



Vocabulary Cards

Grade 4

(organized by unit, with answers)

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To the Teacher

The *ScienceFusion* Vocabulary Cards are available online, formatted in two ways: alphabetized as they appear in the Student Edition Glossary and organized by Student Edition unit.

You may download the vocabulary cards to reproduce and distribute. Or you may allow children and their families to download the cards. A second set of cards is available to you with the answers to the activities in place.

To use the cards, cut them out along the solid lines. Then fold each card along the dotted line. Glue the two sides of the cards together so that the definition is on one side and the associated activity is on the other side.

The front of each card shows the vocabulary term, the phonetic respelling (grades 2–5), and the glossary definition of the term. The back of each card contains a short activity with a space for students to write or draw. The activities (questions, fill-in-the-blanks, word scrambles, word searches) are designed to help students understand and remember the meanings of vocabulary terms in the Student Edition.

Ideas for Using the Vocabulary Cards

- Have small groups of students read each vocabulary term aloud and take turns reading the definitions. Have students restate the meaning of each term in their own words. Then have students work together to complete the activity on the back of the card.
- Have students sort the cards by topic or have them create word webs to see the relationships among the vocabulary terms.
- Have students use the Vocabulary Cards at home. Suggest that students enlist family members to help them review and remember the concepts associated with the vocabulary.
- Allow students to use the cards to play vocabulary reinforcement games such as Concentration, Twenty Questions, and Jeopardy®.
- Encourage students to use the Vocabulary Cards as tools for reviewing content prior to tests or state science assessment.

Sample answer: I see people in the classroom. I hear my teacher talking. I feel the wooden top of my desk.

What observations can you make about where you are right now? (Remember, you can observe with all your senses.)

.....

observation
(ahb•zer•VAY•shuhn)

Information that you gather with your senses.

Sample answer: earth scientists (rocks, weather, Earth changes); physical scientists (matter and energy); life scientists (living things)

Name three kinds of scientists, and tell what they study.

.....

scientist
(SY•uhn•tist)

A person who asks questions about the natural world.

Sample answer: so you and others can compare results

Why is it important to communicate the results of an investigation?

.....

investigation
(in•ves•tuh•GAY•shuhn)

A procedure carried out to gather data about an object or event.

Sample answer: I would like to study biology because I like to learn about plants and animals.

Name an area of science that you would like to study, and explain why you are interested in that area.

.....

science
(SY•uhns)

The study of the natural world.

Sample answer: If left in direct sunlight, black crayons melt more quickly than white crayons.

What is a hypothesis you might want to test?

hypothesis
(hy•PAATH•uh•sis)

A possible explanation or answer to a question, a testable statement.

Sample answer: that the ice cubes melted

You leave a glass of ice cubes on a table. When you return, there are no ice cubes in the glass but there is water. What can you infer?

inference
(IN•fer•uhns)

An untested conclusion based on your observations.

Drawing should show a leaf and then a larger leaf with the same shape and color but with more details visible.

Draw a leaf. Then draw how that same leaf would look under a microscope.

microscope
(MY•kruh•skohp)

A tool that makes an object look several times bigger than it is.

Sample answer: Drawing might show a pan balance with an egg in one pan and a 50-gram mass in the other pan. The two pans should be level.

Draw a pan balance. In one pan, draw a mass labeled 50 grams. In the other pan, draw an object that has a mass of about 50 grams.

pan balance
(PAN BAL•uhns)

A tool that measures mass.

Sample answers: solar system, building, airplane

Sometimes you make models to represent something that is too big to investigate directly. Give two examples of this kind of model.

model
(MAHD•l)

A mental or physical representation of a process or object.

newton (N)

What is the unit of measure used in a spring scale?

spring scale
(SPRING SKAYL)

A tool that measures forces, such as weight.

Drawing or diagram should show a plant and have labeled parts, such as the roots, stem, leaves, and flowers.

Draw a two-dimensional model of a plant. Label the plant parts.

two-dimensional model
(TOO di•MEN•shuh•nuhl MAHD•l)

A model that has the dimensions of width and height only.

Sample answers: graph, written notes, diagram, audio recording, photograph

Name two ways to record data.

data
(DAY•tuh)

Individual facts, statistics, and items of information.

Sample answer: A three-dimensional model is more like the real object being studied.

Why may a three-dimensional model be more useful than a two-dimensional model?

three-dimensional model
(THREE di•MEN•shuh•nuhl MAHD•l)

A model that has the dimension of depth as well as width and height.

