Vocabulary

attract
bar magnet
change of direction
change of motion
disc/ring magnet
faster
force
force strength
gravity
horseshoe magnet
iron filings

3-PS2-1

identified.

Cause and Effect

Cause and effect

relationships are routinely

lines of force magnet magnetic fields magnetic poles motion moving away from poles position pull push repel

rod magnet slower slowing down speed speeding up start stop toward balanced forces changes of speed down

east left measurement of motion north right south unbalanced forces up west

3-PS2-3

Cause and Effect

Cause and effect relationships

are routinely identified, tested,

and used to explain change.







Resources *

Crosscutting Concepts

Patterns of change can be

used to make predictions.

3-PS2-2

Patterns

* List your recommended texts and resources - we will be collecting them at the end of the year.



Yvonne Caamal Canul Superintendent

Mark Coscarella, Ed.D. Deputy Superintendent

Mara Lud Executive Director of Instructional Learning Delsa Chapman Director of Magnet Programs & High Schools

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learning expectations and

The following tips may be

State Standards.

Pacing Guide:

They establish paced, student

provide a starting point for the

helpful as you begin using the

implementation of the Michigan

- introduction.

- understand Michigan State Standards.

DRAFT

Third Grade • First Quarter Pacing Guide

Science

Introduction to Your Science Pacing Guide

· Introduce 9-week content skills according to the Pacing Guide.

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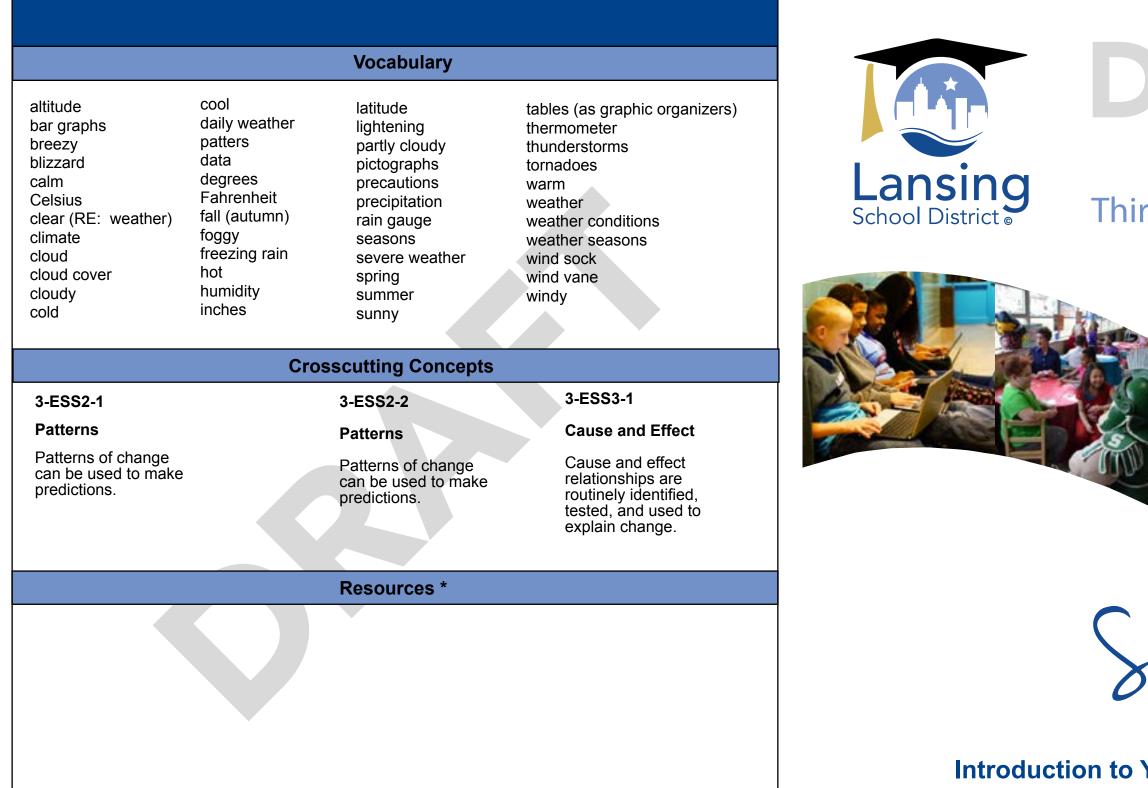
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Grade 3	Science	
Motion and Stability - Forces and Interactions 3-PS2-1	Motion and Stability - Forces and Interactions 3-PS2-2	Motion and Stability - Forces and Interactions 3-PS2-3
I CAN plan and conduct an investigation to show that balanced and unbalanced forces affect the motion of an object.	I CAN predict the motion of an object based on pattern observations and movement measurements.	I CAN ask questions to figure out how electricity and magnetism affect objects that don't touch.
Core Idea		
Forces and Motions	Forces and Motions	Types of Interactions
Each force acts on one particular object and has both strength and a direction. An object at rest typically has multiple forces acting on it, but they add to give zero net force on the object. Forces that do not sum to zero can cause changes in the object's speed or direction of motion. Objects in contact exert forces on each other.	The patterns of an object's motion in various situations can be observed and measured; when that past motion exhibits a regular pattern, future motion can be predicted from it.	Electric, and magnetic forces between a pair of objects do not require that the objects be in contact. The sizes of the forces in each situation depend on the properties of the objects and their distances apart and, for forces between two magnets, on their orientation relative to each other.
Standard		
Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object. Clarification Statement: Examples could include an unbalanced force on one side of a ball can make it start moving; and, balanced forces pushing on a box from both sides will not produce any motion at all.	Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion. Clarification Statement: Examples of motion with a predictable pattern could include a child swinging in a swing, a ball rolling back and forth in a bowl, and two children on a see-saw.	Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other. Clarification Statement: Examples of an electric force could include the force on hair from an electricallycharged balloon and the electrical forces between a charged rod and pieces of paper; examples of a magnetic force could include the force between two permanent magnets, the force between an electromagnet and steel paperclips, and the force exerted by one magnet versus the force exerted by two magnets. Examples of cause and effect relationships could include how the distance between objects affects strength of the force and how the orientation of magnets affects the direction of the magnetic force.
Science and Engineering Practices		
Planning and Carrying Out Investigations	Planning and Carrying Out Investigations	Asking Questions and Defining Problems
 Planning and carrying out investigations to answer questions or test solutions to problems in 3-5 builds on prior experiences and progresses to include investigations,that control variables and provide evidence to support explanations or design solutions. Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence, using fair tests in which variables are controlled and the number of trials considered. 	 Planning and carrying out investigations to answer questions or test solutions to problems in 3-5 builds on prior experiences and progresses to include investigations,that control variables and provide evidence to support explanations or design solutions. Make observations and/or measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon or test a design solution. 	 Asking questions and defining problems in grades 3–5 builds on grades K–2 experiences and progresses to specifying qualitative relationships. ▶ Ask questions that can be investigated based on patterns such as cause and effect relationships.

