

Grade 3 Science Standards

Earth & Space Science

3.ESS2 *Earth's Systems*

- 3.ESS2.1 Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.**[^] [Clarification Statement: Examples of data at this grade level could include average temperature, precipitation, and wind direction.] [Assessment Boundary: Assessment of graphical displays is limited to pictographs and bar graphs.]
- 3.ESS2.2 Obtain and combine information to describe climates in different regions of the world.** [Clarification Statement: Examples of different regions could include equatorial, polar, coastal, and midcontinental.][Assessment Boundary: Assessment does not include complex interactions that cause weather patterns and climate or identify the role of the water cycle in weather.]

3.ESS3 *Earth and Human Activity*

- 3.ESS3.1 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.][Assessment Boundary: Assessment does not include types (hurricane, tornado, tropical storm) or names of storms (Hurricane Andrew), jet streams, or El Nino or La Nina weather patterns.]

Engineering, Technology, and the Application of Science

3.ETS1 *Engineering Design*

- 3.ETS1.1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.** [Clarification Statement: A design problem must be identified before solutions are developed. Solutions or designs identify the criteria for success and identify limitations and constraints.][Assessment Boundary: Assessment does not include limitations or criteria based on specific process or system boundaries (e.g. limitations of scientific principles or long-term societal and environmental impacts).]
- 3.ETS1.2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.** [Clarification Statement: Emphasis is on researching a problem prior to designing a solution, plan for testing to evaluate how well it will perform under a range of likely conditions using scientific knowledge and communicating the design process.][Assessment Boundary: Assessment is limited to the design process and modeling.]
- 3.ETS1.3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.** [Clarification Statement: Emphasis is on identifying the purpose of the investigation and specific evidence to collect, testing one criteria or constraint at a time, and record the data accordingly.][Assessment Boundary: Assessment is limited to proposing different solutions based on evidence collected and to determine which is best based on the criteria and the constraints.]

Life Science

3.LS1 *From Molecules to Organisms: Structures and Processes*

3.LS1.1 Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. [Clarification Statement: Changes organisms go through during their life form a pattern.][Assessment Boundary: Assessment of plant life cycles is limited to those of flowering plants. Assessment does not include details of human reproduction.]

3.LS2 *Ecosystems: Interactions, Energy, and Dynamics*

3.LS2.1 Construct an argument that some animals form groups that help members survive. [Clarification Statement: Emphasis is on how being part of a group helps animals obtain food, defend themselves, and cope with changes, and does not cover how group behavior evolved as a result of a survival advantage.][Assessment Boundary: Assessment does not include evolution of group behavior, altruism, and signaling behaviors.]

3.LS3 *Heredity: Inheritance and Variation of Traits*

3.LS3.1 Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and 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.][Assessment Boundary: Assessment does not include genetic mechanisms of inheritance and prediction of traits. Assessment is limited to non-human examples.]

3.LS3.2 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.][Assessment Boundary: Assessment is limited to physical traits and does not include genetic factors.]

3.LS4 *Biological Evolution: Unity and Diversity*

3.LS4.1 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 could include marine fossils found on dry land, tropical plant fossils found in Arctic areas, and fossils of extinct organisms.] [Assessment Boundary: Assessment does not include identification of specific fossils or present plants and animals. Assessment is limited to major fossil types and relative ages.]

3.LS4.2 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, and 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.][Assessment Boundary: Assessment does not include patterns of genetic inheritance.]

- 3.LS4.3 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 organisms and habitats involved. The organisms and their habitat make up a system in which the parts depend on each other.][Assessment Boundary: Assessment does not include multi-generational shifts in population traits due to natural selection.]
- 3-LS4-4 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 global climate change, changes in land characteristics, water distribution, temperature, food, and other organisms.] [Assessment Boundary: Assessment is limited to a single environmental change.]

Physical Science

3.PS2 *Motion and Stability: Force and Interactions*

- 3.PS2.1 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.] [Assessment Boundary: Assessment is limited to one variable at a time: number, size, or direction of forces. Assessment does not include quantitative force size, only qualitative and relative. Assessment is limited to gravity being addressed as a force that pulls objects down.]
- 3.PS2.2 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.] [Assessment Boundary: Assessment does not include technical terms such as period and frequency.]
- 3.PS2.3 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 electrically charged 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 paper clips, 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.] [Assessment Boundary: Assessment is limited to forces produced by objects that can be manipulated by students, and electrical interactions are limited to static electricity.]
- 3.PS2.4 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.][Assessment Boundary: Assessment does not include electromagnetism.]

*This performance expectation integrates traditional science content with engineering through a practice or disciplinary core idea.

[^]This performance expectation references [a proximal connection to climate change](#) and the disciplinary core ideas: Earth's Systems and Earth and Human Activity.