Wall Township Public Schools	Board Approval Date: 2/17/26
Course Title: Grade K Science	
Course Description: Kindergarten science introduces students to the world around them through hands-on exploration, observation, and play-based investigation. Students learn about plants, animals, weather, sunlight, sound, and motion as they ask questions, test ideas, and notice patterns in their everyday experiences. The course builds early science and engineering habits of mind by encouraging curiosity, problem solving, and communication through drawings, models, and discussion.	

Course Sequence & Pacing

Unit Titles	Estimated Number of Instructional Periods
Unit 1: Living Things & Their Needs	22 Days
Unit 2: All Kinds of Weather	22 Days
Unit 3: Severe Weather	22 Days
Unit 4: Pushes & Pulls	22 Days

Unit 1 - Living Things & Their Needs

Sequence & Pacing	22 days
Living Things & Their Needs	**Estimated Number of Instructional Periods**
Lesson 1: Living and Nonliving	4 days
Lesson 2: Animal Needs	4 days
Lesson 3: Animals & Changing the Environment	4 days
Lesson 4: Plant Needs	4 days
Lesson 5: Human Impacts on the Environment	5 days
Unit Assessment	1 day

Unit 1 Title: Living Things & Their Needs

Unit 1 Summary: In this unit, students investigate how plants and animals meet their basic needs for food, water, light, air, and shelter. Using hands-on activities, movement, models, and read-alouds, students explore patterns shared by all living things and examine how humans can support or disrupt those needs in the environment.

Learning Standards

NJSLS Science Grade K - 2020

Science & Engineering Practices

K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.

K-ESS3-1. Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live.

K-ESS2-2. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs

K-ESS3-3. Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.

Disciplinary Core Ideas

LS1.C: Organization for Matter and Energy Flow in Organisms

ESS3.C: Human Impacts on Earth Systems

ESS2.E. Biogeology

ESS3.A: Natural Resources

Interdisciplinary Connections

Career Readiness, Life Literacies, & Key Skills *(CLKS - 9.1 -5.5…)*:

9.4.2.IML.1 – Identify how information is shared using words, images, or symbols.
9.4.2.IML.2 – Create and communicate ideas using drawings, models, or spoken explanations.
9.2.2.CAP.1 – Identify interests, strengths, and preferences when working with others

Computer Science & Design Thinking *(CS & DT 8.1.5…)*:

8.1.2.NI.1 – Use technology tools to create simple models or representations.
8.1.2.AP.1 – Use age-appropriate digital tools to express ideas.
8.2.2.ED.1 – Identify a problem and propose a solution inspired by nature (biomimicry).

Interdisciplinary Connections

ELA

RI.CR.K.1 With prompting and support, ask and answer questions about key details in an informational text (e.g., who, what, where, when, why, how).
W.AW.K.1. Use a combination of drawing, dictating, and writing to compose opinion pieces on topics or texts
W.IW.K.2. Use a combination of drawing, dictating, and writing to compose informative/explanatory texts to convey ideas.

Math

K.CC.A- Know number names and the count sequence
MP.2 Reason abstractly and quantitatively.
MP.5 Use appropriate tools strategically

Learning Targets

Unit Essential Questions:

What do plants and animals need to live and grow?

How do where plants and animals live help them meet their needs?

How can people help or harm plants and animals in their environment?

Unit Enduring Understandings:

All plants and animals have basic needs that must be met in order to survive.

Different environments provide different resources that support living things.

Plants, animals, and humans can change the environment in helpful or harmful ways.

