

**DIOCESE OF DES MOINES
SCIENCE
Grade-Level Expectations
Grades K-1-2**

STANDARD 1: The student will understand and experience science as inquiry.

The student will/can....

Benchmark

- K-2.Sci.S1.B1:** **Observe, record, and explain natural events.**
- Grade K: Observe natural events.
Grade 1: Observe and record natural events.
Grade 2: Observe, record, and explain natural events.

Benchmark

- K-2.Sci.S1.B2:** **Predict, collect, compare and contrast data from observations.**
- Grade K: State data collected from observations as a whole class and small groups.
Grade 1: Compare and contrast data collected from observations as a whole class and small groups.
Grade 2: Predict, collect, compare and contrast data from observations.

**DIOCESE OF DES MOINES
SCIENCE
Grade-Level Expectations
Grades K-1-2**

STANDARD 2: The student will understand and experience physical science.

The student will/can....

Benchmark

- K-2.Sci.S2.B1:** Communicate that all matter exists with different properties.
- Grade K: Recognize the properties of solids, liquids and gases.
- Grade 1: Compare and contrast differences in solids, liquids, and gases.
- Grade 2: Communicate that matter exists with different properties.

Benchmark

- K-2.Sci.S2.B2:** Describe different types of forces
- Grade K: Recognize that a force is needed to move something.
- Grade 1: Demonstrate that objects move with a force.
- Grade 2: Describe different types of forces.

**DIOCESE OF DES MOINES
SCIENCE
Grade-Level Expectations
Grades K-1-2**

STANDARD 3: The student will understand and experience life science.

The student will/can....

Benchmark

K-2.Sci.S3.B1: Summarize that all living things depend upon each other, their environment, and can change over time.

Grade K: Identify living things and non-livings and some changes among them.

Grade 1: Compare and contrast living and nonliving things.

Give examples of ways plants and animals depend on each other.

Grade 2: Summarize that all living things depend on each other, their environment, and can change over time.

**DIOCESE OF DES MOINES
SCIENCE
Grade-Level Expectations
Grades K-1-2**

STANDARD 4: The student will understand and experience earth and space science.

The student will/can....

Benchmark

- K-2.Sci.S4.B1:** **Demonstrate an understanding of the basic features of the earth.**
- Grade K: Name different bodies of water and landforms.
 - Grade 1: Compare and contrast different soil and rock types.
 - Grade 2: Demonstrate a basic understanding of the features of the earth

Benchmark

- K-2.Sci.S4.B2:** **Distinguish different types of weather.**
- Grade K: Identify daily and seasonal weather.
 - Grade 1: Determine the effects of the sun on the Earth's weather.
 - Grade 2: Distinguish different types of weather.

Benchmark

- K-2.Sci.S4.B3:** **Distinguish visible objects in space.**
- Grade K: Name characteristics of day and night.
 - Grade 1: Establish that the sun is a star and center of our solar system.
 - Grade 2: Distinguish visible objects in space.

**DIOCESE OF DES MOINES
SCIENCE
Grade-Level Expectations
Grades K-1-2**

STANDARD 5: The student will develop personal, social and ethical perspectives of science and health.

The student will/can....

Benchmark

- K-2.Sci.S5.B1:** **Develop knowledge of the human body, personal health care, and safety.**
- Grade K: Share ways to take care of the body and stay safe.
Grade 1: Identify ways to take care of the body and stay safe.
Grade 2: Develop knowledge of the human body, personal health care, and safety.

Benchmark

- K-2.Sci.S5.B2:** **Explain causes and effects of various forms of pollution.**
- Grade K: Explore ways to keep the earth clean.
Grade 1: Investigate ways to reduce, reuse, and recycle.
Grade 2: Examine causes and effects of various forms of pollution.

Benchmark

- K-2.Sci.S5.B3:** **Develop Christian values in relationship to the environment.**
- Grade K: Recognize that God created the world and we share it with others.
Grade 1: Communicate ways of conserving God's resources.
Grade 2: Develop Christian values in relationship to the environment.

**DIOCESE OF DES MOINES
SCIENCE
Grade-Level Expectations
Grades K-1-2**

STANDARD 6: The student will understand the history and nature of science.

