By Topic	
Living and Non-living	Kindergarten - 3) Distinguish between living and nonliving things and verify what living things need to survive (e.g., animals needing food, water, and air; plants needing nutrients, water, sunlight, and air). 3rd - 5) Obtain and combine information to describe that organisms are classified as living things, rather than nonliving things, based on their ability to obtain and use resources, grow, reproduce, and maintain stable internal conditions while living in a constantly changing external environment.
Habitat/ Diversity	2nd - 7) Obtain information from literature and other media to illustrate that there are many different kinds of living things and that they exist in different places on land and in water (e.g., woodland, tundra, desert, rainforest, ocean, river). 3rd - 11) Construct an argument from evidence to explain the likelihood of an organism's ability to survive when compared to the resources in a certain habitat (e.g., freshwater organisms survive well, less well, or not at all in saltwater; desert organisms survive well, less well, or not at all in woodlands).
Comparing parent and offspring/ genetics	1st - 7) Make observations to identify the similarities and differences of offspring to their parents and to other members of the same species (e.g., flowers from the same kind of plant being the same shape, but differing in size; dog being same breed as parent, but differing in fur color or pattern). 3rd - 7) Examine data to provide evidence that plants and animals, excluding humans, have traits inherited from parents and that variations of these traits exist in groups of similar organisms (e.g., flower colors in pea plants, fur color and pattern in animal offspring).
Seed dispersal/ pollination	2nd - 6) Design and construct models to simulate how animals disperse seeds or pollinate plants (e.g., animals brushing fur against seed pods and seeds falling off in other areas, birds and bees extracting nectar from flowers and transferring pollen from one plant to another).*
Life Cycle	3rd - 6) Create representations to explain the unique and diverse life cycles of organisms other than humans (e.g., flowering plants, frogs, butterflies), including commonalities such as birth, growth, reproduction, and death.
Food Chain/ Web	5th - 10) Construct and interpret models (e.g., diagrams, flow charts) to explain that energy in animals' food is used for body repair, growth, motion, and maintenance of body warmth and was once energy from the sun. 5th - 11) Create a model to illustrate the transfer of matter among producers; consumers, including scavengers and decomposers; and the environment.
Interactions/ Relationships	7th - 8) Construct an explanation to predict patterns of interactions in different ecosystems in terms of the relationships between and among organisms (e.g., competition, predation, mutualism, commensalism, parasitism).
Taxonomy	Biology - 13) Obtain, evaluate, and communicate information to explain how organisms are classified by physical characteristics, organized into levels of taxonomy, and identified by binomial nomenclature (e.g., taxonomic classification, dichotomous keys).
Magnetic Field – Navigation	8th - 11) Develop and use models of Earth's interior composition to illustrate the resulting magnetic field (e.g., magnetic poles) and to explain its measureable effects (e.g., protection from cosmic radiation).

Adaptations	Kindergarten - 4) Gather evidence to support how plants and animals provide for their needs by altering their environment (e.g., tree roots breaking a sidewalk to provide space, red fox burrowing to create a den to raise young, humans growing gardens for food and building roads for transportation). 1st - 5) Design a solution to a human problem by using materials to imitate how plants and/or animals use their external parts to help them survive, grow, and meet their needs (e.g., outerwear imitating animal furs for insulation, gear mimicking tree bark or shells for protection). 1st - 6) Obtain information to provide evidence that parents and their offspring engage in patterns of behavior that help the offspring survive (e.g., crying of offspring indicating need for feeding, quacking or barking by parents indicating protection of young). 3rd - 8) Engage in argument from evidence to justify that traits can be influenced by the environment (e.g., stunted growth in normally tall plants due to insufficient water, change in an arctic fox's fur color due to light and/or temperature, stunted growth of a normally large animal due to malnourishment). 3rd - 10) Investigate how variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing (e.g., plants having larger thorns being less likely to be eaten by predators, animals having better camouflage coloration being more likely to survive and bear offspring). 4th - 9) Examine evidence to support an argument that the internal and external structures of plants (e.g., thorns, leaves, stems, roots, colored petals, xylem, phloem) and animals (e.g., heart, stomach, lung, brain, skin) function to support survival, growth, behavior, and reproduction. 4th - 11) Investigate different ways animals receive information through the senses, process that information, and respond to it in different ways (e.g., skunks lifting tails and spraying an odor when threatened, dogs moving ears when reacting to sound, snakes coiling or striking when sensing vibrations). 7th - 10) Use evidence and scientific reasoning to explain how characteristic animal behaviors (e.g., building nests to protect young from cold, herding to protect young from predators, attracting mates for breeding by producing special sounds and displaying colorful plumage, transferring pollen or seeds to create conditions for seed germination and growth) and specialized plant structures (e.g., flower brightness, nectar, and odor attracting birds that transfer pollen; hard outer shells on seeds providing protection prior to germination) affect the probability of successful reproduction of both animals and plants. Environmental - 5) Engage in argument from evidence to compare how individual versus group behavior (e.g., flocking; cooperative behaviors such as hunting, migrating, and swarming) may affect a species' chance to survive and reproduce over time.

