture	30-1 “Structure and Properties of the Nucleus” (text)	Homework, Test	Job 14:14 Just like mankind all of nature has an appointed time

	predictable rate.						
	11. Use the predictability of decay rates and the concept of half-life to explain how radioactive substances can be used in estimating the age of materials.	Developed	Week 35	Lecture	30-8 “Half-life and Rate of Decay” (text)	Homework, Test	
	12. Describe how different atomic energy levels are associated with the electron configurations of atoms and electron configurations (and/or conformations) of molecules.	Reinforced	Week 35	Lecture	30-6 “Gamma Rays” (text)	Homework, Test	
	13. Explain how atoms and molecules can gain or lose energy in particular discrete amounts (quanta or packets);	Reinforced	Week 35	Lecture	38-10 “Fluorescence and Phosphorescence” (text)	Homework, Test	

	therefore they can only absorb or emit light at the wavelengths corresponding to these amounts.						
	14. Use historical examples to explain how new ideas are limited by the context in which they are conceived; are often initially rejected by the scientific establishment; sometimes spring from unexpected findings; and usually grow slowly through contributions from many different investigators (e.g., nuclear energy, quantum theory and theory of relativity).	Reinforced	Week 35	Lecture	30-1 “Structure and Properties of the Nucleus” (text)	Homework, Test	

	15. Describe concepts/ideas in physical sciences that have important, long-lasting effects on science and society (e.g., quantum theory, theory of relativity, age of the universe).	Developed	Week 33	Lecture and Power Point	24-1 "Wave vs. Particle; Huygen's Principle and Diffraction"	Homework, Test	I Kings 3:14 God's laws bring good and long lasting blessings
Science and Technology	1. Explain how science often advances with the introduction of new technologies and how solving technological problems often results in new scientific knowledge	Developed	Week 34	Lecture and Power Point	28-11 "Lasers" (text) and Smart Board	Homework, Test	
	2. Describe how new technologies often extend the current levels of scientific understanding and introduce	Reinforced	Week 27	Lecture and Power Point	17-11 "The Electrocardiogram" (text)	Homework, Test	

	new areas of research.						
	3. Research how scientific inquiry is driven by the desire to understand the natural world and how technological design is driven by the need to meet human needs and solve human problems.	Not Addressed					
	4. Explain why basic concepts and principles of science and technology should be a part of active debate about the economics, policies, politics and ethics of various science-related and technology-related challenges.	Developed	Week35	Lecture and Power Point	31-2 “Nuclear Fission; Nuclear Reactors” (text) and Smart Board	Homework, Test	II Pet 3:10 God is in charge of when the elements will melt

Scientific Inquiry	1. Formulate testable hypotheses. Develop and explain the appropriate procedures, controls and variables (dependent and independent) in scientific experimentation.	Developed	Week 3	Lab	"Acceleration due to Gravity" Ticker-Tape, Weight, Tape, and Meter Stick	Lab Report	
	2. Derive simple mathematical relationships that have predictive power from experimental data (e.g., derive an equation from a graph and vice versa, determine whether a linear or exponential relationship exists among the data in a table).	Developed	Week 10	Lab	"Hooke's Law" Springs, Meters Stick, Graph paper	Lab Report	
	3. Research and apply appropriate	Reinforced	Week 3	Lab	Demonstrate and implement lab procedures		Eph 6:1-3 Follow God's rules of safety and you will

	safety precautions when designing and/or conducting scientific investigations (e.g., OSHA, MSDS, eyewash, goggles and ventilation).						live
	4. Create and clarify the method, procedures, controls and variables in complex scientific investigations.	Not Addressed					
	5. Use appropriate summary statistics to analyze and describe data.	Reinforced	Week 24	Lab	"Calorimetry" Calorimeter, Sample, Thermometer, Scales, Beaker, and Bunsen burner	Lab Report	
Scientific Ways of Knowing	1. Select a scientific model, concept or theory and explain how it has been	Developed	Week 1	Lecture and Power Point	1-3 "Models, Theories, and Laws" (text) and Smart Board	Homework, Test	Jn 13:34 God's new commandment was the same- it did not evolve with new truth

	revised over time based on new knowledge, perceptions or technology.						
	2. Analyze a set of data to derive a principle and then apply that principle to a similar phenomenon (e.g., predator-prey relationships and properties of semiconductors).	Developed	Week 8	Lecture and Power Point	5-9 “Kepler’s Laws” (text) and Smart Board	Homework, Test	
	3. Describe how individuals and teams contribute to science and engineering at different levels of complexity (e.g., an individual may conduct basic field studies, hundreds of people may work together on major scientific questions or	Developed	Week 33	Lecture and Power Point	24-9 “Michelson Interferometer” (text) and Smart Board	Homework, Test	I Cor 12:25 Teams get more accomplished when unified

	technical problem).						
	4. Explain that scientists may develop and apply ethical tests to evaluate the consequences of their research when appropriate.	Developed	Week 4	Lecture and Power Point	5-8 “Satellites and Weightlessness” (text) Q. Should we be in Space? and Smart Board	Homework, Test	I Jn 4:1 We are to test the spirits to verify truth
	5. Recognize that individuals and society must decide on proposals involving new research and the introduction of new technologies into society. Decisions involve assessment of alternatives, risks, costs and benefits and consideration of who benefits and who suffers, who pays and gains,	Developed	Week 23	Lecture and Power Point	13-1 “Atomic Theory of Matter? (text) Q. Build Particle Accelerators? And Smart Board	Homework, Test	Math 6:24 Ethical choices must be made and lived with

	and what the risks are and who bears them.						
	6. Research how advances in scientific knowledge have impacted society on a local, national or global level.	Developed	Week 4	Lecture and Power Point	5-8 "Satellites and Weightlessness" (text) *Space program* and Smart Board	Homework, Test	
Unit Conversions	Demonstrate unit conversion between different systems	Reinforced	Week 1	Lecture and Power Point	1-6 "Converting Units" (text) and Smart Board	Homework, Test	
	Show how unit analysis can prove an equations validity.	Developed	Week 1	Lecture and Power Point	1-8 " Mathematics in Physics"	Homework, Test	
Electricity	Investigate separation and behavior of static charges.	Reinforced	Week 25	Lecture, Power Point, and Demonstration	16-1 "Static Electricity; Electric Charge and its Conservation" (text), Smart Board, and Glass and Rubber Rods.	Homework, Test	Job 28:26 God first showed charge separation in lightning
	Demonstrate use of Coulomb's Law	Introduced	Week 25	Lecture and Power Point	16-5 "Coulomb's Law" (text) and Smart Board	Homework, Test	
	Describe electric field around point charges.	Introduced	Week 25	Lecture and Power Point	16-7 "The Electric Field" (text) and Smart Board	Homework, Test	

