Biology II

Wheatland High School

Unit	Standards	Enduring Understandings or Big Ideas	Essential Questions/ Understandings*	Knowledge Targets	Skill Targets	Reasoning Targets	Product Targets	Assessments	Key Academic Vocabulary	Instructional Strategies & Resources Activities
Life and It's Chemistry (Week 1, 4 Weeks)	WY: Science **WY: Grades 9-12** Concepts & Processes 1: Concepts and Processes Science is a dynamic process; concepts and processes in life systems, earth and space systems, and physical systems are best learned through inquiry and investigation. Students develop an understanding of scientific content through inquiry within the context of these unifying concepts and processes: • Systems, classification, order, and organization • Evidence, models, and explanations • Change, constancy, and measurement • Evolution and equilibrium • Form and function LIFE SYSTEMS SC11.1.1 The Cell: Explain the processes of life, which necessitates an understanding of relationships between structure and function of the cell and cellular differentiation. Identify activities taking place in an organism related to metabolic activities in cells, including growth, regulation, transport, and homeostasis. Differentiate between asexual and sexual reproduction. Science as Inquiry 2: Science as Inquiry Students demonstrate knowledge, skills, and habits of mind necessary to safely perform scientific inquiry. Inquiry is the foundation for the development of content, teaching students the use of processes of science that enable them to construct and develop their own knowledge. Inquiry requires appropriate field, classroom, and laboratory experiences with suitable facilities and equipment. SC11.2.1 Students use research scientific information and present findings through appropriate means. SC11.2.2 Students use inquiry to conduct scientific investigations. • Pose problems and identify questions and concepts to design and conduct an investigation. • Collect, organize, analyze and appropriately	Understand the organization of living things. Understand scientific method. Understand the chemical nature of life and organic molecules common to living things.		Identify the seven characteristics of life. Identify the parts of scientific method. Understand that all matter is composed of atoms. Describe the unique properties of water. Identify the four types of organic compounds critical to life. Describe the building blocks of the organic compounds.	Use scientific method to conduct a lab. Communicate results of lab in written form.	Explain why unique properties of water are crucial to life. Explain the importance of organic compounds to life.	Complete a lab report.	Chapters 1 - 11 Test: Written Summative Raisin Written: Report Formative Vocabulary Quiz Chapters 1-11 Other: Quiz Diagnostic	1. molecules 2. organelles 3. cells 4. tissues 5. organs 6. population 7. species 8. hypothesis 9. control 10. dependent variable 11. independent variable 12. theory 13. control	Biology, 7th edition; Raven, Johnson, Losos, and Singer. McGraw-Hill Companies 2002.

