

Oakley Union Elementary
School District
(O.U.E.S.D.)

Kid-Friendly
California
Standards & Benchmarks
for Science

Checklist Format



**Kid-Friendly CA Standards and Benchmarks for Science for
Kindergarten Students @ Oakley Union Elementary School District**

Physical Sciences

- 1.0 I know that objects can be looked at carefully, measured, and their actions can be guessed/predicted.
- 1.a I can describe objects by what they are made of, how they look, and how they are used.
- 1.b I know that water has different forms and can be a liquid or a solid and can change back and forth.
- 1.c I know that water in a container can evaporate into the air if the lid is not on.

Life Sciences

- 2.0 I know the world has many kinds of plants and animals.
- 2.a I know how to observe and tell about plants and animals based on how they look and how they act.
- 2.b I know in stories sometimes authors show plants and animals behaving like people and this is not real.
- 2.c I can tell about the important parts of plants and animals.

Earth Sciences

- 3.0 I know our Earth is made of land, air, and water.
- 3.a I can talk about landforms and bodies of water on Earth.
- 3.b I know that weather changes between days and across seasons and affects nature and people.
- 3.c I can tell about the things from nature that people use everyday. I know we must take care of our Earth by recycling and reusing its resources.

Investigation and Experimentation

- 4.0 I know a scientist asks good questions and carefully explores. I can observe, predict, communicate, measure, put things in order, compare, classify, and record data.
- 4.a I use all of my senses when I observe an object.
- 4.b I use describing words to tell about an object.
- 4.c I use direction words to describe where an object is.
- 4.d I can compare and sort objects by ways they are alike.
- 4.e I can share what I see using words and pictures.

**OUESD Kid-Friendly @ Home CA Standards and Benchmarks
Science for 1st Grade Students**

Physical Sciences

- 1.0 I know that matter is anything that takes up space and it comes in 3 different forms (states); solids, liquids and gases.
- 1.a I can use my senses to describe and talk about the size, shape, hardness and texture of an object.
- 1.b I know and can describe how an object can change its form when we mix it with something else, cool or heat it.

Life Sciences

- 2.0 Plants and animals need certain things to survive.
- 2.a Plants and animals come in different shapes, sizes and with special features that help them survive in different types of environments or habitats.
- 2.b I know plants need light, air, water, and soil to live and animals need food, water, air and shelter.
- 2.c I know that animals use plants and other animals as a source of food and/or shelter.
- 2.d I know that the shape of an animal's teeth can tell you what it eats.
- 2.e I know that the leaves on a plant use sunlight and air to make food and the roots of a plant take in water and nutrients from the soil.

Earth Sciences

- 3.0 I can observe and talk about weather.
- 3.a I can use tools such as a thermometer or weather vane to measure and record weather changes from day to day.
- 3.b I know that weather can change from day to day but that there is a pattern of weather that we can count on during each season.
- 3.c I know the sun warms the land, air, and water.

Investigation and Experimentation

- 4.0 I know science is a way of asking questions about the world. I can use the skills of a scientist to explore the world around me. I can observe, predict, communicate, measure, put things in order, compare, classify, and record data.
- 4.a I can explain and share my findings by drawing detailed pictures.
- 4.b I can use numbers, pictures and words to share what I have seen or experienced.
- 4.c I can make a bar graph to show what I have observed.
- 4.d I can observe and describe the location of an object.
- 4.e I am learning to make new observations when I find that 2 descriptions of the same object or event do not match.