	Compare electric potential to the electric field around point charges.	Introduced	Week 26	Lecture and Power Point	17-2 “Relation between electric potential and electric field” (text) and Smart Board	Homework, Test	
	Investigate current electricity	Developed	Week 28	Lecture, Power Point, and Demonstration	18-2 “Electric Current” (text), Smart Board, and various demonstrations	Homework, Test	
	Use and apply Ohm’s Law	Introduced	Week 28	Lecture and Power Point	18-3 “Ohm’s Law: Resistance and Resistors”	Homework, Test	
	Explore voltages and currents in DC circuits	Developed	Week 29	Lecture, Power Point, and Demonstration	19-1 “Resistors in Series and Parallel” (text), Smart Board, and Various circuits.	Homework, Test	
	Compare the conductivity to different materials	Developed	Week 28	Lecture and Power Point	18-4 “Resitivity” (text) and Smart Board	Homework, Test	
	Show how to use Kirchhoff’s rules in complex circuits	Introduced	Week 29	Lecture and Power Point	19-4 “Kirchhoff’s Rules” (text) and Smart Board	Homework, Test	
	Investigate electric hazards and safeguards	Developed	Week 29	Lecture, Power Point, and Demonstration	19-9 “Electric Hazards; Leakage Currents” (text), Smart Board, and Various devices.	Homework, Test	
Magnetism	Describe magnets with their fields and compare to	Developed	Week 30	Lecture, Power Point, and Demonstration	20-1 “Magnets and Magnetic Fields” (text), Smart Board,	Homework, Test	

	charges with their fields				and Magnets, compasses and field probe		
	Show the production of magnetism with electric current	Developed	Week 30	Lecture, Power Point, and Demonstration	20-2 “Electric Currents Produce magnetism” (text), Smart Board, and Current carrying wires inducing a magnetic field	Homework, Test	
	Explain force on an electric current in a magnetic field	Introduced	Week 30	Lecture, Power Point, and Demonstration	20-3 “Force on an Electric Current in a Magnetic Field” (text) Smart Board, Current carrying wires in a magnetic field	Homework, Test	
	Describe the production of EMF	Introduced	Week 31	Lecture, Power Point, and Demonstration	21-1 “Induced EMF” (text), Smart Board, and Coils, magnets and galvanometer.	Homework, Test	
	Demonstrate EMF in motors and generators	Developed	Week 31	Lecture, Power Point, and Demonstration	21-5 “Generators” (text), Smart Board, and Motors and generators.	Homework, Test	
	Explain the production of electromagnetic waves and recognize the many examples.	Developed	Week 31	Lecture and Power Point	22-3 “Production of Electromagnetic Waves” (text) and Smart Board	Homework, Test	

Energy	Explain how an object's kinetic energy depends on its mass and velocity	Developed	Week 9	Lecture and Power Point	6-3 "Kinetic Energy and the Work-energy Principle" (text) and Smart Board	Homework, Test	
	Describe the work-energy principle	Introduced	Week 9	Lecture and Power Point	6-3 "Kinetic Energy and the Work-energy Principle" (text) and Smart Board	Homework, Test	Gen 2:2 God's energy produced creative work
	Demonstrate that near Earth's surface and object's gravitational potential energy depends upon its mass, the acceleration due to gravity and height above a reference point.	Developed	Week 9	Lecture and Power Point	6-4 "Potential Energy" (text) and Smart Board	Homework, Test	
	Investigate conservative and nonconservative forces	Introduced	Week 10	Lecture and Power Point	6-5 "Conservative and Nonconservative Forces" (text) and Smart Board	Homework, Test	
	Compare potential energy in elastic materials with gravitational PE	Introduced	Week 10	Lecture and Power Point	6-6 "Mechanical Energy and its Conservation" (text) and Smart Board	Homework, Test	

Heat	Describe the use of thermometers in measuring temperature.	Reinforced	Week 22	Lecture and Power Point	13-2 “Temperature and Thermometers” (text) and Smart Board	Homework, Test	
	Investigate thermal expansion and stress	Developed	Week 22	Lecture, Power Point, and Demonstration	13-6 “Thermal Stress” (text), Smart Board, and Various demos	Homework, Test	
	Define the Ideal Gas Law	Developed	Week 23	Lecture and Power Point	13-8 “The Ideal Gas Law” and Smart Board	Homework, Test	
	Compare temperature, heat and internal energy	Developed	Week 23	Lecture and Power Point	14-2 “Distinction Between Temperature, Heat and Internal Energy” (text) and Smart Board	Homework, Test	
	Define specific heat	Introduced	Week 23	Lecture and Power Point	14-4 “Specific Heat” (text) and Smart Board	Homework, Test	
	Define latent heat	Introduced	Week 23	Lecture and Power Point	14-6 “Latent Heat” (text) and Smart Board	Homework, Test	
	Investigate calorimetry	Introduced	Week 23	Lecture and Power Point	14-5 “Calorimetry” (text) and Smart Board	Homework, Test	
		Introduced	Week 23	Lab	“Calorimetry” Calorimeter, Sample, Thermometer, Scales, Beaker, and Bunsen burner	Lab Report	

	Show heat transfer	Reintroduced	Week 24	Lecture and Power Point	14-7 “Conduction”, 14-8 “Convection”, 14-9 “Radiation”, (text) and Smart Board	Homework, Test	Luke 12:55 Heat as energy can move
	Explain laws of thermodynamics	Developed	Week 24	Lecture and Power Point	15-1 “The First Law of Thermodynamics” (text) and Smart Board	Homework, Test	
		Developed	Week 24	Lecture and Power Point	15-4 “The Second Law of Thermodynamics” (text) and Smart Board	Homework, Test	
		Introduced	Week 24	Lecture and Power Point	15-7 “Entropy and the Second Law of Thermodynamics” (text) and Smart Board	Homework, Test	
Sound	Define sound and its sources	Reinforced	Week 21	Lecture and Power Point	12-1 “Characteristics of Sound” (text) and Smart Board	Homework, Test	Lv 26:36 Vibration of air is sound
		Reinforced	Week 21	Lecture, Power Point, and Demonstration	12-5 “Sources of sound: vibrating strings and air columns” (text), Smart Board, and Various demos	Homework, Test	
	Investigate interference of waves	Developed	Week 22	Lecture and Power Point	12-7 “Interference of Sound Waves: Beats” (text) and	Homework, Test	

