



# ACHIEVEMENT LEVEL DESCRIPTORS

## Washington Comprehensive Assessment of Science

### Grade 5

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Science Assessment Team  
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## Grade 5 Level 2

A 5th grade student performing at **Level 2** applies, with support, science and engineering practices and crosscutting concepts to explain phenomena and design solutions to problems in the natural and the designed world. The student uses models and information to support arguments and explanations, to identify patterns in data, and to describe parts of systems. The student identifies the data to collect in an investigation in order to answer questions or to describe possible solutions to problems. The student uses data and basic computational thinking to support arguments and explanations about cause and effect relationships.

### **A student performing at Level 2 can do things like:**

1. Use a model and patterns in data to describe matter as made of particles and to describe that mixing different types of matter can result in new substances. (Derived from PS1)
2. Ask questions that can be investigated to provide evidence about the effects of balanced and unbalanced forces on the motion of an object. (Derived from PS2)
3. Use evidence and basic computational thinking to support an explanation about the relationship between speed and energy and about changes in energy when objects collide. (Derived from PS3)
4. Use a model to describe wave patterns and how light transfers information to the eye and causes objects to be seen. (Derived from PS4)
5. Use a model to describe patterns in the life cycles of organisms, and use evidence to support the argument that plants and animals need internal and external structures to live. (Derived from LS1)
6. Use a model to describe the movement of matter among living parts of an ecosystem. (Derived from LS2)
7. Identify patterns in data that provide evidence that plants and animals inherit traits and that traits can vary within a group of similar organisms. (Derived from LS3)
8. Identify data from fossils that provide evidence of the effects of environmental changes on the inherited traits of organisms that lived long ago and that supports an argument that some organisms survive better than others in a particular habitat. (Derived from LS4)
9. Use graphical displays of data to identify movements of the Earth and sun that result in daily and seasonal patterns in shadows, hours of daylight, and appearance of stars in the night sky. (Derived from ESS1)
10. Use graphical displays of data and information to identify seasonal weather patterns and patterns in climate in different regions of the world. (Derived from ESS2)
11. Identify evidence that supports an argument about how well a solution reduces the impact of a weather-related hazard. (Derived from ESS3)
12. Identify criteria for a successful solution to a problem caused by people's changing needs and wants. (Derived from ETS1)



## Grade 5 Level 3

A 5th grade student performing at **Level 3** effectively applies science and engineering practices and crosscutting concepts to explain phenomena and design solutions to problems in the natural and the designed world. The student develops and uses models and information to construct arguments and explanations and to identify and describe patterns in data and system characteristics. The student asks questions that can be investigated and designs solutions to problems that meet given criteria and constraints. The student uses data and mathematical and computational thinking to construct arguments and explanations about cause and effect relationships.

**In addition to the skills and knowledge demonstrated at Level 2, a student performing at Level 3 can do things like:**

1. Develop and use models and patterns in data to provide evidence that matter is made of particles and that mixing different types of matter can result in new substances. (Derived from PS1)
2. Ask questions and plan investigations to provide evidence about cause and effect relationships between forces and objects' motions. (Derived from PS2)
3. Use evidence and mathematical and computational thinking to construct an explanation about the relationship between speed and energy and to predict changes in energy when objects collide. (Derived from PS3)
4. Develop and use a model to describe wave patterns and how light transfers information to the eye and causes objects to be seen. (Derived from PS4)
5. Develop and use a model that describes patterns in the life cycles of organisms, and use evidence to construct an argument that plants and animals need internal and external structures to live. (Derived from LS1)
6. Develop and use a model to describe the movement of matter among living parts of an ecosystem. (Derived from LS2)
7. Describe how patterns in data provide evidence that plants and animals inherit traits and that there is variation among traits within a group of similar organisms. (Derived from LS3)
8. Describe how data from fossils provides evidence of the effects of environmental changes on the inherited traits of organisms that lived long ago, and use the data to construct an argument that some organisms survive better than others in a particular habitat. (Derived from LS4)
9. Make and use graphical displays of data to describe how movements of the Earth and sun result in daily and seasonal patterns in shadows, hours of daylight, and appearance of stars in the night sky. (Derived from ESS1)
10. Make and use graphical displays of data and information to describe seasonal weather patterns and patterns in climate in different regions of the world. (Derived from ESS2)
11. Use evidence to make an argument about how well multiple solutions reduce the impact of a weather-related hazard. (Derived from ESS3)
12. Identify criteria for success and constraints on a solution to a problem caused by people's changing needs and wants. (Derived from ETS1)



## Grade 5 Level 4

A 5th grade student performing at **Level 4** effectively, consistently, and appropriately applies science and engineering practices and crosscutting concepts to explain phenomena and design solutions to problems in the natural and the designed world. The student evaluates models and information and revises arguments and explanations by analyzing patterns in data, cause and effect relationships, and system interactions. The student conducts investigations to collect data in order to answer questions and uses criteria and constraints to evaluate solutions to a problem. The student uses mathematical and computational thinking and scientific reasoning to analyze and interpret data in order to evaluate arguments and explanations about cause and effect relationships.

**In addition to the skills and knowledge demonstrated at Level 3, a student performing at Level 4 can do things like:**

1. Use patterns in data to evaluate and revise models and plan investigations that provide evidence that matter is made of particles and that mixing different types of matter can result in new substances. (Derived from PS1)
2. Ask questions and plan investigations to provide evidence that can be used to construct arguments about cause and effect relationships between forces and objects' motions. (Derived from PS2)
3. Use evidence, mathematical and computational thinking, and scientific reasoning to evaluate an explanation about the relationship between speed and energy and to predict changes in energy when objects collide. (Derived from PS3)
4. Evaluate and revise a model that describes wave patterns, and use the model to explain how light transfers information to the eye and causes objects to be seen. (Derived from PS4)
5. Evaluate and revise a model that describes patterns in the life cycles of organisms, and use evidence and scientific reasoning to construct an argument that plants and animals need internal and external structures to live. (Derived from LS1)
6. Evaluate and revise a model that describes the movement of matter among living parts of an ecosystem. (Derived from LS2)
7. Explain, using scientific reasoning, how patterns in data provide evidence that plants and animals inherit traits and that there is variation among traits within a group of similar organisms. (Derived from LS3)
8. Describe, using scientific reasoning, how data from fossils provides evidence of the effects of environmental changes on the inherited traits of organisms that lived long ago, and use the data to evaluate an argument that some organisms survive better than others in a particular habitat. (Derived from LS4)
9. Make and evaluate graphical displays of data, and use scientific reasoning to describe how movements of the Earth and sun result in daily and seasonal patterns in shadows, hours of daylight, and appearance of stars in the night sky. (Derived from ESS1)
10. Make and use graphical displays of data and information to describe the causes of seasonal weather patterns and patterns in climate in different regions of the world. (Derived from ESS2)
11. Use evidence to make and evaluate an argument that compares how well multiple solutions reduce the impact of a weather-related hazard. (Derived from ESS3)
12. Use criteria and constraints to evaluate a solution to a problem caused by people's changing needs and wants. (Derived from ETS1)