**OUESD Kid-Friendly @ Home CA Standards and Benchmarks
Science for 2nd Grade Students**

Physical Sciences

1.0 I know that objects can be looked at carefully, measured, and their actions can be guessed/predicted.

- 1.1 *I can describe objects by what they are made of, how they look, and how they are used.*
- 1.2 *I know that water has different forms and can be a liquid or a solid and can change back and forth.*
- 1.3 *I know that water in a container can evaporate into the air if the lid is not on.*

Life Sciences

2.0 I know the world has many kinds of plants and animals.

- 2.a *I know how to observe and tell about plants and animals based on how they look and how they act.*
- 2.b *I know in stories sometimes authors show plants and animals behaving like people and this is not real.*
- 2.c *I can tell about the important parts of plants and animals.*

Earth Sciences

3.0 I know our Earth is made of land, air, and water.

- 3.a *I can talk about landforms and bodies of water on Earth.*
- 3.b *I know that weather changes between days and across seasons and affects nature and people.*
- 3.c *I can tell about the things from nature that people use everyday. I know we must take care of our Earth by recycling and reusing its resources.*

Investigation and Experimentation

4.0 I know a scientist asks good questions and carefully explores. I can observe, predict, communicate, measure, put things in order, compare, classify, and record data.

- 4.a *I use all of my senses when I observe an object.*
- 4.b *I use describing words to tell about an object.*
- 4.c *I use direction words to describe where an object is.*
- 4.d *I can compare and sort objects by ways they are alike.*
- 4.e *I can share what I see using words and pictures.*

OUESD Kid-Friendly @ Home CA Standards and Benchmarks
Science for 3rd Grade Students

Physical Sciences

- 1.0 I know energy is the ability to do work and that matter occupies space in the form of a solid, liquid, or gas.
- 1.a I know that the Sun is a source of energy and it comes in the form of light.
- 1.b I know sources of stored energy can come in many forms such as food, fuel, and batteries.
- 1.c I know machines and living things can change stored energy to motion and heat.
- 1.d I know energy can be carried from one place to another by waves, and by moving objects.
- 1.e I know matter has 3 forms; solid, liquid and gas.
- 1.f I know that evaporation and melting are changes that happen when objects are heated.
- 1.g I know that when 2 or more substances are mixed the result is a new substance with its own new properties.
- 1.h I know matter is made up of small particles called atoms that can not be seen by the human eye.
- 1.i I know that elements are the building blocks of matter and that a periodic table is a chart that displays information about the elements.

- 2.0 I know light is a form of energy and that it travels in a straight path.
- 2.a I know that an object can block light causing a shadow.
- 2.b I know that when light hits a smooth surface such as a mirror, a clear image is reflected.
- 2.c I know that the color of the light that bounces off an object gives the object its color.
- 2.d I know I see an object when reflected light enters my eyes.

Life Sciences

- 3.0 I know that when a living thing is able to change its looks or behavior it may improve its ability to survive in a specific environment.
- 3.a I know that there are specific parts of plants and animals that help them get what they need and that special features help them survive.
- 3.b I can name plants and animals that live in different kinds of environments.
- 3.c I know that living things can change their environment in both helpful and harmful ways.
- 3.d I know that environments can change in many ways and for many reasons and that living things respond to the changes in different ways.
- 3.e I know that extinct means that a living thing no longer exists because it was not able to change in order to survive its new environment. Fossils found show that living things from the past resemble living things of today.

OUESD Kid-Friendly @ Home CA Standards and Benchmarks
Science for 3rd Grade Students

Earth Sciences

- 4.0 I know that objects in the sky appear to move depending on the seasons.
- 4.a I know that patterns of stars are called constellations and they stay the same, although they appear to move across the sky nightly, and different stars can be seen in different seasons.
- 4.b I know what causes the phases of the moon.
- 4.c I know and can talk about how a telescope is a tool for making distant objects appear closer, larger and clearer to the human eye.
- 4.d I know that Earth is one of many planets that travel around the Sun and the Moon travels around the Earth.
- 4.e I know that depending on the time of day and the season of the year, the Sun's position in the sky can appear to have changed.

Investigation and Experimentation
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- 5.0 I know that progress in science happens when questions are asked and the careful investigations are conducted. I can observe, predict, communicate, measure, put things in order, compare, classify and record data to find out more about a topic.
- 5.a I know that the results of similar scientific investigations do not always turn out exactly the same because of differences in the things being investigated, methods being used or uncertainty in the observation. I know scientists often repeat observations to get accurate results.
- 5.b I know that in science I must understand the difference between facts and opinions and that scientist must have evidence to support their ideas.
- 5.c I can use numerical information to talk about and compare objects, events and measurements.
- 5.d I can predict what the result of an investigation will be and then compare my idea to the actual results.
- 5.e I can collect information and use it to help me come up with a logical explanation of why something happened.