	represent data. • Give priority to evidence in drawing conclusions and making connections to scientific concepts. • Clearly and accurately communicate the result of the investigation. SC11.2.3 Students clearly and accurately communicate the result of their own work as well as information from other sources. Copyright © 2015, Wyoming Department of Education									
Molecular Genetics (Week 5, 4 Weeks)	WY: Science **WY: Grades 9-12** Concepts & Processes 1: Concepts and Processes Science is a dynamic process; concepts and processes in life systems, earth and space systems, and physical systems are best learned through inquiry and investigation. Students develop an understanding of scientific content through inquiry within the context of these unifying concepts and processes: • Systems, classification, order, and organization • Evidence, models, and explanations • Change, constancy, and measurement • Evolution and equilibrium • Form and function LIFE SYSTEMS SC11.1.2 Molecular Basis of Heredity: Demonstrate an understanding that organisms ensure species continuity by passing genetic information from parent to offspring. Utilize genetic information to make predictions about possible offspring. Apply concepts of molecular biology (DNA and genes) to recent discoveries. Earth and Space Systems SC11.1.8 Origin and Evolution of the Earth System: Investigate geologic time through comparing rock sequences, the fossil record, and decay rates of radioactive isotopes. History & Nature of Science in Personal and Social Decisions 3. History and Nature of Science in Personal and Social Decisions Students recognize the nature of science, its history, and its connections to personal, social, economic, and political decisions. Historically, scientific events have had significant impacts on our cultural heritage. SC11.3.1 Students examine the nature and history of science. • As scientific knowledge evolves, it impacts	DNA is the genetic material that contains a code for proteins. Genetic technology improves human health and quality of life.		Explain that the knowledge about DNA has been gradually shaped by a series of discoveries and experiments. Identify the parts of a DNA molecule. Explain the process of DNA replication. Explain the relationship between chromosomes, genes and DNA. Explain the differences between DNA and RNA and between the different types of RNA. Describe how DNA, RNA and ribosomes interact in protein synthesis. Explain the processes of transcription and translation. Describe the basic types of genetic engineering.	Construct a timeline of experiments and discoveries related to DNA. Construct a model of a DNA molecule. Construct a model of the process of protein synthesis.		Timeline Model of DNA Model of protein synthesis	Chapter 14 Test: Written Summative Chapter 15 Test: Written Summative Chapters 16 & 17 Test: Written Summative DNA Model Performance: Skill Demonstration Formative Protein Synthesis Performance: Skill Demonstration Formative DNA Fingerprint Performance: Skill Demonstration Formative Vocabulary Quiz Chapter 14 Other: Quiz Diagnostic Vocabulary Quiz Chapter 15 Other: Quiz Diagnostic Chapters 16 & 17 Other: Quiz Diagnostic	Biology II Vocabulary Chapter 14 1. Nucleic acid 2. Nucleotide 3. Purine 4. Pyrimidine 5. Semiconservative replication 6. Leading strand 7. Lagging strand 8. Replication fork 9. Gene 10. Bacteriophages 11. Phosphodiester bond 12. Complementary base pairs 13. Okazaki fragments 14. Double helix 15. DNA Polymerases 16. DNA primase 17. DNA helicase 18. DNA gyrase 19. Nucleases 20. Bidirectional 21. Antiparallel configuration	Biology, 7th edition; Raven, Johnson, Losos, and Singer. McGraw-Hill Companies 2002.

	personal, social, economic, and political decisions. • The historical misuse of scientific information to make personal, social, economic, and political decisions. SC11.3.2 Students examine how scientific information is used to make decisions. • Interdisciplinary connections of the sciences and connections to other subject areas and career opportunities. • The role of science in solving personal, local, national, and global problems. • The origins, limitations, and conservation of natural resources, including Wyoming examples. 			Describe the uses for genetic engineering. Explain the advantages and disadvantages of genetic engineering.					22. **Biology II Vocabulary List Chapter 15** 1. Anticodon 2. Central Dogma 3. Coding strand 4. Codons 5. Exons 6. Gene expression 7. Introns 8. Messenger RNA 9. Nonsense codons

10. Reading frame
11. Ribosomal RNA
12. Ribosome
13. RNA splicing
14. Template strand
15. Transcription
16. Transcription bubble
17. Transfer RNA
18. Translation

