Crest Memorial School Curriculum and Pacing Guide	
Grade: 3	Subject Area: Science
Adoption Date: September 2024	Revision Date: September 2024

Mission and Vision Statements

Mission: All students will possess an understanding of scientific concepts and processes required for personal decision-making, participation in civic life, and preparation for careers in STEM fields (for those that chose).

Vision: Prepare students to become scientifically literate individuals who can effectively:

- Apply scientific thinking, skills, and understanding to real-world phenomena and problems;
- Engage in systems thinking and modeling to explain phenomena and to give a context for the ideas to be learned;
- Conduct investigations, solve problems, and engage in discussions;
- Discuss open-ended questions that focus on the strength of the evidence used to generate claims;
- Read and evaluate multiple sources, including science-related magazine and journal articles and web-based resources to gain knowledge about current and past science problems and solutions and develop well-reasoned claims; and
- Communicate ideas through journal articles, reports, posters, and media presentations that explain and argue.

Integration of Technology

9.4.5.TL.1: Compare the common uses of at least two different digital tools and identify the advantages and disadvantages of using each.
9.4.5.TL.2: Sort and filter data in a spreadsheet to analyze findings.

21st Century Skills

9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).
9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.CivicsCM.3)
9.4.5.IML.2: Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3)
9.4.5.IML.3: Represent the same data in multiple visual formats in order to tell a story about the data

Career Education
9.2.5.CAP.3: Identify qualifications needed to pursue traditional and non-traditional careers and occupations. 9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care, medicine, education) and examples of these requirements.

Interdisciplinary Connection
RI.TS.3.4. Utilize and reference features of a text when writing or speaking about a text, using text features (e.g., graphics, images, captions, headings) and search tools (e.g., key words, sidebars, hyperlinks) to locate and integrate information relevant to a given topic efficiently. ' W.IW.3.2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly. SL.ES.3.3. Ask and answer questions about information from a speaker, offering appropriate elaboration and detail. SL.AS.3.6. Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification. 3.DL.B.3. Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories.

Accommodations and Modifications	
Special Education	● follow 504/IEP accommodations ● create visual word wall with labels ● highlight and define important vocabulary ● ask yes/no questions ● provide sentence frames or sentence stems ● allow for use of pictures in science journal with dictation support ● create a word map
English Language Learners	● create visual word wall with labels ● highlight and define important vocabulary ● ask yes/no questions ● provide sentence frames or sentence stems ● allow for use of pictures in science journal with dictation support ● create a word map
Students At-Risk of Failure	● Allow verbalization before writing ● Use audio materials when necessary ● Read tests aloud ● Restate, reword, clarify directions ● Re-teach concepts using small groups

	● Provide educational “breaks” as necessary ● Chunking content into “digestible bites” ● Shorten assignments to focus on mastery concept ● Assignment, project, and assessment modification based on individual student needs ● Use mnemonic devices
Gifted and Talented	● Student choice ● Assignment, project, and assessment modification based on individual student needs
Students with 504 Plans	● Allow verbalization before writing ● Use audio materials when necessary ● Read tests aloud ● Restate, reword, clarify directions ● Re-teach concepts using small groups ● Provide educational “breaks” as necessary ● Chunking content into “digestible bites” ● Shorten assignments to focus on mastery concept ● Use mnemonic devices

Assessments	
Formative	● Hands on activities ● Teacher observations ● Class discussion
Summative	● Lesson assessments ● End of unit test
Benchmark	● Baseline science assessment
Alternative	● Performance Tasks ● Projects

Pacing Guide	
Unit 1: Fossils & Changing Environments	Number of days: 14
Unit 2: Life Cycles	Number of days: 18

Unit 3: Heredity, Survival, & Selection	Number of days: 16
Unit 4: Weather & Climate	Number of days: 20
Unit 5: Forces, Motion, & Magnets	Number of days: 17

Unit 1 Learning Goals (Fossils & Changing Environments)
SWBAT develop an understanding of how animals and their environments have changed through time. SWBAT analyze the traits of animals that are alive today and compare them to fossils. SWBAT infer how ancient organisms and environments of the past may have appeared.