**OUESD Kid-Friendly @ Home CA Standards and Benchmarks
Science for 4th Grade Students**

Physical Sciences

- 1.0 I know electricity and magnetism are related effects that have many useful applications in everyday life.
- 1.a I know what an electric current is and how to build simple and parallel circuits in which it can flow using wires, batteries (power source), and bulbs.
- 1.b I know how to build a simple compass and use it to detect magnetic effects such as Earth's magnetic field.
- 1.c I know how to produce magnetic fields using electric currents and how to build a simple electromagnet.
- 1.d I know the role of electromagnets in the construction of electric motors, electric generators, and some simple everyday devices.
- 1.e I know electrically charged objects attract or repel each other.
- 1.f I know magnets have 2 poles and that like poles repel and unlike poles attract.
- 1.g I know electrical energy can be converted into heat, light, and motion.

Life Sciences

- 2.0 I know all organisms need energy & matter to live & grow.
- 2.a I know about food chains and that plants are the most important source of matter and energy in them.
- 2.b I know food chains and food webs contain both producers and consumers and that they often compete for resources within an ecosystem.
- 2.c I know decomposers recycle matter from non-living plants and animals.

- 3.0 I know living organisms depend on each other and their environment to survive.
- 3.a I know ecosystems are made up of living and non-living components.
- 3.b I know within an environment the survival ability of plants and animals varies.
- 3.c I know plants and animals depend on each other to survive. Plants depend on animals for pollination and seed dispersal. Animals depend on plants for food and shelter.
- 3.d I know disease is not caused by microorganisms and that many microorganisms are beneficial.

OUESD Kid-Friendly @ Home CA Standards and Benchmarks
Science for 4th Grade Students

Earth Sciences

- 4.0 I know the properties of rocks and minerals come from the way in which they were formed.
- 4.a I know the difference between igneous, sedimentary, and metamorphic rocks in relation to their properties and methods of formation (rock cycle).
- 4.b I know how to identify rock-forming minerals and ore minerals using a table showing diagnostic properties.

- 5.0 I know the Earth's land surface is constantly changed by waves, wind, water, and ice.
- 5.a I know that changes in the Earth can take place over a long period of time (erosion) or happen quickly (landslides, volcanic eruptions, earthquakes).
- 5.b I know rocks can break into smaller pieces through natural processes such as freezing, thawing, and plant root growth.
- 5.c I know water movement erodes landforms and reshapes land by carrying away pebbles, sand, silt, and mud from one place to another (weathering, transport, and deposition).

Investigation and Experimentation
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- 6.0 I know that progress in science happens when questions are asked and careful investigations are conducted. I can observe, predict, communicate, measure, put things in order, compare, classify and record data to find out more about a topic.
- 6.a I know that in science I must understand the difference between what I see (observation) and what I interpret from what I see. I know that scientists' explanations come from both observation and interpretation.
- 6.b I know how to measure and estimate the weight, length, or volume of objects.
- 6.c I know how to make and give reasons for predictions based on cause-and-effect observations.
- 6.d I know how to test a prediction by performing trials and then make conclusions by reviewing my predictions and the trial results.
- 6.e I know how to create graphs from measurements and take meaning from that information.
- 6.f I know how to follow a set of written directions to perform a scientific investigation.

**OUESD Kid-Friendly @ Home CA Standards and Benchmarks
Science for 5th Grade Students**

Physical Sciences

- 1.0 I know that matter can be solid, liquid, or gaseous.
- 1.a I understand that the properties of matter include, volume, mass, weight, and density.
- 1.b I know that matter is made of elements and elements are made of atoms.
- 1.c I know that some metals, such as aluminum are pure elements; others are composed of a combination of elemental metals.
- 1.d I know that elements are made of different kinds of atoms and that they're organized by their properties on the periodic table.
- 1.e I know that scientists have developed instruments that helped us learn that atoms and molecules often occur in well-ordered arrays.
- 1.f I know how differences in chemical and physical properties of substances are used to separate mixtures and identify compounds.
- 1.g I can name the properties of solid, liquid and gaseous substances, such as sugar, water, oxygen, nitrogen and carbon dioxide.
- 1.h I know that living organisms and most materials are composed of just a few elements.
- 1.i I know the common properties of salt such as sodium chloride (NaCl).

