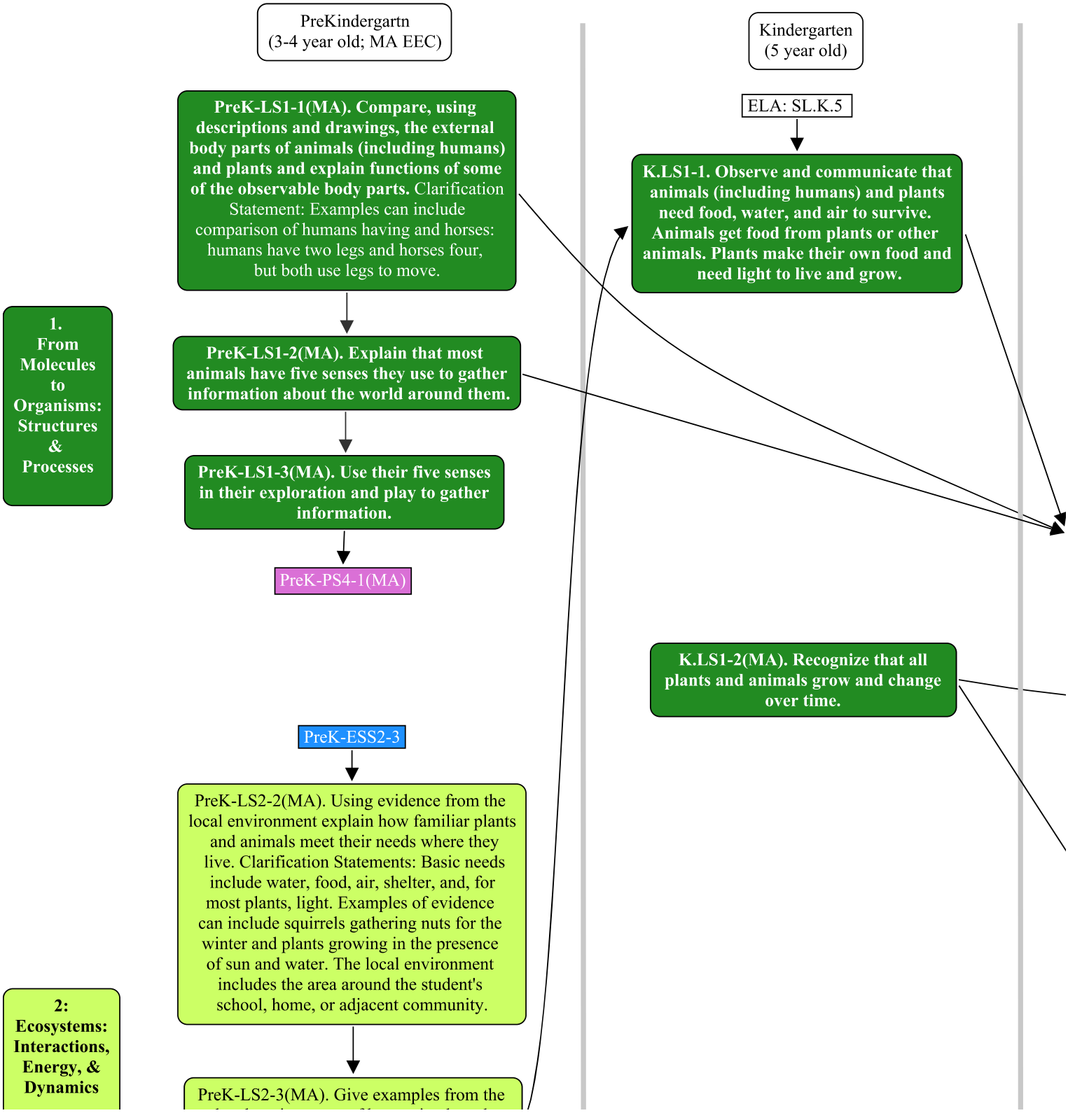
2016 MA S


PreKindergartn
(3-4 year old; MA EEC)
Kindergarten
(5 year old)
ELA: SL.K.5
PreK-LS1-1(MA). Compare, using descriptions and drawings, the external body parts of animals (including humans) and plants and explain functions of some of the observable body parts. Clarification Statement: Examples can include comparison of humans having and horses: humans have two legs and horses four, but both use legs to move.
K.LS1-1. Observe and communicate that animals (including humans) and plants need food, water, and air to survive. Animals get food from plants or other animals. Plants make their own food and need light to live and grow.
1. From Molecules to Organisms: Structures & Processes
PreK-LS1-2(MA). Explain that most animals have five senses they use to gather information about the world around them.
PreK-LS1-3(MA). Use their five senses in their exploration and play to gather information.
PreK-PS4-1(MA)
K.LS1-2(MA). Recognize that all plants and animals grow and change over time.
PreK-ESS2-3
PreK-LS2-2(MA). Using evidence from the local environment explain how familiar plants and animals meet their needs where they live. Clarification Statements: Basic needs include water, food, air, shelter, and, for most plants, light. Examples of evidence can include squirrels gathering nuts for the winter and plants growing in the presence of sun and water. The local environment includes the area around the student's school, home, or adjacent community.
2: Ecosystems: Interactions, Energy, & Dynamics
PreK-LS2-3(MA). Give examples from the

TE PreK-5 *Life Science* Strand Map (Ap

Please direct comments, suggested edits, and questions to: mathsciencetech@doe.mass.edu.
The standards and strand maps are available at: www.doe.mass.edu/stem/review.html
(*) denotes integration of technology/engineering through a practice or core idea.

Grade 1

ELA: RI.1.5, RI.1.6

1-LS1-2. Obtain information to compare ways in which the behavior of different animal parents and their offspring help the offspring to survive. Clarification Statement: Examples of behaviors could include the signals that offspring make (such as crying, cheeping, and other vocalizations) and the responses of the parents (such as feeding, comforting, and protecting the offspring).

1-LS1-1. Use evidence to explain that (a) different animals use their body parts and senses in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water, and air, and (b) plants have roots, stems, leaves, flowers, and fruits that are used to take in water, air, and other nutrients, and and produce food for the plant. Clarification Statement: Descriptions are not expected to include mechanisms such as the process of photosynthesis.

Grade 2

Math: 2.MD.10

2-LS2-3(MA). Develop and use models to compare how plants and animals depend on their surroundings and other living things to meet their needs in the places they live.

Grade 3

Math: 3.M

3-LS1-1. Use simp representations to sh types of organisms have life cycles. Describe tha birth, growth, reprodu common but there are in which these happ Statements: Examples ca ways plants and animals a from a seed, born fro (e.g., increase in size a a new part), reproduce (root runners, mate and l and die (e.g., length of li should focus on those o Describing variation in o should focus on compari stages of each, not specifi Boundary: Detailed desc organism's cycle, the diffe metamorphosis" an metamorphosis" or d reproduction are in state asse

