

2014 GED® Test Free Practice Test Companion

Now that you have viewed or taken the 2014 GED® Free Practice Test, the information in this Companion will help you understand what content is covered on each content area section of the 2014 GED® test. In addition, the Companion identifies what skill is tested by each question on the Free Practice Test to help you in preparing for the 2014 GED® test.

Science

The 2014 GED® Science test covers all of the Science Practices skills listed in the left column below. Not every test form will contain every skill that is listed, but each skill is considered “fair game” to appear on the test. Each test form, however, will be made up of a consistent percentage of test questions in each of the three major science practices skill areas that make up the test. The right column shows what is tested by each question on the 2014 GED® Free Practice Test.

Science Practices	Question Numbers
<u>Science Practices Skill Area 1: Reading and Writing in a Science Context</u> (30% of 2014 GED® Science test)	
Understand and explain written scientific presentations	1
Determine the meaning of symbols, terms and phrases as they are used in scientific presentations	
Pull specific evidence from a written source to support a finding or conclusion	4,5,8
Bring together and make sense of multiple findings, conclusions, or theories	
Express scientific information or findings in words	2, 3, 6, 7
<u>Science Practices Skill Area 2: Applying Important Science Concepts</u> (40% of GED Science test)	
Identify possible sources of error and alter the design of an investigation to remove the error	
Identify and refine hypotheses for scientific investigations	
Identify the strengths and weaknesses of one or more scientific investigation designs	
Design a scientific investigation	
Identify and interpret independent and dependent variables in scientific	9

investigations	
Use data or evidence to arrive at a conclusion	
Make a prediction based upon data or evidence	
Make judgments about whether theories or conclusions are supported or challenged by data or evidence	
Understand and apply scientific models, theories and processes	
<u>Science Practices Skill Area 3: Applying Mathematical Reasoning in Science</u> (30% of GED Science test)	
Understand and explain visual and numerical scientific presentations (for example, tables, diagrams, etc.)	
Express scientific information or findings visually (for example, placing data in a chart)	
Express scientific information or findings using numbers or symbols	
Apply formulas from scientific theories	
Describe a data set statistically	10
Determine the probability of events	
<u>Science Content Knowledge Areas</u>	
Each question on the 2014 GED® Science test measures essential science ideas in two ways. First, each question tests one of the Science Practices skills as described above. These skills require you to demonstrate the reasoning and critical thinking skills that are important to science. But second, each question also includes a science knowledge concept or topic drawn from one of the three main science knowledge areas: Life Science, Physical Science, and Earth and Space Science. You may find that being generally familiar with this focused range of concepts and topics helps you better understand what the test questions ask. These Content Topics and Subtopics, as well as the percentage of the test questions that cover each of the three main science knowledge areas, are listed below to the left. The information on the right shows what is tested by each question on the 2014 GED® Free Practice Test in science.	
When preparing for the 2014 GED® Science test, you should always remember that the main focus of the test is on your skills of reasoning and thinking applied in a scientific context. You might look at the content knowledge areas below and worry that you will never be able to have enough detailed knowledge to do well on the 2014 GED® Science test. But in reality, the test doesn't require you to have in-depth knowledge of any of the social studies content knowledge topics and subtopics. Instead, you should be broadly and generally familiar with each of the basic concepts listed below. This means that you should be prepared to recognize and	

<p>understand, in context, each of the terms listed. The questions on the test will never ask you to give your own definition of a term or topic. For example, one of the subtopics in the Human Body and Health area of Life Science is "body systems." In being prepared for the test, it would be helpful for you to generally know that the human body is composed of a number of different systems that work together to perform different functions. For example, the muscular system and the skeletal system work together to allow a body to move. Your general familiarity with this concept would likely help you to understand the context of the question and successfully use your reasoning and thinking skills to arrive at an answer.</p>	
<p><u>Science Content Knowledge Area 1: Life Science</u> (40% of 2014 GED® test)</p>	
<p>Human Body and Health</p>	
<p>- Body systems (e.g. muscular, endocrine, nervous systems) and how they work together to perform a function (e.g. muscular and skeletal work to move the body)</p>	
<p>- Homeostasis, feedback methods that maintain homeostasis (e.g. sweating to maintain internal temperature), and effects of changes in the external environment on living things (e.g. hypothermia, injury)</p>	
<p>- Sources of nutrients (e.g. foods, symbiotic organisms) and concepts in nutrition (e.g. calories, vitamins, minerals)</p>	
<p>- Transmission of disease and pathogens (e.g. airborne, bloodborne), effects of disease or pathogens on populations (e.g. demographics change, extinction), and disease prevention methods (e.g. vaccination, sanitation)</p>	
<p>Relationship Between Life Functions and Energy Intake</p>	
<p>- Energy for life functions (e.g. photosynthesis, respiration, fermentation)</p>	
<p>- Energy Flows in Ecologic Networks (Ecosystems)</p>	
<p>- Flow of energy in ecosystems (e.g. energy pyramids), conservation of energy in an ecosystem (e.g. energy lost as heat, energy passed on to other organisms) and sources of energy (e.g. sunlight, producers, lower level consumer)</p>	2
<p>- Flow of matter in ecosystems (e.g. food webs and chains, positions of organisms in the web or chain) and the effects of change in communities or environment on food webs</p>	
<p>- Carrying capacity, changes in carrying capacity based on changes in populations and environmental effects and limiting resources to necessary for growth</p>	
<p>- Symbiosis (e.g. mutualism, parasitism, commensalism) and predator/prey relationships (e.g. changes in one population affecting another population)</p>	5

