

GRADE 5

1a

Physical Sciences

Elements and their combinations account for all the varied types of matter in the world. As a basis for understanding this concept:

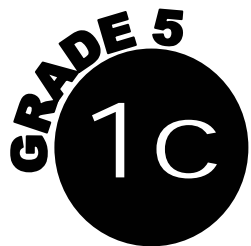
Students know during chemical reactions, the atoms in the reactants rearrange to form products with different properties.

GRADE 5
1b

Physical Sciences

Elements and their combinations account for all the varied types of matter in the world. As a basis for understanding this concept:

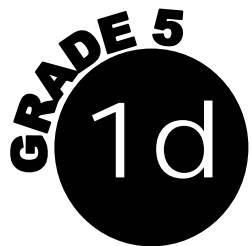
Students know all matter is made of atoms, which may combine to form molecules.



Physical Sciences

Elements and their combinations account for all the varied types of matter in the world. As a basis for understanding this concept:

Students know metals have properties in common, such as electrical and thermal conductivity. Some metals, such as aluminum (Al), iron (Fe), nickel (Ni), copper (Cu), silver (Ag), gold (Au), are pure elements while others, such as steel and brass, are composed of a combination of elemental metals.



Physical Sciences

Elements and their combinations account for all the varied types of matter in the world. As a basis for understanding this concept:

Students know each element is made of one kind of atom. These elements are organized in the Periodic Table by their chemical properties.



Physical Sciences

Elements and their combinations account for all the varied types of matter in the world. As a basis for understanding this concept:

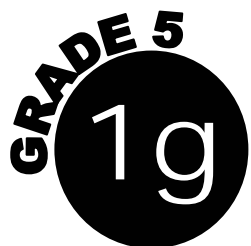
Students know scientists have developed instruments that can create images of atoms and molecules showing that they are discrete and often occur in well ordered arrays.

GRADE 5
1f

Physical Sciences

Elements and their combinations account for all the varied types of matter in the world. As a basis for understanding this concept:

Students know differences in chemical and physical properties of substances are used to separate mixtures and identify compounds.



Physical Sciences

Elements and their combinations account for all the varied types of matter in the world. As a basis for understanding this concept:

Students know properties of solid, liquid, and gaseous substances, such as sugar ($C_6H_{12}O_6$), water (H_2O), helium (He), oxygen (O_2), nitrogen (N_2), and carbon dioxide (CO_2).

GRADE 5
2a

Life Sciences

Plants and animals have structures for respiration, digestion, waste disposal, and transport of materials. As a basis for understanding this concept:

Students know many multicellular organisms have specialized structures to support the transport of materials.

GRADE 5
2b

Life Sciences

Plants and animals have structures for respiration, digestion, waste disposal, and transport of materials. As a basis for understanding this concept:

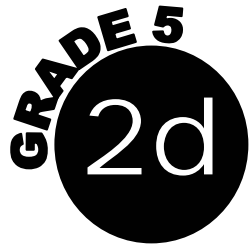
Students know how blood circulates through the heart chambers, lungs, and body, and how carbon dioxide (CO_2) and oxygen (O_2) are exchanged in the lungs and tissues.



Life Sciences

Plants and animals have structures for respiration, digestion, waste disposal, and transport of materials. As a basis for understanding this concept:

Students know the sequential steps of digestion, and the roles of teeth and mouth, esophagus, stomach, small intestine, large intestine, and colon in the function of the digestive system.



Life Sciences

Plants and animals have structures for respiration, digestion, waste disposal, and transport of materials. As a basis for understanding this concept:

Students know the role of the kidney in removing cellular wastes from blood and converting them into urine, which is stored in the bladder.



Life Sciences

Plants and animals have structures for respiration, digestion, waste disposal, and transport of materials. As a basis for understanding this concept:

Students know how sugar, water, and minerals are transported in a vascular plant.

GRADE 5
2f

Life Sciences

Plants and animals have structures for respiration, digestion, waste disposal, and transport of materials. As a basis for understanding this concept:

Students know plants use carbon dioxide (CO_2) and energy from sunlight to build molecules of sugar and release oxygen.



Life Sciences

Plants and animals have structures for respiration, digestion, waste disposal, and transport of materials. As a basis for understanding this concept:

Students know plant and animal cells break down sugar to obtain energy, forming carbon dioxide (CO_2) and water (respiration).

GRADE 5
3a

Earth Sciences

Water on Earth moves between the oceans and land through the processes of evaporation and condensation. As a basis for understanding this concept:

Students know most of the Earth's water is present as salt water in the oceans, which cover most of the Earth's surface.



Earth Sciences

Water on Earth moves between the oceans and land through the processes of evaporation and condensation. As a basis for understanding this concept:

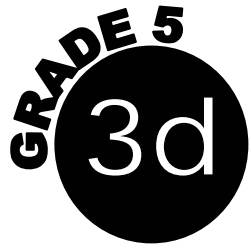
Students know when liquid water evaporates, it turns into water vapor in the air and can reappear as a liquid when cooled, or as a solid if cooled below the freezing point of water.



