

TODAY'S STANDARD

Molecules & Extended Structures

Develop models to describe the atomic composition of simple molecules and extended structures.

TODAY'S LEARNING GOAL

Molecules & Extended Structures

I *can*...

build a model that
shows the atoms inside
a simple molecule.

TODAY'S LEARNING GOAL

Molecules & Extended Structures

I *can*...

compare a small molecule
like water to a giant
repeating structure like a
crystal.

TODAY'S LEARNING GOAL

Molecules & Extended Structures

I *can*...

use my model to explain
what makes one substance
different from another.

TODAY'S LEARNING GOALS

Molecules & Extended Structures

I *can*...

- build a model that shows the atoms inside a simple molecule.
- compare a small molecule like water to a giant repeating structure like a crystal.
- use my model to explain what makes one substance different from another.

TODAY'S STANDARD

Chemical Reaction Data

Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.

TODAY'S LEARNING GOAL

Chemical Reaction Data

I *can*...
collect data on the
properties of substances
before and after they mix.

TODAY'S LEARNING GOAL

Chemical Reaction Data

I *can*...

compare those properties
to decide if a chemical
reaction happened.

TODAY'S LEARNING GOAL

Chemical Reaction Data

I *can*...

use evidence like color, smell, or temperature change to back up my claim.

TODAY'S LEARNING GOALS

Chemical Reaction Data

I *can*...

- collect data on the properties of substances before and after they mix.
- compare those properties to decide if a chemical reaction happened.
- use evidence like color, smell, or temperature change to back up my claim.

TODAY'S STANDARD

Synthetic Materials

Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.

TODAY'S LEARNING GOAL

Synthetic Materials

I *can*...

trace a synthetic material
back to the natural
resource it came from.

TODAY'S LEARNING GOAL

Synthetic Materials

I *can*...

describe how making and using synthetic materials affects people and the environment.

TODAY'S LEARNING GOAL

Synthetic Materials

I *can*...
research a synthetic
material and explain its
benefits and drawbacks.

TODAY'S LEARNING GOALS

Synthetic Materials

I *can*...

- trace a synthetic material back to the natural resource it came from.
- describe how making and using synthetic materials affects people and the environment.
- research a synthetic material and explain its benefits and drawbacks.

TODAY'S STANDARD

Changes by Thermal Energy

Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.

TODAY'S LEARNING GOAL

Changes by Thermal Energy

I *can*...

build a model that shows
how particles move in
solids, liquids, and gases.

TODAY'S LEARNING GOAL

Changes by Thermal Energy

I *can*...

predict what happens to
particle motion when
heat is added or removed.

TODAY'S LEARNING GOAL

Changes by Thermal Energy

I *can...*
explain how thermal
energy connects to
changes in state.

TODAY'S LEARNING GOALS

Changes by Thermal Energy

I *can*...

- build a model that shows how particles move in solids, liquids, and gases.
- predict what happens to particle motion when heat is added or removed.
- explain how thermal energy connects to changes in state.

TODAY'S STANDARD

Mass & Chemical Reactions

Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved.

TODAY'S LEARNING GOAL

Mass & Chemical Reactions

I *can*...

model a chemical reaction by drawing the atoms before and after.

TODAY'S LEARNING GOAL

Mass & Chemical Reactions

I *can*...

show that no atoms
disappear or appear
during the reaction.

TODAY'S LEARNING GOAL

Mass & Chemical Reactions

I *can*...

explain why the mass of the products equals the mass of the reactants.

TODAY'S LEARNING GOALS

Mass & Chemical Reactions

I *can*...

- model a chemical reaction by drawing the atoms before and after.
- show that no atoms disappear or appear during the reaction.
- explain why the mass of the products equals the mass of the reactants.

TODAY'S STANDARD

Endothermic & Exothermic

Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.

TODAY'S LEARNING GOAL

Endothermic & Exothermic

I *can*...

design a device that uses
a chemical reaction to
heat or cool something.

TODAY'S LEARNING GOAL

Endothermic & Exothermic

I *can*...

test how well my device works and collect data on temperature change.

TODAY'S LEARNING GOAL

Endothermic & Exothermic

I *can*...
modify my design
based on what I
learned from testing.

TODAY'S LEARNING GOALS

Endothermic & Exothermic

I *can*...

- design a device that uses a chemical reaction to heat or cool something.
- test how well my device works and collect data on temperature change.
- modify my design based on what I learned from testing.

TODAY'S STANDARD

Newton's Third Law & Collisions

Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.

TODAY'S LEARNING GOAL

Newton's Third Law & Collisions

I *can*...

use Newton's Third Law
to explain what happens
when two objects collide.

TODAY'S LEARNING GOAL

Newton's Third Law & Collisions

I *can...*

design a solution to
reduce the impact of
a collision.

TODAY'S LEARNING GOAL

Newton's Third Law & Collisions

I *can*...

test my solution and
show how forces act in
equal and opposite pairs.

TODAY'S LEARNING GOALS

Newton's Third Law & Collisions

I *can*...

- use Newton's Third Law to explain what happens when two objects collide.
- design a solution to reduce the impact of a collision.
- test my solution and show how forces act in equal and opposite pairs.

TODAY'S STANDARD

Changes in an Object's Motion

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.