Sample answer: an event, such as a storm

What can a computer model represent that a three-dimensional model cannot?

computer model
(kuhm•PYOO•ter MAHD•l)

A computer program that models an event or object.

from west to east

In what direction does Earth rotate?

rotate
(ROH•tayt)

To spin on an axis.

Drawing should show Earth with its axis. The axis should be labeled.

Draw Earth. Show and label its axis.

axis
(AK•sis)

The imaginary line around which Earth rotates.

Drawing should show a first-quarter moon.

The moon looks different in each of its phases. Draw what a first-quarter moon looks like.

moon phase
(MOON FAYZ)

One of the shapes the moon seems to have as it orbits Earth.

about 365 days

How long does it take for Earth to complete one orbit around the sun?

orbit
(AWR•bit)

The path of one object in space around another object.

to look or see

You know what a telescope and a microscope are. What do you think the word part *scope* means?

telescope
(TEL•uh•skohp)

A device people use to observe distant objects with their eyes.

No. The Big Dipper is a group of stars that is part of the constellation Ursa Major, or Great Bear.

Is the Big Dipper a constellation? Explain.

constellation
(kahn•stuh•LAY•shuhn)

A pattern of stars that form an imaginary picture or design in the sky.

things that are very far away in space

What do space probes take pictures of?

space probe
(SPAYS PROHB)

A spacecraft without a crew designed to explore the solar system and transmit data back to Earth.

Sample answers: gravity, water, blowing sand, chemicals, plants, animals

Name some things that can cause weathering.

weathering
(WETH•er•ing)

The breaking down of rocks on Earth's surface into smaller pieces.

Sample answer: Weathering is the breaking down of rock into smaller pieces; erosion is the moving of weathered rock and soil.

What is the difference between weathering and erosion?

erosion
(uh•ROH•zhuhn)

The process of moving sediment from one place to another.

Sample answer: deposit; A flowing river deposits weathered rock.

What is the verb form of the noun *deposition*? Write a sentence using the verb.

deposition
(dep•uh•ZISH•uhn)

The dropping or settling of eroded materials.

Sample answer: When sediment piles up near the mouth of a river, the sediment forms a delta.

Explain how sediment can form a delta.

sediment
(SED•uh•muhnt)

Small pieces of rock, sand, and silt carried by water.

igneous, sedimentary, metamorphic

Rocks form in different ways. Name the three types of rocks.

rock
(RAHK)

A solid substance made up of one or more minerals.

Minerals are natural. They are found in the ground, in caves, and even in the air.

Are minerals natural or human-made? Explain.

mineral
(MIN•er•uhl)

A nonliving solid that has a crystal form.

granite

pumice

obsidian

Unscramble the letters to make words that name three kinds of igneous rock.

igneous rock
(IG•nee•uhs RAHK)

A type of rock that forms from melted rock that cools and hardens.

g r a n l t e a o
 f y f s s s i l s
 t e n e s r j l e
 g l v m b l b h
 s a n d s t o u e
 u h z x s l a t e
 a s d p b g f v d c

Circle the words that relate to sedimentary rock.

sedimentary rock

(sed•uh•MEN•tuh•ree RAHK)

A type of rock that forms when layers of sediment are pressed together.

metamorphic rock

(met•uh•MAWR•fik RAHK)

A type of rock that forms when heat or pressure change an existing rock.

Sample answer: in a mountain range

Name a place where metamorphic rock is found.

Yes. Heat and pressure can change a sedimentary rock into a metamorphic rock.

Can a sedimentary rock become a metamorphic rock? Explain.

sedimentary rock

What kind of rock are fossils found in?

fossil

(FAHS•uhl)

The remains or traces of a plant or animal that lived long ago.

rock cycle

(RAHK SY•kuhl)

The sequence of processes that change rocks from one type to another over long periods.

Sample answer: for building roads, bridges, and homes as well as other buildings

Rocks are an important resource. What can they be used for?

resource
(REE•sawrs)

Any material that can be used to satisfy a need.

Circle the names of nonrenewable resources.

h	m	i	t	s	a	g	n	a
e	a	n	d	k	f	l	e	c
s	l	a	o	c	s	k	d	x
e	b	z	o	o	e	b	n	g
e	s	l	a	r	e	n	i	m
r	c	i	s	d	r	f	w	f
t	p	o	n	a	t	a	n	z

nonrenewable resource
(nah•rih•NOO•uh•buhl REE•sawrs)

A resource that, once used, cannot be replaced in a reasonable amount of time.