8.MS-L

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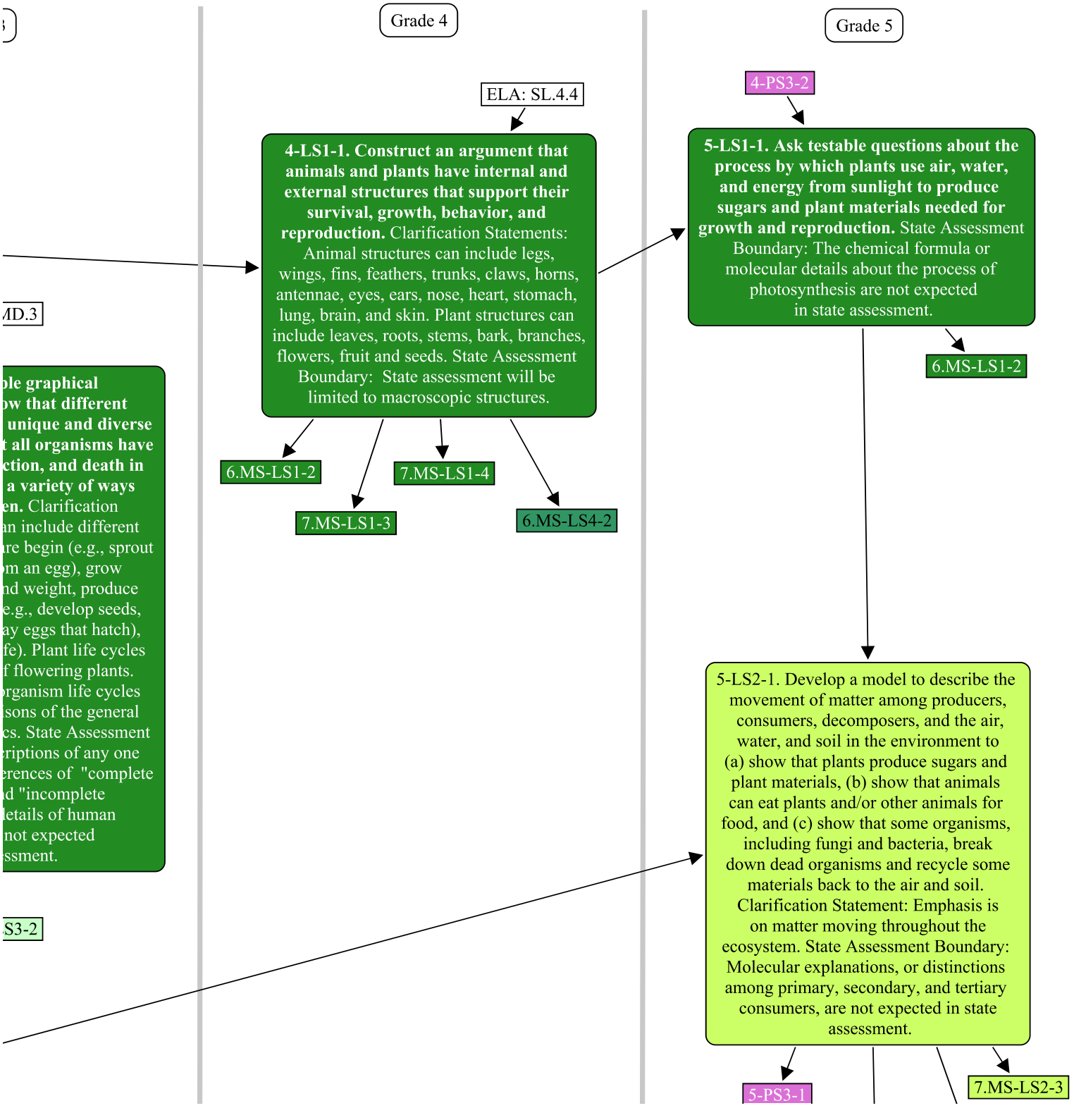
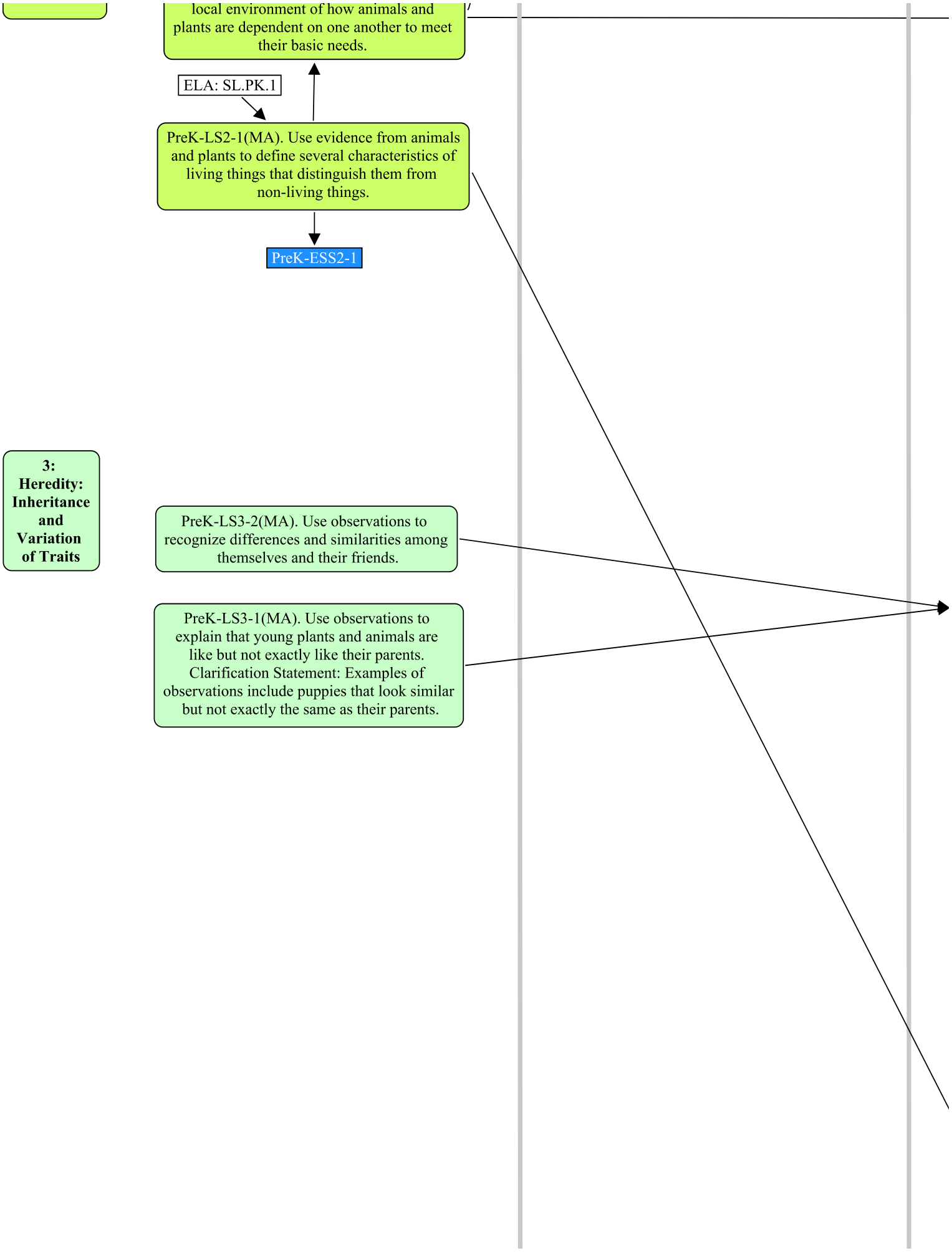