Vocabulary: living, nonliving, plant, animal, needs, food, water, light, shelter, habitat, roots, leaves, safety, environment, survive

Students will be able to:

- Observe and identify living and nonliving things

- Describe what plants and animals need to survive
- Explain how plants get water and light
- Explain how animals find food, shelter, and safety
- Model how living things depend on their environment
- Compare how different plants and animals meet their needs

Suggested Learning Activities: *Diversity & Inclusion [DEI]*, *Climate Change*)

- Explore plants and animals from local and global environments
- Discuss caring for living things in students' own communities
- Highlight responsible human choices that protect habitats
- Encourage respect for living things and shared spaces

Assessment Evidence

Formative Assessments: daily writing activities, lesson independent practice, lesson focus question written response, vocabulary activities

Common Benchmark Assessments: Unit Assessment

Alternative Assessments

- Drawing and explaining a plant or animal's needs
- Sorting activity: match living things to their needs and habitats
- Oral explanation using a simple model or picture

Core Instructional & Supplemental Materials

Mystery Science Online Platform & Digital Resources - Grade K

Accommodations and Modifications: Students with Disabilities, English Language Learners, Students at Risk of Failure, Students with 504s, Gifted & Talented Students

Specific Strategies and Practices that Support Students with Disabilities:

Students receiving Special Education programming have specific goals and objectives, as well as accommodations and modifications outlined within their Individualized Education Plans (IEP) due to an identified disability and/or diagnosis. In addition to exposure to the general education curriculum, the instruction is differentiated based upon the student's needs. The IEP acts as a supplemental curriculum guide inclusive of instructional strategies that support each learner.

Small group/One to one - Additional time - Review of directions - Student restates information - Space for movement or breaks - Extra visual and verbal cues and prompts - Preferential seating - Follow a routine/schedule - Rest breaks - Verbal and visual cues regarding directions and staying on task - Checklists - Immediate feedback

Specific Strategies and Practices that Support English Language Learners

English language learner (ELL) is a national-origin-minority student who is limited-English-proficient. This term is often preferred over limited-English-proficient (LEP) as it highlights accomplishments rather than deficits.

Pre-teaching of vocabulary and concepts - Personal Glossary - Extended Time - Simplified/Verbal Instructions - Frequent Breaks - Visual learning, including graphic organizers - Use of cognates to increase comprehension - Teacher modeling - Pairing students with beginning English language skills with students who have more advanced English language skills - Scaffolding - Word walls - Think-pair-share - Cooperative learning groups

Students at Risk of Failure

Home/School Connection - Alternative Assessments - Learning Contracts - Homogenous Grouping - Supplemental Instruction - Think-Pair-Share by Readiness - Homework Options - Differentiated Online Practice - Leveled Rubrics - Tiered Level of Supports- Small Group Instruction Work Alone Choice

Students with 504 Plans

Teachers are responsible for implementing designated services and strategies identified on a student's 504 Plan. 504 plans are formal plans that schools develop to give kids the support they need and covers any condition that limits daily activities in a major way. Students' accommodations are outlined in their individual 504 plan.

Specific Strategies and Practices that Support Gifted & Talented Students

It is critical that all teachers are able to recognize a high-ability student who may need more depth and complexity in instruction.

Homogeneous Grouping - Small Group In-Depth Instruction - Differentiated Online Practice - Alternative Assessments - Pre-Assess to provide Differentiated Instruction to Accelerate Learning

Unit 2 - All Kinds of Weather

Sequence & Pacing	22 days
All Kinds of Weather	**Estimated Number of Instructional Periods**
Lesson 1: Severe Weather & Preparation	7 days
Lesson 2: Weather Conditions	7 days
Lesson 3: Local Weather & Daily Patterns	7 days
Unit Assessment	1 day

Unit 2 Title: All Kinds of Weather

Unit 2 Summary: In this unit, students explore the different parts of plants and how those parts are essential for plant survival.

Learning Standards

NJSLS Science Grade K- 2020

Science & Engineering Practices

K-ESS2-1 – Use and share observations of local weather conditions to describe patterns over time

K-ESS3-2 – Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather

Disciplinary Core Ideas

ESS3.B: Natural Hazards

ESS2.D: Weather and Climate

ESS2.E: Biogeology

Interdisciplinary Connections

Career Readiness, Life Literacies, & Key Skills *(CLKS - 9.1 -5.5…)*:

- **9.4.2.IML.1** – Identify how information is shared using pictures, words, and symbols.
- **9.4.2.IML.2** – Create and communicate ideas using drawings, models, or oral explanations.