TODAY'S LEARNING GOAL

Changes in an Object's Motion

I *can*...

plan an investigation to
test how forces change
an object's motion.

TODAY'S LEARNING GOAL

Changes in an Object's Motion

I *can...*

show how the total force
and the mass of the
object affect acceleration.

TODAY'S LEARNING GOAL

Changes in an Object's Motion

I *can*...

use evidence from my
test to defend my
claim.

TODAY'S LEARNING GOALS

Changes in an Object's Motion

I *can*...

- plan an investigation to test how forces change an object's motion.
- show how the total force and the mass of the object affect acceleration.
- use evidence from my test to defend my claim.

TODAY'S STANDARD

Electric & Magnetic Force Strength

Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.

TODAY'S LEARNING GOAL

Electric & Magnetic Force Strength

I *can*...

ask questions about what
makes electric or
magnetic forces stronger.

TODAY'S LEARNING GOAL

Electric & Magnetic Force Strength

I *can*...

analyze data to figure out how distance and other factors change force strength.

TODAY'S LEARNING GOAL

Electric & Magnetic Force Strength

I *can...*
use evidence to explain
how these forces work
without touching.

TODAY'S LEARNING GOALS

Electric & Magnetic Force Strength

I *can*...

- ask questions about what makes electric or magnetic forces stronger.
- analyze data to figure out how distance and other factors change force strength.
- use evidence to explain how these forces work without touching.

TODAY'S STANDARD

Gravitational Interactions

Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.

TODAY'S LEARNING GOAL

Gravitational Interactions

I *can*...

use evidence to argue that gravity always pulls objects toward each other.

TODAY'S LEARNING GOAL

Gravitational Interactions

I *can*...

explain how more mass makes the gravitational pull stronger.

TODAY'S LEARNING GOAL

Gravitational Interactions

I *can*...

present my argument
with data, diagrams,
or models.

TODAY'S LEARNING GOALS

Gravitational Interactions

I *can*...

- use evidence to argue that gravity always pulls objects toward each other.
- explain how more mass makes the gravitational pull stronger.
- present my argument with data, diagrams, or models.

TODAY'S STANDARD

Noncontact Forces

Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.

TODAY'S LEARNING GOAL

Noncontact Forces

I *can*...

investigate how magnets, charged objects, or masses interact without touching.

TODAY'S LEARNING GOAL

Noncontact Forces

I *can*...

evaluate my experiment to see if it gives strong evidence for invisible fields.

TODAY'S LEARNING GOAL

Noncontact Forces

I *can...*
use my results to
explain that fields
exist around forces.

TODAY'S LEARNING GOALS

Noncontact Forces

I *can*...

- investigate how magnets, charged objects, or masses interact without touching.
- evaluate my experiment to see if it gives strong evidence for invisible fields.
- use my results to explain that fields exist around forces.

TODAY'S STANDARD

Kinetic Energy of an Object

Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.

TODAY'S LEARNING GOAL

Kinetic Energy of an Object

I *can*...

build a graph that
shows how mass
affects kinetic energy.

TODAY'S LEARNING GOAL

Kinetic Energy of an Object

I *can*...

build another graph
that shows how speed
affects kinetic energy.

TODAY'S LEARNING GOAL

Kinetic Energy of an Object

I *can*...

interpret my graphs to
describe what changes the
energy of motion the
most.

TODAY'S LEARNING GOALS

Kinetic Energy of an Object

I *can*...

- build a graph that shows how mass affects kinetic energy.
- build another graph that shows how speed affects kinetic energy.
- interpret my graphs to describe what changes the energy of motion the most.

TODAY'S STANDARD

Distance & Potential Energy

Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.

TODAY'S LEARNING GOAL

Distance & Potential Energy

I *can*...

build a model that shows where potential energy is stored in a system.

TODAY'S LEARNING GOAL

Distance & Potential Energy

I *can*...

describe how the energy changes when the objects move closer or farther apart.

TODAY'S LEARNING GOAL

Distance & Potential Energy

I *can*...
use my model to predict
the energy stored in
different arrangements.

TODAY'S LEARNING GOALS

Distance & Potential Energy

I *can*...

- build a model that shows where potential energy is stored in a system.
- describe how the energy changes when the objects move closer or farther apart.
- use my model to predict the energy stored in different arrangements.

TODAY'S STANDARD

Thermal Energy Transfer

Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.

TODAY'S LEARNING GOAL

Thermal Energy Transfer

I *can...*

design a device that
traps or releases heat
as much as possible.

TODAY'S LEARNING GOAL

Thermal Energy Transfer

I *can...*
construct and test my
device to see how
well it works.

TODAY'S LEARNING GOAL

Thermal Energy Transfer

I *can...*
use my data to
improve the design.

TODAY'S LEARNING GOALS

Thermal Energy Transfer

I *can*...

- design a device that traps or releases heat as much as possible.
- construct and test my device to see how well it works.
- use my data to improve the design.

TODAY'S STANDARD

Temperature & Energy

Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.

TODAY'S LEARNING GOAL

Temperature & Energy

I *can...*

plan an investigation to
see how heat moves
between different
materials.

TODAY'S LEARNING GOAL

Temperature & Energy

I *can...*

test how mass and type
of matter affect the
temperature change.