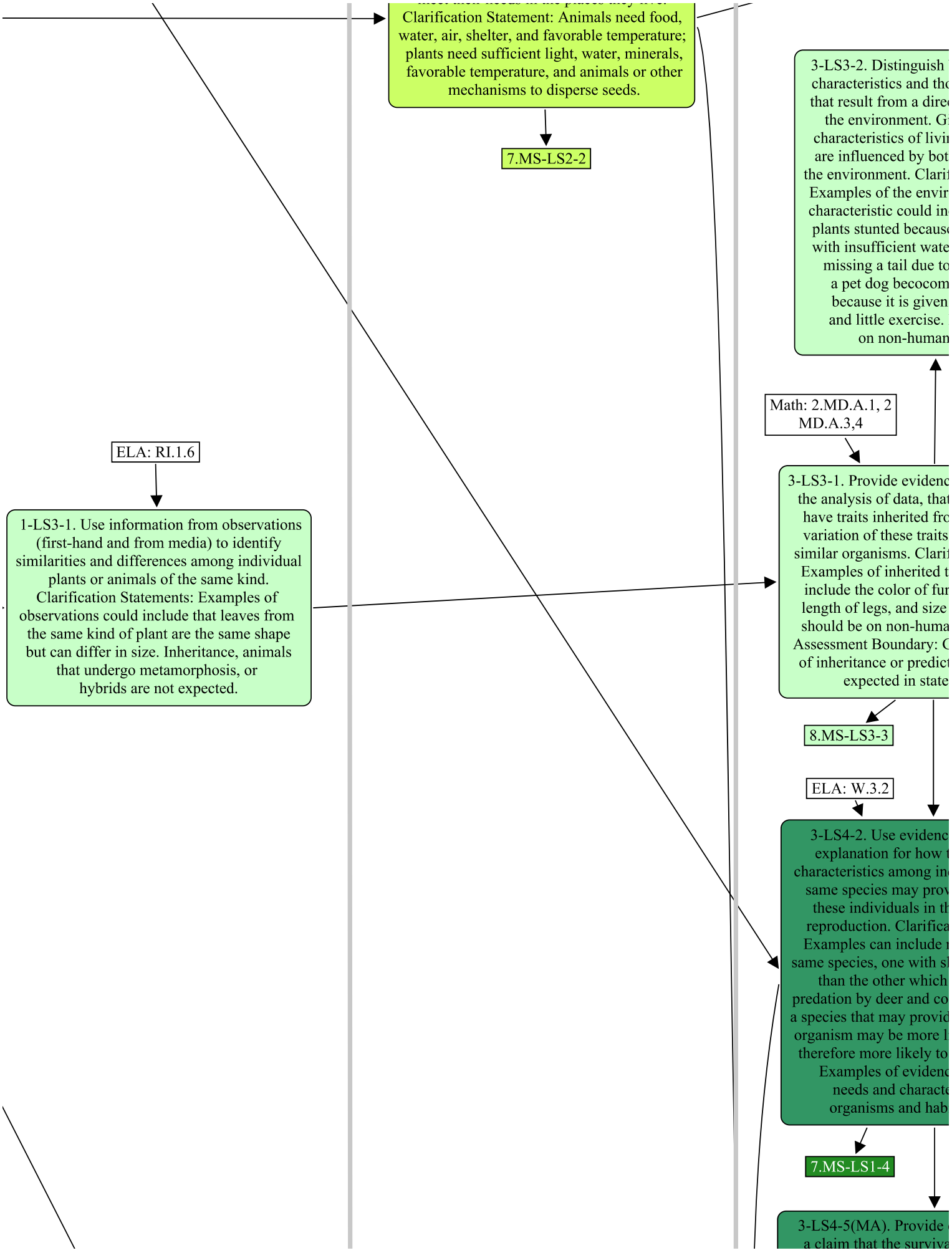