Computer Science & Design Thinking *(CS & DT 8.1.5…)*:

- **8.1.2.NI.1** – Use technology tools to explore and represent ideas.
- **8.1.2.AP.1** – Use age-appropriate digital tools to express learning.

Interdisciplinary Connections

ELA

RI.CR.K.1 With prompting and support, ask and answer questions about key details in an informational text (e.g., who, what, where, when, why, how).

Math

MP.2 Reason abstractly and quantitatively
MP.4 Model with mathematics

Learning Targets

Unit Essential Questions:	**Unit Enduring Understandings:**
What kinds of weather do we experience where we live?	Weather changes from day to day and can be observed and described.
How does weather affect what we do outside?	Wind, rain, temperature, and sun affect what people can safely do.
How can weather forecasts help keep us safe?	Weather forecasts help people prepare for everyday and severe weather.

Vocabulary: weather, wind, rain, sun, clouds, storm, temperature, forecast, safe, prepare, kite

Students will be able to:

- Observe and describe daily weather conditions
- Identify wind, rain, sun, and temperature as parts of weather
- Explain how wind strength affects activities like flying kites
- Use simple tools to observe weather condition
- Describe ways people prepare for storms
- Use weather information to decide when it is safe to go outside

Suggested Learning Activities: *Diversity & Inclusion [DEI]*, *Climate Change*)

- Discuss weather experiences in students' own communities
- Practice safety routines for storms and strong winds
- Encourage awareness of how weather affects different people and places

Assessment Evidence

Formative Assessments: daily writing activities, lesson independent practice, lesson focus question written response, vocabulary activities

Common Benchmark Assessments: Unit Assessment

Alternative Assessments

- Draw and label today's weather
- Act out how to prepare for different types of weather
- Explain using pictures when it is safe or unsafe to fly a kite

Core Instructional & Supplemental Materials

Mystery Science Online Platform & Digital Resources - Grade K

Accommodations and Modifications: Students with Disabilities, English Language Learners, Students at Risk of Failure, Students with 504s, Gifted & Talented Students

Specific Strategies and Practices that Support Students with Disabilities:

Small group/One to one - Additional time - Review of directions - Student restates information - Space for movement or breaks - Extra visual and verbal cues and prompts - Preferential seating - Follow a routine/schedule - Rest breaks - Verbal and visual cues regarding directions and staying on task - Checklists - Immediate feedback

Specific Strategies and Practices that Support English Language Learners

Pre-teaching of vocabulary and concepts - Personal Glossary - Extended Time - Simplified/Verbal Instructions - Frequent Breaks - Visual learning, including graphic organizers - Use of cognates to increase comprehension - Teacher modeling - Pairing students with beginning English language skills with students who have more advanced English language skills - Scaffolding - Word walls - Think-pair-share - Cooperative learning groups

Students at Risk of Failure

Alternative Assessments - Learning Contracts - Homogenous Grouping - Supplemental Instruction - Think-Pair-Share by Readiness - Homework Options - Differentiated Online Practice - Leveled Rubrics - Tiered Level of Supports - Tiered Activities - Small Group Instruction - Work Alone Choice - Group Work Choice

Students with 504 Plans

Students' accommodations are outlined in their individual 504 plan.

Response accommodations: ● Give responses in a form (oral or written) that's easier for him/her ● Dictate answers to a scribe ● Capture responses on an audio recorder ● Use a spelling dictionary or electronic spell-checker ● Use a word processor to give responses in class ● Use a calculator or table of "math facts"

Setting accommodations: ● Work or take a test in a different setting, such as a quiet room with few distractions ● Sit where he/she learns best (for example, near the teacher) ● Take a test in small group setting

Timing accommodations: ● Take more time to complete a task or a test ● Have extra time to process oral information and directions ● Take frequent breaks, such as after completing a task.