									19. Translocation 20. Triplet code 21. Vocabulary List Chapters 16 & 17

Evolution (Week 9, 11 Weeks)	WY: Science **WY: Grades 9-12** Concepts & Processes 1: Concepts and Processes Science is a dynamic process; concepts and processes in life systems, earth and space systems, and physical systems are best learned through inquiry and investigation. Students develop an understanding of scientific content through inquiry within the context of these unifying concepts and processes: • Systems, classification, order, and organization • Evidence, models, and explanations • Change, constancy, and measurement • Evolution and equilibrium • Form and function LIFE SYSTEMS SC11.1.2 Molecular Basis of Heredity: Demonstrate an understanding that organisms ensure species continuity by passing genetic information from parent to offspring. Utilize genetic information to make predictions about possible offspring. Apply concepts of molecular biology (DNA and genes) to recent discoveries. SC11.1.3 Biological Evolution: Explain how species evolve over time. Understand that evolution is the consequence of various interactions, including the genetic variability of offspring due to mutation and recombination of genes, and the ensuing selection by the	Fossils provide evidence for understanding the history of life on Earth. The theory of natural selection explains evolution and the diversity of life. Charles Darwin developed a theory of evolution based on natural selection. Multiple lines of evidence support the theory of evolution. The theory of evolution continues ot be refined as scientists learn new information.		Discuss evidence that Darwin used to support the idea that organisms could change over time. List the four principles of natural selection. Relate the process of natural slection to changes in gene frequency. Discuss patterns observed in evolution. Describe factors the influence speciation. Compare gradulism and puncutated equilibrium. Describe a typical	Demonstrate variations in a population. Demonstrate the process of natural selection by showing changes in gene frequency. Communciate results of lab investigation in written form.	Relate the process of natural selection to genetic variation. Use a model to explain the process of natural selection.	Lab report for genetic variation lab. Lab report for natural selection lab.	Chap 21 - 23 Test: Written Summative Variations Written: Report Formative Natural Selection Written: Report Formative Vocabulary Quiz Chapters 21-23 Other: Quiz Diagnostic	***Biology II Chapters 21, 22, 23 – Vocabulary*** 1. Absolute dating 2. Artificial selection 3. Darwin 4. Evolution 5. Fitness 6. Gene frequency 7. Gene pool 8. Genetic drift 9. Gradualism 10. Heterozygosity 11. Mass extinctions 12. Natural selection 13. Population genetics 14. Punctuated equilibrium 15. Relative dating 16. Reproductively isolated	Biology, 7th edition; Raven, Johnson, Losos, and Singer. McGraw-Hill Companies 2002.

	environment of those offspring better able to survive and leave additional offspring. Discuss natural selection and that its evolutionary consequences provide a scientific explanation for the great diversity of organisms as evidenced by the fossil record. Examine how different species are related by descent from common ancestors. Explain how organisms are classified based on similarities that reflect their evolutionary relationships, with species being the most fundamental unit of classification. Science as Inquiry 2: Science as Inquiry Students demonstrate knowledge, skills, and habits of mind necessary to safely perform scientific inquiry. Inquiry is the foundation for the development of content, teaching students the use of processes of science that enable them to construct and develop their own knowledge. Inquiry requires appropriate field, classroom, and laboratory experiences with suitable facilities and equipment. SC11.2.1 Students use research scientific information and present findings through appropriate means. SC11.2.2 Students use inquiry to conduct scientific investigations. • Pose problems and identify questions and concepts to design and conduct an investigation. • Collect, organize, analyze and appropriately represent data. • Give priority to evidence in drawing conclusions and making connections to scientific concepts. • Clearly and accurately communicate the result of the investigation. SC11.2.3 Students clearly and accurately communicate the result of their own work as well as information from other sources. SC11.2.4 Students investigate the relationships between science and technology and the role of technological design in meeting human needs. History & Nature of Science in Personal and Social Decisions 3. History and Nature of Science in Personal and Social Decisions Students recognize the nature of science, its history, and its connections to personal, social, economic, and political decisions. Historically, scientific events have had significant impacts on our cultural heritage. SC11.3.1 Students examine the nature and history of science. • As scientific knowledge evolves, it impacts personal, social, economic, and political decisions.			sequence of events in fossilization. Compare techniques for dating fossils.					17. Selection 18. Speciation 19. Subspecies 20. Vestigial structures