					Smart Board		
	Describe the Doppler effect and its explanation of natural occurrences	Introduced	Week 22	Lecture and Power Point	12-8 “Doppler effect” (text) and Smart Board	Homework, Test	
Light	Demonstrate the reflection of light by ray diagrams	Developed	Week 32	Lecture and Power Point	23-2 “Reflection; Image Formation by a Plane Mirror” (text) and Smart Board	Homework, Test	Gen 1:4 Light travels in straight lines
		Developed	Week 32	Lecture and Power Point	23-3 “Reflection; Image Formation by a Spherical Mirror” (text) and Smart Board	Homework, Test	
	Describe refraction and use Snell’s law	Developed	Week 23	Lecture and Power Point	23-4 “Index of Refraction” (text) and Smart Board	Homework, Test	
		Introduced	Week 23	Lecture and Power Point	23-5 “Refraction: Snell’s Law” (text) and Smart Board	Homework, Test	
		Developed	Week 23	Lab	“Snell’s Law” Glass block, pins, protractor, and paper	Lab Report	
	Demonstrate refraction by ray diagrams	Developed	Week 23	Lecture, Power Point, and Demonstration	23-7 “Thin Lenses; Ray Tracing” (text), Smart Board, and Various hand held lenses	Homework, Test	

	Use and apply the lens formula	Developed	Week 24	Lecture and Power Point	23-9 “Problem Solving for Lenses” (text) and Smart Board	Homework, Test	
		Developed	Week 24	Lab	“Convex Lenses” Thin lenses, optical bench	Lab Report	
	Investigate the dual nature of light	Introduced	Week 24	Lecture and Power Point	24-1 “Waves versus particles: Huygens’s Principle and diffraction” (text) and Smart Board	Homework, Test	
		Developed	Week 24	Lecture and Power Point	24-10 “Polarization” (text) and Smart Board	Homework, Test	
	Illustrate optical instruments	Reinforced	Week 24	Lecture, Power Point, and Demonstration	25-1,2,3,4,5 “Optical Instruments” (text) and Smart Board	Homework, Test	
Waves	Explain the nature of waves	Developed	Week 18	Lecture and Power Point	11-1 “Simple Harmonic Motion” (text) and Smart Board	Homework, Test	
		Introduced	Week 18	Lecture and Power Point	11-2 “Energy in the simple Harmonic Oscillator” (text) and Smart Board	Homework, Test	
		Introduced	Week 18	Lecture and Power Point	11-3 “The Period and Sinusoidal Nature of Simple Harmonic Motion” (text) and Smart	Homework, Test	

					Board		
	Demonstrate types of waves	Reinforced	Week 19	Lecture, Power Point, and Demonstration	11-8 “Types of waves: Transverse and Longitudinal” (text), Smart Board, and Various springs	Homework, Test	
		Introduced	Week 19	Lecture, Power Point, and Demonstration	11-12 8 “Standing Waves; resonance” (text), Smart Board, and Various demos	Homework, Test	

Mansfield Christian School
Anatomy 121 and 122
Academic Standard Addendum to PSO Curriculum

The following syllabus for Anatomy 121 as well as the syllabus for Anatomy 122 is a dual credit course for college credits from North Central State College and high school credits from Mansfield Christian School. This affords the students at Mansfield Christian School to take a college course for full college credit while at the Mansfield Christian campus. As indicated by the aforementioned syllabi, this course broaches the anatomical and physiological creation on a cellular as well as physical realm. Truly supporting all that is God's amazing dynamic, yet dependant on creation.

Course Description: Please refer to the accompanying syllabus

Course Outcomes and Biblical Integration:
Students should be able to:

1. Introduction to Anatomy and Physiology: All systems and their comparative equivalents.	Man was made in the image and likeness of God. Gen. 1:26-28 and Psalm 49 12, 14 and 20.
2. The Chemical Level of Organization	Col. 1: 15-17 From the atom, matter, and molecule to Man. From the unseen to what we can see. All a result from the grace of God
3. Cell Structure and Function	Gen 2:7
4. The Tissue Level of Organization	Col 1:15-17 A complete integrated dynamic. Intensely altruistic.
5. The Integument System	Flesh: Amazingly strong in its physical state Amazingly week metaphysical state
6. The Skeletal System	Foundations of structure and design: Zechariah 12:1
7. The Muscular System	Romans 12:1 and Psalm 139:13-16 Wonderfully made and created: "strength"
8. The Nervous System	Nehemiah 9:6 and Isaiah 45:5-7 and Psalm 102:25 and 26 Matter, energy, and REAL communication. Small to Huge
9. The General and Special Systems	Breath of life - Proverbs 20:12 and Malachi 2:10
10. The Endocrine System	Ecclesiastes 3:18-21 "All go to one Place" Consistency in the total of creation
11. The Cardiovascular System : Blood and Heart	Energy and the "pump". Perpetual Physics and the gas of the Lord: BLOOD. Significant in all that is eternal. Leviticus 17:10-14
12. The Lymphatic System	Job 4:17 Purity of the maker and the creation.

13. The Respiratory System	The BREATH of LIFE also (Job 27:3)
14. The Digestive System	Genesis 1:29 and I Cor. 12: 12-26 The unity of the human body
15. Nutrition and Metabolism	Genesis 1:29 (Expanded)
16. The Urinary System	Psalm 107:17-20 The total dynamic of Man and Acts 17:24 ,26
17. The Reproductive System	AMAZING GRACE: Exodus 23:25
18. Development and Inheritance	From inheritance to INHERITANCE : From the gene to the gate of heaven or the gate of hell: Decision and result: John 3:16 ; James 5:13-16 and Psalm 139:13-16

These credit hours have been accepted in full and partial towards college graduation at such institutions of learning as Nazarene College, Indiana Wesleyan University, Malone College, Heidelberg College, Liberty College, Ohio State University, to name a few.

Man was made in the image and likeness of God!