Life Sciences

- 2.0 I know plants and animals have special structures for respiration, digestion, waste disposal, and movement of materials.
- 2.a I know the body has many organ systems that move materials throughout the body.
- 2.b I know how blood circulates through the heart chambers, lungs, and body and how carbon dioxide and oxygen are exchanged in the lungs and tissues.
- 2.c I know that digestion is the process of breaking down food into smaller pieces that your body can use and that it begins with the mouth and includes the esophagus, stomach, small intestine, large intestine and colon.
- 2.d I know the role of the kidney; how it removes cellular waste from the blood changing it into urine which is stored in the bladder.
- 2.e I know vascular plants have special structures for the transport of materials such as sugar, water, and minerals.
- 2.f I know plants use carbon dioxide and light from the sun to build sugar and release oxygen.
- 2.g I know that plants and animals break sugar down to release energy, carbon dioxide, and water.

OUESD Kid-Friendly @ Home CA Standards and Benchmarks
Science for 5th Grade Students

Earth Sciences

- 3.0 I know about and can describe the process of evaporation and condensation.
- 3.a I know that salt water oceans cover most of the Earth's surface.
- 3.b I know that liquid water evaporates and can either reappear as a liquid or a solid depending on the temperature.
- 3.c I know that water vapor in the air can move from one place to another and that these tiny droplets of water or ice can fall to Earth as rain, hail, sleet, or snow.
- 3.d I know there are many limited sources for fresh water here on Earth and that the availability of these water sources can be extended by recycling and decreasing the use of water.
- 3.e I know the source of water my community uses.

- 4.0 I know the uneven heating of the Earth from the Sun can result in changing weather.
- 4.a I know about how the uneven heating of Earth causes air movements.
- 4.b I know the influence the ocean has on weather and the role the water cycle plays in weather patterns.
- 4.c I know the causes and effects of different types of severe weather.
- 4.d I know how to use weather maps and data to predict weather.
- 4.e I know that the Earth's atmosphere exerts a pressure equally in all directions and that this pressure decreases with distance above the Earth.

- 5.0 I know the solar system consists of planets and other bodies that travel around the Sun in predictable paths.
- 5.a I know that the Sun is a star made up of hydrogen and helium and that it is the center of our solar system.
- 5.b I know our solar system includes the planet Earth, the Moon, the Sun and other planets along with smaller objects.
- 5.c I know the path of a planet around the Sun is because of the gravitational attraction between the Sun and the planet.

OUESD Kid-Friendly @ Home CA Standards and Benchmarks
Science for 5th Grade Students

Investigation and Experimentation
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- 6.0 I know that progress in science happens when questions are asked and the careful investigations are conducted. I can observe, predict, communicate, measure, put things in order, compare, classify and record data to find out more about a topic.
- 6.a I can use specific criteria to classify objects.
- 6.b I can develop a testable question.
- 6.c I can plan and carry out a simple investigation based on my own developed question and I can write instructions others can understand.
- 6.d I can identify dependent and controlled variables in an investigation.
- 6.e I can identify a single independent variable in an investigation and explain how this variable is used to collect information to answer a question about the results of the experiment.
- 6.f I can make quantitative observations using tools like thermometers, meter sticks, balances, and graduated cylinders.
- 6.g I can record data using charts, labeled diagrams, and graphs and make inferences based on the data.
- 6.h I can draw conclusions from scientific evidence and determine whether more information is needed in order to support a specific conclusion.
- 6.i I can write a report after an investigation where I conduct tests, collect data, examine evidence and draw conclusions.