Grade 4
Grade 5
ELA: SL.4.4
4-PS3-2
4-LS1-1. Construct an argument that animals and plants have internal and external structures that support their survival, growth, behavior, and reproduction. Clarification Statements: Animal structures can include legs, wings, fins, feathers, trunks, claws, horns, antennae, eyes, ears, nose, heart, stomach, lung, brain, and skin. Plant structures can include leaves, roots, stems, bark, branches, flowers, fruit and seeds. State Assessment Boundary: State assessment will be limited to macroscopic structures.
5-LS1-1. Ask testable questions about the process by which plants use air, water, and energy from sunlight to produce sugars and plant materials needed for growth and reproduction. State Assessment Boundary: The chemical formula or molecular details about the process of photosynthesis are not expected in state assessment.
6.MS-LS1-2
6.MS-LS1-2
7.MS-LS1-4
7.MS-LS1-3
6.MS-LS4-2
MD.3
ble graphical
ow that different
unique and diverse
t all organisms have
ction, and death in
a variety of ways
en. Clarification
an include different
re begin (e.g., sprout
m an egg), grow
nd weight, produce
e.g., develop seeds,
ay eggs that hatch),
fe). Plant life cycles
f flowering plants.
rganism life cycles
sons of the general
cs. State Assessment
riptions of any one
erences of "complete
d "incomplete
letails of human
not expected
ssment.
S3-2
5-LS2-1. Develop a model to describe the movement of matter among producers, consumers, decomposers, and the air, water, and soil in the environment to (a) show that plants produce sugars and plant materials, (b) show that animals can eat plants and/or other animals for food, and (c) show that some organisms, including fungi and bacteria, break down dead organisms and recycle some materials back to the air and soil. Clarification Statement: Emphasis is on matter moving throughout the ecosystem. State Assessment Boundary: Molecular explanations, or distinctions among primary, secondary, and tertiary consumers, are not expected in state assessment.
5-PS3-1
7.MS-LS2-3


