ESSENTIAL ELEMENT, LINKAGE LEVELS, AND MINI-MAP
SCIENCE: MIDDLE SCHOOL
SCI.EE.MS-LS1-3

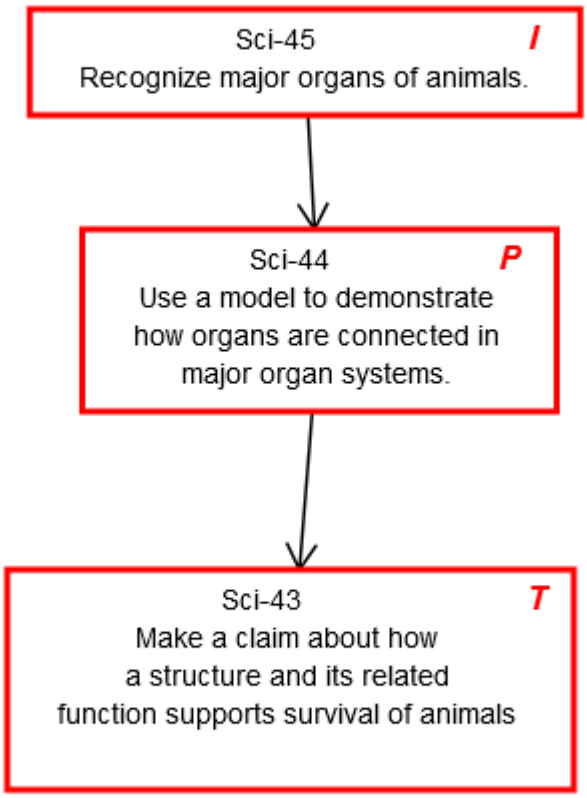
State Standard for General Education	DLM Essential Element	Linkage Levels
MS-LS1-3 Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells	**EE.MS-LS1-3** Make a claim about how a structure (e.g., organs and organ systems) and its related function supports survival of animals (circulatory, digestive, and respiratory systems)	**Initial:** • Recognize major organs of animals **Precursor:** • Use a model to demonstrate how organs are connected in major organ systems **Target:** • Make a claim about how a structure (e.g., organs and organ systems) and its related function supports survival of animals (circulatory, digestive, and respiratory systems)

A diagram showing the relationship of linkage levels in the mini-map appears below.

Key to map codes in upper right corner of linkage level boxes:

I Initial
P Precursor
T Target

SCI.EE.MS-LS1-3 Make a claim about how a structure (e.g., organs and organ systems) and its related function supports survival of animals (circulatory, digestive, and respiratory systems).



ESSENTIAL ELEMENT, LINKAGE LEVELS, AND MINI-MAP
SCIENCE: MIDDLE SCHOOL
SCI.EE.MS-LS1-5

State Standard for General Education	DLM Essential Element	Linkage Levels
MS-LS1-5 Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms	**EE.MS-LS1-5** Interpret data to show that environmental resources (e.g., food, light, space, water) influence growth of organisms (e.g., drought decreasing plant growth, fertilizer increasing plant growth, different varieties of plant seeds growing at different rates in different conditions, fish growing larger in large ponds than small ponds)	**Initial:** • Match organisms to their habitats **Precursor:** • Identify factors that influence growth of organisms **Target:** • Interpret data to show that environmental resources (e.g., food, light, space, water) influence growth of organisms (e.g., drought decreasing plant growth, fertilizer increasing plant growth, different varieties of plant seeds growing at different rates in different conditions, fish growing larger in large ponds than small ponds)

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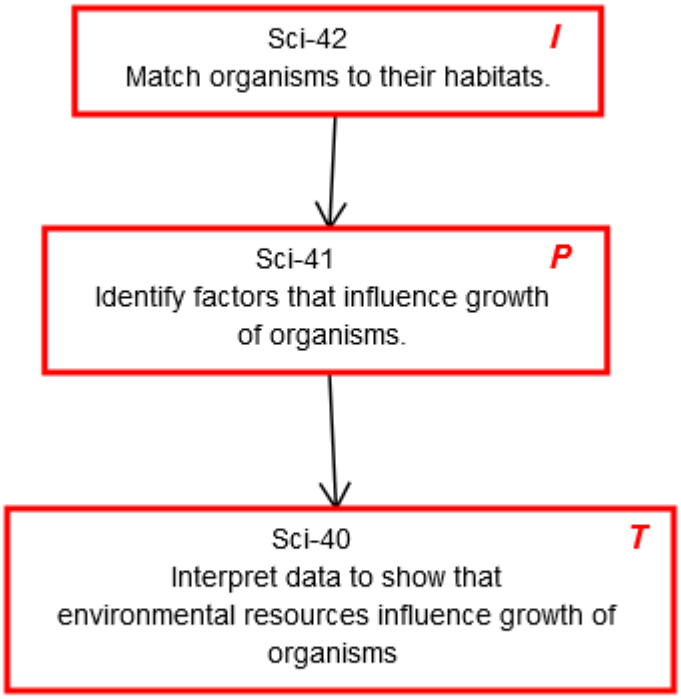
Key to map codes in upper right corner of linkage level boxes:

I Initial
P Precursor
T Target

SCI.EE.MS-LS1-5 Interpret data to show that environmental resources (e.g., food, light, space, water) influence growth of organisms (e.g., drought decreasing plant growth, fertilizer increasing plant growth, different varieties of plant seeds growing at different rates in different conditions, fish growing larger in large ponds than small ponds).



ESSENTIAL ELEMENT, LINKAGE LEVELS, AND MINI-MAP
SCIENCE: MIDDLE SCHOOL
SCI.EE.MS-LS2-2

State Standard for General Education	DLM Essential Element	Linkage Levels
MS-LS2-2 Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems	**EE.MS-LS2-2** Use models of food chains/webs to identify producers and consumers in aquatic and terrestrial ecosystems	**Initial:** • Identify food that animals eat **Precursor:** • Classify animals based on what they eat (e.g., herbivore, omnivore, carnivore) **Target:** • Use models of food chains/webs to identify producers and consumers in aquatic and terrestrial ecosystems

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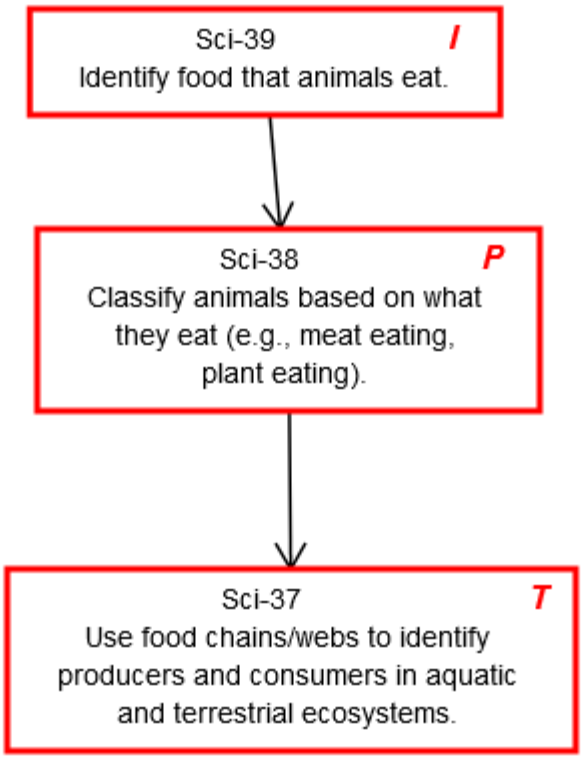
Key to map codes in upper right corner of linkage level boxes:

I Initial
P Precursor
T Target

SCI.EE.MS-LS2-2 Use models of food chains/webs to identify producers and consumers in aquatic and terrestrial ecosystems.



ESSENTIAL ELEMENT, LINKAGE LEVELS, AND MINI-MAP
SCIENCE: MIDDLE SCHOOL
SCI.EE.MS-PS1-2

State Standard for General Education	DLM Essential Element	Linkage Levels
MS-PS1-2 Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred	**EE.MS-PS1-2** Interpret and analyze data on the properties (e.g., color, texture, odor, and state of matter) of substances before and after chemical changes have occurred (e.g., burning sugar or burning steel wool, rust, effervescent tablets)	**Initial:** • Observe and identify examples of change (e.g. state of matter, color, temperature, and odor) **Precursor:** • Gather data on the properties (e.g., color, texture, odor, and state of matter) of substances before and after chemical changes have occurred (e.g., burning sugar or burning steel wool, rust, effervescent tablets) **Target:** • Interpret and analyze data on the properties (e.g., color, texture, odor, and state of matter) of substances before and after chemical changes have occurred (e.g., burning sugar or burning steel wool, rust, effervescent tablets)