TODAY'S LEARNING GOAL

Temperature & Energy

I *can...*
explain my results
using what I know
about energy transfer.

TODAY'S LEARNING GOALS

Temperature & Energy

I *can*...

- plan an investigation to see how heat moves between different materials.
- test how mass and type of matter affect the temperature change.
- explain my results using what I know about energy transfer.

TODAY'S STANDARD

Kinetic Energy Transfer

Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.

TODAY'S LEARNING GOAL

Kinetic Energy Transfer

I *can*...

argue from evidence that
energy is transferred
whenever motion changes.

TODAY'S LEARNING GOAL

Kinetic Energy Transfer

I *can...*
use a real example to
show energy moving
into or out of an object.

TODAY'S LEARNING GOAL

Kinetic Energy Transfer

I *can*...

present my argument
using a model or
diagram.

TODAY'S LEARNING GOALS

Kinetic Energy Transfer

I *can*...

- argue from evidence that energy is transferred whenever motion changes.
- use a real example to show energy moving into or out of an object.
- present my argument using a model or diagram.

TODAY'S STANDARD

Waves & Energy

Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.

TODAY'S LEARNING GOAL

Waves & Energy

I *can...*
use math to describe a
wave by its amplitude
and wavelength.

TODAY'S LEARNING GOAL

Waves & Energy

I *can...*
show how a wave
with bigger amplitude
carries more energy.

TODAY'S LEARNING GOAL

Waves & Energy

I *can...*
compare two waves
using their
properties.

TODAY'S LEARNING GOALS

Waves & Energy

I *can*...

- use math to describe a wave by its amplitude and wavelength.
- show how a wave with bigger amplitude carries more energy.
- compare two waves using their properties.

TODAY'S STANDARD

Wave Transmission

Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.

TODAY'S LEARNING GOAL

Wave Transmission

I *can...*

build a model that
shows how waves hit
a material.

TODAY'S LEARNING GOAL

Wave Transmission

I *can*...
describe what happens
when a wave is reflected,
absorbed, or transmitted.

TODAY'S LEARNING GOAL

Wave Transmission

I *can*...
use my model to predict
how a wave will behave
in different materials.

TODAY'S LEARNING GOALS

Wave Transmission

I *can*...

- build a model that shows how waves hit a material.
- describe what happens when a wave is reflected, absorbed, or transmitted.
- use my model to predict how a wave will behave in different materials.

TODAY'S STANDARD

Digital vs Analog Signals

Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.

TODAY'S LEARNING GOAL

Digital vs Analog Signals

I *can*...
compare digital signals
and analog signals
using real examples.

TODAY'S LEARNING GOAL

Digital vs Analog Signals

I *can*...

explain why digital signals can travel without losing information.

TODAY'S LEARNING GOAL

Digital vs Analog Signals

I *can...*
use evidence from
research to support
my claim.

TODAY'S LEARNING GOALS

Digital vs Analog Signals

I *can*...

- compare digital signals and analog signals using real examples.
- explain why digital signals can travel without losing information.
- use evidence from research to support my claim.

TODAY'S STANDARD

Evidence of Living Things

Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.

TODAY'S LEARNING GOAL

Evidence of Living Things

I *can...*
investigate samples
using a microscope to
look for cells.

TODAY'S LEARNING GOAL

Evidence of Living Things

I *can...*
use my evidence to
show that all living
things are made of cells.

TODAY'S LEARNING GOAL

Evidence of Living Things

I *can*...

compare organisms that
are one cell to organisms
with many cells.

TODAY'S LEARNING GOALS

Evidence of Living Things

I *can*...

- investigate samples using a microscope to look for cells.
- use my evidence to show that all living things are made of cells.
- compare organisms that are one cell to organisms with many cells.

TODAY'S STANDARD

Cell Parts & Functions

Develop and use a model to describe the function of a cell as a whole and ways the parts of cells contribute to the function.

TODAY'S LEARNING GOAL

Cell Parts & Functions

I *can*...

build a model of a cell that labels each part.

TODAY'S LEARNING GOAL

Cell Parts & Functions

I *can*...

describe what each
organelle does for the
cell.

TODAY'S LEARNING GOAL

Cell Parts & Functions

I *can*...

use my model to explain
how the parts work
together to keep the cell
alive.

TODAY'S LEARNING GOALS

Cell Parts & Functions

I *can*...

- build a model of a cell that labels each part.
- describe what each organelle does for the cell.
- use my model to explain how the parts work together to keep the cell alive.

TODAY'S STANDARD

Interacting Body Systems

Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.

TODAY'S LEARNING GOAL

Interacting Body Systems

I *can*...

describe how groups of cells form tissues, organs, and body systems.

TODAY'S LEARNING GOAL

Interacting Body Systems

I *can*...

argue from evidence that the body is a system of smaller systems working together.

TODAY'S LEARNING GOAL

Interacting Body Systems

I *can...*

use an example to show
what happens when one
system breaks down.

TODAY'S LEARNING GOALS

Interacting Body Systems

I *can*...

- describe how groups of cells form tissues, organs, and body systems.
- argue from evidence that the body is a system of smaller systems working together.
- use an example to show what happens when one system breaks down.

TODAY'S STANDARD

Plant & Animal Reproduction

Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.