The student will/can....

Benchmark

K-2.Sci.S6.B1: **Express science as a human endeavor throughout history.**

- Grade K: Name things scientist do.
- Grade 1: Name different kinds of scientific jobs.
- Grade 2: Express science as a human endeavor practiced throughout history.

Benchmark

K-2.Sci.S6.B2: **Compare and contrast natural events that have repeated patterns.**

- Grade K: Name natural events that have repeated patterns.
- Grade 1: Explain natural events that have repeated patterns.
- Grade 2: Compare and contrast natural events that have repeated patterns.

**DIOCESE OF DES MOINES
SCIENCE
Grade-Level Expectations
Grades K-1-2**

STANDARD 7: The student will be able to select and use appropriate technology in scientific activities.

The student will/can....

Benchmark

- K-2.Sci.S7.B1:** **Identify and use the appropriate technology in scientific activities.**
- Grade K: Use teacher-selected equipment for activity.
 - Grade 1: Identify the appropriate technology in scientific activities.
 - Grade 2: Identify and use the appropriate technology in scientific activities.

**DIOCESE OF DES MOINES
SCIENCE
Grade-Level Expectations
Grades 3-4-5**

STANDARD 1: The student will understand and experience science as inquiry.

The student will/can....

Benchmark

- 3-5.Sci.S1.B1:** **Conduct scientific investigations using the process of inquiry.**
- Grade 3: Ask questions and collect data with teacher guidance
Grade 4: Ask questions, collect data, communicate conclusions
Grade 5: Ask questions, collect data, communicate conclusions.

**DIOCESE OF DES MOINES
SCIENCE
Grade-Level Expectations
Grades 3-4-5**

STANDARD 2: The student will understand and experience physical science.

The student will/can....

Benchmark

3-5.Sci.S2.B1: Compare and contrast physical and chemical changes in matter and its properties

Grade 3: Identify physical changes in matter.

Grade 4: N/A

Grade 5: Compare and contrast physical and chemical changes in matter and its properties.

Benchmark

3-5.Sci.S2.B2: Compare and contrast different forms of energy

Grade 3: N/A

Grade 4: Compare and contrast different forms of energy.

Grade 5: N/A

Benchmark

3-5.Sci.S2.B3: Compare and contrast the relationship between force and motion.

Grade 3: Recognize the relationship between force, motion, and machines.

Grade 4: N/A

Grade 5: Compare and contrast the relationship between force and motion.

**DIOCESE OF DES MOINES
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Grade-Level Expectations
Grades 3-4-5**

STANDARD 3: The student will understand and experience life science.

The student will/can....

Benchmark

3-5.Sci.S3.B1: **Demonstrate the characteristics of living things.**

- Grade 3: Identify what living things need to survive.
- Grade 4: Identify examples of adaptations in living things.
- Grade 5: Demonstrate the characteristics of living things.

Benchmark

3-5.Sci.S3.B2: **Evaluate the relationships between organisms and their environment.**

- Grade 3: Explain the relationships between organisms and their environment.
- Grade 4: Demonstrate the relationships between organisms and their environment.
- Grade 5: Evaluate the relationships between organisms and their environment.

**DIOCESE OF DES MOINES
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Grade-Level Expectations
Grades 3-4-5**

STANDARD 4: The student will understand and experience earth and space science.

The student will/can....

Benchmark

3-5.Sci.S4.B1: Categorize the processes that shape the earth.

Grade 3: N/A

Grade 4: Identify some of the forces that change earth's surface.

Recognize layers of the earth and determine the processes that shape the Earth.

Categorize the processes that shape the earth.

Grade 5: N/A

Benchmark

3-5.Sci.S4.B2: Describe the relationship of weather/climate to changes in the earth's atmosphere.

Grade 3: N/A

Grade 4: N/A

Grade 5: Identify various weather conditions.

Determine the causes of various weather conditions.

: Describe the relationship of weather/climate to changes in the earth's atmosphere.

Benchmark

3-5.Sci.S4.B3: Demonstrate knowledge of the properties, movements, and locations of objects in our solar system

Grade 3: Explain the relationship between the earth and moon.