local environment of how animals and plants are dependent on one another to meet their basic needs.
ELA: SL.PK.1
PreK-LS2-1(MA). Use evidence from animals and plants to define several characteristics of living things that distinguish them from non-living things.
PreK-ESS2-1
3: Heredity: Inheritance and Variation of Traits
PreK-LS3-2(MA). Use observations to recognize differences and similarities among themselves and their friends.
PreK-LS3-1(MA). Use observations to explain that young plants and animals are like but not exactly like their parents. Clarification Statement: Examples of observations include puppies that look similar but not exactly the same as their parents.


Clarification Statement: Animals need food, water, air, shelter, and favorable temperature; plants need sufficient light, water, minerals, favorable temperature, and animals or other mechanisms to disperse seeds.
7.MS-LS2-2
3-LS3-2. Distinguish
characteristics and tho
that result from a direc
the environment. Gi
characteristics of livi
are influenced by bot
the environment. Clari
Examples of the envir
characteristic could in
plants stunted becaus
with insufficient wate
missing a tail due to
a pet dog becocom
because it is given
and little exercise.
on non-human
Math: 2.MD.A.1, 2 MD.A.3,4
ELA: RI.1.6
1-LS3-1. Use information from observations (first-hand and from media) to identify similarities and differences among individual plants or animals of the same kind. Clarification Statements: Examples of observations could include that leaves from the same kind of plant are the same shape but can differ in size. Inheritance, animals that undergo metamorphosis, or hybrids are not expected.
3-LS3-1. Provide evidenc
the analysis of data, that
have traits inherited fro
variation of these traits
similar organisms. Clari
Examples of inherited t
include the color of fur
length of legs, and size
should be on non-huma
Assessment Boundary: C
of inheritance or predict
expected in state
8.MS-LS3-3
ELA: W.3.2
3-LS4-2. Use evidenc
explanation for how t
characteristics among in
same species may prov
these individuals in th
reproduction. Clarifica
Examples can include
same species, one with s
than the other which
predation by deer and co
a species that may provid
organism may be more l
therefore more likely to
Examples of evidenc
needs and characte
organisms and hab
7.MS-LS1-4
3-LS4-5(MA). Provide
a claim that the survival

between inherited
ose characteristics
ct interaction with
ive examples of
ng organisms that
h inheritance and
fication Statements:
onment affecting a
clude normally tall
e they were grown
r or light, a lizard
a predator and,
ing overweight
too much food
Focus should be
examples.

8.MS-LS1-5

e, including through
t plants and animals
m parents and that
exist in a group of
fication Statements:
raits that vary can
, shape of leaves,
of flowers. Focus
n examples. State
Genetic mechanisms
tion of traits are not
assessment.

8.MS-LS4-5

e to construct an
he variations in
dividuals within the
ide advantages to
eir survival and
tion Statements:
ose bushes of the
ightly longer thorns
may prevent its
lor variation within
e advantages so one
ikely to survive and
produce offspring.
e could include
eristics of the
itats involved.

HS-LS4-2

evidence to support
l of a population is

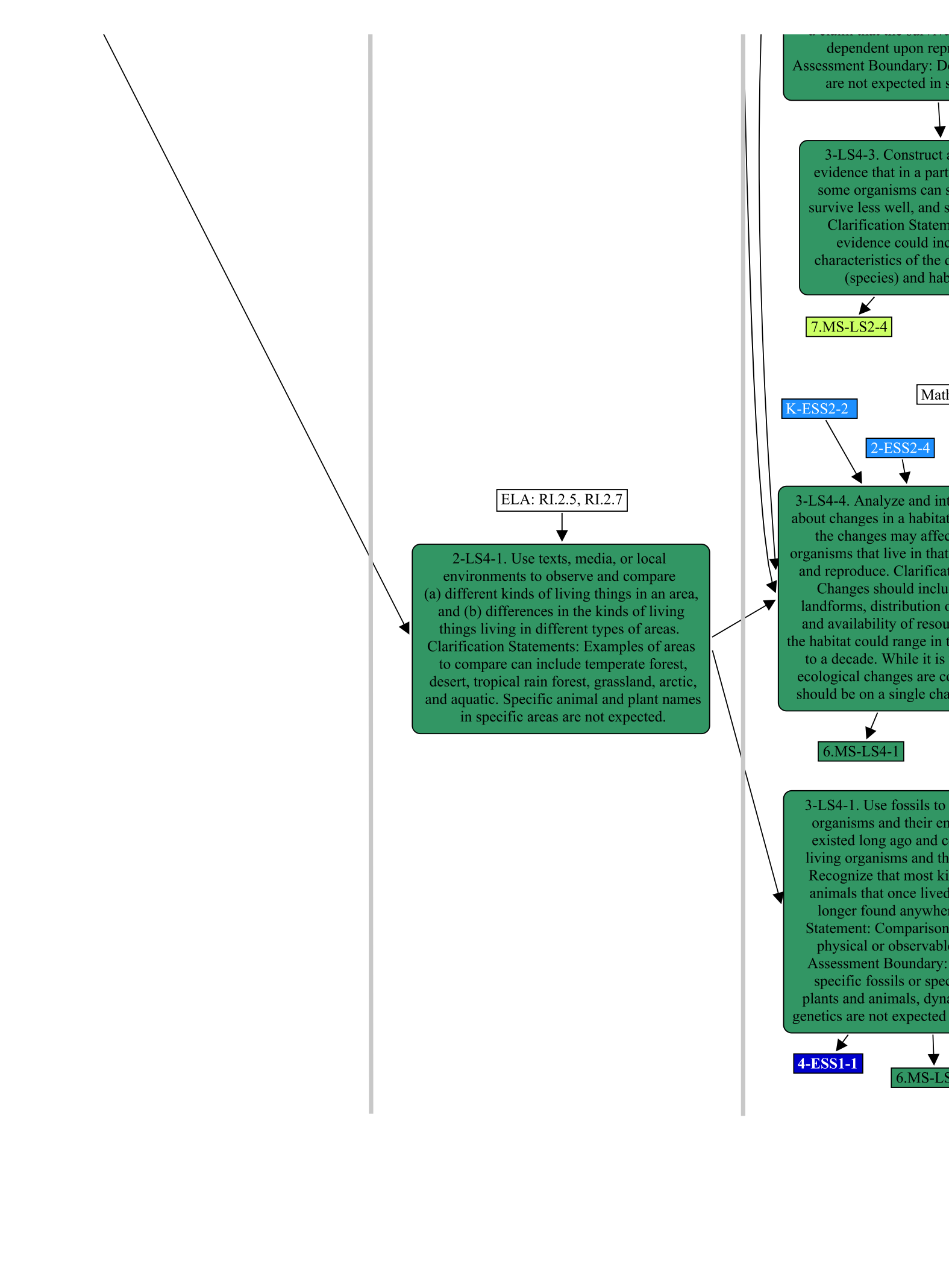
7.MS-LS2-7(MA)