TODAY'S LEARNING GOAL

Plant & Animal Reproduction

I *can...*

use evidence to explain
how animal behaviors
help them reproduce.

TODAY'S LEARNING GOAL

Plant & Animal Reproduction

I *can*...

describe how plant structures like flowers or fruits help plants reproduce.

TODAY'S LEARNING GOAL

Plant & Animal Reproduction

I *can*...

argue why those traits
make successful
reproduction more likely.

TODAY'S LEARNING GOALS

Plant & Animal Reproduction

I *can*...

- use evidence to explain how animal behaviors help them reproduce.
- describe how plant structures like flowers or fruits help plants reproduce.
- argue why those traits make successful reproduction more likely.

TODAY'S STANDARD

Influencing Organism Growth

Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.

TODAY'S LEARNING GOAL

Influencing Organism Growth

I *can...*
describe how the
environment affects
an organism's growth.

TODAY'S LEARNING GOAL

Influencing Organism Growth

I *can...*
describe how genes
affect an organism's
growth.

TODAY'S LEARNING GOAL

Influencing Organism Growth

I *can...*
use evidence to
explain how both
factors work together.

TODAY'S LEARNING GOALS

Influencing Organism Growth

I *can*...

- describe how the environment affects an organism's growth.
- describe how genes affect an organism's growth.
- use evidence to explain how both factors work together.

TODAY'S STANDARD

Role of Photosynthesis

Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.

TODAY'S LEARNING GOAL

Role of Photosynthesis

I *can...*

explain how plants
use sunlight to make
their own food.

TODAY'S LEARNING GOAL

Role of Photosynthesis

I *can...*

describe how
photosynthesis moves
matter and energy into
living things.

TODAY'S LEARNING GOAL

Role of Photosynthesis

I *can...*
use a model to show
the inputs and outputs
of photosynthesis.

TODAY'S LEARNING GOALS

Role of Photosynthesis

I *can*...

- explain how plants use sunlight to make their own food.
- describe how photosynthesis moves matter and energy into living things.
- use a model to show the inputs and outputs of photosynthesis.

TODAY'S STANDARD

Food & Chemical Reactions

Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.

TODAY'S LEARNING GOAL

Food & Chemical Reactions

I *can*...

build a model that shows
how food is broken down
inside an organism.

TODAY'S LEARNING GOAL

Food & Chemical Reactions

I *can*...

describe how the molecules are rearranged into new ones the body can use.

TODAY'S LEARNING GOAL

Food & Chemical Reactions

I *can*...

explain how this process
supports growth and
releases energy.

TODAY'S LEARNING GOALS

Food & Chemical Reactions

I *can*...

- build a model that shows how food is broken down inside an organism.
- describe how the molecules are rearranged into new ones the body can use.
- explain how this process supports growth and releases energy.

TODAY'S STANDARD

Stimuli & Sensory Receptors

Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.

TODAY'S LEARNING GOAL

Stimuli & Sensory Receptors

I *can*...

describe how sensory receptors detect light, sound, touch, taste, or smell.

TODAY'S LEARNING GOAL

Stimuli & Sensory Receptors

I *can...*
explain how those
signals travel to the
brain.

TODAY'S LEARNING GOAL

Stimuli & Sensory Receptors

I *can...*

give examples of how
the brain responds with
behavior or memory.

TODAY'S LEARNING GOALS

Stimuli & Sensory Receptors

I *can*...

- describe how sensory receptors detect light, sound, touch, taste, or smell.
- explain how those signals travel to the brain.
- give examples of how the brain responds with behavior or memory.

TODAY'S STANDARD

Resource Availability

Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.

TODAY'S LEARNING GOAL

Resource Availability

I *can*...

analyze data on resources
like food, water, or space
in an ecosystem.

TODAY'S LEARNING GOAL

Resource Availability

I *can*...

use evidence to explain
how changes in resources
change a population.

TODAY'S LEARNING GOAL

Resource Availability

I *can*...

predict what would
happen to a species if a
key resource disappeared.

TODAY'S LEARNING GOALS

Resource Availability

I *can*...

- analyze data on resources like food, water, or space in an ecosystem.
- use evidence to explain how changes in resources change a population.
- predict what would happen to a species if a key resource disappeared.

TODAY'S STANDARD

Interactions in Ecosystems

Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.

TODAY'S LEARNING GOAL

Interactions in Ecosystems

I *can*...

describe patterns like
competition, predation,
and mutualism in an
ecosystem.

TODAY'S LEARNING GOAL

Interactions in Ecosystems

I *can*...

use those patterns to
predict how organisms in a
new ecosystem will
interact.

TODAY'S LEARNING GOAL

Interactions in Ecosystems

I *can...*
build an explanation
backed by real
examples.

TODAY'S LEARNING GOALS

*Interactions in Ecosystems***I** *can...*

- describe patterns like competition, predation, and mutualism in an ecosystem.
- use those patterns to predict how organisms in a new ecosystem will interact.
- build an explanation backed by real examples.

TODAY'S STANDARD

Matter & Energy in Ecosystems

Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.

TODAY'S LEARNING GOAL

Matter & Energy in Ecosystems

I *can*...

build a model that shows
how matter cycles
through an ecosystem.

