

Test Design BlueprintDate 1/25/2015Integrated Science II
Course Title2002420
Course Number9-12
Grade(s)

Main Idea <i>(Big Idea/Domain/Strand/Standard)</i>	Standard Code	Percent of Test Based on Time Devoted to Standard	Number of Test Questions <i>(60 total)</i>
Explain that a scientific theory is the culmination of many scientific investigations drawing together all the current evidence concerning a substantial range of phenomena; thus, a scientific theory represents the most powerful explanation scientists have to offer.	SC.912.N.3.1	1.66 %	1
Describe the role consensus plays in the historical development of a theory in any one of the disciplines of science.	SC.912.N.3.2	1.66 %	1
Describe and predict how the initial mass of a star determines its evolution.	SC.912.E.5.3	1.66 %	1
Explain the formation of planetary systems based on our knowledge of our Solar System and apply this knowledge to newly discovered planetary systems.	SC.912.E.5.5	1.66 %	1
Develop logical connections through physical principles, including Kepler's and Newton's Laws about the relationships and the effects of Earth, Moon, and Sun on each other.	SC.912.E.5.6	1.66 %	1
Summarize the conditions that contribute to the climate of a geographic area, including the relationships to lakes and oceans.	SC.912.E.7.4	1.66 %	1

Distinguish between bonding forces holding compounds together and other attractive forces, including hydrogen bonding and van der Waals forces.	SC.912.P.8.6	1.66 %	1
Relate acidity and basicity to hydronium and hydroxyl ion concentration and pH.	SC.912.P.8.11	1.66 %	1
Characterize types of chemical reactions, for example: redox, acid-base, synthesis, and single and double replacement reactions.	SC.912.P.8.8	1.66 %	1
Apply the mole concept and the law of conservation of mass to calculate quantities of chemicals participating in reactions.	SC.912.P.8.9	1.66 %	1
Describe the properties of the carbon atom that make the diversity of carbon compounds possible.	SC.912.P.8.12	3.33 %	2
Identify selected functional groups and relate how they contribute to properties of carbon compounds.	SC.912.P.8.13	3.33 %	2
Differentiate between chemical and nuclear reactions.	SC.912.P.10.12	1.66 %	1
Differentiate among conductors, semiconductors, and insulators.	SC.912.P.10.14	1.66 %	1
Investigate and explain the relationships among current, voltage, resistance, and power.	SC.912.P.10.15	1.66 %	1
Relate temperature to the average molecular kinetic energy.	SC.912.P.10.5	1.66 %	1
Compare the magnitude and range of the four fundamental forces (gravitational, electromagnetic, weak nuclear, strong nuclear).	SC.912.P.10.10	1.66 %	1
Distinguish between scalar and vector quantities and assess which should be used to describe an event.	SC.912.P.12.1	1.66 %	1

Analyze the motion of an object in terms of its position, velocity, and acceleration (with respect to a frame of reference) as functions of time.	SC.912.P.12.2	1.66 %	1
Describe how the gravitational force between two objects depends on their masses and the distance between them.	SC.912.P.12.4	1.66 %	1
Explain the significance of genetic factors, environmental factors, and pathogenic agents to health from the perspectives of both individual and public health.	SC.912.L.14.6	1.66 %	1
Identify the major parts of the brain on diagrams or models.	SC.912.L.14.26	1.66 %	1
Describe the factors affecting blood flow through the cardiovascular system.	SC.912.L.14.36	3.33 %	2
Explain the basic functions of the human immune system, including specific and nonspecific immune response, vaccines, and antibiotics.	SC.912.L.14.52	3.33 %	2
Describe the scientific explanations of the origin of life on Earth.	SC.912.L.15.8	1.66 %	1
Describe how mutation and genetic recombination increase genetic variation.	SC.912.L.15.15	1.66 %	1
Use Mendel's laws of segregation and independent assortment to analyze patterns of inheritance.	SC.912.L.16.1	3.33 %	2
Discuss observed inheritance patterns caused by various modes of inheritance, including dominant, recessive, codominant, sex-linked, polygenic, and multiple alleles.	SC.912.L.16.2	3.33 %	2
Explain how and why the genetic code is universal and is common to almost all organisms.	SC.912.L.16.9	1.66 %	1
Describe the basic process of DNA replication and how it relates to the transmission and conservation of the genetic information.	SC.912.L.16.3	3.33 %	2

Explain how mutations in the DNA sequence may or may not result in phenotypic change. Explain how mutations in gametes may result in phenotypic changes in offspring.	SC.912.L.16.4	3.33 %	2
Explain the basic processes of transcription and translation, and how they result in the expression of genes.	SC.912.L.16.5	1.66 %	1
Evaluate the impact of biotechnology on the individual, society and the environment, including medical and ethical issues.	SC.912.L.16.10	1.66 %	1
Describe the basic anatomy and physiology of the human reproductive system. Describe the process of human development from fertilization to birth and major changes that occur in each trimester of pregnancy.	SC.912.L.16.13	3.33 %	2
Describe the process of meiosis, including independent assortment and crossing over. Explain how reduction division results in the formation of haploid gametes or spores.	SC.912.L.16.16	3.33 %	2
Compare and contrast mitosis and meiosis and relate to the processes of sexual and asexual reproduction and their consequences for genetic variation.	SC.912.L.16.17	1.66 %	1
Use a food web to identify and distinguish producers, consumers, and decomposers. Explain the pathway of energy transfer through trophic levels and the reduction of available energy at successive trophic levels.	SC.912.L.17.9	1.66 %	1
Describe the basic molecular structures and primary functions of the four major categories of biological macromolecules.	SC.912.L.18.1	3.33 %	2
Identify the reactants, products, and basic functions of photosynthesis.	SC.912.L.18.7	3.33 %	2

Identify the reactants, products, and basic functions of aerobic and anaerobic cellular respiration.	SC.912.L.18.8	1.66 %	1
Explain the interrelated nature of photosynthesis and cellular respiration.	SC.912.L.18.9	3.33 %	2
Connect the role of adenosine triphosphate (ATP) to energy transfers within a cell.	SC.912.L.18.10	1.66 %	1
Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, and their effect on enzyme activity.	SC.912.L.18.11	3.33 %	2
Evaluate how environment and personal health are interrelated	HE.912.C.1.3	1.66 %	1
Analyze strategies for prevention, detection, and treatment of communicable and chronic diseases.	HE.912.C.1.5	3.33 %	2
Analyze how heredity and family history can impact personal health.	HE.912.C.1.7	1.66 %	1
TOTALS		100 %	60

List All Common Course Teachers:

Thomas Hosted