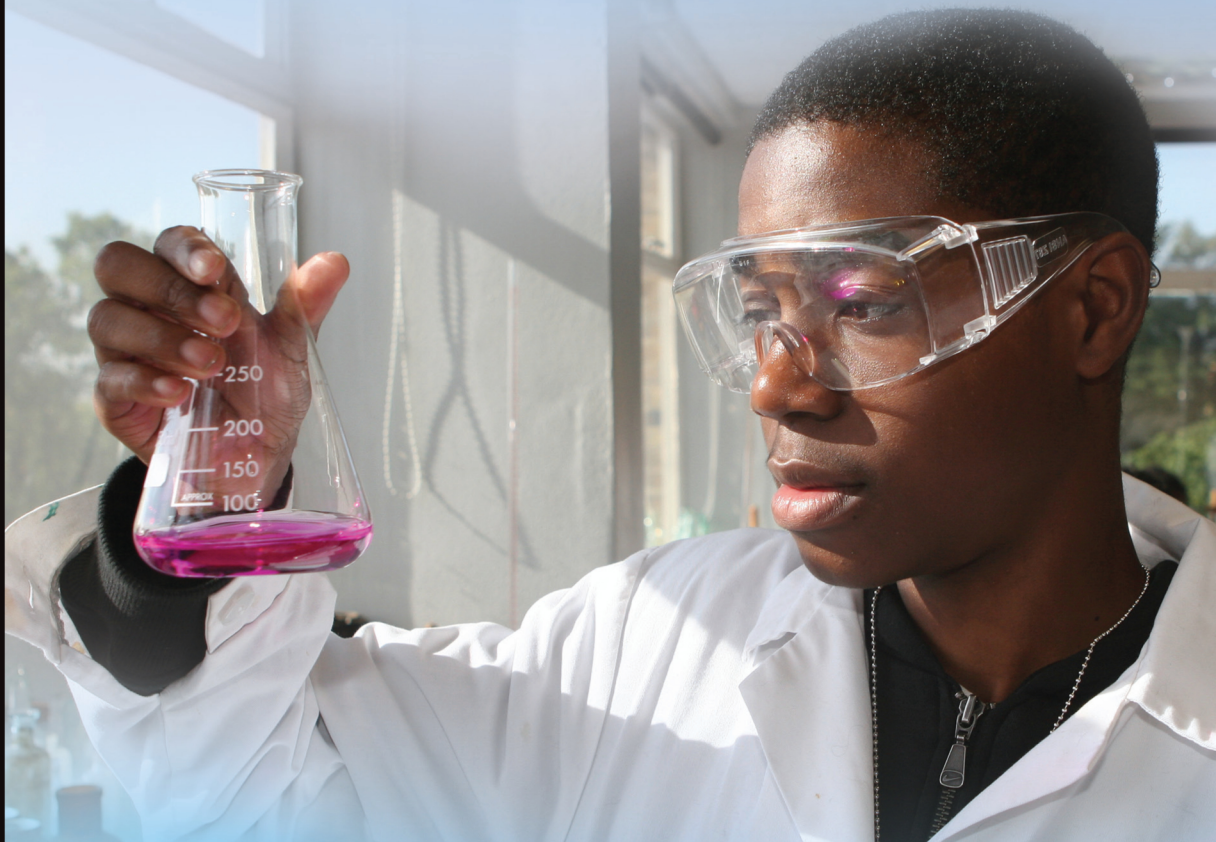


# *Science and Technology Words*



Science in the News

Computers and the Net

The Natural World

Observations and Experiments

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## PREVIEW

Here's an introduction to the vocabulary terms, skills, and concepts you will study in this unit. Answers are upside down on the bottom of the page.

Write **T** or **F** to show whether each statement is *true* or *false*.