4.3-5-ETS1-5(MA)

5-LS2-2(MA). Compare at least two designs for a composter to determine which is most likely to encourage decomposition of materials.* Clarification Statement: Measures or evidence of decomposition should be on qualitative descriptions or comparisons.

4: Biological Evolution: Unity and Diversity

Massachusetts Department of
Elementary and Secondary Education
April 2016


dependent upon rep
Assessment Boundary: D
are not expected in s
3-LS4-3. Construct a
evidence that in a part
some organisms can s
survive less well, and s
Clarification Statem
evidence could inc
characteristics of the c
(species) and hab
7.MS-LS2-4
Math
K-ESS2-2
2-ESS2-4
ELA: RI.2.5, RI.2.7
2-LS4-1. Use texts, media, or local environments to observe and compare (a) different kinds of living things in an area, and (b) differences in the kinds of living things living in different types of areas. Clarification Statements: Examples of areas to compare can include temperate forest, desert, tropical rain forest, grassland, arctic, and aquatic. Specific animal and plant names in specific areas are not expected.
3-LS4-4. Analyze and int
about changes in a habitat
the changes may affec
organisms that live in that
and reproduce. Clarificat
Changes should inclu
landforms, distribution c
and availability of resou
the habitat could range in t
to a decade. While it is
ecological changes are c
should be on a single cha
6.MS-LS4-1
3-LS4-1. Use fossils to
organisms and their en
existed long ago and c
living organisms and th
Recognize that most ki
animals that once lived
longer found anywhe
Statement: Comparison
physical or observabl
Assessment Boundary:
specific fossils or spec
plants and animals, dyna
genetics are not expected
4-ESS1-1
6.MS-LS

roduction. State
etails of reproduction
state assessment.

an argument with
icular environment
survive well, some
ome cannot survive.
ent: Examples of
lude needs and
different organisms
itats involved.

8.MS-LS1-5

n: 3.MD.B.3

3-ESS2-2

terpret given data
and describe how
t the ability of
habitat to survive
tion Statements:
de changes to
f water, climate,
rces. Changes in
ime from a season
understood that
mplex, the focus
nge to the habitat.

7.MS-LS2-1

describe types of
vironments that
ompare those to
eir environments.
nds of plants and
on Earth are no
re. Clarification
s should focus on
e features. State
Identification of
cific present-day
amic processes, or
in state assessment.

6.MS-LS4-2

4-1