Yes. Matter is anything that takes up space and has mass. Gases take up space and have mass, so gases are matter.

Are gases matter? Explain.

Drawing may show trees, crops, sunlight, or wind

Draw a renewable resource.

renewable resource
(rih•NOO•uh•buhl REE•sawrs)

A resource that can be replaced within a reasonable amount of time.

matter
(MAT•er)

Anything that has mass and takes up space.

Sample answer: rectangular, smooth, plastic

Name three physical properties of your desk.

physical property
(FIZ•ih•kuhl PRAHP•er•tee)

Anything that you can observe about an object by using one or more of your senses.

a pan balance

What tool can you use to measure mass?

mass
(MAS)

The amount of matter in an object.

Sample answers: liter, milliliter, gallon, quart, pint

Name a unit of measure used to describe the volume of a liquid.

volume
(VAHL•yoom)

The amount of space that matter takes up.

less dense than water

Will an object float if it is more dense than water or if it is less dense than water?

density
(DEN•suh•tee)

The amount of matter in an object compared to the space it takes up.

gas—no definite volume, no definite shape
liquid—definite volume, no definite shape;
solid—definite volume, definite shape;

gas definite volume, definite shape

liquid definite volume, no definite shape

solid no definite volume, no definite shape

Match the state of matter to the words on the right.

states of matter
(STAYTS uhv MAT•er)

The physical forms (such as solid, liquid, and gas) that matter can exist in.

Sample answer: desk, rock, paper

Write three examples of solids.

solid
(SAHL•id)

The state of matter that has a definite shape and a definite volume.

container

A liquid takes the shape of its

liquid
(LIK•wid)

The state of matter that has a definite volume but no definite shape.

far apart

Particles in a gas are

gas
(GAS)

The state of matter that does not have a definite shape or volume.

a k r m z b e s
 a k r m z b e s
 c o n d e n s e
 j l j n p o l x
 f r e e z e r f
 t b o v b t
 e v a p o r a t e
 k f m v n g i j k

Circle the words that tell ways matter changes state.

change of state
(CHAYNJ uhv STAYT)

A physical change that occurs when matter changes from one state to another, such as from a liquid to a gas.

_____ is
from a gas. removed

Condensation occurs when heat energy

condensation
(kahn•duhn•SAY•shuhn)

The process by which a gas changes into a liquid.

During evaporation, particles that gain
enough _____ enter the air as water vapor. energy

evaporation
(ee•vap•uh•RAY•shuhn)

The process by which a liquid changes into a gas.

_____ barriers, distance between the magnet and the object

Name two things that affect the strength of a magnet.

magnet
(MAG•nit)

An object that attracts iron and a few other (but not all) metals.

at the poles

Where on a magnet is the magnetic field the strongest?

magnetic field
(mag•NET•ik FEELD)

The space around a magnet in which the force of the magnet acts.

Circle the words that relate to magnetic poles.

d l y u n l i l n
 a e n e k i l z
 e p j f c n q h o
 s e t r a c t a t a
 t r b v f o m o t r p
 w a r k h u n o s s
 w y s x e w q n d

magnetic pole
(mag•NET•ik POHL)

The parts of a magnet at which its force is strongest.

Sample answers: doorbell, speaker, computer, telephone, motor, generator

Name two places you can find electromagnets being used.

electromagnet
(ee•lek•troh•MAG•nit)

A temporary magnet caused by an electric current.

Sample answers: fan, hair dryer, refrigerator, washing machine, vacuum cleaner

Name two objects that use a motor.

motor
(MOH•ter)

A device that uses electricity to make things move.

mass

texture

size

Unscramble words that name three physical properties that can be changed.

physical change
(FIZ•ih•kuhl CHAYNJ)

A change in matter from one form to another that doesn't result in a different substance.

Sample answers: car running on gasoline, animal getting energy from food

Write an example of chemical energy.

chemical energy
(KEM•ih•kuhl EN•er•jee)

Energy that can be released by a chemical reaction.

mechanical energy

Which kind of energy is the total potential energy and kinetic energy of an object?

energy
(EN•er•jee)

The ability to do work and cause changes in matter.

Sample answer: a girl riding a bicycle

Write an example of something that has kinetic energy.

kinetic energy
(kih•NET•ik EN•er•jee)

The energy of motion.

Sample answer: a stretching rubber band

Sample answers: car running on gasoline; animal getting energy from food

Write an example of something that has potential energy.

