

## OCPS BENCHMARK TASK ANALYSES

**Subject Area:** Science  
**Grade:** 3  
**Body of Knowledge:** The Nature of Science  
**Big Idea 1:** The Practice of Science

Benchmark Codes	BENCHMARKS
SC.3.N.1.1	Raise questions about the natural world, investigate them individually and in teams through free exploration and systematic investigations, and generate appropriate explanations based on those explorations.
SC.3.N.1.2	Compare the observations made by different groups using the same tools and seek reasons to explain the differences across groups.
SC.3.N.1.3	Keep records as appropriate, such as pictorial, written, or simple charts and graphs, of investigations conducted.
SC.3.N.1.4	Recognize the importance of communication among scientists.
SC.3.N.1.5	Recognize that scientists question, discuss, and check each other's evidence and explanations.
SC.3.N.1.6	Infer based on observation.
SC.3.N.1.7	Explain that empirical evidence is information, such as observations or measurements, that is used to help validate explanations of natural phenomena.

Benchmark Codes	TASK ANALYSES
SC.3.N.1.1	The student ... <ul style="list-style-type: none"> <li>• poses and investigates questions individually and collaboratively through free exploration and systematic investigations.</li> <li>• draws conclusions based on the results of the explorations.</li> </ul>
SC.3.N.1.2	The student ... <ul style="list-style-type: none"> <li>• works in a group using the same tools as other groups to gather common data.</li> <li>• compares groups' data and explains differences.</li> </ul>
SC.3.N.1.3	The student ... <ul style="list-style-type: none"> <li>• records in a science notebook, pictorial or written information or simple charts and graphs of investigations conducted.</li> </ul>
SC.3.N.1.4	The student ... <ul style="list-style-type: none"> <li>• understands the importance of communicating results.</li> </ul>
SC.3.N.1.5	The student ... <ul style="list-style-type: none"> <li>• understands that scientists question, discuss, and check each other's evidence and explanations.</li> </ul>
SC.3.N.1.6	The student ... <ul style="list-style-type: none"> <li>• infers based on observation.</li> </ul>
SC.3.N.1.7	The student ... <ul style="list-style-type: none"> <li>• explains that empirical evidence is information, such as observations or measurements, that is used to help validate explanations of natural phenomena.</li> </ul>



**Subject Area:** Science  
**Grade:** 3  
**Body of Knowledge:** The Nature of Science  
**Big Idea 3:** The Role of Theories, Laws, Hypotheses, and Models

Benchmark Codes	BENCHMARKS
SC.3.N.3.1	Recognize that words in science can have different or more specific meanings than their use in everyday language; for example, energy, cell, heat/cold, and evidence.
SC.3.N.3.2	Recognize that scientists use models to help understand and explain how things work.
SC.3.N.3.3	Recognize that all models are approximations of natural phenomena; as such, they do not perfectly account for all observations.

Benchmark Codes	TASK ANALYSES
SC.3.N.3.1	The student ... <ul style="list-style-type: none"> <li>• understands that words in science can have different or more specific meanings than their use in everyday language; e.g., energy, cell, heat/cold, and evidence.</li> </ul>
SC.3.N.3.2	The student ... <ul style="list-style-type: none"> <li>• uses models to help understand and explain how things work.</li> </ul>
SC.3.N.3.3	The student ... <ul style="list-style-type: none"> <li>• recognizes that models are useful in science, but they are only approximations and do not perfectly account for all observations.</li> </ul>



**Subject Area:** Science  
**Grade:** 3  
**Body of Knowledge:** Earth and Space Science  
**Big Idea 5:** Earth in Space and Time

Benchmark Codes	BENCHMARKS
SC.3.E.5.1	Explain that stars can be different; some are smaller, some are larger, and some appear brighter than others; all except the Sun are so far away that they look like points of light.
SC.3.E.5.2	Identify the Sun as a star that emits energy; some of it in the form of light.
SC.3.E.5.3	Recognize that the Sun appears large and bright because it is the closest star to Earth.
SC.3.E.5.4	Explore the Law of Gravity by demonstrating that gravity is a force that can be overcome.
SC.3.E.5.5	Investigate that the number of stars that can be seen through telescopes is dramatically greater than those seen by the unaided eye.