Assignment modifications: ● Complete fewer or different homework problems than peers ● Shorten assignment ● Answer fewer or different test questions ● Create alternate projects or assignments

Specific Strategies and Practices that Support Gifted & Talented Students

It is critical that all teachers are able to recognize a high-ability student who may need more depth and complexity in instruction.
Use of high level academic vocabulary/texts ● Problem-based learning ● Pre-assess to condense curriculum ● Interest-based research ● Authentic problem-solving ● Homogeneous grouping opportunities

Unit 3 -Sunlight & Warmth

Sequence & Pacing	22 days
Sunlight & Warmth	**Estimated Number of Instructional Periods**
Lesson 1: Sunlight, Heat, & Earth's Surface	7 days
Lesson 2: Sunlight, Warming, & Engineering	7 days
Lesson 3: Sunlight & Warmth	7 days
Unit Assessment	1 day

Unit 3 Title: Sunlight & Warmth

Unit 3 Summary: In this unit, students make observations to explore how sunlight warms the Earth's surface. The Sun's energy heats up the pavement, keeps us warm, and can even melt marshmallows. Using what they learn, students think about ways that shade and structures can reduce the warming effect of the Sun.

Learning Standards

NJSLS Science Grade K - 2020

Science & Engineering Practices

K-PS3-1. Make observations to determine the effect of sunlight on Earth's surface.

K-PS3-1. Make observations to determine the effect of sunlight on Earth's surface.

K-PS3-2. Use tools and materials provided to design and build a structure that will reduce the warming effect of sunlight on Earth's surface.

K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

K-2-ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

Disciplinary Core Ideas

ESS1.A: The Universe and its Stars

ESS1.B: Earth and the Solar System

Interdisciplinary Connections

Career Readiness, Life Literacies, & Key Skills *(CLKS - 9.1 -5.5…)*:

- **9.4.2.IML.1** – Identify how information is shared using pictures, words, and symbols.
- **9.4.2.IML.2** – Create and communicate ideas using drawings, models, and oral explanations.
- **9.2.2.CAP.1** – Identify personal interests and strengths while learning and solving problems

Computer Science & Design Thinking *(CS & DT 8.1.5…)*:

- **8.1.2.NI.1** – Use technology tools to explore and represent ideas.
- **8.1.2.AP.1** – Use digital tools to express understanding.
- **8.2.2.ED.1** – Identify problems and solutions by observing patterns in nature.

Interdisciplinary Connections

ELA

RI.CI.K.2. With prompting and support, identify the main topic and key details of an informational text (e.g., who, what, where, when, why, how).

Math

MP.2 Reason abstractly and quantitatively

MP.4 Model with mathematics

Learning Targets

Unit Essential Questions:	**Unit Enduring Understandings:**
How does sunlight affect the temperature of things around us?	Sunlight can warm objects and surfaces on Earth.
How can shade and materials keep things cool or warm?	Shade and materials can change how much sunlight warms something.
How can people use the Sun to solve problems?	People can use sunlight in helpful ways or design solutions to reduce its warming effects.

Vocabulary: sunlight, heat, warm, cool, shade, reflect, surface, shadow, energy, cook, protect, material

Students will be able to:

- Observe how sunlight warms different surfaces
- Describe differences between sunny and shaded areas
- Explain how shade helps keep things cool
- Investigate how materials affect warming
- Design a structure that reduces sunlight's warming effect
- Test and improve a simple design using observations

- Use drawings and words to communicate findings
- Make predictions about where sunlight will cause warming

Suggested Learning Activities: *Diversity & Inclusion [DEI]*, *Climate Change*)

- Explore how people in different places use shade (trees, awnings, umbrellas)
- Discuss how extreme heat affects people, animals, and communities differently
- Design shade solutions for animals, playgrounds, or homes
- Connect sunlight use to renewable energy and caring for Earth

Assessment Evidence

Formative Assessments: daily writing activities, lesson independent practice, lesson focus question written response, vocabulary activities

Common Benchmark Assessments: Unit Assessment

Alternative Assessments

- Draw and label sunny vs. shaded surfaces
- Explain a shade structure using pictures