Earth Sciences

Water on Earth moves between the oceans and land through the processes of evaporation and condensation. As a basis for understanding this concept:

Students know water moves in the air from one place to another in the form of clouds or fog, which are tiny droplets of water or ice, and falls to the Earth as rain, hail, sleet, or snow.



Earth Sciences

Water on Earth moves between the oceans and land through the processes of evaporation and condensation. As a basis for understanding this concept:

Students know the amount of fresh water, located in rivers, lakes, underground sources, and glaciers, is limited, and its availability can be extended through recycling and decreased use.



Earth Sciences

Water on Earth moves between the oceans and land through the processes of evaporation and condensation. As a basis for understanding this concept:

Students know the origin of water used by their local communities.

GRADE 5
4a

Earth Sciences

Energy from the sun heats the Earth unevenly, causing air movements resulting in changing weather patterns. As a basis for understanding this concept:

Students know uneven heating of the Earth causes air movements (convection currents).

GRADE 5
4b

Earth Sciences

Energy from the sun heats the Earth unevenly, causing air movements resulting in changing weather patterns. As a basis for understanding this concept:

Students know the influence of the ocean on weather, and the role of the water cycle in weather.

GRADE 5
4C

Earth Sciences

Energy from the sun heats the Earth unevenly, causing air movements resulting in changing weather patterns. As a basis for understanding this concept:

Students know causes and effects of different types of severe weather.

GRADE 5
4d

Earth Sciences

Energy from the sun heats the Earth unevenly, causing air movements resulting in changing weather patterns. As a basis for understanding this concept:

Students know how to use weather maps and weather forecasts to predict local weather, and that prediction depends on many changing variables.



Earth Sciences

Energy from the sun heats the Earth unevenly, causing air movements resulting in changing weather patterns. As a basis for understanding this concept:

Students know the Earth's atmosphere exerts a pressure that decreases with distance above the Earth's surface, and is the same in all directions.

GRADE 5
5a

Earth Sciences

The solar system consists of planets and other bodies that orbit the sun in predictable paths. As a basis for understanding this concept:

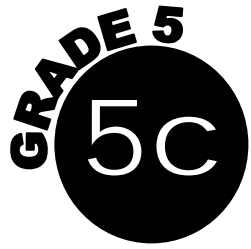
Students know the sun, an average star, is the central and largest body in the solar system and is composed primarily of hydrogen and helium.



Earth Sciences

The solar system consists of planets and other bodies that orbit the sun in predictable paths. As a basis for understanding this concept:

Students know the solar system includes the Earth, moon, sun, eight other planets and their satellites, and smaller objects such as asteroids and comets.



Earth Sciences

The solar system consists of planets and other bodies that orbit the sun in predictable paths. As a basis for understanding this concept:

Students know the path of a planet around the sun is due to the gravitational attraction between the sun and the planet.



Investigation and Experimentation

Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept, and addressing the content in the other three strands, students should develop their own questions and perform investigations.

Students will classify objects (e.g., rocks, plant, leaves) based on appropriate criteria.



Investigation and Experimentation

Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept, and addressing the content in the other three strands, students should develop their own questions and perform investigations.

Students will develop a testable question.



Investigation and Experimentation

Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept, and addressing the content in the other three strands, students should develop their own questions and perform investigations.

Students will plan and conduct a simple investigation based on a student-developed question, and write instructions others can follow to carry out the procedure.



Investigation and Experimentation

Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept, and addressing the content in the other three strands, students should develop their own questions and perform investigations.

Students will identify the dependent and controlled variables in an investigation.



Investigation and Experimentation

Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept, and addressing the content in the other three strands, students should develop their own questions and perform investigations.

Students will identify a single independent variable in a scientific investigation and explain what will be learned by collecting data on this variable.



Investigation and Experimentation

Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept, and addressing the content in the other three strands, students should develop their own questions and perform investigations.

Students will select appropriate tools (e.g., thermometers, meter sticks, balances, and graduated cylinders) and make quantitative observations.



Investigation and Experimentation

Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept, and addressing the content in the other three strands, students should develop their own questions and perform investigations.

Students will record data using appropriate graphic representation (including charts, graphs, and labeled diagrams), and make inferences based on those data.



Investigation and Experimentation

Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept, and addressing the content in the other three strands, students should develop their own questions and perform investigations.

Students will draw conclusions based on scientific evidence and indicate whether further information is needed to support a specific conclusion.



Investigation and Experimentation

Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept, and addressing the content in the other three strands, students should develop their own questions and perform investigations.

Students will write a report of an investigation that includes tests conducted, data collected or evidence examined, and conclusions drawn.