Benchmark Codes	TASK ANALYSES
	<b>The student ...</b>
SC.3.E.5.1	<ul style="list-style-type: none"> <li>• understands that stars are different.</li> <li>• observes that there are stars in the sky that are different sizes.</li> <li>• identifies the Sun as a medium-sized star when compared to other stars.</li> <li>• recognizes that some stars appear brighter than others.</li> <li>• understands that stars are so far away that they look like points of light.</li> </ul>
SC.3.E.5.2	<ul style="list-style-type: none"> <li>• identifies the Sun as a star that emits energy, some of it in the form of light.</li> </ul>
SC.3.E.5.3	<ul style="list-style-type: none"> <li>• recognizes that the Sun appears large and bright because it is the closest star to Earth.</li> </ul>
SC.3.E.5.4	<ul style="list-style-type: none"> <li>• demonstrates that gravity is a force that can be overcome.</li> </ul>
SC.3.E.5.5	<ul style="list-style-type: none"> <li>• investigates that the number of stars that can be seen through telescopes is dramatically greater than those seen by the unaided eye.</li> </ul>



**Subject Area:** Science  
**Grade:** 3  
**Body of Knowledge:** Earth and Space Science  
**Big Idea 6:** Earth Structures

Benchmark Codes	BENCHMARKS
SC.3.E.6.1	Demonstrate that radiant energy from the Sun can heat objects and when the Sun is not present may be lost.

Benchmark Codes	TASK ANALYSES
SC.3.E.6.1	The student ... <ul style="list-style-type: none"> <li>• investigates and understands that objects absorb and release heat.</li> <li>• understands that the Sun emits heat.</li> <li>• investigates that objects heated by the Sun can lose heat when the Sun is not present.</li> </ul>



**Subject Area:** Science  
**Grade:** 3  
**Body of Knowledge:** Physical Science  
**Big Idea 8:** Properties of Matter

Benchmark Codes	BENCHMARKS
SC.3.P.8.1	Measure and compare temperatures of various samples of solids and liquids.
SC.3.P.8.2	Measure and compare the mass and volume of solids and liquids.
SC.3.P.8.3	Compare materials and objects according to properties such as size, shape, color, texture, and hardness.

Benchmark Codes	TASK ANALYSES
SC.3.P.8.1	<p>The student ...</p> <ul style="list-style-type: none"> <li>uses a thermometer to measure and graph the temperatures of various solids (e.g., soil, sand, rice, beans, clay, etc.).</li> <li>compares and contrasts the temperatures of various solids.</li> <li>uses a thermometer to measure and graph the temperatures of various liquids (e.g., water, soda, milk, orange juice, hand soap, vinegar).</li> <li>compares and contrasts the temperatures of various liquids.</li> </ul>
SC.3.P.8.2	<ul style="list-style-type: none"> <li>uses appropriate science tools to measure the mass and volume of various solids and liquids and records the data.</li> <li>observes and compares the mass and volume of solids and liquids.</li> </ul>
SC.3.P.8.3	<ul style="list-style-type: none"> <li>compares materials and objects according to properties, such as size, shape, color, texture, and hardness.</li> </ul>



**Subject Area:** Science  
**Grade:** 3  
**Body of Knowledge:** Physical Science  
**Big Idea 9:** Changes in Matter

Benchmark Codes	BENCHMARKS
SC.3.P.9.1	Describe the changes water undergoes when it changes state through heating and cooling by using familiar scientific terms such as melting, freezing, boiling, evaporation, and condensation.

Benchmark Codes	TASK ANALYSES
SC.3.P.9.1	The student ... <ul style="list-style-type: none"> <li>• observes and describes ice melting.</li> <li>• observes and describes water freezing.</li> <li>• observes and describes water boiling.</li> <li>• observes and describes water evaporating.</li> <li>• observes and describes water vapor condensing.</li> <li>• records these changes in a science notebook, using the words melting, freezing, boiling, evaporation, and condensation.</li> </ul>



**Subject Area:** Science  
**Grade:** 3  
**Body of Knowledge:** Physical Science  
**Big Idea 10:** Forms of Energy

Benchmark Codes	BENCHMARKS
SC.3.P.10.1	Identify some basic forms of energy such as light, heat, sound, electrical, and mechanical.
SC.3.P.10.2	Recognize that energy has the ability to cause motion or create change.
SC.3.P.10.3	Demonstrate that light travels in a straight line until it strikes an object or travels from one medium to another.
SC.3.P.10.4	Demonstrate that light can be reflected, refracted, and absorbed.