Write an example of chemical energy.

potential energy
(poh•TEN•shuhl EN•er•jee)

Energy that an object has because of the object's position or its condition.

chemical energy
(KEM•ih•kuhl EN•er•jee)

Energy that can be released by a chemical reaction.

kinetic energy

Mechanical energy consists of both potential energy and

Sample answer: from chemical energy released during the burning of coal and natural gas, from solar energy, from wind energy

Where does electrical energy come from?

mechanical energy
(muh•KAN•ih•kuhl EN•er•jee)

The total potential and kinetic energy of an object.

electrical energy
(ee•LEK•trih•kuhl EN•er•jee)

Energy that comes from an electric current.

“from water”: hydrogen, hydroplane

What does the word part *hydro* mean?
What is another word that contains this
word part?

hydroelectric energy
(hy•droh•ee•LEK•trik EN•er•jee)

Electricity produced using the energy
of falling water.

wind turbine (or windmill)

What is the name of the object that uses
wind energy to produce electricity?

wind energy
(WIND EN•er•jee)

The energy of moving air, which can
be used to generate electricity.

because solar energy comes from sunlight, which is
a renewable resource

Why is solar energy considered a
renewable energy source?

solar energy
(SOH•ler EN•er•jee)

The power of the sun.

conduction, convection, radiation

Write three ways heat travels.

heat
(HEET)

The energy that moves between
objects of different temperatures.

because we need heat from the sun to live and heat travels from the sun to Earth by radiation

Why could we say that radiation may be the most important way heat can move?

radiation
(ray•dee•AY•shuhn)

The movement of heat without matter to carry it.

conduction
(kuhn•DUK•shuhn)

The movement of heat between two materials that are touching.

Match the type of heat transfer to the example.
conduction winds blowing from a warmer area
convection hot cocoa making a metal spoon hot
radiation land being heated by the sun
conduction—hot cocoa making a metal spoon hot;
convection—winds blowing from a warmer area;
radiation—land being heated by the sun

Circle the words that name good conductors.
a c o p d x b i b q i h s
c o n c r e t e
o p d r s g u n z e i
e p l c w o o g l e
n e t k m i w j e r
i r o u d g p f v r
a l n u m i u n m z

conductor
(kuhn•DUK•ter)

A material that lets heat or electrical charges travel through it easily.

convection
(kuhn•VEK•shuhn)

The movement of heat in liquids and gases from a warmer area to a cooler area.

Circle the correct answer or answers.
In convection, which can carry heat?
air
wood
water
air, water

Sample answers: plastic, rubber, glass, air, ceramics, dry wood

Name two materials that act as good insulators.

insulator
(IN•suh•layt•er)

A material that does not let heat or electrical charges move through it easily.

Sample answer: I am sitting three chairs from the window.

Describe your present position in relation to a reference point.

position
(puh•ZISH•uhn)

The location of an object in relation to a nearby object or place.

Sample answer: I see that the object's position has changed from one place to another place.

Explain how you can tell that an object is in motion.

motion
(MOH•shuhn)

A change of position of an object.

2 meters/second

If you walk 120 meters in one minute, what is your speed?

speed
(SPEED)

The measure of an object's change in position during a certain amount of time.

Speed is the amount of time an object takes to move a certain distance. Velocity is the speed of an object in a certain direction.

Yes. The car is accelerating because acceleration means "any change in velocity."

What is the difference between speed and velocity?

The speed of a car changes from 55 mph to 45 mph. Is the car accelerating? Explain.

velocity
(vuh•LAHS•uh•tee)

The speed of an object in a particular direction.

acceleration
(ak•sel•er•AY•shuhn)

Any change in the speed or direction of an object's motion.

Sample answer: A kick is a push. You are moving the ball away from you.

Sample answer: make seeds that can grow into new plants

You kick a soccer ball. Is this force a push or a pull? Explain.

What can mature plants do?

force
(FAWHRS)

A push or a pull of any kind.

maturity
(muh•CHER•ih•tee)

The stage at which organisms can reproduce.

Sample answers: light, water, heat

Name two factors that can affect germination.

germination
(jer•muh•NAY•shuhn)

The sprouting of a seed.

sperm, eggs

What are female sex cells called?

What are male sex cells called?

fertilization
(fer•tl•ih•ZAY•shuhn)

The joining of an egg and sperm.

by the wind, by animals (pollinators), by water

Name three ways a plant can be pollinated.

pollination
(pol•uh•NAY•shuhn)

The transfer of pollen from the male structures to the female structures of seed plants.

