

Online Resources

Science Glossary

The Science Test expects you to understand basic mathematical terms (surface area, volume, percent, diameter, etc.) and conversions (such as grams to kilograms). To refresh your memory, review Chapter 3. In addition to basic math, you should be familiar with science material taught through eleventh grade. Basic scientific terms (liquid, experiment, etc.) are not presented in the following glossary.

Here is a sample list of concepts and terms previously tested on the ACT:

| Term | Definition |
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| Absorption | conversion of electromagnetic radiation (e.g. light) into internal energy |
| Acceleration | change in speed over change in time, $a = \frac{\Delta v}{\Delta t}$ |
| Acid | proton donor or electron pair acceptor in chemical reactions; acidic substances have a pH of 7 or less |
| Amino Acid | the subunit from which proteins are made; contains an amino group (NH ₂) and a carboxyl group (COOH) |
| Amplitude | magnitude of a wave, measured from equilibrium to maximum height (or depth) |
| Atomic Nucleus | the small, dense cluster of protons (positively charged) and neutrons (no charge) at the center of every atom, orbited by a cloud of electrons (negatively charged) |
| ATP | adenosine triphosphate; supplies energy for most cellular processes |
| Attraction | electrostatic force that binds atoms or molecules with opposite charges |
| Balanced Chemical Equation | the number of atoms of each element must be equal on both sides of a chemical reaction (e.g. in the balanced equation, $\text{CH}_4 + 2\text{O}_2 \rightarrow \text{CO}_2 + 2\text{H}_2\text{O}$, there is 1 C, 4 H, and 4 O on both sides) |

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| Base | proton acceptor or electron pair donor in chemical reactions; basic (or alkaline) substances have a pH of 7 or more |
| Boiling | vaporization; change in state from liquid to gas (water boils at 100°C) |
| Calorie | unit of energy; amount of energy required to raise the temperature of 1 g of water by 1°C |
| Carbohydrate | chemical compound of carbon, hydrogen, and oxygen in a 1:2:1 ratio; provides energy (glucose, C ₆ H ₁₂ O ₆ , is a sugar, which is a carbohydrate) |
| Charge | property of matter, considered either positive (+) or negative (-); allows particles to attract or repel |
| Chromatid | one strand of a pair that makes up a chromosome; composed of a double helix of DNA |
| Chromosome | structure of nucleic acids and proteins; often found in cellular nuclei; carries genetic information |
| Concentration | amount of solute per unit volume of solution; measured in mass per volume (e.g. g/L), volume per volume (e.g. mL/L), number, or percent |
| Conduction | direct transmittance of heat or electricity through a substance, usually due to difference of temperature or electrical potential |
| Contamination | unwanted pollution of one substance by another; introduction of impurities |
| Convection | movement in a fluid caused by the rising of hotter, less dense material, and the sinking of colder, denser material |
| Density | quantity of mass per unit volume; measured in mass per volume (e.g. g/L) |
| DNA | deoxyribonucleic acid; self-replicating molecule composed of two strings of nucleotides; the main carrier of genetic information |
| Freezing | change in state from liquid to solid (water freezes at 0°C) |
| Friction | resistance between two surfaces when they move over each other; moves in the opposite direction of motion |
| Gamete | cell with half of the genetic information of an organism; able to unite with another gamete during sexual reproduction to form a zygote, which will grow into an organism (e.g. sperm, eggs) |
| Greenhouse Gas | gas that absorbs infrared radiation and warms the Earth (e.g. methane (CH ₄), carbon dioxide (CO ₂)) |
| Kinetic Energy | energy an object possesses when it is in motion; equal to half the object's mass multiplied by the square of its velocity, $E_k = \frac{1}{2}mv^2$ |
| Lipid | chemical compound of carbon, hydrogen, and oxygen, composed of fatty acids and glycerin; insoluble in water; stores energy for cellular processes and is a part of cell membranes (also sometimes called fats) |

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| Moles | unit that measures the number of elementary particles in a substance; one mole = 6.023×10^{23} particles |
| Natural Selection | the process by which organisms better adapted to their environment are better able to survive and reproduce, meaning that their traits tend to persist through generations |
| Newton's 1st Law | objects in a state of constant motion (or rest) remain that way unless an external force is applied |
| Newton's 3rd Law | for every force, there is an equal and opposite reactive force |
| Nucleic Acid | complex molecule composed of strings of nucleotides; often carries genetic information (e.g. DNA, RNA) |
| pH Scale | a number from 1 to 14 that indicates the concentration of hydrogen ions in a substance; 7 is neutral, higher than 7 is basic, and lower than 7 is acidic; values one unit apart on this scale vary by a factor of 10 (e.g. a pH of 2 is 10 times more acidic than a pH of 3) |
| Photosynthesis | the process by which plants and some bacteria use sunlight to create glucose and oxygen from carbon dioxide and water; represented by the chemical equation $6\text{CO}_2 + 6\text{H}_2\text{O} + \text{light} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$ |
| Pressure | force exerted per unit area; measured in millimeters mercury (mmHg), atmospheres (atm), or pascals (Pa) |
| Protein | complex molecule composed of chains of amino acids; essential to living organisms as enzymes and structural components |
| Radiation | emission of energy as electromagnetic waves (or subatomic particles) |
| Reaction Rate | the speed at which the reactants of a reaction are converted to its products; increases when surface area, temperature, concentration or pressure increase, and when a catalyst is added |
| Repulsion | electrostatic force that repels atoms or molecules with the same charge |
| Sex-linked Trait | a trait controlled by a gene that is on a sex chromosome (X in females, Y in males), typically the X-chromosome, so females who carry the gene for the trait may not exhibit the trait, but their sons likely will |
| Solution | mixture of two or more substances where one is dissolved in the other (particles cannot be seen) |
| Speed | change in position or distance over time, $\Delta v = \frac{\Delta d}{\Delta t}$ |
| Starch | large carbohydrate that stores energy in plants, especially in bulbs, roots, and seeds |
| Thermometer | device that measures temperature; typically a narrow, sealed glass tube with a bulb of mercury |
| Vapor Pressure | the slight pressure that results from the evaporation of a liquid into a gas, and the condensation of that gas back into a liquid |

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| Variation | differences in genetic information among individuals of a population |
| Water Bath | container of water used to heat other containers (e.g. test tubes) in experiments |
| Wavelength | distance between successive crests of a wave |
| Weight | force gravity exerts on an object, equal to the mass of the object multiplied by the acceleration due to gravity, $F_w = mg$ |