Gen. 1:26-28, 5:1, 9:6 I Cor. 11:7, James 3:9, I Thes. 4:14-17

Mansfield Christian School
Senior Science Curriculum Guide

Performance Scale Key	**Instructional Method Key**		
Introduced			
Developed	AC-Accelerated Reader	A-Assemble	BD-Build-Describe
Reinforced	Cl-Classification	C-Construct	CC-Compare & Contrast
Not Addressed	Co-Collaboration	Col-Collect	Com-Complete
	Cr-Create	D-Drama	Dem-Demonstration
	Dis-Discuss	DP-Descriptive Presentation	Dr-Draw
	E-Experiment	Ft-Field Trip	G-Games
	Gr-Guided Reading	Gs-Guest Speaker	GW-Group Work
	GWr-Group Writing	ID-Identification	I-Illustration
	In-Investigation	IW-Independent writing	IR-Independent Reading
	IRA-Interactive Reading Aloud	L-Lecture	M-Manipulative
	MI-Managed Independent	MM-Multi Media (Video, Audio)	NC-Number Cards
	Pa-Participation	P-Prediction	PR-Peer Review
	PP-Power Point	R-Read	Re-Recreation
	S-Songs	So-Sort	SR-Shared Reading
	SRT-Star Reading Test	TM-Teaching Modeling	VE-Verbal Explanation
	V-View	WP-Written Practice	WS-Word Study

Standard	**Indicator**	**Performance Scale**	**Time Frame**	**Instructional Method**	**Instructional Activities and Resources**	**Assessment of Learning**	**Biblical Integration**
Earth Space and Sciences **SO1.**	A. Explain how technology can be used to gather evidence and increase our understanding of the universe	Reinforced	Week 1 Thru Week 9	GW-group work DP- descriptive demonstration DEM-Demonstration E-Experimentation	Internet Models Modern Application Student Presentations	Student Presentation Diagrams Models Student to student quiz	Isaiah 40:26 Lift up your eyes on high, and see who has created these things and the strength of HIS power; not one is missing.

				PP-Power Point		Quiz	
	01. Explain how scientists obtain information about the universe by using technology to detect electromagnetic radiation that is emitted, reflected or absorbed by stars and other objects.	Reinforced (ie - Global Warming, Ozone depletion, Black Holes, etc. ?)	Weeks 1-9	L-Lecture DEM-Demonstration PP-Power Point MM- Multi Media	Lecture Notes Models Elmo – Computer Technology Display Examples Text Lab	Student Response Quiz Quiz Presentation Grade	Isaiah 45:5-7 I am the LORD, and there is no other; there is no God besides ME. I form the light, and create darkness… I the Lord do all these things.
	02. Explain how the large scale motion of objects in the universe is governed by gravitational forces and detected by observing electromagnetic radiation.	Reinforced	Weeks 1-9	Models DEM-Demonstration L-Lecture	Student Presentations Descriptive Presentation Outside Sources Internet	Student Interaction Student Quizzes Lecture Response Recognition of Molecular Origin Quiz	Gen. 2:1 Thus the heavens and the earth anal the host of them, were finished.

	03. Explain how information about the universe inferred by understanding that stars and other objects in space emit, reflect or absorb electromagnetic radiation, which we can then detect.	Reinforced	Weeks 1-9	L-Lecture Models E-Experiments DEM-Demonstration	Text Lecture Notes Outside Sources Student Research Internet	Student Interaction Quiz	Hebrews 1:3 Who…upholding All things by the word of His power……
	04. Explain how astronomers infer that the whole universe is expanding the by understanding how light seen from distant galaxies has longer apparent wavelengths than comparable light sources on earth.	Develop Reinforce	Week 1-9	L-Lecture DEM-Demonstration E-Experiments MM-Multi Media	Text Additional University Texts	Lab Quiz Student Interaction Oral Test Games Quiz	Nehemiah 9:6 You alone are the Lord; you have made heaven, the heavens of heavens with all their host, the earth and all things on it, the seas and all that is in them, and YOU preserve them all…….
	B. Describe how Earth is made up of A series of interconnected systems and how a change in one system affects other systems.	Develop Reinforce	Week 5 Weeks 5-9	L-Lecture MM-Multi Media Lab	Internet Biology Text	Lab Practical Quiz Reviews	Isaiah 51:6 ….for the heavens will vanish away like smoke, the earth will grow old like a garment

				PP-Power Point			and these who dwell in it will die in like manner …
	05. Investigate how thermal energy transfers in the world's oceans impact on physical features . (e.g. ice caps, oceanic and atmospheric currents) and weather patterns.	Develop Reinforce	Week 5-9	DEM-Demonstration L-Lecture MM-Multi Media PP-Power Point	Outside Text Lecture Notes Additional Texts Lab	Lab Practical Student Interaction Lecture Response Presentations	Hebrews 1:3 Who…upholding all things by the word of HIS power.
	06. Describe how scientists extimate how much of a given resource is available on Earth	Develop Reinforce	Week 1-9	L-Lecture MM-Multi Media DEM-Demonstration	Outside Texts Lecture Handouts Internet	Observational Interaction Presentations	Hebrews 11:3 By Faith we understand that the worlds were formed by the word of God, so that the things which are seen were not made of things which are visible.
	C. Explain that humans are an integral part of the Earths system and the choices humans make today impact natural	Reinforce	Week 1-9	L-Lecture GW – Group Work	Additional Text Internet Industrial	Student Interaction Observational Response	Job 38:4

	systems in the future.				Applications & effectiveness		
	D. Summarize the historical development of scientific theories and ideas and describe emerging issues in the study of Earth and space sciences.	Develop Reinforce	Week 5 Week 5-9	DEM-Demonstration PP-Power Point GW- Group Work	Additional Texts Internet	Quiz Observational Responses	Isaiah 42:5
Life Sciences **S02** **(Medical Terminology, Wellness & Nutrition)**	A. Explain how processes at the cellular level affect the functions and characteristics of an organism.	Develop Reinforce	Weeks 10-38 Weeks 29-38	L-Lecture DEM-Demonstration GW-Group Work WS-Word Study	Text Internet	Student Responses Quiz Tests Student Presentations Guest Speakers	Isaiah 43:7
	01. Recognize that information stored in DNA provides the instructions for assembling protein molecules used by the cells that determine the characteristics of an organism.	Develop Reinforce	Week 10-38	L-Lecture DEM-Demonstration GW-Group Work WS- Word Study	Text Internet	Quiz Student Presentations	Amos 7:1
	02. Explain why specialized	Reinforce	Week 10-38	L-Lecture	Text	Student Interaction	Mark 10:6

	cells/structures are useful to plants and animals (e.g. stoma, phloem. Blood, nerve, muscle, egg and sperm).			DEM-Demonstration MM-Multi Media GW –Group Work Word Study	Lecture Handouts and additional Notes Demonstrations	Quizzes Presentations	
	B. Explain how humans are connected to, and impact natural systems.	Reinforce	Week 10-38	Lecture MM-Multi Media WS-Word Study	Text	Lecture Response Presentations	Matthew 5:45
	C. Explain how the molecular basis of life and the principles of genetics determine inheritance.	Reinforce Develop	Week 10-38	Lecture Lecture Notes and Handouts DEM-Demonstration WS-Word Study	Text Internet Additional Text	Student Interaction Quiz Presentations	John 1: 3 & 4
	05. Examine the inheritance of traits through one or more genes and how a single gene can	Reinforce	Week 10-38	L-Lecture GW-Group Work	Text Internet Additional	Lecture Response Student Presentations	