Core Instructional Materials	**Supplemental Materials**
● Mystery Science Website ● Mystery Science Worksheets ● Mystery Packs ● Scholastic Super Science “Welcome to The Fossil Park”	● Science Journal ● Lesson Projects ● Unit Projects

Daily Targets	**NJSLS Performance Expectations**	**Instructional Activities**
● Day 1-2: Generate observations and questions about phenomenon	3-LS4-1	● Introduce and explore the Watery Cave anchoring phenomenon on Mystery Science. The class will build on this throughout the unit. ● Mystery science guided inquiry video ● Class discussion ● Hands on activity: See, Think, Wonder sheet
● Day 3-4: Investigate how fossils reveal changes in a habitat	3-LS4-1	● Teacher introduces Lesson 1 “Where can you find whales in a desert?” lesson ● Mystery Science exploration video ● Hands on activity: students create a model fossil dig with fossil dig packet
● Day 5-6: Analyze data from dinosaur fossils	3-LS4-1	● Teacher introduces Lesson 2 “How do we

to provide evidence about the appearance and behavior of those dinosaurs		know what dinosaurs looked like? lesson ● Mystery Science exploration video ● Hands on activity: students compare traits of dinosaurs fossils and modern animals with dinosaur detective sheets
● Day 7-8: Analyze and interpret how fossil dinosaur tracks reveal the speed of a dinosaur	3-LS4-1	● Teacher introduces Lesson 3 “Can you outrun a dinosaur?” lesson ● Mystery Science exploration video ● Hands on activity: students compare the length of their running steps with dinosaurs’ steps
● Day 9-10: Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago	3-LS4-1	● Teacher introduces Performance Task: “How are you a part of the watery cave's story?” performance task ● Mystery science exploration video ● Hands on activity: students will apply what they have learned about the watery cave in a writing task. They will write a narrative text, an informational text, or an opinion text.
● Day 11-12: Investigate fossils in close proximity to where we live	3-LS4-1	● Teacher will introduce the article “Welcome to The Fossil Park.” ● The class will read about the Edelman Fossil Park & Museum at Rowan University. They will relate to the close proximity of the fossil park and also realize that habits can change. The fossils at the fossil park are animals that lived in water, but the location is no longer under water. ● Students will write a story about what fossil they might find if they went to the fossil park and what they would do with it.
● Day 13: Unit 1 Fossils & Changing Environments Jeopardy Review	3-LS4-1	● Class will play Unit 1 Fossils & Changing Environments Jeopardy review game
● Day 14: Unit 1 Fossils & Changing Environments Test	3-LS4-1	● Students will complete Unit 1 Fossils & Changing Environments Test

Inclusive concepts
Mystery Science allows for all types of learners to be fully engaged. It incorporates hands on activities, visuals, and step by step instruction that may be paused for learners working at a slower pace.

Unit 2 Learning Goals (Life Cycles)
SWBAT compare and contrast the life cycles of both animals and plants. SWBAT develop models to build an understanding that all organisms share certain stages in their life cycles: birth, growth, reproduction, and death. SWBAT explore how an understanding of life cycles can aid in solving problems that occur when there are too many or too few organisms in a particular environment.

Core Instructional Materials	Supplemental Materials
● Mystery Science Website ● Mystery Science Worksheets ● Mystery Packs	● Science Journal ● Lesson Projects ● Unit Projects ● Live flowers ● Fresh produce (radish, potato, cucumber, tomato, celery)

Daily Targets	NJSLS Performance Expectations	Instructional Activities
● Day 1-2: Generate observations and questions about phenomenon	3-LS1-1	● Introduce and explore the Saguaro Cycles anchoring phenomenon on Mystery Science. The class will build on this throughout the unit. ● Mystery science guided inquiry video: view bats flying around at night and sticking their heads into cactus flowers ● Class discussion ● Hands on activity: See, Think, Wonder sheet
● Day 3-4: Explore animal life cycles	3-LS1-1	● Teacher introduces Lesson 1: “How is your life like an alligator's life?”