1. \_\_\_\_ The words *molecule* and *atom* are **synonyms**.
2. \_\_\_\_ *Hexagon* is the **noun form** of *hexagonal*.
3. \_\_\_\_ *Cirrus* clouds are dark and dense.
4. \_\_\_\_ *Botanists* are scientists who study a type of food poisoning called *botulism*.
5. \_\_\_\_ The words *pollute* and *sterilize* are **antonyms**.
6. \_\_\_\_ The **prefix** *-al* turns the word *digit* into *digital*.
7. \_\_\_\_ The Greek root *therm* means "heat."
8. \_\_\_\_ *Dynamic* is the **adjective form** of the noun *dynamics*.
9. \_\_\_\_ The **plural form** of *bacterium* is *bacteriums*.
10. \_\_\_\_ The **suffix** *-ion* can be used to turn a verb into a noun.

## SPELLING

Circle the correctly spelled word in each group.

1. vertabrate      virtabrate      vertebrate
2. professor      proffessor      perfesser
3. germanate      germinate      germenate

ANSWERS: 1. F 2. T 3. F 4. F 5. T 6. F 7. T 8. T 9. F 10. T SPELLING: 1. vertebrate 2. professor 3. germinate

## GLOSSARY

A *glossary* is an alphabetical list of unusual or specialized words from a certain field of knowledge. Following are some important scientific and technical words that all educated people should know.

**atmosphere** the air (made of gases, fine dust, and water vapor) that surrounds the Earth

**atoms** tiny parts into which all things on Earth can be broken down

**bacteria** simple, one-celled organisms that are visible only through a microscope

**bit** the smallest unit of information used by a computer; represented by a 0 or a 1

**byte** a string of eight bits standing for a single character

**carbohydrates** sugars and starches in food that give people energy

**chemistry** the scientific study of what substances are made of and how they can change when combined with other substances

**climate** a region's average weather over many years

**crust** the outer layer of the Earth

**diskettes** disks made of magnetic material and used to store data entered into a computer

**ecology** the study of how all living things depend on one another

**erosion** the wearing away of soil by wind and water

**evolution** changes in a species over time

**food chain** a group of organisms, each of which is dependent on another for food

**fossils** the remains of organisms that lived long ago

**organisms** living things

## WORDS IN CONTEXT

Complete each sentence with a word from the glossary. Use the other words in the sentence to help you decide which word to add. Check the dictionary definition if you're still not sure.

1. The devastating Dust Bowl of the 1930s was caused by the widespread \_\_\_\_\_ of America's farmland.



2. Life science is the study of all the \_\_\_\_\_ on Earth.
3. Fruits, vegetables, and grains are all good sources of \_\_\_\_\_.
4. Some \_\_\_\_\_ are useful for making foods such as cheese; other kinds can cause sickness and death.
5. There are two hydrogen \_\_\_\_\_ and one oxygen \_\_\_\_\_ in a water molecule.
6. Each \_\_\_\_\_ of information in a computer program stands for a letter, number, or symbol.

### SCRAMBLED WORDS

First unscramble the words from the glossary.  
Then solve the crossword puzzle with words that complete the sentences.

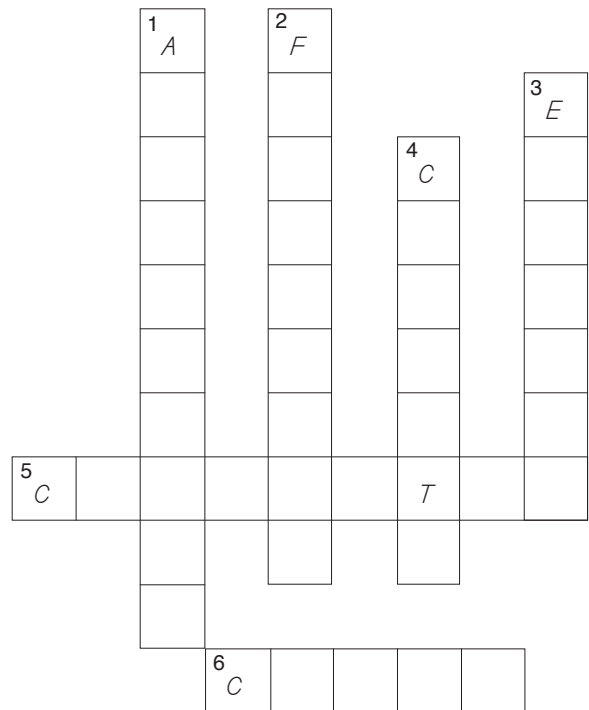
- ALCTIME** \_\_\_\_\_
- ODFO ACHIN** \_\_\_\_\_
- COYLOGE** \_\_\_\_\_
- MYSTERCHI** \_\_\_\_\_
- STRUC** \_\_\_\_\_
- HERPOSTMAE** \_\_\_\_\_

### ACROSS

5. \_\_\_\_\_ is the study of what matter is made of and how it can change.
6. The continents and the ocean floor are part of the Earth's \_\_\_\_\_.