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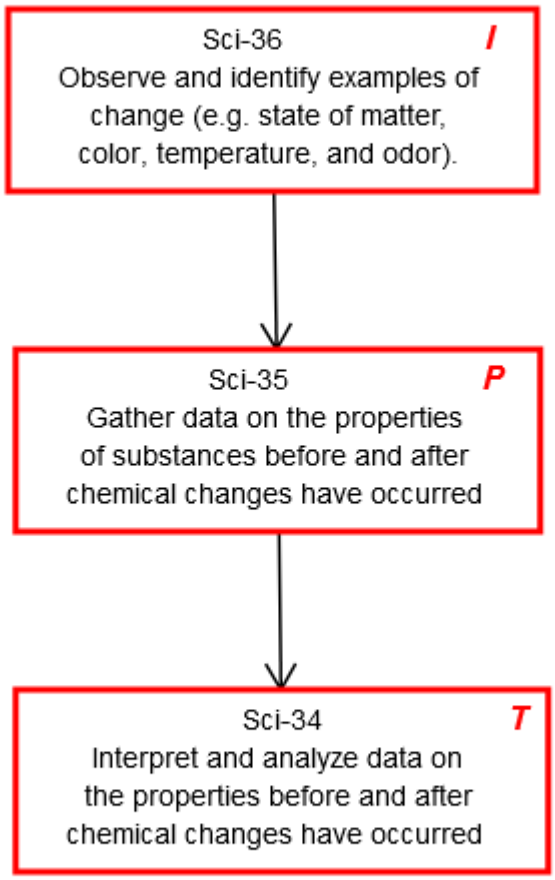
SCI.EE.MS-PS1-2 Interpret and analyze data on the properties (e.g., color, texture, odor, and state of matter) of substances before and after chemical changes have occurred (e.g., burning sugar or burning steel wool, rust, effervescent tablets).



ESSENTIAL ELEMENT, LINKAGE LEVELS, AND MINI-MAP
SCIENCE: MIDDLE SCHOOL
SCI.EE.MS-PS2-2

State Standard for General Education	DLM Essential Element	Linkage Levels
MS-PS2-2 Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object	**EE.MS-PS2-2** Investigate and predict the change in motion of objects based on the forces acting on those objects	**Initial:** • Identify ways to change the movement of an object (e.g., faster, slower, stop) **Precursor:** • Investigate and identify ways to change the motion of an object (e.g., change an incline's slope to make an object go slower, faster, farther) **Target:** • Investigate and predict the change in motion of objects based on the forces acting on those objects

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I Initial
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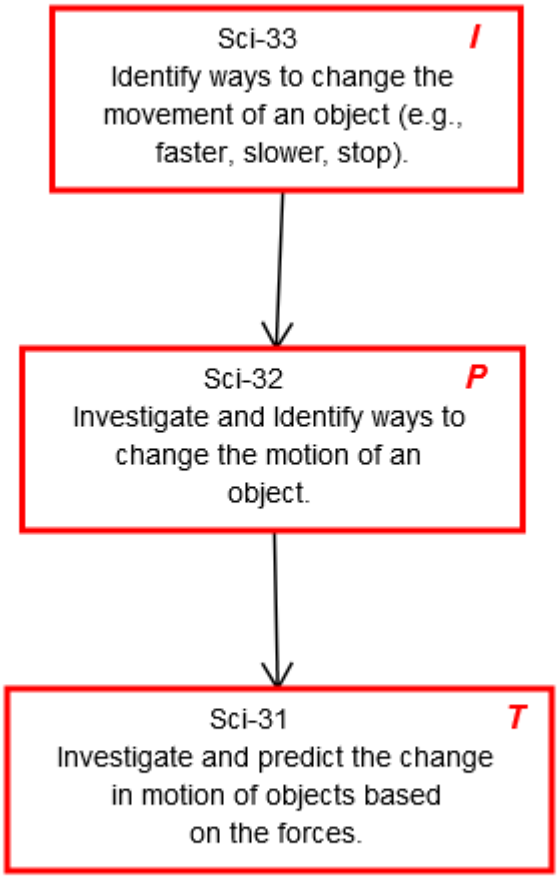
T Target

SCI.EE.MS-PS2-2 Investigate and predict the change in motion of objects based on the forces acting on those objects.