		● Mystery Science exploration video ● Hands on activity: use birthday buddy worksheet to compare the life timeline of different animals
● Day 5-6: Investigate mosquito life cycles and habitats to design a solution to a problem	3-LS4-4 3-5-ETS1-2	● Teacher introduces Lesson 2: “What's the best way to get rid of mosquitoes?” ● Mystery Science exploration video ● Hands on activity: students will evaluate the merits of different solutions for getting rid of mosquitoes at various locations in a town. Then, use Bug Off! Worksheet to design a solution to solve the problem of too many mosquitoes.
● Day 7-8: Develop a model flower to determine how and why flowers are pollinated	3-LS1-1	● Teacher introduces Lesson 3: “Why do plants grow flowers?” ● Mystery Science exploration video ● Hands on activity: Students will make flower and bee models. They will fly their bees from flower to flower and observe what happens to the flower’s pollen during this process.
● Day 9-10: Describe why plants grow fruit	3-LS1-1	● Teacher introduces Lesson 4: “Why do plants give us fruit?” ● Mystery Science exploration video ● Hands on activity: students will predict if produce is a science fruit or science vegetable, then search for seeds and record findings on sheet.
● Day 11-12: Identify and describe the parts of the flower	3-LS1-1	● Teacher will introduce the process of “dissecting” a flower ● Students will divide their “operating table” piece of paper into four sections. Following the flower dissection sheet they will find and take off the petals, pollen dusters, sticky stigma, and cut open the ovary. ● Students will complete the remainder of the worksheet and label the flower.
● Day 13-14: Discover all flowering plants	3-LS1-1	● Teacher introduces Lesson 5: “Why are there

have both unique and common characteristics		so many different kinds of flowers?” ● Mystery Science exploration video ● Hands on activity: students play garden game to observe and predict how different pollinators influence plant reproduction.
● Day 15-16: Describe saguaro life cycle	3-LS1-1	● Teacher introduces Performance Task: “Why are some Saguaros so tiny?” ● Mystery science exploration video ● Hands on activity: students fill in saguaro life cycle worksheet
● Day 17: Unit 2 Life Cycles Jeopardy Review	3-LS1-1 3-LS4-4 3-5-ETS1-2	● Class will play Unit 2 Life Cycles Jeopardy review game
● Day 18: Unit 1 Life Cycles Test	3-LS1-1 3-LS4-4 3-5-ETS1-2	● Students will complete Unit 2 Life Cycles Test

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Unit 3 Learning Goals (Heredity, Survival, & Selection)
SWBAT explore the inherited and acquired traits of plants and animals. SWBAT analyze traits. This will provide evidence for how traits vary, how they are inherited, and how they have changed over time through both artificial and natural selection. SWBAT examine how a particular environment can affect traits, including inherited traits that provide animals with an advantage for survival.

Core Instructional Materials	**Supplemental Materials**
● Mystery Science Website ● Mystery Science Worksheets	● Science Journal ● Lesson Projects