- Disruption of ecosystems (e.g. invasive species, flooding, habitat destruction, desertification) and extinction (e.g. causes [human and natural] and effects)	4, 8, 9
Organization of Life (Structure and Function of Life)	
- Essential functions of life (e.g. chemical reactions, reproduction, metabolism) and cellular components that assist the functions of life (e.g. cell membranes, enzymes, energy)	
- Cell theory (e.g. cells come from cells, cells are the smallest unit of living things), specialized cells and tissues (e.g. muscles, nerve, etc.) and cellular levels of organization (e.g. cells, tissues, organs, systems)	
- Mitosis, meiosis (e.g. process and purpose)	
Molecular Basis for Heredity	
- Central dogma of molecular biology, the mechanism of inheritance (e.g. DNA) and chromosomes (e.g. description, chromosome splitting during Meiosis)	
- Genotypes, phenotypes and the probability of traits in close relatives (e.g. Punnett squares, pedigree charts)	
- New alleles, assortment of alleles (e.g. mutations, crossing over), environmental altering of traits, and expression of traits (e.g. epigenetics, color-points of Siamese cats)	7
Evolution	
- Common ancestry (e.g. evidence) and cladograms (e.g. drawing, creating, interpreting)	
- Selection (e.g. natural selection, artificial selection, evidence) and the requirements for selection (e.g. variation in traits, differential survivability)	
- Adaptation, selection pressure, and speciation	
- Sources of nutrients (e.g. foods, symbiotic organisms) and concepts in nutrition (e.g. calories, vitamins, minerals)	
- Transmission of disease and pathogens (e.g. airborne, bloodborne), effects of disease or pathogens on populations (e.g. demographics change, extinction), and disease prevention methods (e.g. vaccination, sanitation)	
<u>Science Content Knowledge Area 2: Physical Science</u> (40% of 2014 GED® Science test)	
Conservation, Transformation, and Flow of Energy	
- Heat, temperature, the flow of heat results in work and the transfer of heat (e.g. conduction, convection)	
- Endothermic and exothermic reactions	
- Types of energy (e.g. kinetic, chemical, mechanical) and transformations	

between types of energy (e.g. chemical energy [sugar] to kinetic energy [motion of a body])	
- Sources of energy (e.g. sun, fossil fuels, nuclear) and the relationships between different sources (e.g. levels of pollutions, amount of energy produced)	
- Types of waves, parts of waves (e.g. frequency, wavelength), types of electromagnetic radiation, transfer of energy by waves, and the uses and dangers of electromagnetic radiation (e.g. radio transmission, UV light and sunburns)	
Work, Motion, and Forces	
- Speed, velocity, acceleration, momentum, and collisions (e.g. inertia in a car accident, momentum transfer between two objects)	
- Force, Newton's Laws, gravity, acceleration due to Gravity (e.g. freefall, law of gravitational attraction), mass and weight	6
- Work, simple machines (types and functions), mechanical advantages (force, distance, and simple machines), and power	
Chemical Properties and Reactions Related to Living Systems	
- Structure of matter	
- Physical and chemical properties, changes of state, and density	10
- Balancing chemical equations and different types of chemical equations, conservation of mass in balanced chemical equations and limiting reactants	
- Parts in solutions, general rules of solubility (e.g. hotter solvents allow more solute to dissolve), saturation and the differences between weak and strong solutions	3
<u>Science Content Knowledge Area 3: Earth & Space Science</u> (20% of 2014 GED® Science test)	
Interactions between Earth's Systems and Living Things	
- Interactions of matter between living and non-living things (e.g. cycles of matter) and the location, uses and dangers of fossil fuels	
- Natural Hazards (e.g. earthquakes, hurricanes, etc.) their effects (e.g. frequency, severity, and short- and long-term effects), and mitigation thereof (e.g. dikes, storm shelters, building practices)	
- Extraction and use of natural resources, renewable vs. non-renewable resources and sustainability	
Earth and its System Components and Interactions	
- Characteristics of the atmosphere, including its layers, gases and their effects on the Earth and its organisms, including climate change	
- Characteristics of the oceans (e.g. salt water, currents, coral reefs) and their effects on Earth and organisms	

- Interactions between Earth’s systems (e.g. weathering caused by wind or water on rock, wind caused by high/low pressure and Earth rotation, etc.)	
- Interior structure of the Earth (e.g. core, mantle, crust, tectonic plates) and its effects (e.g. volcanoes, earth quakes, etc.) and major landforms of the Earth (e.g. mountains, ocean basins, continental shelves, etc.)	1
Structures and Organization of the Cosmos	
- Structures in the universe (e.g. galaxies, stars, constellations, solar systems), the age and development of the universe, and the age and development of Stars (e.g. main sequence, stellar development, deaths of stars [black hole, white dwarf])	
- Sun, planets, and moons (e.g. types of planets, comets, asteroids), the motion of the Earth’s motion and the interactions within the Earth’s solar system (e.g. tides, eclipses)	
- The age of the Earth, including radiometrics, fossils, and landforms	