Describe characteristics of objects in our solar system.

Demonstrate knowledge of the properties, movements, and locations of objects in our solar system.

Grade 4: N/A

Grade 5: N/A

**DIOCESE OF DES MOINES
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Grades 3-4-5**

STANDARD 5: The student will develop personal, social and ethical perspectives of science and health.

The student will/can....

Benchmark

3-5.Sci.S5.B1: **Demonstrate understanding of the basic structure, function, and connections between body systems and personal health issues.**

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| Grade 3: | Identify basic structure, function, and connections between skin, hair and nails (integumentary system) and personal health issues. |
| Grade 4: | Identify basic structure, function and connections between skeletal and muscular system and personal health issues. |
| Grade 5: | Identify basic structure, function and connections between cardiovascular and respiratory system and personal health issues. |

Benchmark

3-5.Sci.S5.B2: **Demonstrate the connection between Christian ethics and environmental stewardship.**

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|----------|------------------------------------------------------------------------------------|
| Grade 3: | Define stewardship in relationship to the environment. |
| Grade 4: | Describe the connections between Christian ethics and environmental stewardship. |
| Grade 5: | Demonstrate the connection between Christian ethics and environmental stewardship. |

**DIOCESE OF DES MOINES
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Grade-Level Expectations
Grades 3-4-5**

STANDARD 6: The student will understand the history and nature of science.

The student will/can....

Benchmark

- 3-5.Sci.S6.B1:** Draw conclusions about science as a human endeavor throughout history.
- Grade 3: Identify famous scientists and their contributions to science knowledge today.
- Grade 4: Connect scientists to the nature of scientific study.
- Grade 5: Draw conclusions about science as a human endeavor throughout history.

Benchmark

- 3-5.Sci.S 6B.2:** Demonstrate that there are cycles that occur naturally.
- Grade 3: Recognize that there are cycles that occur naturally.
- Grade 4: Compare and contrast that there are cycles that occur naturally.
- Grade 5: Demonstrate that there are cycles that occur naturally.

**DIOCESE OF DES MOINES
SCIENCE
Grade-Level Expectations
Grades 3-4-5**

STANDARD 7: The student will able to select and use the appropriate technology in scientific activities.

The student will/can....

Benchmark

- 3-5.Sci.S7.B1:** **Evaluate and use the appropriate technology in scientific activities.**
Grade 3: Recognize resources/tools that are available for use in scientific activities.
Grade 4: Integrate resources/tools into scientific activities.
Grade 5: Evaluate and use appropriate resources/tools for a specific science activity.

**DIOCESE OF DES MOINES
SCIENCE
Expectations
Grades 6-7-8**

STANDARD 1: The student will understand and experience science as inquiry.

The student will/can....

Benchmark

6-8.Sci.S1.B1: Design and conduct scientific investigations using the process of inquiry.

- Grade 6: Design and conduct an experiment with appropriate guidance.
- Grade 7: Design and conduct an experiment as a group.
- Grade 8: Design and conduct an experiment working independently.

Benchmark

6-8.Sci.S1.B2: Recognize and analyze explanations and predictions.

- Grade 6: Predict and explain the outcomes of an investigation.
- Grade 7: Record and analyze data to develop a conclusion.
- Grade 8: Record and analyze data to develop a conclusion.
Revise and assess the investigation.

**DIOCESE OF DES MOINES
SCIENCE
Expectations
Grades 6-7-8**

STANDARD 2: The student will understand and experience physical science.

Physical Science

The student will/can....

Benchmark

6-8.Sci.S2.B1: Compare and contrast the states of matter and their properties.

Compare and contrast the motion, energy and spacing of molecules in each of the four states of matter.

Compare and contrast physical and chemical changes and their relationship to the conservation of matter and energy.

Demonstrate understanding of elements, compounds, mixtures, and solutions and their properties.

Benchmark

6-8.Sci.S2.B2: Identify forces and the effect of the net force on the motion of an object.

Identify forces and the effect of the net force on the motion of an object.

Identify the appropriate law of motion.