	First Quarter
	Motion and Stability - Forces and Interactions 3-PS2-4
	I CAN make something that uses magnets to solve a problem.
	Types of Interactions Electric, and magnetic forces between a pair of objects do not require that the objects be in contact. The sizes of the forces in each situation depend on theproperties of the objects and their distances apart and, for forces between two magnets, on their orientation relative to each other.
of s	Define a simple design problem that can be solved by applying scientific ideas about magnets. Clarification Statement: Examples of problems could include constructing a latch to keep a door shut and creating a device to keep two moving objects from touching each other.
	Asking Questions and Defining Problems
	 Asking questions and defining problems in grades 3–5 builds on grades K–2 experiences and progresses to specifying qualitative relationships. Define a simple problem that can be solved through the development of a new or improved object or tool.



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Introduction to Your Science Pacing Guide

- introduction.

- understand Michigan State Standards.

DRAFT

Third Grade • Second Ouarter Pacing Guide



Science

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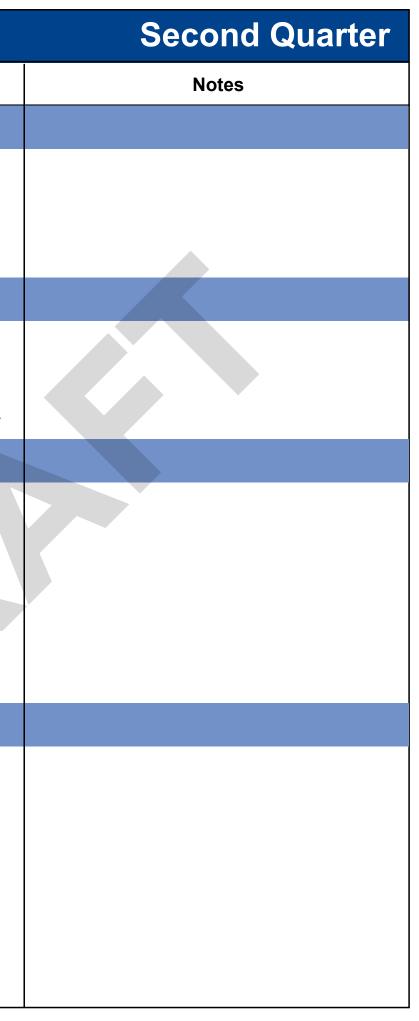
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Grade 3	Science	
Earth's Systems 3-ESS2-1	Earth's Systems 3-ESS2-2	Earth's Systems 3-ESS3-1
I CAN STATEMENT		
I CAN show weather data for each of the seasons.	I CAN gather and share information about climates from around the world.	I CAN form an opinion about a design to fix a weather problem.
Core Idea		
Weather and Climate	Weather and Climate	Natural Hazards
Scientists record patterns of the weather across different times and areas so that they can make predictions about what kind of weather might happen next.	Climate describes a range of an area's typical weather conditions and the extent to which those conditions vary over years.	A variety of natural hazards result from natural processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts.
Standard		
Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season. <i>Clarification Statement: Examples of data could</i> <i>include average temperature, precipitation, and</i> <i>wind direction.</i>	Obtain and combine information to describe climates in different regions of the world.	Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard. Clarification Statement: Examples of design solutions to weather-related hazards could include barriers to prevent flooding, wind resistant roofs, and lightning rods.
Science and Engineering Practices		
 Analyzing and Interpreting Data Analyzing data in 3–5 builds on K–2 experiences and progresses to introducing quantitative approaches to collecting data and conducting multiple trials of qualitative observations. When possible and feasible, digital tools should be used. Represent data in tables and various graphical displays (bar graphs and pictographs) to reveal patterns that indicate relationships. 	 Obtaining, Evaluating, and Communicating Information Obtaining, evaluating, and communicating information in 3–5 builds on K–2 experiences and progresses to evaluating the merit and accuracy of ideas and methods. Obtain and combine information from books and other reliable media to explain phenomena. 	 Engaging in Argument from Evidence Engaging in argument from evidence in 3–5 builds on K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed world(s). Make a claim about the merit of a solution to a problem by citing relevant evidence about how it meets the criteria and constraints of the problem.



Vocabulary

adult
air
beak shape
body coverings
(e.g. feathers, fur,
skin, hair, scales)
butterfly
characteristics
cocoon
ecosystems

egg environment eve color food habitat inherited insects interdependent larva

