Key Word / Concept	Grade	Key points about the key words
solid, liquid, gas	1	students know they have different properties (1.a.); solids have defined, rigid shapes; fluids and gasses have liquid shapes defined by the space they occupy
adaptation	1	plants and animals have external features that help them thrive in different kinds of places (2.a.); ex: giraffes have long necks that help them reach the tops of trees
survival	1	plants and animals need water, animals need food, and plants need light; plants and animals obtain these things through their adaptations (2.b.)
food chain	1	introduce students to the idea of the food chain; explain it in terms of interdependence: animals need to eat plants or other animals for food, and many use plants or even other animals for shelter and nesting; introduces students to the idea that all living organisms in an environment are interdependent (2.c.)
carnivore	1	identify them by the shape of their teeth; sharp teeth are used for tearing meat; introduces students to the concepts of structural form and function (2.d.)
herbivore	1	identify them by the shape of their teeth; flat teeth are suited for chewing and grinding plants; introduces students to the concept of structural form and function (2.d.)
roots	1	roots take in water and nutrients from the soil; introduces them again to the concept of plant structures and their functions (2.e.)
green leaves	1	green leaves are the sites where photosynthesis turns sunlight into food; introduces idea of plant structures and functions (2.e.)
land steward	All	A person who takes care of the land so that it provides a good habitat for plants and animals; they also make sure that the land is healthy so that humans can enjoy its natural resources
inheritance	2	organisms reproduce offspring of their own kind; offspring resemble their parents and one another; ex: dogs always give birth to puppies; offspring inherit genes from their parents, making them resemble their parents and one another; however, there is individual variation between siblings in appearance and behavior (2.a.)
individual characteristics	2	some individual characteristics are inherited from biological parents; others are caused or influenced by the environment (2.c.)

individual variation	2	there is variation among individuals of one kind within a population; there is even greater variation in appearance and behavior between individuals in a population than between siblings; these variations are a function of genetics and environmental influences (2.d.)
life cycles	2	the sequential stages of life cycles are different for different animals; insects go thru the egg, larval, pupal, and adult stages; other animals molt, shedding their exoskeletons (2.b.)
germination, growth, and development of plants	2	Light, gravity, touch, or environmental stress can affect the germination, growth, and development of plants; roots grow downward in response to gravity; stems and leaves grow upward or sideways to seek sunlight; environmentalstress resulting from inadequate light, lack of nutrients, or the wrong amount of water impedes or halts the growth of plants (2.e.)
flowers and fruit	2	flowers and fruit are associated with reproduction in plants; focus on structure and function of seeds, flowers, and fruit in plant reproduction; students should examine the parts of a flower (2.f.)
weathering	2	weathering is the interaction btween the atmosphere and the Earth's surface; smaller rocks come from weathering of larger rocks; small rocks are weathered into very small rocks that turn into soil (3.b.)
physical weathering	2	big rocks break down after freezing and thawing of water cracks them; they can also be crocked by roots growing and wedging them apart (3.b.)
chemcial weathering	2	reactions with the atmosphere breaks down rocks (3.b.)
soil	2	soil is made partly from weathered rock and partly from organic materials; students inspect the soil to find that soils differ in their color, texture, capacity to retain water, and ability to support the growth of many kinds of plants; organic materials include rotting dead leaves and twigs as well as animal remains; burring mammals, such as gophers, and worm activity are responsible for mixing the soil; dark soils have more organic material while red soils are made mostly from rocks and minerals; soil fertility is determined more by organic material than on weathered rock; decaying organic materials act to hold moisture in a spongelike manner and return nutrients to the soil (3.c.)
natural resources	2	natural resources meet human needs for food, clothing, fuel, shelter; manufacturing materials are made from natural resources; plants supply food, fuel, and building materials for humans; students should be able to name and identify the origin of the resources of some of the hings they use as food, clothing, and shelter (3.e.)

experimentation	2	students use magnifiers or microscopes as tools to aid in scientific investigation (4.a.); make sketches of observations made with the microscope (4.f.); use power of observation to make predictions about answers to own questions (4.f.)
energy	3	Energy is a physical attribute capable of causing changes in material objects; it is the ability to do work (to make things move, stretch, or gorw) or to cause physical and chemical changes; students should understand that the Earth's major form of energy is the Sun; the sun's energy can be seen as light and felt as heat; both light and heat are forms of energy (1.a.)
releasing energy	3	animals break down food in their stomachs and use the energy (1.c.)
stored energy	3	food is a form of stored energy (1.b.); living things can use the energy stored in food to create motion and heat (1.c.)
solid, liquid, gas	3	students learn that matter can occur in any of these forms and change states; most things can turn to liquid when heated (1.e.)
evaporation	3	learn that water will evaporate when heated by the sun (1.f.)
light sources and shadows	3	students observe that objects block sources of light, creating shadows; they see what is blocking the light and where the light is coming from; they observe the difference between the object and the shadow's shape; they experiment with blocking light (2.a)
adaptation	3	adaptations in physical structure or behavior may help an organism survive; students continue to focus on the adaptation of external structures, such as thorns on a plant (3.a)
diversity	3	students know that the organisms that live in forests and grassland are different from one another because their environments are different; the organisms' different adaptations help them thrive in different environments (3.b)
biome	3	a biome is a broad type of habitat, such as a grassland or a forest; organisms from the same biome tend to have similar adaptations (ex: there are many animals with fins in the ocean throughout the world but none in grasslands) (3.b.)

organisms change environment	3	organisms alter their environment to compete for food, shelter, light, water; these changes can be detrimental to those organisms or to other organisms while some changes are beneficial; ex: a large tree grows and shades out small plants, which is detrimental to them (3.c.)
environmental change alters organisms	3	students know that when the environment changes, some platns and animals survive and reproduce; others die or move to a new location; plants and animals adapt specific external structures suitable for their environment, so if the environment changes, they may not be able to survive; plants and animals establish a balance with each other in their biome, so if one species is affected, the rest may be affected as well; animals could move while seeds blow somewhere else and take up residence (3.d.)