**DIOCESE OF DES MOINES
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Expectations
Grades 6-7-8**

STANDARD 3: The student will understand and experience life science.

Life Science

The student will/can....

Benchmark

6-8.Sci.S3.B1: **Explain the relationships between structure and function in living systems.**

Classify the structure and interrelationships among cells, tissues, organs, systems, and organisms.

Benchmark

6-8.Sci.S3.B2: **Describe and demonstrate the principles of heredity in living organisms.**

Apply the principles of heredity by predicting the characteristics of offspring in plants and animals.

Benchmark

6-8.Sci.S3.B3: **Explain concepts of diversity and adaptations of organisms.**

Explain how organisms adapt to their environment over time.
Explain how adaptations lead to more diversity of organisms.

Benchmark

6-8.Sci.S3.B4: **Demonstrate and describe how organisms relate to each other and their environment.**

Explain how changes in environmental conditions can affect the survival of individual organisms and entire species.

**DIOCESE OF DES MOINES
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Grades 6-7-8**

STANDARD 4: The student will understand and experience earth and space science.

Earth and Space Science

The student will/can....

Benchmark

6-8.Sci.S4.B1: Demonstrate understanding of natural processes that affect and shape the Earth.

Demonstrate understanding of the earth's history based on physical evidence.

Demonstrate understanding of the structure of the earth system and the processes that change the earth and its surface

Demonstrate understanding of the earth's atmospheric properties and how they influence weather and climate

Benchmark

6-8.Sci.S4.B2: Demonstrate understanding of the essential ideas about the composition, structure, scale and motion of objects within the universe.

Demonstrate understanding of the essential ideas about the composition, structure, scale and motion of objects within the universe.

**DIOCESE OF DES MOINES
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Grades 6-7-8**

STANDARD 5: The student will develop personal, social and ethical perspectives of science and health.

The student will/can....

Benchmark

6-8.Sci.S5.B1: Demonstrate understanding of the basic structure, function, and connections between body systems and personal health issues.

Identify basic structure, function, and connections between digestive and excretory system and personal health issues.

Identify basic structure, function and connections between nervous system and personal health issues.

Identify basic structure, function and connections between endocrine and lymphatic system and personal health issues.

Benchmark

6-8.Sci.S5.B2: Draw conclusions relating Christian ethics to scientific progress and technology.

Grade 6: Recognize our Christian ethics involves the responsible use of scientific progress and technology.

Grade 7: Apply Christian ethics to specific issues involving scientific progress and technology.

Grade 8: Draw conclusions relating Christian ethics to scientific progress and technology.

**DIOCESE OF DES MOINES
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Expectations
Grades 6-7-8**

STANDARD 6: The student will understand the history and nature of science.

The student will/can....

Benchmark

6-8.Sci.S6.B1: Evaluate the progression of historical scientific developments that led to present-day knowledge.

Grade 6: Recognize that current scientific knowledge has evolved over time.

Grade 7: Develop the relationship between science and technology. Correlate a current scientific theory with its development through time.

Grade 8: Evaluate the progression of historical scientific developments that led to present-day knowledge.

Benchmark

6-8.Sci.S6.B2: Analyze the different forms of energy and explain the process of energy transfer.

List and identify different forms of energy and be able to describe how energy is transferred from one form to another.

Benchmark

6-8.Sci.S 6B.3: Demonstrate how cycles occur naturally.

Grade 6: Describe cycles that occur naturally.

Grade 7: Compare and contrast cycles that occur naturally.

Grade 8: Demonstrate how cycles occur naturally.

**DIOCESE OF DES MOINES
SCIENCE
Expectations
Grades 6-7-8**

STANDARD 7: The student will be able to select and use the appropriate technology in scientific activities.

The student will/can....

Benchmark

6-8.Sci.S7.B1: Select and use the appropriate technology in scientific inquiry.

- Grade 6: Identify, choose, and practice using the appropriate scientific apparatus to gather and process data.
- Grade 7: Identify, choose, and use the appropriate scientific apparatus to gather and process data with accuracy and precision.
- Grade 8: Select and use the appropriate scientific apparatus to gather and process data with accuracy and precision.