TODAY'S LEARNING GOAL

Matter & Energy in Ecosystems

I *can*...

use the same model to
show how energy flows
one way through the food
chain.

TODAY'S LEARNING GOAL

Matter & Energy in Ecosystems

I *can*...

describe the roles of
producers, consumers,
and decomposers.

TODAY'S LEARNING GOALS

Matter & Energy in Ecosystems

I *can*...

- build a model that shows how matter cycles through an ecosystem.
- use the same model to show how energy flows one way through the food chain.
- describe the roles of producers, consumers, and decomposers.

TODAY'S STANDARD

Effects of Ecosystem Change

Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

TODAY'S LEARNING GOAL

Effects of Ecosystem Change

I *can...*

use evidence to show
how a physical change
affects a population.

TODAY'S LEARNING GOAL

Effects of Ecosystem Change

I *can...*

use evidence to show
how a biological change
affects a population.

TODAY'S LEARNING GOAL

Effects of Ecosystem Change

I *can*...

argue what's likely to happen when a key part of an ecosystem changes.

TODAY'S LEARNING GOALS

Effects of Ecosystem Change

I *can*...

- use evidence to show how a physical change affects a population.
- use evidence to show how a biological change affects a population.
- argue what's likely to happen when a key part of an ecosystem changes.

TODAY'S STANDARD

Designs for Biodiversity

Evaluate competing
design solutions for
maintaining
biodiversity and
ecosystem services.

TODAY'S LEARNING GOAL

Designs for Biodiversity

I *can...*
compare two
solutions designed to
protect biodiversity.

TODAY'S LEARNING GOAL

Designs for Biodiversity

I *can...*

evaluate each solution
using evidence and criteria
like cost and impact.

TODAY'S LEARNING GOAL

Designs for Biodiversity

I *can...*

argue which solution
is most effective and
why.

TODAY'S LEARNING GOALS

Designs for Biodiversity

I *can*...

- compare two solutions designed to protect biodiversity.
- evaluate each solution using evidence and criteria like cost and impact.
- argue which solution is most effective and why.

TODAY'S STANDARD

Mutations

Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.

TODAY'S LEARNING GOAL

Mutations

I *can*...

model how a mutation changes a gene and the protein it codes for.

TODAY'S LEARNING GOAL

Mutations

I *can*...

describe how that change
can be harmful, helpful,
or have no effect.

TODAY'S LEARNING GOAL

Mutations

I *can...*
use my model to
explain how mutations
shape traits.

TODAY'S LEARNING GOALS

Mutations

I *can*...

- model how a mutation changes a gene and the protein it codes for.
- describe how that change can be harmful, helpful, or have no effect.
- use my model to explain how mutations shape traits.

TODAY'S STANDARD

Models for Genetic Variation

Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.

TODAY'S LEARNING GOAL

Models for Genetic Variation

I *can...*
model the difference
between asexual and
sexual reproduction.

TODAY'S LEARNING GOAL

Models for Genetic Variation

I *can...*

describe why asexual
reproduction makes
identical offspring.

TODAY'S LEARNING GOAL

Models for Genetic Variation

I *can...*
describe why sexual
reproduction makes
offspring with variation.

TODAY'S LEARNING GOALS

Models for Genetic Variation

I *can*...

- model the difference between asexual and sexual reproduction.
- describe why asexual reproduction makes identical offspring.
- describe why sexual reproduction makes offspring with variation.

TODAY'S STANDARD

Patterns in the Fossil Record

Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.

TODAY'S LEARNING GOAL

Patterns in the Fossil Record

I *can*...

analyze fossil data to
find patterns of
change over time.

TODAY'S LEARNING GOAL

Patterns in the Fossil Record

I *can*...

describe evidence of
existence, diversity, and
extinction in the fossil
record.

TODAY'S LEARNING GOAL

Patterns in the Fossil Record

I *can*...

use the patterns to
explain how life on
Earth has changed.

TODAY'S LEARNING GOALS

Patterns in the Fossil Record

I *can*...

- analyze fossil data to find patterns of change over time.
- describe evidence of existence, diversity, and extinction in the fossil record.
- use the patterns to explain how life on Earth has changed.

TODAY'S STANDARD

Comparative Anatomy

Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.

TODAY'S LEARNING GOAL

Comparative Anatomy

I *can...*

compare body structures
between modern animals
to find similarities.

TODAY'S LEARNING GOAL

Comparative Anatomy

I *can...*
compare modern
animals to their fossil
ancestors.

TODAY'S LEARNING GOAL

Comparative Anatomy

I *can...*

use my comparisons to
argue that organisms
share common ancestors.

TODAY'S LEARNING GOALS

*Comparative Anatomy***I** *can...*

- compare body structures between modern animals to find similarities.
- compare modern animals to their fossil ancestors.
- use my comparisons to argue that organisms share common ancestors.

TODAY'S STANDARD

Comparative Embryology

Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy.

TODAY'S LEARNING GOAL

Comparative Embryology

I *can...*
compare images of
embryos across
different species.

TODAY'S LEARNING GOAL

Comparative Embryology

I *can*...

find patterns of similarity
that aren't obvious in the
adult animals.

TODAY'S LEARNING GOAL

Comparative Embryology

I *can...*
use the patterns to
argue that these
species are related.

TODAY'S LEARNING GOALS

Comparative Embryology

I *can*...