### DOWN

1. The \_\_\_\_\_ extends more than 1,400 miles above the Earth's surface.
2. Each of the organisms in a \_\_\_\_\_ (two words) eats one of the other organisms.
3. The study of the relationship between different populations in a habitat is called \_\_\_\_\_.
4. A desert \_\_\_\_\_ is mostly hot and dry.



## WORD FORMS

Add vowels (*a, e, i, o, u*) to complete a different form of a glossary word. Use context clues for help. The first one has been done for you.

1. A bacteri al infection can usually be treated with an antibiotic.
2. As weather \_\_r\_\_d\_\_s rocks, salt from the rocks enters the soil.
3. \_\_t\_\_m\_\_c energy is used to power some submarines.
4. Ch\_\_m\_\_sts often conduct their experiments in laboratories.
5. Over time, organisms will f\_\_ss\_\_l\_\_z\_\_ if all the conditions are right.
6. All of today's plants and animals \_\_v\_\_lv\_\_d from tiny one-celled creatures.
7. Scientists call lightning an “\_\_tm\_\_sph\_\_r\_\_c disturbance.”

## EXAMPLES

Circle an example of each **boldface** glossary item.

### 1. **climate**

mountainous      overpopulated      humid      prosperous

### 2. **carbohydrates**

lettuce      butter      proteins      potatoes

### 3. **organisms**

fleas      glaciers      chemicals      instruments

**How Does Sunlight Produce Vitamin D?**

Vitamin D is a chemical that allows your body to make use of an important nutrient called *calcium*. Our bodies make the Vitamin D we need by “doing chemistry.”

Sunlight is a part of the chemical reaction that makes Vitamin D. When it’s in your skin, the ultraviolet energy in sunshine snips up another chemical that is already floating around in your body. The new chemical formed is called Vitamin D3. But your body can’t make use of Vitamin D3 until a few more chemical reactions occur. So the D3 is carried to your liver, where the atoms are rearranged to form a new molecule.

Then that chemical ends up in your kidneys. There it is taken apart again and put back together as *calcitrol*. This is the Vitamin D your stomach needs to absorb calcium.

Vitamin D is essential to everyone’s nutrition. It helps young people grow strong teeth and straight new bones. It keeps older people’s bones from getting brittle. Years ago, parents were concerned about the lack of sunshine in the dark winter months. They worried that their children weren’t getting enough Vitamin D. Today, Vitamin D is added to almost all milk that’s sold in the United States.

**WORD SEARCH**

1. What eight-letter word in the reading means “the smallest particle of a substance that can exist alone without losing its chemical form”? m
2. What three organs of the human body are named in the reading?  
k s l
3. What nine-letter word in the reading means “food” or “nourishment”? n
4. What two-syllable word in the reading means “to attract and take in another substance”? a

## WORD ROOTS

- The Latin roots *vit* and *viv* mean “life.” The word *vitamin*, for example, means “a substance needed by the body for normal growth and health.” Read the list of words containing *vit* or *viv*. Then write a letter to match each word with its meaning. Use a dictionary if you need help.

- |                           |                                 |
|---------------------------|---------------------------------|
| 1. _____ <b>survive</b>   | a. clear; bright; strong        |
| 2. _____ <b>vital</b>     | b. lively, spirited, energetic  |
| 3. _____ <b>vivid</b>     | c. to continue to live or exist |
| 4. _____ <b>vivacious</b> | d. necessary to life            |
| 5. _____ <b>revival</b>   | e. act of bringing back to life |

- Now write sentences of your own, using the five **boldface** words above.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

## ANALOGIES

An *analogy* is a statement of relationship. It points out a likeness between things that are otherwise unlike. Complete the following analogies with words from the reading.

