

# Sixth Grade

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. 6-PS1-4

- 1 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. 6-PS1-4

Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes. 6-PS1-6

- 2 Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes. 6-PS1-6

Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer. 6-PS3-3

- 3 Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer. 6-PS3-3

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. 6-PS4-1

- 4 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. 6-PS4-1

Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials. 6-PS4-2

- 5 Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials. 6-PS4-2

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**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.** 6-PS4-3

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**6 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.** 6-PS4-3

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**Conduct an investigation to provide evidence that living things are made of cells; either one cell or many, different numbers and types of cells.** 6-LS1-1

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**7 Conduct an investigation to provide evidence that living things are made of cells; either one cell or many, different numbers and types of cells.** 6-LS1-1

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**Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.** 6-LS1-2

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**8 Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.** 6-LS1-2

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**Use arguments supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.** 6-LS1-3

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**9 Use arguments supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.** 6-LS1-3

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**Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.** 6-LS1-8

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**10 Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.** 6-LS1-8

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**Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is**

**11 Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's history.** 6-ESS1-4

used to organize Earth's history. 6-ESS1-4

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Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process. 6-ESS2-1

**12** Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process. 6-ESS2-1

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Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales. 6-ESS2-2

**13** Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales. 6-ESS2-2

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Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions. 6-ESS2-3

**14** Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions. 6-ESS2-3

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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. 6-ESS3-1

**15** 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. 6-ESS3-1

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Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects. 6-ESS3-2

**16** Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects. 6-ESS3-2

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**Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, considering relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.** 6-ETS1-1

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**17 Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, considering relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.** 6-ETS1-1

**Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.** 6-ETS1-2

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**18 Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.** 6-ETS1-2

**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.** 6-ETS1-3

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**19 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.** 6-ETS1-3

**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.** 6-ETS1-4

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