- compare images of embryos across different species.
- find patterns of similarity that aren't obvious in the adult animals.
- use the patterns to argue that these species are related.

TODAY'S STANDARD

Genetic Variation for Survival

Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.

TODAY'S LEARNING GOAL

Genetic Variation for Survival

I *can*...

describe how variation
in a trait can help an
individual survive.

TODAY'S LEARNING GOAL

Genetic Variation for Survival

I *can...*

explain how surviving
individuals pass that
trait to their offspring.

TODAY'S LEARNING GOAL

Genetic Variation for Survival

I *can*...

use evidence to argue
how natural selection
shapes a population.

TODAY'S LEARNING GOALS

Genetic Variation for Survival

I *can*...

- describe how variation in a trait can help an individual survive.
- explain how surviving individuals pass that trait to their offspring.
- use evidence to argue how natural selection shapes a population.

TODAY'S STANDARD

Inheritance of Desired Traits

Gather and synthesize information about technologies that have changed the way humans influence the inheritance of desired traits in organisms.

TODAY'S LEARNING GOAL

Inheritance of Desired Traits

I *can...*

research how humans
have used selective
breeding to change traits
in plants or animals.

TODAY'S LEARNING GOAL

Inheritance of Desired Traits

I *can...*
describe newer
technologies that
influence inherited traits.

TODAY'S LEARNING GOAL

Inheritance of Desired Traits

I *can...*

explain the benefits
and risks of changing
organisms this way.

TODAY'S LEARNING GOALS

Inheritance of Desired Traits

I *can*...

- research how humans have used selective breeding to change traits in plants or animals.
- describe newer technologies that influence inherited traits.
- explain the benefits and risks of changing organisms this way.

TODAY'S STANDARD

Natural Selection & Traits

Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.

TODAY'S LEARNING GOAL

Natural Selection & Traits

I *can*...

use a graph or chart to
show how a trait spreads
through a population.

TODAY'S LEARNING GOAL

Natural Selection & Traits

I *can...*

explain how natural
selection causes some
traits to become more
common.

TODAY'S LEARNING GOAL

Natural Selection & Traits

I *can...*

explain how other traits
become less common at
the same time.

TODAY'S LEARNING GOALS

Natural Selection & Traits

I *can*...

- use a graph or chart to show how a trait spreads through a population.
- explain how natural selection causes some traits to become more common.
- explain how other traits become less common at the same time.

TODAY'S STANDARD

Earth-Sun-Moon System

Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.

TODAY'S LEARNING GOAL

Earth-Sun-Moon System

I *can...*

build a model of the
Earth, Sun, and Moon
system.

TODAY'S LEARNING GOAL

Earth-Sun-Moon System

I *can...*
use my model to
explain moon phases,
eclipses, and seasons.

TODAY'S LEARNING GOAL

Earth-Sun-Moon System

I *can...*

predict the next cycle
in each pattern.

TODAY'S LEARNING GOALS

Earth-Sun-Moon System

I *can*...

- build a model of the Earth, Sun, and Moon system.
- use my model to explain moon phases, eclipses, and seasons.
- predict the next cycle in each pattern.

TODAY'S STANDARD

Gravity & Our Solar System

Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.

TODAY'S LEARNING GOAL

Gravity & Our Solar System

I *can...*

model how gravity
holds planets in orbit
around the Sun.

TODAY'S LEARNING GOAL

Gravity & Our Solar System

I *can...*

describe how gravity
shapes galaxies.

TODAY'S LEARNING GOAL

Gravity & Our Solar System

I *can...*

use my model to predict
what would happen if
gravity suddenly
weakened.

TODAY'S LEARNING GOALS

Gravity & Our Solar System

I *can*...

- model how gravity holds planets in orbit around the Sun.
- describe how gravity shapes galaxies.
- use my model to predict what would happen if gravity suddenly weakened.

TODAY'S STANDARD

Scale Model of the Solar System

Analyze and interpret data to determine scale properties of objects in the solar system.

TODAY'S LEARNING GOAL

Scale Model of the Solar System

I *can...*

compare the size, distance,
and other properties of
objects in the solar system.

TODAY'S LEARNING GOAL

Scale Model of the Solar System

I *can...*

interpret data to put
the solar system in
proper scale.

TODAY'S LEARNING GOAL

Scale Model of the Solar System

I *can...*
use the scale to explain
why space is so much
bigger than it looks.

TODAY'S LEARNING GOALS

Scale Model of the Solar System

I *can*...

- compare the size, distance, and other properties of objects in the solar system.
- interpret data to put the solar system in proper scale.
- use the scale to explain why space is so much bigger than it looks.

TODAY'S STANDARD

Time Scale of Earth

Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history.

TODAY'S LEARNING GOAL

Time Scale of Earth

I *can...*

read evidence from layers
of rock to find clues
about Earth's history.

TODAY'S LEARNING GOAL

Time Scale of Earth

I *can...*
use the geologic time
scale to organize
major events in order.

TODAY'S LEARNING GOAL

Time Scale of Earth

I *can...*
explain how rock
strata show that
Earth is very old.

TODAY'S LEARNING GOALS

Time Scale of Earth

I *can*...