	influence more than one trait.			WS-Word Study	Sources	Quiz Test	
	06. Explain how developmental differentiation is regulated through the expression of different genes.	Reinforce	Week 10-38	L-Lecture MM-Multi Media GW-Group Work WS-Word Study	Text Additional Texts Internet	Student Participation Lecture Response Test	Jeremiah 27:5
	D. Relate how biotic and abiotic global changes have occurred in the past and will continue to do so in the future.	Develop Reinforce	Week 1 thru week 38	L-Lecture DEM-Demonstration GW-Group Work WS-Word Study	Text Lecture Handouts and Notes Lab	Lab Practical Quiz Student Response Test	Acts 17:24-29
	10. Explain additional components of the evolutionary theory, including genetic drift , immigration, emigration, and mutation	Reinforce	Week 1 thru Week 38	Lecture MM-Multi Media IR-Independent Reading	Text Internet Student Presentations	Student Response Student Presentations Quiz	Deut. 7:12-14

				VE-Verbal Explanation GW-Group Work WS-Word Study	Group Discussions Additional Text		
	E. Explain the Interconnectedness of the components of a natural system.	Develop Reinforce	Week 1 Week 1 Thru Week 38	L-Lecture MM-Multi Media DEM-Demonstrations MI-Managed Independent	Text Internet Additional Texts GW-Group Work	Student Response Student Self Discovery Labs Student Presentations	I John 1:5-7
	07. Relate diversity and adaptation to structures and functions of living organisms at various levels of organization.	Develop Reinforce	Week 1 Week 1 thru Week 38	Same as Above	Text Internet Additional Texts P-Prediction	Text Quizzes Student Presentations Demonstrations	Revelation 21:23-25
	08. Based on the structure and stability of ecosystems and their non living components, predict the biotic and abiotic changes in such	Reinforce	Week 1 thru Week 38	L-Lecture MM-Multi Media MI-Managed Independent	Text Internet CC-Compare & Contrast	Text Research References	Isaiah 60:19 and 20

	systems when disturbed (e.g. introduction of non-native species, climatic change, etc.)				GW-Group Work		
	09. Explain why and how living systems require a continuous input of energy to maintain their chemical and physical organization. Explain that with death and the cessation of energy input, living systems rapidly disintegrate toward more disorganized states.	Develop Reinforce	Week 1 thru Week 38	L-Lecture FT-Trip MM-Multi Media MI-Managed Independent	Text Internet Technology Periodicals PP-Power Point	Student Interaction Quizzes Student Presentations Independent Research	Jeremiah 5:24
	F. Explain how human choices today will affect the quality and quantity of life on Earth.	Develop Reinforce	Week 1 thru Week 38	(Same as Above)	Same as Above	Text Student Interaction	Jeremiah 27:5
	01. Cite examples of ways that scientific inquiry is driven by the desire to understand the natural world and how technology is driven by the need to meet	Develop Reinforce	Week 1 thru Week 38 Special Concentration During Week 22	(Same as above)	(Same as above)	(Same as above) Additional Professional Periodicals (Pharmacology,	Isaiah 42:5

	human needs and solve human problems.		(Biochemistry and Biotechnology: Industry and Health Care)			Health Care, Industrial, Biotechnology, - - -)	
	G. Summarize the historical development of scientific theories and ideas within the study of life sciences.	Reinforce	Week 10-38	Student Presentations GW-Group Work WS-Word Study Internet	Internet Text Additional Sources Medical Journals Research Papers Student Presentations	Student Interaction Student Presentations Quiz Test Exam	Psalm 104:14-16
	11. Study the historical development of a biological theory or idea (e.g. genetics, cytology and germ theory)	Develop Reinforce	Week 1 Introduction Week 10 thru Week 38	L-Lecture DEM-Demonstration MI-Managed Independent GW-Group Work WS-Word	Text Handouts Internet Student Presentations	Student Interaction Quiz Student Presentations Exam	Genesis 1:26

				Study Internet			
	12. Describe advances in life sciences that have important, long-lasting effects on science and society (e.g. Biotechnology)	Develop Reinforce	Week 1 Weeks 10-38	Same as Above	Same as Above	Same as Above	Psalm 8:6-8
S04 **Physical** **Sciences**	E. Summarize the historical development of scientific theories and ideas within the study of physical sciences.	Reinforce	Week 8 thru Week 38	DEM-Demonstrations L-Lecture MM-Multi Media WS-Word Study GW-Group Work	Demonstrations Student Presentations Handouts Internet Text	Student Demonstrations Student Interaction Quizzes	Psalm 19:1-3
	14. Use historical examples to explain how new ideas are limited by the context in which they are conceived ; are often initially rejected by the scientific establishment, sometimes many different investigators	Develop Reinforce	Week 1 Week 1 thru Week 38	DEM-Demonstrations L-Lecture MM-Multi Media	Text Student Notes and Handouts	Lecture Responses Student Interaction Student Demonstration Quizzes	Isaiah 40:26

	(e.g. nuclear energy, quantum theory and theory of relativity)					Tests Exam	
	15. Describe concepts/ideas in physical sciences that have important, long-lasting effects on science and society.	(Same as Above)	(Same as Above)	(Same as Above)	(Same as Above)	(Same as Above)	John 1:3
S04 **Science and Technology**	A. Predict how human choices today will determine the quality and quantity of life on Earth.	Introduce Develop Reinforce	Weeks 1-38	L-Lectures IW-Independent Writing GW-Group Work In-Investigation Co-Collaboration DP- Descriptive Presentation WS-Word Study	Text Lecture Student Presentation	Peer Review Student Presentation Quiz	Romans 1:20
	01. Explain how science often advances with the introduction of new technologies and how solving technological problems often results in new scientific knowledge.	Develop Reinforce	Same as Above	L-Lecture DEM-demonstrations MI-Managed Independent (Addition of Above – A.)	Text Lecture Notes Power Point Student Research	Lecture Response Quizzes Exam	Psalm 8:24 and Psalm 19:1-6