Benchmark Codes	TASK ANALYSES
SC.3.P.10.1	The student ... <ul style="list-style-type: none"> <li>recognizes that energy comes in many different forms.</li> <li>identifies forms of energy, such as light, heat, sound, electrical, and mechanical.</li> </ul>
SC.3.P.10.2	The student ... <ul style="list-style-type: none"> <li>recognizes that energy has the ability to cause motion or create change.</li> </ul>
SC.3.P.10.3	The student ... <ul style="list-style-type: none"> <li>demonstrates that light travels in a straight line until it strikes an object or travels from one medium to another.</li> </ul>
SC.3.P.10.4	The student ... <ul style="list-style-type: none"> <li>demonstrates that light can be reflected, refracted, and absorbed.</li> </ul>

**Subject Area:** Science  
**Grade:** 3  
**Body of Knowledge:** Physical Science  
**Big Idea 11:** Energy Transfer and Transformations

Benchmark Codes	BENCHMARKS
SC.3.P.11.1	Investigate, observe, and explain that things that give off light often also give off heat.
SC.3.P.11.2	Investigate, observe, and explain that heat is produced when one object rubs against another, such as rubbing one's hands together.

Benchmark Codes	TASK ANALYSES
SC.3.P.11.1	The student ... <ul style="list-style-type: none"> <li>investigates, observes, and explains that things that give off light often give off heat.</li> </ul>
SC.3.P.11.2	The student ... <ul style="list-style-type: none"> <li>investigates, observes, and explains that heat is produced when one object rubs against another (e.g., rubbing one's hands together, sanding wood).</li> </ul>



**Subject Area:** Science  
**Grade:** 3  
**Body of Knowledge:** Life Science  
**Big Idea 14:** Organization and Development of Living Organisms

Benchmark Codes	BENCHMARKS
SC.3.L.14.1	Describe structures in plants and their roles in food production, support, water and nutrient transport, and reproduction.
SC.3.L.14.2	Investigate and describe how plants respond to stimuli (heat, light, gravity), such as the way plant stems grow toward light and their roots grow downward in response to gravity.

Benchmark Codes	TASK ANALYSES
SC.3.L.14.1	The student ... <ul style="list-style-type: none"> <li>• describes leaves as the structure for food production.</li> <li>• describes stems or trunks and roots as the structures for support.</li> <li>• describes roots and stems or trunks as the structures for water and nutrient transport.</li> <li>• describes flowers, cones, or spores as the structures for reproduction.</li> </ul>
SC.3.L.14.2	The student ... <ul style="list-style-type: none"> <li>• predicts, investigates, and describes how plants respond to heat.</li> <li>• predicts, investigates, and describes how plants respond to light.</li> <li>• predicts, investigates, and describes how plants respond to gravity.</li> </ul>



**Subject Area:** Science  
**Grade:** 3  
**Body of Knowledge:** Life Science  
**Big Idea 15:** Diversity and the Evolution of Living Organisms

Benchmark Codes	BENCHMARKS
SC.3.L.15.1	Classify animals into major groups (mammals, birds, reptiles, amphibians, fish, arthropods, vertebrates and invertebrates, those having live births and those which lay eggs) according to their physical characteristics and behaviors.
SC.3.L.15.2	Classify flowering and nonflowering plants into major groups such as those that produce seeds, or those like ferns and mosses that produce spores, according to their physical characteristics.

Benchmark Codes	TASK ANALYSES
SC.3.L.15.1	<p><b>The student ...</b></p> <ul style="list-style-type: none"> <li>• classifies animals as vertebrates or invertebrates.</li> <li>• classifies animals as mammals, birds, reptiles, amphibians, fish, or arthropods.</li> <li>• identifies physical characteristics of mammals, birds, reptiles, amphibians, fish, and arthropods, such as hair, wings, etc.</li> <li>• identifies behavioral characteristics of mammals, birds, reptiles, amphibians, fish, and arthropods, such as raising young, migrating, etc.</li> </ul>
SC.3.L.15.2	<ul style="list-style-type: none"> <li>• observes plants that produce seeds (e.g., grasses, orange trees, conifers)</li> <li>• observes plants that produce spores (e.g., ferns, mosses)</li> <li>• classifies plants as flowering (e.g., magnolia trees, azaleas) or non-flowering (e.g., mosses, conifers such as bald Cypress trees or pine trees) according to their physical characteristics.</li> </ul>



**Subject Area:** Science  
**Grade:** 3  
**Body of Knowledge:** Life Science  
**Big Idea: 17** Interdependence

Benchmark Codes	BENCHMARKS
SC.3.L.17.1	Describe how animals and plants respond to changing seasons.
SC.3.L.17.2	Recognize that plants use energy from the Sun, air and water to make their own food.

Benchmark Codes	TASK ANALYSES
SC.3.L.17.1	The student ... <ul style="list-style-type: none"> <li>• observes, records, and describes how animals and plants change during different seasons.</li> </ul>
SC.3.L.17.2	The student ... <ul style="list-style-type: none"> <li>• recognizes that plants use energy from the Sun, air and water to make their own food.</li> </ul>