- read evidence from layers of rock to find clues about Earth's history.
- use the geologic time scale to organize major events in order.
- explain how rock strata show that Earth is very old.

TODAY'S STANDARD

Cycling of Earth's Materials

Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.

TODAY'S LEARNING GOAL

Cycling of Earth's Materials

I *can...*

build a model that shows
how Earth's materials
cycle through the rock
cycle.

TODAY'S LEARNING GOAL

Cycling of Earth's Materials

I *can...*

describe how energy from
inside the Earth and from
the Sun drives the cycling.

TODAY'S LEARNING GOAL

Cycling of Earth's Materials

I *can...*

use my model to
predict where a rock
might end up next.

TODAY'S LEARNING GOALS

Cycling of Earth's Materials

I *can*...

- build a model that shows how Earth's materials cycle through the rock cycle.
- describe how energy from inside the Earth and from the Sun drives the cycling.
- use my model to predict where a rock might end up next.

TODAY'S STANDARD

Geoscience Processes

Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.

TODAY'S LEARNING GOAL

Geoscience Processes

I *can...*

describe slow processes
like weathering and
erosion that change
Earth's surface.

TODAY'S LEARNING GOAL

Geoscience Processes

I *can...*
describe fast processes
like earthquakes and
volcanic eruptions.

TODAY'S LEARNING GOAL

Geoscience Processes

I *can...*

use evidence to explain
how these processes
shape the land at different
scales.

TODAY'S LEARNING GOALS

Geoscience Processes

I *can*...

- describe slow processes like weathering and erosion that change Earth's surface.
- describe fast processes like earthquakes and volcanic eruptions.
- use evidence to explain how these processes shape the land at different scales.

TODAY'S STANDARD

Past Plate Motions

Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.

TODAY'S LEARNING GOAL

Past Plate Motions

I *can...*
analyze evidence like
fossils, rock types,
and continent shapes.

TODAY'S LEARNING GOAL

Past Plate Motions

I *can...*
use that evidence to
show that the
continents have moved.

TODAY'S LEARNING GOAL

Past Plate Motions

I *can...*

explain how seafloor
patterns support
plate tectonics.

TODAY'S LEARNING GOALS

Past Plate Motions

I *can*...

- analyze evidence like fossils, rock types, and continent shapes.
- use that evidence to show that the continents have moved.
- explain how seafloor patterns support plate tectonics.

TODAY'S STANDARD

Cycling of Water

Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.

TODAY'S LEARNING GOAL

Cycling of Water

I *can...*

build a model that
shows the water
cycle.

TODAY'S LEARNING GOAL

Cycling of Water

I *can...*

describe how the Sun
and gravity drive the
cycle.

TODAY'S LEARNING GOAL

Cycling of Water

I *can...*

use my model to trace
one water molecule
through Earth's systems.

TODAY'S LEARNING GOALS

Cycling of Water

I *can*...

- build a model that shows the water cycle.
- describe how the Sun and gravity drive the cycle.
- use my model to trace one water molecule through Earth's systems.

TODAY'S STANDARD

Interactions of Air Masses

Collect data to provide evidence for how the motions and complex interactions of air masses result in changes in weather conditions.

TODAY'S LEARNING GOAL

Interactions of Air Masses

I *can...*

collect weather data
over time and look for
patterns.

TODAY'S LEARNING GOAL

Interactions of Air Masses

I *can...*
explain how moving
air masses cause
changes in weather.

TODAY'S LEARNING GOAL

Interactions of Air Masses

I *can...*
predict the weather
using what I see on a
weather map.

TODAY'S LEARNING GOALS

Interactions of Air Masses

I *can*...

- collect weather data over time and look for patterns.
- explain how moving air masses cause changes in weather.
- predict the weather using what I see on a weather map.

TODAY'S STANDARD

Unequal Heating of Earth

Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.

TODAY'S LEARNING GOAL

Unequal Heating of Earth

I *can...*

build a model that
shows how the Sun
heats Earth unevenly.

TODAY'S LEARNING GOAL

Unequal Heating of Earth

I *can...*

describe how rotation
and uneven heating drive
wind and ocean currents.

TODAY'S LEARNING GOAL

Unequal Heating of Earth

I *can...*

use my model to explain
why different regions
have different climates.

TODAY'S LEARNING GOALS

Unequal Heating of Earth

I *can*...

- build a model that shows how the Sun heats Earth unevenly.
- describe how rotation and uneven heating drive wind and ocean currents.
- use my model to explain why different regions have different climates.

TODAY'S STANDARD

Earth's Resource Distribution

Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.

TODAY'S LEARNING GOAL

Earth's Resource Distribution

I *can...*

describe why Earth's
resources are spread
out unevenly.

TODAY'S LEARNING GOAL

Earth's Resource Distribution

I *can...*
use evidence to explain
how geologic processes
put them where they are.

TODAY'S LEARNING GOAL

Earth's Resource Distribution

I *can...*

give examples of resources
that formed in specific
places for specific reasons.

TODAY'S LEARNING GOALS

Earth's Resource Distribution

I *can*...

- describe why Earth's resources are spread out unevenly.
- use evidence to explain how geologic processes put them where they are.
- give examples of resources that formed in specific places for specific reasons.

TODAY'S STANDARD

Forecast Catastrophic Events

Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.