	02. Describe how new technologies often extend the current levels of scientific understanding and introduce new areas of research.	Reinforce	Same as Above	Same as Above	Same as Above	Same as Above	Psalm 8: 3and4
	03. Research how scientific inquiry is driven by the need to meet human needs and solve human problems.	Reinforce	Same as Above	Same as Above	Same as Above	Same as Above	Romans 12:2
	04. Explain why basic concepts and principles of science and technology should be a part of active debate about the economics, policies, politics and ethics of various science-related and technology-related challenges	Same as Above	Same as Above	Same as Above	Same as Above	Same as Above	Psalm 104:14-16
S05 **Scientific Inquiry**	A. Make appropriate choices when designing and participating in scientific investigations by using cognitive and	Reinforce	Weeks 19-38	R-Read MM-Multi Media IW-Independent Writing	Text Lecture Internet Outside	Student Interaction Student Presentations Quiz	Psalm 19:14 Isaiah 40:26

	manipulative skills when collecting data and formulating conclusions from the data.			DP-Descriptive Presentations Dem-Demonstrations Lab VE-Verbal Explanation GW-Group Work WS-Word Study	Sources University Based Sources Social Science Vs. Physical Science	Exam	
	01. Formulate testable hypothesis. Develop and explain the appropriate procedures, controls and variables. (dependant and independent) in scientific experimentation	Reinforce	Same as Above	Same As Above	Same as Above	Same as Above	I Cor. 10:31
	02. Evaluate scientific investigations by reviewing current scientific knowledge and the experimental procedures used,	Same as Above	Same as Above	Same as Above	Same as Above	Same as Above	I Thes. 5:21& 22

	examining the evidence, identifying faulty reasoning. Pointing out statements that go beyond the evidence and suggesting alternative explanations for the same observations						
	03. Select a scientific model concept or theory and explain how it has been revised over time based on new knowledge, perceptions or technology.	Same as Above	Same as Above	Same as Above	Same as Above	Same as Above	I Cor. 10:31
S06 **Scientific Ways of Knowing**	A. Explain how evidence is used to develop and revise scientific predictions, ideas or theories. 01,02,03,04,05	Review	Weeks 29-38	L-Lecture MI-Managed Independent GW-Group Work CC-compare and contrast WS-Word Study	Text Internet DP-Descriptive Presentation Lab DEM-demonstration Outside Resources	Student Presentations Quiz Student Response Peer Review	Matt. 6:28-30

	B. Explain how ethical considerations shape scientific endeavors.	Same as Above	Same as Above	Same as Above	Same as Above	Same as Above	I Cor. 14:33
	C.Explain how societal issues and considerations shape scientific endeavors. (06.,07.,08.,09.,10.,11)	Same as Above	Same as Above	Same as Above	Same as Above	Same as Above	I Cor. 14:40

Science Scope & Sequence

I-Introduced D-Developed R-Reinforced

GRADES	EE	K	1	2	3	4	5	6	7	8	9	10	11	12
A. Earth and Space Science:														
1. Observe constant and changing patterns of objects in the day and night sky.			I	D			D			D	R	R		R
2. Organisms that cause environmental changes							I		D		R			R
3. Long and Short Term Weather Changes	I	I	I D	D		D			D	D	R			R
4. Living and nonliving resources	I	I	I D	D	D	D	D	D	D		R			D R
5. Units of Measurement	I	I	I D			I D	D		D	D	R	R	R	R
6. Oceans	I		I	D							R			D R
7. Plate Tectonics								I			D			R
8. Rocks, Soil, and Minerals	I			I	I D	D	D	D	D		R			
9. Weathering and Erosion/Learn about geological evolution	I			I	I D	D		D	D	D	R			
10. Thermal Energy Transfer								I		D	R			
11. Atmosphere/Air				I		I D	D		D		R			R
12. Water Cycle	I		I	I D		D	D	D	D		R			R
13. Habitats	I		I	I D	D		D		D	D	R			R
14. Landforms	I			I		I D					R			R
15. Recycling	I	I	I D			I D	D	D						R
16. Pollution	I	I	I D			I D	D	D			R			R
17. Natural Disasters and continuous change				I	I D	D		D	D	D				R
18. Fossils/ Understand creationists and evolutionists view of fossils				I	I D		D			D	R			
19. List the steps of Biblical creation.		I	I D	D	D		D		D	D	R			R
20. Compare contrast ideas of origins of the universe.					I					D	R			R
B. Life Science:														
1. Classification of Living Things (Plants and Animals)/ God created order in the structures and functions of life.	I	I	I D	D	D			D	D		R			R
2. Heredity and Genetic Mechanism								I	D	D	R			R
3. Anatomy & Physiology (Plant and Animal)				I	I D	D			D	D	R			R
4. Human Nutrition (food groups)	I	I	I D	D	D	D					R			R
5. Dinosaurs			I	I D						D				
6. Cell division and organisms								I	D		R			R
7. Hygiene	I		I	I D			D				R			R

8. Safety/First Aid			**I**	**I D**					**D**	**D**	**R**	**R**	**R**	**R**
9. Interdependency of plants and animals				**I**	**I D**	**D**	**D**	**D**	**D**	**D**	**D**	**D**		**R**
10. Cells, tissues, and organs					**I**		**D**	**D**	**D**	**D**	**D**	**R**		**R**
11. Photosynthesis					**I**	**I D**	**D**	**D**	**D**			**D**		
12. Food Chain				**I**		**I D**	**D**	**D**	**D**	**D**	**R**	**D**		
13. Human anatomy and physiology/ God created man in his image			**I**				**D**		**D**	**D**		**D**		**R**
14. Symbiotic relationships									**I**	**D**		**D**		**R**
15. Overpopulation										**I**		**D**		**R**
16. Extinction				**I**	**I D**					**D**		**D**		**R**
17. Viruses/Bacteria									**I**			**D**		
18. Natural Selection (unity and diversity of life)										**I**		**D**		**R**
19. Time, chance, mutations and biological impact on natural systems.									**I**	**D**		**D**		**R**
20. Human choices/effect on environment	**I**			**I**		**I D**	**D**		**D**	**D**		**D**		**D**
21. Evolution is man's theory of the existence of all things in a world without God/ Explain the theory of evolution and the evidence that disproves it.									**I**	**D**		**R**		**R**
22. List the steps of Biblical Creation.	**I**	**I**		**I D**			**D**		**D**	**D**	**D**			**R**
C. Physical Sciences:														
1. Simple Machines			**I**	**I D**				**D**		**D**	**D**		**D**	
2. Unit Conversions					**I**	**ID**	**D**			**D**	**D**	**R**	**R**	**R**
3. Color	**I**	**I**	**ID**				**D**							**R**
4. Physical Properties/Changes without resulting in a new substance			**I**			**ID**	**D**	**D**	**D**	**D**	**D**	**D**	**R**	
5. Chemical Properties/Changes into different biological, chemical and physical substances			**I**				**D**	**D**	**D**	**D**	**D**	**D**	**D**	**R**
7. Unstable atomic nuclei												**D**	**D**	**R**
8. States and Properties of Matter			**I**			**I D**	**D**	**D**		**D**	**D**	**D**	**R**	**R**
9. Laws of Motion and apply mathematical analysis						**I**		**D**		**D**	**D**	**D**	**D**	**R**
10. Forces of Motion and how they affect objects				**I**	**I D**	**D**		**D**		**D**	**D**		**D**	**R**
11. Solutions and Mixtures							**I**	**D**		**D**	**D**	**D**	**D**	**R**
12. Electricity/circuits						**I**	**D**	**D**		**D**	**D**		**D**	**R**
13. Magnetism	**I**	**I**	**I D**	**D**	**D**	**D**	**D**	**D**		**D**	**D**		**D**	**R**
14. Measurement	**I**	**I**		**I D**	**D**	**D**	**D**		**D**	**D**	**D**	**D**	**D**	**R**
15. Atomic structure and properties								**I**	**D**		**D**	**D**	**D**	**R**
16. Periodic Table								**I**	**D**	**D**	**D**	**D**	**D**	**R**