● Mystery Packs	● Unit Projects

Daily Targets	NJSLS Performance Expectations	Instructional Activities
● Day 1-2: Generate observations and questions about phenomenon	3-LS4-3 3-LS2-1	● Introduce and explore the Animals Around Us anchoring phenomenon on Mystery Science. The class will build on this throughout the unit. ● Mystery science guided inquiry video: How can ants be one of the most successful kinds of animals on earth? ● Class discussion ● Hands on activity: See, Think, Wonder sheet
● Day 3-4: Examine plant traits and use that information as evidence to help identify an unknown fruit	3-LS3-1	● Teacher introduces Lesson 1 “How do you identify a mysterious fruit?” ● Mystery Science exploration video ● Hands on activity: students look for similarities and differences in the leaves, flowers, and fruits of plants found at the grocery store. They sort fruit cards sheets into groups and identify patterns of inheritance, recording findings on fruit market mystery worksheet
● Day 5-6: Explore the extreme trait variation of different dog breeds and pet pigeon breeds	3-LS3-1	● Teacher introduces Lesson 2 “What do dogs and pigeons have in common” ● Mystery Science exploration video ● Hands on activity: students use pigeon pairing worksheet and pigeon pairing cards to analyze trait similarities and differences among parent, offspring, and sibling pigeons.
● Day 7-8: Explore how variation in the toe scales of green lizards provides some individuals with an advantage when it comes to climbing and surviving.	3-LS3-1 3-LS4-2 3-LS4-3	● Teacher introduces Lesson 3 “How could a lizard's toes help it survive?” ● Mystery Science exploration video ● Hands on activity: students use provided worksheets to participate in an “adopt a lizard” simulation to explore what happens to green

		lizards when a new species of brown lizards is introduced to their environment. Students gather evidence to explain how a change to the environment can cause a certain trait to become more common in a population over time through the process of natural selection.
● Day 9-10: Discover why dogs' expressions, like tail wagging, are so useful when living in a pack.	3-LS2-1	● Teacher introduces Lesson 4 "Why do dogs wag their tails?" ● Mystery Science exploration video ● Hands on activity: students watch videos of different animals that live in groups to simulate observing them in their natural habitats. They will then record their observations in a field journal and construct an explanation of how living in groups helps these animals survive.
● Day 11-12: Examine how physical traits can be influenced by the environment.	3-LS3-2	● Teacher introduces Lesson 5 "How long can people (and animals) survive in outer space?" ● Mystery Science exploration video ● Hands on activity: students measure and record their physical traits (arm strength, height, and balance) and predict how their own traits might change after living in space.
● Day 13-14: Analyze data from competing ant colonies in order to construct an argument about how living in groups helps animals to survive	3-LS2-1	● Teacher introduces Performance Task: "Why do ants live in colonies?" ● Mystery science exploration video ● Hands on activity: students use "Who won the food" sheet to analyze data between Argentine ants and tufted tyrant ant colonies. They will then explain who they think would win and why.
● Day 15: Unit 3 Heredity, Survival, & Selection Jeopardy Review	3-LS2-1 3-LS3-1 3-LS3-2 3-LS4-2 3-LS4-3	● Class will play Unit 3 Heredity, Survival, & Selection Jeopardy review game
● Day 16: Unit 3 Heredity, Survival, & Selection Test	3-LS2-1 3-LS3-1	● Students will complete Unit 3 Heredity, Survival, & Selection Test

	3-LS3-2 3-LS4-2 3-LS4-3	

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Unit 4 Learning Goals (Weather & Climate)
SWBAT students investigate and make predictions about the weather through careful observation of the clouds and wind. SWBAT differentiate between weather and climate and use models to reveal global climate patterns.

Core Instructional Materials	Supplemental Materials
● Mystery Science Website ● Mystery Science Worksheets ● Mystery Packs	● Science Journal ● Lesson Projects ● Unit Projects

Daily Targets	NJSLS Performance Expectations	Instructional Activities
● Day 1-2: Generate observations and questions about phenomenon	3-ESS2-1 3-ESS2-2 3-ESS3-1	● Introduce and explore the Summer Ice Storm anchoring phenomenon on Mystery Science. The class will build on this throughout the unit. ● Mystery science guided inquiry video: observe an icy hailstorm that happens during warm summer weather ● Class discussion ● Hands on activity: See, Think, Wonder sheet
● Day 3-4: Examine clues about how clouds look and feel to discover what they're made of and how they form	3-ESS2-1	● Students record daily weather in weather science journal (reviewing weather data daily from multiple digital tools and online sources)