life cycle metamorphosis moth needs of animals observable features organism(s) parents pupa reproduction

offspring requirements for life similarities and differences between offspring and their parents survival traits variations water young

Crosscutting Concepts

3-LS3-1

Patterns

phenomena.

Similarities and differences

in patterns can be used to

sort and classify natural

3-LS3-2

Cause and Effect

Cause and effect relationships are routinely identified and used to explain change.

3LS4-2

Cause and Effect

Cause and effect relationships are routinely identified and used to explain change...

Resources *

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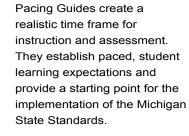
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Third Grade • Third Quarter Pacing Guide

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Grade 3	Science	
Heredity: Inheritance and Variety of Traits 3-LS3-1	Heredity: Inheritance and Variety of Traits 3-LS3-2	Heredity: Inheritance and Variety of Traits 3-LS4-2
I CAN STATEMENT		
I CAN examine data to show that plants and animals inherit traits from parents but all are a little different.	I CAN show that an organism is affected by its environment.	I CAN explain how certain individuals have certain physical advantages that will help them survive.
Core Idea		
Inheritance of Traits Many characteristics of organisms are inherited from their parents.	Inheritance of Traits Other characteristics result from individuals' interactions with the environment, which can range from diet to learning. Many characteristics involve both inheritance and environment.	Natural Selection Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing.
Standard		
Analyze and interpret data to provide evidence that plants & animals have traits inherited from parents & that variation of these traits exists in a group of similar organisms. Clarification Statement: Patterns are the similarities and differences in traits shared between offspring and their parents, or among siblings. Emphasis is on organisms other than humans.	Use evidence to support the explanation that traits can be influenced by the environment. Clarification Statement: Examples of the environment affecting a trait could include normally tall plants grown with insufficient water are stunted; and, a pet dog that is given too much food and little exercise may become overweight	Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, & reproducing. Clarification Statement: Examples of cause and effect relationships could be plants that have larger thorns than other plants may be less likely to be eaten by predators; and, animals that have better camouflage coloration than other animals may be more likely to survive and therefore more likely to leave offspring.
Science and Engineering Practices		
 Analyzing and Interpreting Data Analyzing data in 3–5 builds on K–2 experiences and progresses to introducing quantitative approaches to collecting data and conducting multiple trials of qualitative observations. When possible and feasible, digital tools should be used. Analyze and interpret data to make sense of phenomena using logical reasoning. 	 Constructing Explanations and Designing Solutions Constructing explanations and designing solutions in 3–5 builds on K–2 experiences and progresses to the use of evidence in constructing explanations that specify variables that describe and predict phenomena and in designing multiple solutions to design problems. Use evidence (e.g., observations, patterns) to support an explanation. 	 Constructing Explanations and Designing Solutions Constructing explanations and designing solutions in 3–5 builds on K–2 experiences and progresses to the use of evidence in constructing explanations that specify variables that describe and predict phenomena and in designing multiple solutions to design problems. Use evidence (e.g., observations, patterns) to construct an explanation.