1. *Biology* is to *biologist* as c\_\_\_\_\_ is to *chemist*.
2. *Adjust* is to *readjust* as *action* is to r\_\_\_\_\_.
3. *Athlete* is to *athletic* as e\_\_\_\_\_ is to *energetic*.
4. *Multiply* is to *multiplication* as r\_\_\_\_\_ is to *rearrangement*.

## RHYMING WORDS

Write words from the reading that *rhyme* with the words below.

### FIRST PARAGRAPH:

- |                |                |
|----------------|----------------|
| 1. plead _____ | 3. shore _____ |
| 2. fizz _____  | 4. break _____ |

### SECOND PARAGRAPH:

- |                 |                  |
|-----------------|------------------|
| 1. voting _____ | 3. drowned _____ |
| 2. heart _____  | 4. buried _____  |

### THIRD PARAGRAPH:

- |                 |                |
|-----------------|----------------|
| 1. strung _____ | 3. fluff _____ |
| 2. plate _____  | 4. leaps _____ |

## SYNONYMS

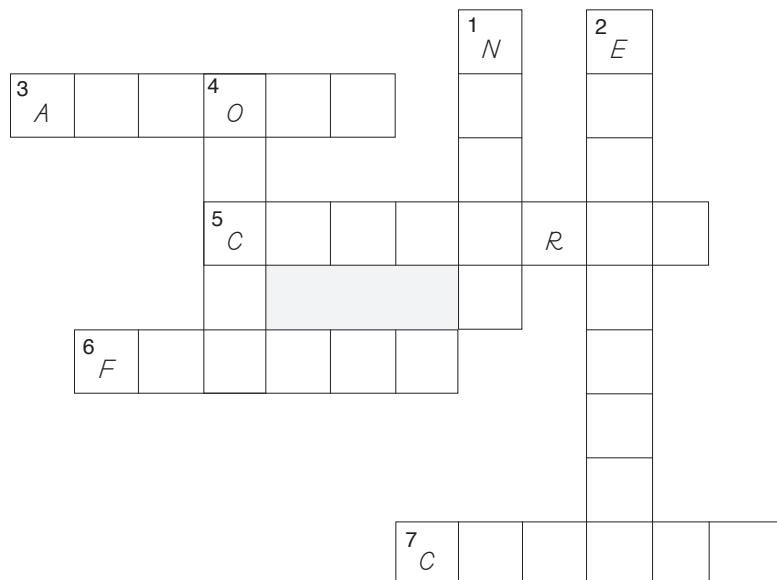
Complete the puzzle with words from the reading. Clue words are *synonyms* (words with a similar meaning) of the answer words.

### ACROSS

3. permits
5. offspring
6. created
7. named

### DOWN

1. requires
2. important
4. happen



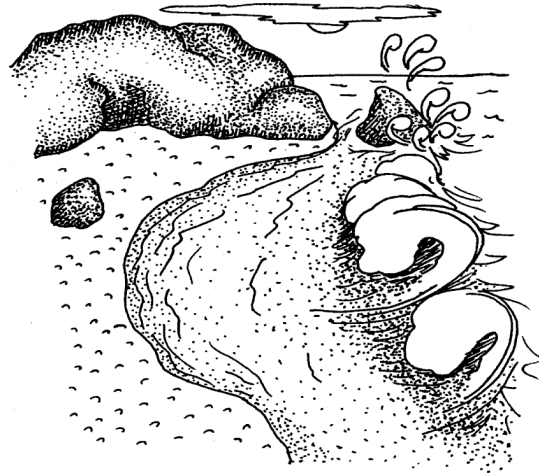


***Waves, Surf, Seas, and Swells: What's the Difference?***

All four terms refer to the conditions of a large body of water's surface. The generic term *wave* refers to the undulations of the water's surface. In their graceful rise and fall, waves are a combination of sea and swell.

*Swell* results from the wind's past action on the water. It has a gentler, more rolling action than that of a wave. You can see swells in the open water even when the current wind is calm. The distance between successive crests is called the *wavelength*.

*Sea* refers to the distinct features of the wave—such as crests—caused by wind blowing across the water's surface.