		● Teacher introduces Lesson 1 “Where do clouds come from?” ● Mystery Science exploration video ● Hands on activity: teacher will add hot water to clear cups, place a plate overtop, and the class will observe evaporation/forming of condensation. Record findings on Gas Trap worksheet.
● Day 5-6: Make model to simulate the water cycle	3-ESS2-1	● The class will draw out the water cycle on the outside of zip lock bags. Water will be poured ¼ the way into the zip lock bags, zipped up, and taped onto the window. The class will observe as the sun heats the water in the bags, it will cause evaporation and condensation to form. ● Students will fill out a corresponding water cycle worksheet.
● Day 7-8: Make predictions about the weather by observing clouds and their changes	3-ESS2-1	● Students record daily weather in weather science journal ● Teacher introduces Lesson 2 “How can we predict when it's going to storm?” ● Mystery Science exploration video ● Hands on activity: students create their own Storm Spotter’s Guide to record notes, identify different types of clouds, and think about wind direction to figure out if a storm is heading their way. Students will go outside to observe clouds and record findings.
● Day 9-10: Explore seasonal weather conditions across different regions and investigate how weather patterns can be used to make predictions about future weather.	3-ESS2-1	● Students record daily weather in weather science journal ● Teacher introduces Lesson 3 “Where's the best place to build a snow fort?” ● Mystery Science exploration video ● Hands on activity: students use the What’s the Weather chart to organize daily temperature data from three snowy towns. They then compare weather conditions and predict which town is most likely to have the best weather for a snow fort festival next year.

● Day 11-12: Understand the term “climate” and explore the world’s five major climates	3-ESS2-2 3-ESS2-1	● Students record daily weather in weather science journal ● Teacher introduces Lesson 4 “Why are some places always hot?” ● Mystery Science exploration video ● Hands on activity: students are given 1 out of 3 maps (Americas, Asia & Australia, Europe & Africa) to determine different climates of that region. The class will then combine maps and search for global climate patterns. Class will discuss what type of clothing you would wear and what kind of weather, plants, and animals each zone has.
● Day 13-14: Explore the effects of natural hazards, such as tornadoes, hurricanes, and dust storms.	3-ESS3-1 3-5-ETS1-1 3-5-ETS1-2 3-5-ETS1-3	● Students record daily weather in weather science journal ● Teacher introduces Lesson 5 “How can you keep a house from blowing away in a windstorm?” ● Mystery Science exploration video ● Hands on activity: students first build a paper house with Design a Windproof House printout. Then, students will make two additional designs with modifications and explain which design worked better and why.
● Day 15-16: Analyze and represent real weather data in tables and bar graphs in order to forecast hail storms during different seasons and in different regions of the United States	3-ESS2-1. 3-ESS2-2 3-ESS3-1	● Students record daily weather in weather science journal ● Teacher introduces Performance Task: “Can we predict when it's going to hail?” ● Mystery science exploration video ● Hands on activity: Students will review seasonal hail storm data to then fill in the Past Hailstorm Patterns worksheet. Students will share their findings with the class so all seasons are covered. Using this knowledge, students will complete the Future Hailstorm Prediction sheet.
● Day 17: Unit 4 Weather & Climate Jeopardy Review	3-ESS2-1 3-ESS2-2 3-ESS3-1	● Students record daily weather in weather science journal ● Class will play Unit 4 Weather & Climate

	3-5-ETS1-1 3-5-ETS1-2 3-5-ETS1-3	Jeopardy review game
● Day 18 - 19:	3-ESS2-1	● Students record daily weather in weather science journal ● The class will short and filter their weather recording data into a google spread sheet to analyze findings. ● Students will partner up to create a frequency table and bar graph or recorded data.
● Day 20 : Unit 4 Weather & Climate Test	3-ESS2-1 3-ESS2-2 3-ESS3-1 3-5-ETS1-1 3-5-ETS1-2 3-5-ETS1-3	● Students will complete Unit 4 Weather & Climate Test

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Unit 5 Learning Goals (Forces, Motion, & Magnets)
SWBAT students explore the forces all around them. SWBAT investigate the effects of balanced and unbalanced forces, the pushes and pulls of bridge structures, and the effects of gravity and friction on the motion of objects. SWBAT explore the power of magnetic forces and design solutions to everyday problems using their knowledge of these forces.