17. Energy, their uses and transfers					I	I D		D	D	D	D	D	D	R
a. Potential/Kinetic						I	D			D	D	D	R	
b. Heat (thermal energy transferred)							I			D	D	D	R	
c. Sound					I		D			D	D	D	R	
d. Light						I	D			D	D	D	R	
e. Waves (energy that can interact with matter)										I	D	D	R	
f. Nuclear										I	D	D		R
g. Endothermic/Exothermic										I	D	D		R
h. Water						I			D		D		D	R
i. Wind	I					I			D		D		D	
18. Electromagnetic Spectrum										I	D			R
19. Acids and Bases								I	D	D	D	D	D	R
20. Formulas									I	D	D	D	D	R
21. Scientific Method			I		I D	D	D	D	D	D	D	D		R
22. Laws of Conservation (energy changes form but quantity remains constant)			I							I D	D	D		R
23. Lab techniques									D	D	R			R
24. Renewable, non-renewable sources of energy						I	D	D	D		R	D		R
25. Summarize scientific theories established and emerging									I	D	R	D		R
D. Science and Technology:														
1. Science & Technology interdependence			I		I D				D	D	R			R
2. Magnifying glass	I		I				D		D	D	R			
3. Telescope										I				
4. Microscope							I		D	D	R			
5. Computer	I		I		I D	D	D		D	D	R			
6. Websites			I		I D	D	D		D	D				
7. Proper care of instruments									I	D				
8. Ethical decisions regarding scientific advancements and the needs of a society					I				D	D	D	D		R
9. Effects of advanced technology to the quality of life				I	I D		D	D	D	D	D		D	R
10. Inventions/Inventors	I		I	I D	D	D		D	D	D	D			R
11. Models and Designs (process and planning)					I	I D	D		D	D	D		D	R
12. Solutions and constraints of cost, time, trade-offs, materials, safety and aesthetics									ID	ID	D			R
E. Scientific Inquiry:														
1. "What if …" (ask a testable question)	I	I	I D	D	D	D	D	D	D	D	D	D		R
2. Observing	I	I	I D	D	D	D	D	D	D	D	D	D		R
3. Qualitative and Quantitative			I					D	D	D	D	D	D	R
4. Classifying	I	I	I D	D		D	D	D	D	D	D	D		R

5. Inferring			I		I D	D	D	D	D	D	D		D	R
6. Communicating results	I	I	I D		D	D	D	D	D	D	D		D	R
7. Measuring	I	I	I D	D	D	D	D	D	D	D	D			D
8. Predicting	I	I	I D	D	D	D	D	D	D	D	D	D	D	R
9. Interpreting Data through a variety of methods	I	I	I D		D		D	D	D	D	D	D		R
10. Forming Hypothesis	I		I	I D	D	D	D	D	D	D	D	D		R
11. Separating/Controlling Variables						I	D	D	D	D	D	D	R	R
12. Experimenting to investigate a simple question	I	I		I D		D	D	D	D	D	D	D	R	R
13. Choosing appropriate tools to safely conduct investigations					I		D	D	D	D	D	D	D	R
14. Investigating	I	I	I D		D	D	D	D	D	D	D	D	R	R
15. Drawing Conclusions from data using mathematical skills		I			I D	D	D	D	D	D	D	D	R	R
16. Recording data correctly in models and designs		I			I D	D		D	D	D	R	D	D	R
17. Organizing/Patterning by using cognitive and manipulative skills						I		D	D	D	R			
18. List the limitations of science							I	D	D	D	R	D	D	R
F. Scientific Ways of Knowing														
1. Asking open-ended questions	I	I	I D					D	D	D	D	D	D	R
2. Different investigations provide evidence to support explanations and conclusions					I	I D	D	D	D	D	D	D	D	R
3. Reproducibility (under same conditions that reduce biases)							I		D	D	D			R
4. Respect all living things	I	I	I D	D			D	D	D	D	D			R
5. Distinguish between fact and opinion and how ideas change with new knowledge			I	I D		D	D	D	D	D	D	R		R
6. Research scientific work									I	D	D	R		R
7. Identify various careers in science in diverse cultures					I				D	D	D			R
8. Explain discrepancies in investigations						I	D		D	D	D			R
9. Importance of science in our daily life	I	I		I D	D	D	D	D	D	D	D	R		R
10. Biases to our understanding of the natural world									I	D	D			R
11. Ethical practices and guidelines that shape scientific choices					I				D	D	D			R
12. Science confirms God's word	I	I		I D	D	D	D	D	D	D	D	R		R
13. Importance of keeping accurate records for understanding				I	I D	D	D		D	D	D	R		R
14. Scientific knowledge is based on						I	D	D	D	D	D	R		R

evidence, predictability, and logic														
15. Inquiry is guided by knowledge, observation, ideas, and questions						**I**	**D**	**D**	**D**	**D**	**D**	**R**		**R**
16. Scientific literacy is part of being a knowledgeable citizen									**I**	**D**	**D**	**R**		**R**

Health Scope & Sequence

I: Introduced **D:** Developed **R:** Reinforced

GRADES	Early Ed.	K	1	2	3	4	5	6	7	8	9	10	11	12
A. Physical Health: Human Body														
1. List needs of the human body.										**I D**		**I D**		
2. List the characteristics of a cell.										**I D**		**I D**		
3. Name the eleven systems of the body.										**I D**		**I D**		
4. Participate in the Lifeline Organ Donation Presentation.										**I D**		**I D**		
B. Physical Health: Body Systems														
1. Name the eleven major body systems and explain the function of each.										**I D**		**I D**		
2. Identify problems in each of the eleven systems and explain how they are treated.										**I D**		**I D**		
3. Explain how to avoid food poisoning.										**I D**		**I D**		
4. Explain how teens can show respect for one another in the area of sexuality										**I D**		**I D**		
C. Physical Health: Nutrition														
1. Describe the role of each nutrient and identify a food source for each.										**I D**		**I D**		
2. Explain how the food pyramid can be incorporated into a teen's diet.										**I D**		**I D**		
3. List and explain the 10 items on the Prescription for Good Nutrition.										**I D**		**ID**		