*Surf* is the interaction of the waves and the shoreline. It is influenced by the height and energy of the waves. The topography of the coast also affects surf. A beach with a gentle, offshore slope, for example, will have small surf. A beach that drops off sharply will have larger surf.

**WORD SEARCH**

1. What ten-letter noun in the reading means “the surface features of a region, including hills, rivers, roads, etc.”?
2. What ten-letter adjective in the reading means “going in regular order without a break”?

t

1

## WORDS AND MEANINGS

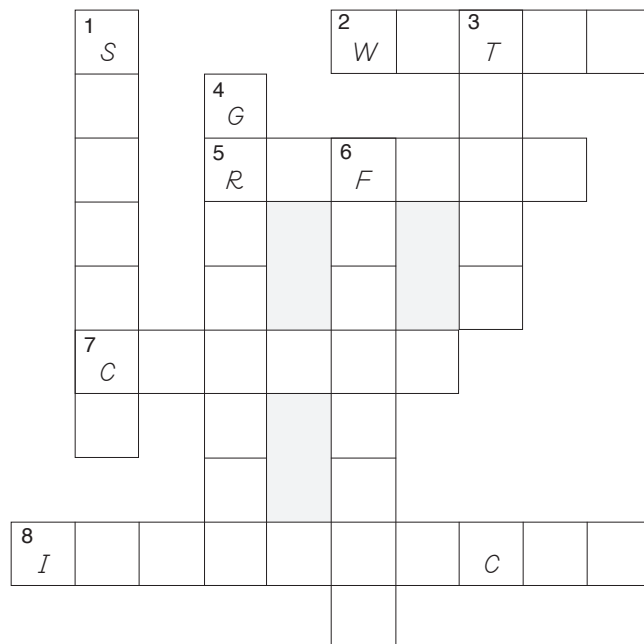
Use the clues to help you solve the crossword puzzle. Answers are words from the reading.

### ACROSS

2. colorless liquid found in oceans
5. points toward; assigns meaning to
7. tops or summits of waves
8. has an effect on

### DOWN

1. the outside of something
3. words or phrases with special meanings in science, art, etc.
4. describes smooth, beautiful ease of movement
6. qualities or characteristics



## PREFIXES

- The prefix *inter-* means "between," and the prefix *off-* means "away from." Write a word from the reading that begins with each prefix.

1. \_\_\_\_\_

- Now replace each scrambled word in the sentences below with a new word that begins with *inter-* or *off-*. The first one has been done for you.

2. Tom said the tree house is MILSTI off-limits until he repairs the floor.

3. That science fiction story is about TALCGAIC \_\_\_\_\_ warfare in outer space.

4. The actor waited GATES \_\_\_\_\_ until he heard his cue.

5. Route 66 is a well-known ETAST \_\_\_\_\_ highway.

## COMMONLY CONFUSED WORDS

You read that the surface features of the coast *affect* surf. Are you clear about the difference between the words *effect* and *affect*?

**effect:** the consequence or result of an action

**EXAMPLE:** *The moon has an effect on the tides.*

**affect:** to influence or produce an effect upon

**EXAMPLE:** *Bright lights affect the eyes.*

Write *affect* or *effect* to complete each sentence.

1. The store owner hoped his advertisement would have a good \_\_\_\_\_ on sales.
2. Our assignment was to write a paragraph about one cause and one \_\_\_\_\_ of world hunger.
3. Why should you allow her bad mood to \_\_\_\_\_ the way *you* feel?
4. If he studies a little harder, he can \_\_\_\_\_ a big change in his grades.

## COMPOUND WORDS

1. What compound word (one word made by combining two or more words) is a *synonym* of the word “beach”? \_\_\_\_\_
2. The distance between cresting waves is named by what compound word? \_\_\_\_\_

## WORD COMPLETION

Add vowels (*a, e, i, o, u*) to complete the words from the reading.

1. \_\_nd\_\_l\_\_t\_\_ns are curvy, wavy motions.
2. W\_\_v\_\_s are a combination of s\_\_ and sw\_\_ll.
3. Surf is influenced by the h\_\_ght and \_\_n\_\_rgy of the waves.