Core Instructional Materials	**Supplemental Materials**
● Mystery Science Website ● Mystery Science Worksheets	● Science Journal ● Lesson Projects

● Mystery Packs	● Unit Projects

Daily Targets	NJSLS Performance Expectations	Instructional Activities
● Day 1-2: Generate observations and questions about phenomenon	3-PS2-1 3-PS2-4 3-5-ETS1-1 3-5-ETS1-2	● Introduce and explore the Ice Board anchoring phenomenon on Mystery Science. The class will build on this throughout the unit. ● Mystery science guided inquiry video: observe a skateboard that has been modified to work on ice and be powered by the wind. ● Class discussion ● Hands on activity: See, Think, Wonder sheet and create a conceptual model to explain how the ice board works
● Day 3-4: Investigate pushes and pulls (forces)	3-PS2-1	● Teacher introduces Lesson 1 “How could you win a tug-of-war against a bunch of adults?” ● Mystery Science exploration video ● Hands on activity: students make a folded piece of cardboard jump high in the air, propelled by the pulling force of a rubber band. They will discuss the forces involved in making this “Hopper Popper” jump. Record on Hopper Popper Scoreboard card.
● Day 5-6: Learn about real-life bridge design then plan and carry out their own design	3-5-ETS1-1 3-5-ETS1-2 3-5-ETS1-3	● Teacher introduces Lesson 2 “What makes bridges so strong?” ● Mystery Science exploration video ● Hands on activity: students will build a strong bridge that supports as many pennies as possible -- using only paper. Record findings in Bridge Designer’s Notebook sheet.
● Day 7-8: Investigate the patterns of motion exhibited by a trapeze.	3-PS2-2	● Teacher introduces Lesson 3 “How high can you swing on a flying trapeze?” ● Mystery Science exploration video ● Hands on activity: students build a model trapeze. Make observations and take measurements of the motion of that model and

		use that data to predict the motion of a real trapeze. Record findings on Trapeze Training sheet.
● Day 9-10: Explore the properties of magnets and experiment with an invisible force that acts at a distance	3-PS2-3	● Teacher introduces Lesson 4 "What can magnets do?" ● Mystery Science exploration video ● Hands on activity: students use ring magnets and common objects to discover the push and pull of magnets and how magnets attract certain types of metals. Record findings on Magnets are Weird sheet.
● Day 11-12: Investigate magnetic attraction and repulsion	3-PS2-4 3-5-ETS1-1 3-5-ETS1-2	● Teacher introduces Lesson 5 "How can you unlock a door using a magnet?" ● Mystery Science exploration video ● Hands on activity: students create a magnetic lock that can open a paper door. Students engage in the engineering design process to test and improve their designs.
● Day 13-15 : Design and build new versions of the ice board that have to meet a specific set of design constraint	3-5-ETS1-1 3-5-ETS1-2	● Teacher introduces Performance Task: "Can you design a new ice board?" ● Mystery science exploration video ● Hands on activity: students will record their new ice board design on the Ice Board Designer sheet. They will use multiplication to calculate the coast of their design. Then build an ice board.
● Day 16 : Unit 5 Forces, Motion, & Magnets Jeopardy Review	3-PS2-1 3-PS2-2 3-PS2-3 3-PS2-4 3-5-ETS1-1 3-5-ETS1-2 3-5-ETS1-3	● Class will play Unit 5 Forces, Motion, & Magnets Jeopardy review game
● Day 17: Unit 5 Forces, Motion, & Magnets Test	3-PS2-1 3-PS2-2 3-PS2-3 3-PS2-4	● Students will complete Unit 5 Forces, Motion, & Magnets Test

	3-5-ETS1-1 3-5-ETS1-2 3-5-ETS1-3	

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