Core Instructional & Supplemental Materials

Mystery Science Online Platform & Digital Resources - Grade K

Accommodations and Modifications: Students with Disabilities, English Language Learners, Students at Risk of Failure, Students with 504s, Gifted & Talented Students

Specific Strategies and Practices that Support Students with Disabilities:

Small group/One to one - Additional time - Review of directions - Student restates information - Space for movement or breaks - Extra visual and verbal cues and prompts - Preferential seating - Follow a routine/schedule - Rest breaks - Verbal and visual cues regarding directions and staying on task - Checklists - Immediate feedback

Specific Strategies and Practices that Support English Language Learners

Pre-teaching of vocabulary and concepts - Personal Glossary - Extended Time - Simplified/Verbal Instructions - Frequent Breaks - Visual learning, including graphic organizers - Use of cognates to increase comprehension - Teacher modeling - Pairing students with beginning English language skills with students who have more advanced English language skills - Scaffolding - Word walls - Think-pair-share - Cooperative learning groups

Students at Risk of Failure

Alternative Assessments - Learning Contracts - - Think-Pair-Share by Readiness - Homework Options - Differentiated Online Practice - Leveled Rubrics - Tiered Level of Supports - Tiered Activities - Small Group Instruction - Work Alone Choice - Group Work Choice

Students with 504 Plans

Teachers are responsible for implementing designated services and strategies identified on a student's 504 Plan.. Students' accommodations are outlined in their individual 504 plan.

Specific Strategies and Practices that Support Gifted & Talented Students

Homogeneous Grouping - Small Group In-Depth Instruction - Differentiated Online Practice - Alternative Assessments - Pre-Assess to provide Differentiated Instruction to Accelerate Learning

Unit 4 - Pushes & Pulls

Sequence & Pacing	2 days
Pushes & Pulls	**Estimated Number of Instructional Periods**
Lesson 1: Pushes & Pulls	4 days
Lesson 2: Pushes, Pulls, & "Work Words"	3 days
Lesson 3: Motion, Speed, & Strength	4 days
Lesson 4: Speeds & Direction of Force	3 days
Direction of Motion & Engineering	4 days
Forces & Engineering	3 days
Unit Assessment	1 day

Unit 4 Title: Pushes & Pulls

Unit 4 Summary: In this unit, students are introduced to pushes and pulls and how those affect the motion of objects. Students observe and investigate the effects of what happens when the strength or direction of those pushes and pulls are changed.

Learning Standards

NJSLS Science Grade K - 2020

Science & Engineering Practices

K-PS2-1. Plan & conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.

K-PS2-2. Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.

K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.

K-2-ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

Disciplinary Core Ideas

PS2.A: Forces and Motion

PS2.B: Types of Interactions

PS3.C: Relationship Between Energy and Forces

ETS1.A: Defining Engineering Problems

ETS1.B: Developing Possible Solutions

ETS1.C: Optimizing the Design Solution

Interdisciplinary Connections

Career Readiness, Life Literacies, & Key Skills *(CLKS - 9.1 -5.5…)*:

- **9.4.2.IML.1** – Identify how information is shared using pictures, words, and symbols.
- **9.4.2.IML.2** – Create and communicate ideas using drawings, models, and oral explanations.
- **9.2.2.CAP.1** – Identify personal interests and strengths while learning and solving problems

Computer Science & Design Thinking *(CS & DT 8.1.5…)*:

- **8.1.2.NI.1** – Use technology tools to explore and represent ideas.
- **8.1.2.AP.1** – Use digital tools to express understanding.

ELA

RI.CR.K.1 With prompting and support, ask and answer questions about key details in an informational text (e.g., who, what, where, when, why, how).
W.WR.K.5. With prompting and support, generate questions through shared research in response to a topic, text, or stimulus (e.g., event, photograph, video, book).
SL.ES.K.3. Ask and answer questions in order to seek help, get information, or clarify something that is not understood.