TODAY'S LEARNING GOAL

Forecast Catastrophic Events

I *can...*

analyze data on past
natural hazards to
find patterns.

TODAY'S LEARNING GOAL

Forecast Catastrophic Events

I *can...*
use those patterns to
predict where future
events might happen.

TODAY'S LEARNING GOAL

Forecast Catastrophic Events

I *can...*

describe technologies that
help reduce the damage
from natural hazards.

TODAY'S LEARNING GOALS

Forecast Catastrophic Events

I *can*...

- analyze data on past natural hazards to find patterns.
- use those patterns to predict where future events might happen.
- describe technologies that help reduce the damage from natural hazards.

TODAY'S STANDARD

Minimizing Human Impact

Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

TODAY'S LEARNING GOAL

Minimizing Human Impact

I *can...*
identify a way humans
negatively affect the
environment.

TODAY'S LEARNING GOAL

Minimizing Human Impact

I *can...*
design a method to
monitor that impact.

TODAY'S LEARNING GOAL

Minimizing Human Impact

I *can...*
design a solution to
reduce that impact.

TODAY'S LEARNING GOALS

Minimizing Human Impact

I *can*...

- identify a way humans negatively affect the environment.
- design a method to monitor that impact.
- design a solution to reduce that impact.

TODAY'S STANDARD

Populations & Earth's Systems

Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

TODAY'S LEARNING GOAL

Populations & Earth's Systems

I *can...*

describe how human
population growth
affects Earth's resources.

TODAY'S LEARNING GOAL

Populations & Earth's Systems

I *can...*

describe how using more
resources per person
changes Earth's systems.

TODAY'S LEARNING GOAL

Populations & Earth's Systems

I *can...*

use evidence to argue
what could happen if
these trends continue.

TODAY'S LEARNING GOALS

Populations & Earth's Systems

I *can*...

- describe how human population growth affects Earth's resources.
- describe how using more resources per person changes Earth's systems.
- use evidence to argue what could happen if these trends continue.

TODAY'S STANDARD

Changing Global Temperatures

Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.

TODAY'S LEARNING GOAL

Changing Global Temperatures

I *can...*

ask questions about
the data on rising
global temperatures.

TODAY'S LEARNING GOAL

Changing Global Temperatures

I *can...*
examine evidence for
natural and human
causes of climate change.

TODAY'S LEARNING GOAL

Changing Global Temperatures

I *can...*

use the evidence to
explain what's driving
the temperature rise.

TODAY'S LEARNING GOALS

Changing Global Temperatures

I *can*...

- ask questions about the data on rising global temperatures.
- examine evidence for natural and human causes of climate change.
- use the evidence to explain what's driving the temperature rise.

TODAY'S STANDARD

Defining Design Problems

Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

TODAY'S LEARNING GOAL

Defining Design Problems

I *can...*
define a design
problem in clear,
specific language.

TODAY'S LEARNING GOAL

Defining Design Problems

I *can*...

list the criteria my solution must meet and the constraints I'm working under.

TODAY'S LEARNING GOAL

Defining Design Problems

I *can*...

describe how my solution
might impact people and
the environment.

TODAY'S LEARNING GOALS

Defining Design Problems

I *can*...

- define a design problem in clear, specific language.
- list the criteria my solution must meet and the constraints I'm working under.
- describe how my solution might impact people and the environment.

TODAY'S STANDARD

Evaluating Design Solutions

Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

TODAY'S LEARNING GOAL

Evaluating Design Solutions

I *can...*
compare several
design solutions to
the same problem.

TODAY'S LEARNING GOAL

Evaluating Design Solutions

I *can*...

use a chart or rubric
to evaluate each one
against the criteria.

TODAY'S LEARNING GOAL

Evaluating Design Solutions

I *can...*
argue which solution
best meets the criteria
and constraints.

TODAY'S LEARNING GOALS

Evaluating Design Solutions

I *can*...

- compare several design solutions to the same problem.
- use a chart or rubric to evaluate each one against the criteria.
- argue which solution best meets the criteria and constraints.

TODAY'S STANDARD

Comparing Design Solutions

Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.

TODAY'S LEARNING GOAL

Comparing Design Solutions

I *can...*
analyze test data from
several design
solutions.

TODAY'S LEARNING GOAL

Comparing Design Solutions

I *can...*
identify what worked
best in each one.

TODAY'S LEARNING GOAL

Comparing Design Solutions

I *can...*
combine the best
features into a new
and improved design.

TODAY'S LEARNING GOALS

Comparing Design Solutions

I *can*...

- analyze test data from several design solutions.
- identify what worked best in each one.
- combine the best features into a new and improved design.

TODAY'S STANDARD

Iterative Testing & Modification

Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

TODAY'S LEARNING GOAL

Iterative Testing & Modification

I *can...*
build a model of my
design and test it.

TODAY'S LEARNING GOAL

Iterative Testing & Modification

I *can...*
use data from each
test to modify and
improve the design.

TODAY'S LEARNING GOAL

Iterative Testing & Modification

I *can...*

describe how iteration
helps me move toward
the best solution.

TODAY'S LEARNING GOALS

Iterative Testing & Modification

I *can*...

- build a model of my design and test it.
- use data from each test to modify and improve the design.
- describe how iteration helps me move toward the best solution.