	Third Quarter		
	Notes		
ie e			

Vocabulary			
adult air beak shape body coverings: feathers, fur, skin, butterfly characteristics chrysalis	egg eye color flower flowering plants food food storage fruit hair, scales	insects larva leaf shape life cycle light makes its own food metamorphosis	needs of plants parent plant pupa seed size water

Crosscutting Concepts

3LS4-3

Cause and Effect

Cause and effect

relationships are

routinely identified and

3-LS4-4

Models

Systems and System

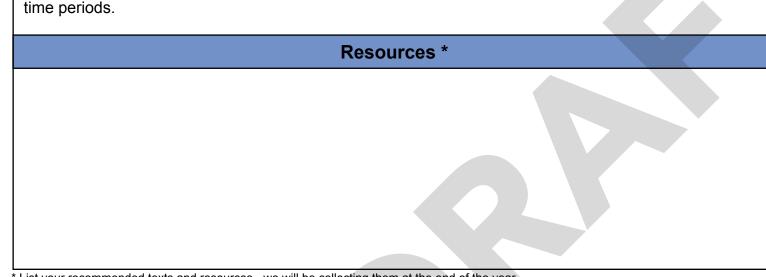
A system can be described

in terms of its components

and their interactions.







used to explain change. used to explain change.

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3LS4-2

Cause and Effect

Cause and effect

relationships are

routinely identified and



3-LS4-1

Scale, Proportion,

phenomena exist from

very short to very long

and Quantity

Observable

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Biological Evolution - Unity and DiverSity 3-LS4-1	Biological Evolution - Unity and DiverSity 3-LS4-2	Biological Evolution - Unity and DiverSity 3-LS4-3
I CAN STATEMENT		
I CAN show that fossils from an area show traits related to their environment. habitats.	 I CAN obtain information from text about temperature, precipitation, & wind direction for the climate of a region. I CAN compare/contrast climates from different regions (of the world or of MI?) 	I CAN show that not all living things are suited for all habitats.
Core Idea		
Evidence of Common Ancestry and Diversity Some kinds of plants and animals that once lived on Earth are no longer found anywhere. Fossils provide evidence about the types of organisms	Natural Selection Sometimes the differences in characteristics between individuals of the same species provide	Adaptation For any particular environment, some kinds of organisms survive well, some survive less well,
that lived long ago and also about the nature of their environments.	advantages in surviving, finding mates, and reproducing.	and some cannot survive at all.
Standard		
Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago. Clarification Statement: Examples of data could include type, size, and distributions of fossil organisms. Examples of fossils and environments	Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, & reproducing. Clarification Statement: Examples of cause and effect relationships could be plants that have larger	Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. Clarification Statement: Examples of evidence could include needs and characteristics of the
could include marine fossils found on dry land, tropical plant fossils found in Arctic areas, and fossils of extinct organisms.	thorns than other plants may be less likely to be eaten by predators; and, animals that have better camouflage coloration than other animals may be more likely to survive and therefore more likely to leave offspring.	organisms and habitats involved. The organisms and their habitat make up a system in which the parts depend on each other.
Science and Engineering Practices		
 Analyzing and Interpreting Data Analyzing data in 3–5 builds on K–2 experiences and progresses to introducing quantitative approaches to collecting data and conducting multiple trials of qualitative observations. When possible and feasible, digital tools should be used. Analyze and interpret data to make sense of phenomena using logical reasoning. 	 Constructing Explanations and Designing Solutions Constructing explanations and designing solutions in 3–5 builds on K–2 experiences and progresses to the use of evidence in constructing explanations that specify variables that describe and predict phenomena and in designing multiple solutions to design problems. Use evidence (e.g., observations, patterns) to construct an explanation. 	 Engaging in Argument from Evidence Engaging in argument from evidence in 3–5 builds on K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed world(s). Construct an argument with evidence.

Fourth Quarter

Biological Evolution - Unity and Diversity 3-LS4-4

□ I CAN evaluate a solution to an environmental problem for living things.

Biodiversity and Humans

Populations live in a variety of habitats, and change in those habitats affects the organisms living there.

Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

Clarification Statement: Examples of environmental changes could include changes in land characteristics, water distribution, temperature, food, and other organisms.

Engaging in Argument from Evidence

Engaging in argument from evidence in 3–5 builds on K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed world(s).

Make a claim about the merit of a solution to a problem by citing relevant evidence about how it meets the criteria and constraints of the problem.