4. Identify the principles of weight loss and weight gain in relationship to a teen's overall diet.										**I D**		**I D**		
5. Explain the importance of keeping a food journal.										**I D**		**I D**		
6. Explain the keys to reading food product labels.										**I D**		**I D**		
7. Explain key eating disorders and explain how to get help.										**I D**		**I D**		
D. Physical Health: Fitness and Exercise														
1. Identify the four parts to physical fitness.										**I D**		**I D**		
2. Explain the difference between skill-related fitness and health-related fitness.										**I D**		**I D**		
3. List and explain the principles of exercise.										**I D**		**I D**		
4. Identify and explain the six components of every exercise program.										**I D**		**I D**		
5. List tips for the prevention of injuries.										**I D**		**I D**		
6. Identify the meaning of the acronym RICE.										**I D**		**I D**		
E. Physical Health: Infectious Disease/Noninfectious Disease														
1. Sin can be the cause of sickness and death.										**I D**		**I D**		
2. Disease may be caused by lack of emotional and/or spiritual health.										**I D**		**I D**		
3. Identify the cause of infectious disease.										**I D**		**I D**		
4. Explain the process of										**I**		**I**		

infectious disease.										D		D		
5. Explain how the human body fights disease.										I D		I D		
6. Explain the role of spiritual defenses in fighting disease.										I D		I D		
7. Name the types of sexually transmitted diseases and explain the dangers of each.										I D		I D		
8. List the five consequences of becoming sexually active.										I D		I D		
9. Identify the causes of noninfectious disease.										I D		I D		
10. Explain the role of lifestyle in the prevention of noninfectious disease.										I D		I D		
11. List the preventative measures against heart disease.										I D		I D		
1. Identify the factors contributing to the development of cancer.										I D		I D		
F. Mental Health: Stress and Anxiety														
1. List the factors that affect a person's reaction to stress.										I D		I D		
2. Explain the ways to deal with stress.										I D		I D		
3. Identify the signs of depression.										I D		I D		
4. Identify the warning signs of suicide.										I D		I D		
5. Explain how to get help if one is considering suicide.										I D		I D		
G. Mental Health: L.I.F.E. Management														

1. Explain the acronym G.I.G.O.										**I D**		**I D**		
2. Explain the role of conduct, character, and conviction in successfully managing one's life.										**I D**		**I D**		
3. Identify peer pressure and explain how to deal with it.										**I D**		**I D**		
4. Explain the role of the friendship pyramid.										**I D**		**I D**		
5. Identify and explain the emotional earthquakes teens' experience.										**I D**		**I D**		
H. Mental Health: Made in His Image														
1. Explain the meaning of the "one-liner" and identify why it can be so powerful.										**I D**		**I D**		
2. Identify the three main attributes that are highly respected by society and explain how these can cause an unhealthy view of oneself.										**I D**		**I D**		
3. Explain what is negative self-talk and identify ways a person can overcome negative self-talk.										**I D**		**I D**		
4. List eight ways to improve self-image.										**I D**		**I D**		
5. Explain the importance of knowing that you are made in God's image.										**I D**		**I D**		
I. Social Health: Head to Toes														
1. Explain how to care										**I**		**I**		

for your skin, hair, hands, eyes, ears, teeth, and feet.										**D**		**D**		
2. Explain why acne is a common problem for teens and how teens can care for acne.										**I D**		**I D**		
3. Identify common problems of the skin, hair, hands, eyes, ears, teeth, and feet.										**I D**		**I D**		
4. Explain why good posture is important.										**I D**		**I D**		
J. Social Health: Risky Business														
1. Identify the relationship between risk taking and accidents.										**I D**		**I D**		
2. Describe how to prevent unnecessary accidents.										**I D**		**I D**		
3. List the precautions to take to avoid being a victim of crime.										**I D**		**I D**		
4. Explain how to act safely at home, at school, on the road, and in the water.										**I D**		**I D**		
5. List, in order of importance, actions to take if in a crisis situation.										**I D**		**I D**		
6. Explain proper first aid for artificial respiration, severe bleeding, shock, burns, and other common emergencies.										**I D**		**I D**		
7. Explain how to save a choking victim.										**I D**		**I D**		
8. Describe when CPR may be needed										**I D**		**I D**		
9. Explain what action to take if you see										**I D**		**I D**		

someone collapse.														
10. List eight tips for babysitters.										**I D**		**I D**		
K. Social Health: Maturity: What's it All About														
1. Identify the relationship between wisdom, common sense and making choices.										**I D**		**I D**		
2. Explain what it means to be mature physically, emotionally, socially and spiritually.										**I D**		**I D**		
3. Explain the purpose of setting boundaries in life.										**I D**		**I D**		
4. Explain why abstinence from intercourse is not the only goal.										**I D**		**I D**		
5. Explain why purity is important and how teens can remain pure before marriage.										**I D**		**I D**		
6. Participate in the Abstinence Till Marriage (ATM) Program										**I D**		**I D**		
L. Social Health: Changing Relationships														
1. List excuses that compromise your dating standards.										**I D**		**I D**		
2. Identify the real purpose of dating.										**I D**		**I D**		
3. Identify the difference between Kingdom relationships and the culture's way of "dating"										**I D**		**I D**		
4. List five reasons for marriage as given by										**I D**		**I D**		

Dennis Rainey.														
5. Explain why teens are generally not ready for parenthood.										**I D**		**I D**		
6. List hints for getting along with family members.										**I D**		**I D**		
7. Explain how you can show respect for adults and senior citizens.										**I D**		**I D**		
8. List physical signs of aging.										**I D**		**I D**		
9. List and explain five common reactions people may have when experiencing the death of a loved one.										**I D**		**I D**		
M. Spiritual Health: Building Your Spiritual Muscles														
1. Explain what it means to be riding the "spiritual fence".										**I D**		**I D**		
2. List signs of spiritual atrophy.										**I D**		**I D**		
3. List the basic keys to training in righteousness.										**I D**		**I D**		
4. List the practical steps to Bible reading and prayer.										**I D**		**I D**		
5. List and explain the keys to consistent Christian living.										**I D**		**I D**		