ESSENTIAL ELEMENT, LINKAGE LEVELS, AND MINI-MAP
SCIENCE: MIDDLE SCHOOL
SCI.EE.MS-PS3-3

State Standard for General Education	DLM Essential Element	Linkage Levels
MS-PS3-3 Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer	**EE.MS-PS3-3** Test and refine a device (e.g., foam cup, insulated box, or thermos) to either minimize or maximize thermal energy transfer (e.g., keeping liquids hot or cold, preventing liquids from freezing, keeping hands warm in cold temperatures)	**Initial:** • Identify objects/materials used to minimize or maximize thermal energy transfer (e.g., gloves, vacuum flask, insulated hot pad holder or foam cup) **Precursor:** • Investigate objects/materials, and predict their ability to maximize or minimize thermal energy transfer **Target:** • Test and refine a device (e.g., foam cup, insulated box, or thermos) to either minimize or maximize thermal energy transfer (e.g., keeping liquids hot or cold, preventing liquids from freezing, keeping hands warm in cold temperatures)

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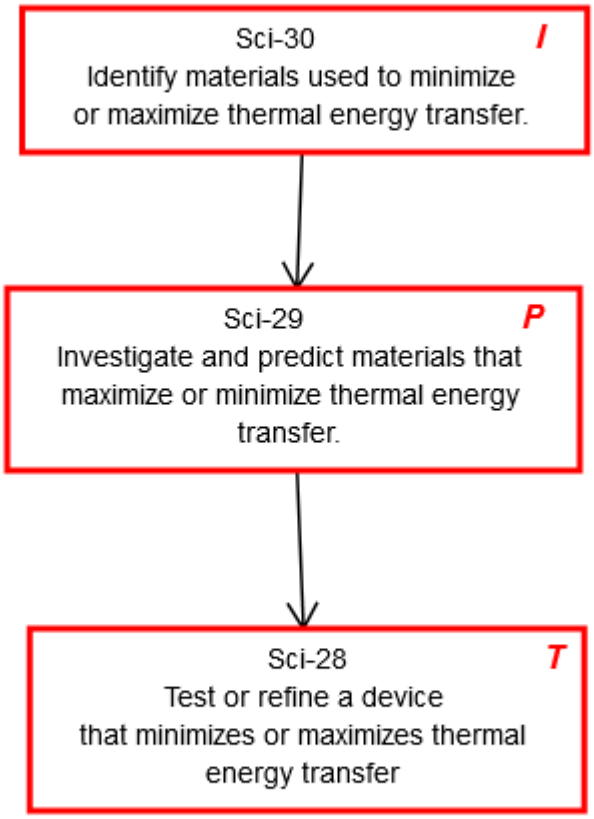
Key to map codes in upper right corner of linkage level boxes:

I Initial
P Precursor
T Target

SCI.EE.MS-PS3-3 Test and refine a device (e.g., foam cup, insulated box, or thermos) to either minimize or maximize thermal energy transfer (e.g., keeping liquids hot or cold, preventing liquids from freezing, keeping hands warm in cold temperatures).



ESSENTIAL ELEMENT, LINKAGE LEVELS, AND MINI-MAP
SCIENCE: MIDDLE SCHOOL
SCI.EE.MS-ESS2-2

State Standard for General Education	DLM Essential Element	Linkage Levels
MS-ESS2-2 Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales	**EE.MS-ESS2-2** Explain how geoscience processes that occur daily (e.g.,wind, rain, runoff) slowly change the surface of Earth, while catastrophic events (e.g., earthquakes, tornadoes, floods) can quickly change the surface of Earth	**Initial:** • Identify differences in weather conditions from day to day **Precursor:** • Identify geoscience processes (e.g., wind, rain, runoff) that have an impact on landforms (e.g., landslides, erosion such as gullies) **Target:** • Explain how geoscience processes that occur daily (e.g.,wind, rain, runoff) slowly change the surface of Earth, while catastrophic events (e.g., earthquakes, tornadoes, floods) can quickly change the surface of Earth

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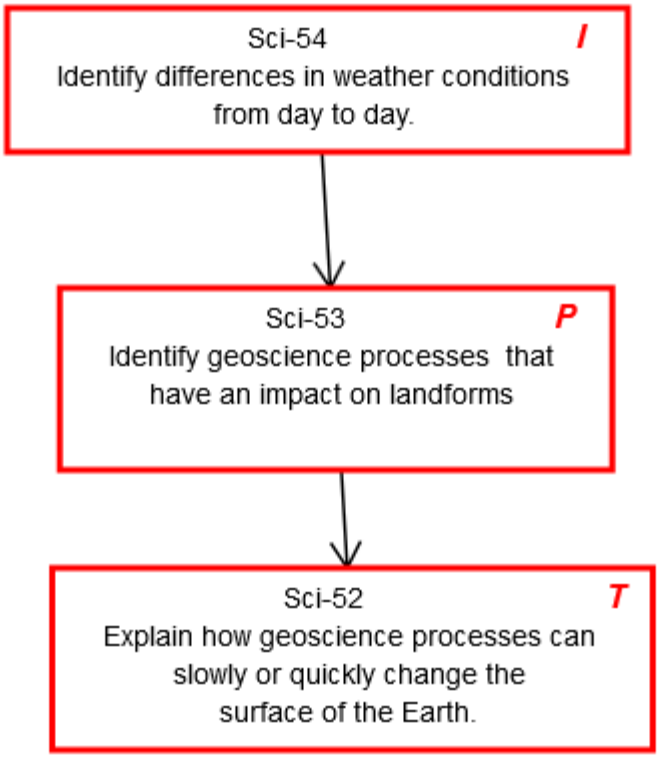
Key to map codes in upper right corner of linkage level boxes:

I Initial
P Precursor
T Target

SCI.EE.MS-ESS2-2 Explain how geoscience processes that occur daily (e.g.,wind, rain, runoff) slowly change the surface of Earth, while catastrophic events (e.g., earthquakes, tornadoes, floods) can quickly change the surface of Earth.



ESSENTIAL ELEMENT, LINKAGE LEVELS, AND MINI-MAP
SCIENCE: MIDDLE SCHOOL
SCI.EE.MS-ESS2-6

State Standard for General Education	DLM Essential Element	Linkage Levels
MS-ESS2-6 Develop and use a model to describe how unequal heating and the rotation of the earth cause patterns of atmospheric and oceanic circulation that determine regional climates	**EE.MS-ESS2-6** Interpret basic weather information (e.g., radar, map) to make predictions about future conditions (e.g., precipitation, temperature, wind)	**Initial:** • Interpret basic weather information (e.g., radar, map) to identify weather conditions **Precursor:** • Interpret basic weather information (e.g., radar, map) to compare weather conditions (either over several days at the same location or different locations on the same day) **Target:** • Interpret basic weather information (e.g., radar, map) to make predictions about future conditions (e.g., precipitation, temperature, wind)

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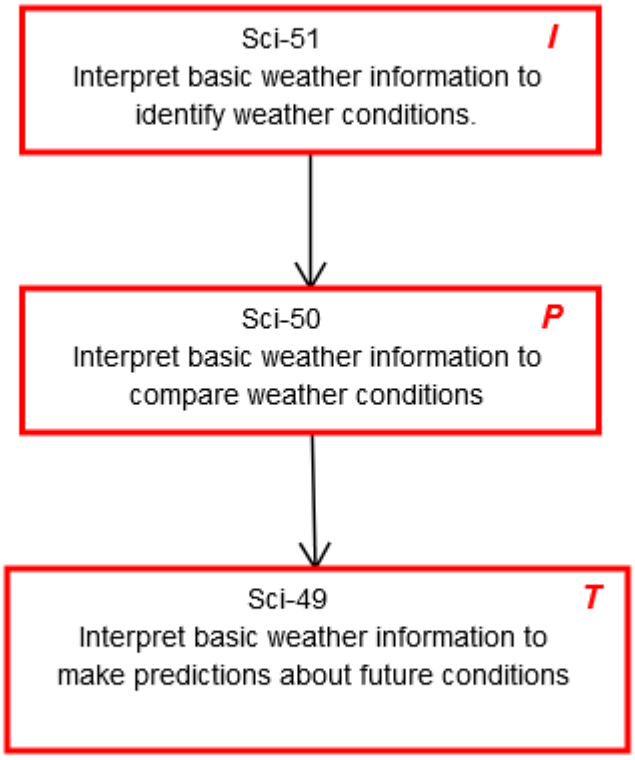
Key to map codes in upper right corner of linkage level boxes:

I Initial
P Precursor
T Target

SCI.EE.MS-ESS2-6 Interpret basic weather information (e.g., radar, map) to make predictions about future conditions (e.g., precipitation, temperature, wind).



ESSENTIAL ELEMENT, LINKAGE LEVELS, AND MINI-MAP
SCIENCE: MIDDLE SCHOOL
SCI.EE.MS-ESS3-3

State Standard for General Education	DLM Essential Element	Linkage Levels
MS-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment	**EE.MS-ESS3-3** Develop a plan to monitor and minimize a human impact on the local environment (e.g., water, land, pollution)	**Initial:** • Recognize resources (e.g., food, water, shelter, air) in the local environment that are important for human life **Precursor:** • Recognize ways in which humans impact the environment (e.g., agriculture, pollution, recycling, city growth) **Target:** • Develop a plan to monitor and minimize a human impact on the local environment (e.g., water, land, pollution)

A diagram showing the relationship of linkage levels in the mini-map appears below.

Key to map codes in upper right corner of linkage level boxes:

I Initial
P Precursor
T Target

SCI.EE.MS-ESS3-3 Develop a plan to monitor and minimize a human impact on the local environment (e.g., water, land, pollution).