Sample answers: butterfly, moth

Name an animal that goes through complete metamorphosis.

complete metamorphosis
(kuhm•PLEET met•uh•MAWR•fuh•sis)

A complex change that most insects undergo that includes larva and pupa stages.

Sample answers: black hair color, green eye color, attached earlobes, cleft chin, dimples

Heredity is the passing of traits from parents to offspring. What are some examples of traits children might inherit from their parents?

heredity
(huh•RED•ih•tee)

The process by which traits are passed from parents to offspring.

Sample answer: A lion cub learns how to hunt from its mother.

Name an example of a learned behavior in an animal.

learned behavior
(LERND bee•HAYV•yer)

A behavior that an animal develops as a result of experience or by observing other animals.

Sample answers: dragonfly, termite, grasshopper

Name an animal that goes through incomplete metamorphosis.

incomplete metamorphosis
(in•kuhm•PLEET
met•uh•MAWR•fuh•sis)

Developmental change in some insects in which a nymph hatches from an egg and gradually develops into an adult.

Yes. A grasshopper goes through incomplete metamorphosis, which includes the nymph stage.

Does a grasshopper's life cycle include a nymph stage? Explain.

nymph
(NIMF)

An immature form of an insect that undergoes incomplete metamorphosis.

Sample answer: A newborn horse stands and walks just after it is born.

Write an example of an instinctual behavior in an animal.

instinct
(IN•stingkt)

An inherited behavior of an animal that helps it meet its needs.

Plants become dormant when temperatures go down.

When do plants become dormant?

dormancy
(DAWR•muhn•see)

A state of rest or inactivity.

When an animal hibernates, it does not use much energy and does not need to eat.

Some animals hibernate. How does hibernating help them?

hibernation
(hy•ber•NAY•shuhn)

A dormant, inactive state in which normal body activities slow.

Sample answers: humpback whale, manatee, birds such as a goose, land mammals such as a buffalo, some butterflies, some fish

Name two animals that migrate.

migration
(my•GRAY•shuhn)

The movement of animals from one region to another and back.

_____ food

Where do animals get their energy from?

energy
(EN•er•jee)

The ability to do work and cause changes in matter.

_____ photosynthesis

Through what process do producers make energy?

producer
(pruh•DOOS•er)

A living thing, such as a plant, that can make its own food.

_____ from soil

Where do plants get most of their nutrients?

nutrients
(NOO•tree•uhnts)

The parts of the soil that help plants grow and stay healthy.

_____ water, carbon dioxide, and energy from sunlight

What do plants use during photosynthesis?

photosynthesis
(foht•oh•SIN•thuh•sis)

The process that plants use to make sugar.

grass, gazelle, lion

gazelle, grass, lion

Write these things in order from where the food chain begins to where it ends.

Yes, animals, such as giraffes, are consumers.

Giraffes eat leaves. Are giraffes consumers?

consumer
(kuhn•SOOM•er)

A living thing that can't make its own food and must eat other living things.

food chain
(FOOD CHAYN)

A series of organisms that depend on one another for food.

Sample answer: mushroom

Name a decomposer.

decomposer
(dee•kuhm•POHZ•er)

A living thing that gets energy by breaking down dead organisms and animal wastes into simpler substances.

Sample answer: zebra, grasses and other plants

Name an example of a herbivore. What does this animal eat?

herbivore
(HER•buh•vawr)

An animal that eats only plants, or producers.

Sample answers: lion, tiger, crocodile, wolf, eagle

Write an example of a carnivore.

carnivore
(KAHR•nuh•vawr)

An animal that eats only other animals.

Sample answer: Humans eat meat, such as beef, pork, poultry, and fish. Humans eat fruits and vegetables.

Humans are omnivores. What are some foods humans eat that come from animals? From plants?

omnivore
(AHM•nih•vawr)

An animal that eats both plants and other animals.

Sample answer: Other parts of the food web are also affected.

What can happen if one part of a food web changes?

food web
(FOOD WEB)

A group of food chains that overlap.

ions

okmse

Unscramble the letters to make words that name kinds of pollution.
acsmlih ec chemicals

pollution
(puh•LOO•shuhn)

Any harmful substance in the environment.

Sample answer: Conserving natural resources helps them last longer.

Why is conservation important?

conservation
(kahn•ser•VAY•shuhn)

The preserving and protecting of a resource.