By Grade Level	
Kindergarten	3) Distinguish between living and nonliving things and verify what living things need to survive (e.g., animals needing food, water, and air; plants needing nutrients, water, sunlight, and air). 4) Gather evidence to support how plants and animals provide for their needs by altering their environment (e.g., tree roots breaking a sidewalk to provide space, red fox burrowing to create a den to raise young, humans growing gardens for food and building roads for transportation).
First	5) Design a solution to a human problem by using materials to imitate how plants and/or animals use their external parts to help them survive, grow, and meet their needs (e.g., outerwear imitating animal furs for insulation, gear mimicking tree bark or shells for protection). 6) Obtain information to provide evidence that parents and their offspring engage in patterns of behavior that help the offspring survive (e.g., crying of offspring indicating need for feeding, quacking or barking by parents indicating protection of young). 7) Make observations to identify the similarities and differences of offspring to their parents and to other members of the same species (e.g., flowers from the same kind of plant being the same shape, but differing in size; dog being same breed as parent, but differing in fur color or pattern).
Second	6) Design and construct models to simulate how animals disperse seeds or pollinate plants (e.g., animals brushing fur against seed pods and seeds falling off in other areas, birds and bees extracting nectar from flowers and transferring pollen from one plant to another).* 7) Obtain information from literature and other media to illustrate that there are many different kinds of living things and that they exist in different places on land and in water (e.g., woodland, tundra, desert, rainforest, ocean, river).
Third	5) Obtain and combine information to describe that organisms are classified as living things, rather than nonliving things, based on their ability to obtain and use resources, grow, reproduce, and maintain stable internal conditions while living in a constantly changing external environment. 6) Create representations to explain the unique and diverse life cycles of organisms other than humans (e.g., flowering plants, frogs, butterflies), including commonalities such as birth, growth, reproduction, and death. 7) Examine data to provide evidence that plants and animals, excluding humans, have traits inherited from parents and that variations of these traits exist in groups of similar organisms (e.g., flower colors in pea plants, fur color and pattern in animal offspring). 8) Engage in argument from evidence to justify that traits can be influenced by the environment (e.g., stunted growth in normally tall plants due to insufficient

	water, change in an arctic fox's fur color due to light and/or temperature, stunted growth of a normally large animal due to malnourishment). 10) Investigate how variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing (e.g., plants having larger thorns being less likely to be eaten by predators, animals having better camouflage coloration being more likely to survive and bear offspring). 11) Construct an argument from evidence to explain the likelihood of an organism's ability to survive when compared to the resources in a certain habitat (e.g., freshwater organisms survive well, less well, or not at all in saltwater; desert organisms survive well, less well, or not at all in woodlands).
Fourth	9) Examine evidence to support an argument that the internal and external structures of plants (e.g., thorns, leaves, stems, roots, colored petals, xylem, phloem) and animals (e.g., heart, stomach, lung, brain, skin) function to support survival, growth, behavior, and reproduction. 11) Investigate different ways animals receive information through the senses, process that information, and respond to it in different ways (e.g., skunks lifting tails and spraying an odor when threatened, dogs moving ears when reacting to sound, snakes coiling or striking when sensing vibrations).
Fifth	10) Construct and interpret models (e.g., diagrams, flow charts) to explain that energy in animals' food is used for body repair, growth, motion, and maintenance of body warmth and was once energy from the sun. 11) Create a model to illustrate the transfer of matter among producers; consumers, including scavengers and decomposers; and the environment.
Seventh	8) Construct an explanation to predict patterns of interactions in different ecosystems in terms of the relationships between and among organisms (e.g., competition, predation, mutualism, commensalism, parasitism). 10) Use evidence and scientific reasoning to explain how characteristic animal behaviors (e.g., building nests to protect young from cold, herding to protect young from predators, attracting mates for breeding by producing special sounds and displaying colorful plumage, transferring pollen or seeds to create conditions for seed germination and growth) and specialized plant structures (e.g., flower brightness, nectar, and odor attracting birds that transfer pollen; hard outer shells on seeds providing protection prior to germination) affect the probability of successful reproduction of both animals and plants.
Eighth	11) Develop and use models of Earth's interior composition to illustrate the resulting magnetic field (e.g., magnetic poles) and to explain its measureable effects (e.g., protection from cosmic radiation).
Environmental	5) Engage in argument from evidence to compare how individual versus group behavior (e.g., flocking; cooperative behaviors such as hunting, migrating, and swarming) may affect a species' chance to survive and reproduce over time.

Biology	13) Obtain, evaluate, and communicate information to explain how organisms are classified by physical characteristics, organized into levels of taxonomy, and identified by binomial nomenclature (e.g., taxonomic classification, dichotomous keys).