Math

K.M.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
K.M.A.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference.
MP.2 Reason abstractly and quantitatively

Learning Targets

Unit Essential Questions:	**Unit Enduring Understandings:**
What happens when we push or pull an object?	Pushes and pulls can change how objects move.
How does changing the strength or direction of a push or pull change motion?	The strength and direction of a force affect speed and motion.
How do people use forces to move, protect, or control objects?	People use pushes, pulls, and machines to solve real-world problems.

Vocabulary: push, pull, force, motion, speed, direction, machine, move, stop, faster, slower, design

Students will be able to:

- Observe how pushes and pulls make objects move
- Compare strong and weak pushes and pulls
- Describe how direction affects motion
- Investigate how machines use forces
- Model pushes and pulls using objects and drawings
- Design a solution that changes an object's motion
- Test and improve a design using evidence
- Communicate observations using words and pictures

Suggested Learning Activities: *Diversity & Inclusion [DEI]*, *Climate Change*)

- Explore how workers use machines in different communities and cultures
- Discuss accessibility tools (ramps, doors, carts) that rely on pushes and pulls
- Design force solutions that help people or animals stay safe
- Connect engineering solutions to protecting towns and environments

Assessment Evidence

Formative Assessments: daily writing activities, lesson independent practice, lesson focus question written response, vocabulary activities

Common Benchmark Assessments: Unit Assessment

Alternative Assessments

- Draw and label how an object moves when pushed or pulled
- Explain a design solution using a simple model
- Demonstrate how changing force changes motion

Core Instructional & Supplemental Materials

Mystery Science Online Platform & Digital Resources - Grade K

Accommodations and Modifications:
Students with Disabilities, English Language Learners, Students at Risk of Failure, Students with 504s, Gifted & Talented Students

Specific Strategies and Practices that Support Students with Disabilities:

Small group/One to one - Additional time - Review of directions - Student restates information - Space for movement or breaks - Extra visual and verbal cues and prompts - Preferential seating - Follow a routine/schedule - Rest breaks - Verbal and visual cues regarding directions and staying on task - Checklists - Immediate feedback

Specific Strategies and Practices that Support English Language Learners

Pre-teaching of vocabulary and concepts - Personal Glossary - Extended Time - Simplified/Verbal Instructions - Frequent Breaks - Visual learning, including graphic organizers - Use of cognates to increase comprehension - Teacher modeling - Pairing students with beginning English language skills with students who have more advanced English language skills - Scaffolding - Word walls - Think-pair-share - Cooperative learning groups

Students at Risk of Failure

Alternative Assessments - Learning Contracts - Homogenous Grouping - Supplemental Instruction - Think-Pair-Share by Readiness - Homework Options - Differentiated Online Practice - Leveled Rubrics - Tiered Level of Supports - Tiered Activities - Small Group Instruction - Work Alone Choice - Group Work Choice

Students with 504 Plans

Students' accommodations are outlined in their individual 504 plan.

Response accommodations: ● Give responses in a form (oral or written) that's easier for him/her ● Dictate answers to a scribe ● Capture responses on an audio recorder ● Use a spelling dictionary or electronic spell-checker ● Use a word processor to give responses in class ● Use a calculator or table of "math facts"

Setting accommodations: ● Work or take a test in a different setting, such as a quiet room with few distractions ● Sit where he/she learns best (for example, near the teacher) ● Take a test in small group setting

Timing accommodations: ● Take more time to complete a task or a test ● Have extra time to process oral information and directions ● Take frequent breaks, such as after completing a task.

Assignment modifications: ● Complete fewer or different homework problems than peers ● Shorten assignment ● Answer fewer or different test questions ● Create alternate projects or assignments

Specific Strategies and Practices that Support Gifted & Talented Students

It is critical that all teachers are able to recognize a high-ability student who may need more depth and complexity in instruction.

Use of high level academic vocabulary/texts ● Problem-based learning ● Pre-assess to condense curriculum ● Interest-based research ● Authentic problem-solving ● Homogeneous grouping opportunities