	• The historical misuse of scientific information to make personal, social, economic, and political decisions. SC11.3.2 Students examine how scientific information is used to make decisions. • Interdisciplinary connections of the sciences and connections to other subject areas and career opportunities. • The role of science in solving personal, local, national, and global problems. • The origins, limitations, and conservation of natural resources, including Wyoming examples. 									
Taxonomy (Week 20, 3 Weeks)	WY: Science **WY: Grades 9-12** Concepts & Processes 1: Concepts and Processes Science is a dynamic process; concepts and processes in life systems, earth and space systems, and physical systems are best learned through inquiry and investigation. Students develop an understanding of scientific content through inquiry within the context of these unifying concepts and processes: • Systems, classification, order, and organization • Evidence, models, and explanations • Change, constancy, and measurement • Evolution and equilibrium • Form and function LIFE SYSTEMS SC11.1.6 Behavior and Adaptation: Examine behavior as the sum of responses of an organism to stimuli in its environment, which evolves through adaptation, increasing the potential for species survival. Identify adaptations as characteristics and behaviors of an organism that enhance the chance for survival and reproductive success in a particular environment. 	Biologists name organisms in a systematic way. All living things are groups into a few major categories.		Describe binomial naming. Understand the hierarchical classification system. Understand the definition of a species and its limitations. Describe the 3 domains and the organisms that would be found in each. Identify the major phyla of the Domain Euk arya and list an example of each.	Research and build PowerPoi nt sides for 3 phlya.			Chapters 25 -31 Test: Written Phyla Project: Technology	Autotroph Bacillus Bioremediation Chitin Coccus Dessication External Extremophile Gram-negative Gram-positive Heterotroph Methanogen Mycelium Mycology Nonextreme Nonvascular Osmotroph Phagotroph Phototroph Spirillum Spore Taxon Taxonomy Vascular Virus	Biology, 7th edition; Raven, Johnson, Losos, and Singer. McGraw-Hill Companies 2002.
The Animal Body and	WY: Science	Understand that the vertebrate body is made		Identify the 4 main tissue types in the	Make and demonstrate a model		Model a pair of	Chapter 42 Test: Written Muscle Model	1. **Acetylcho line** 2. **Actin**	Biology, 7th edition; Raven, Johnson,

How It Moves (Week 23, 4 Weeks)	**WY: Grades 9-12** Concepts & Processes 1: Concepts and Processes Science is a dynamic process; concepts and processes in life systems, earth and space systems, and physical systems are best learned through inquiry and investigation. Students develop an understanding of scientific content through inquiry within the context of these unifying concepts and processes: • Systems, classification, order, and organization • Evidence, models, and explanations • Change, constancy, and measurement • Evolution and equilibrium • Form and function LIFE SYSTEMS SC11.1.6 Behavior and Adaptation: Examine behavior as the sum of responses of an organism to stimuli in its environment, which evolves through adaptation, increasing the potential for species survival. Identify adaptations as characteristics and behaviors of an organism that enhance the chance for survival and reproductive success in a particular environment. Science as Inquiry 2: Science as Inquiry Students demonstrate knowledge, skills, and habits of mind necessary to safely perform scientific inquiry. Inquiry is the foundation for the development of content, teaching students the use of processes of science that enable them to construct and develop their own knowledge. Inquiry requires appropriate field, classroom, and laboratory experiences with suitable facilities and equipment. SC11.2.1 Students use research scientific information and present findings through appropriate means. SC11.2.2 Students use inquiry to conduct scientific investigations. • Pose problems and identify questions and concepts to design and conduct an investigation. • Collect, organize, analyze and appropriately represent data. • Give priority to evidence in drawing conclusions and making connections to scientific concepts. • Clearly and accurately communicate the result of the investigation. SC11.2.3 Students clearly and accurately communicate the result of their own work as well as information from other sources. SC11.2.4 Students investigate the relationships between science and technology and the role of technological design in meeting human needs.	up of a variety of organs and organ systems that carry out specific functions. Understand the different vertebrate structures for support of the body. Understand the different vertebrate structures and methods of locomotion.		vertebrate body. Describe the general characteristics of the 4 main tissue types. Describe the different types of tissues found in each type. Describe the different types of locomotion and list an example of an organism that uses that type of locomotion. Describe the mechanism for contraction of skeletal muscles.	of synergistic and antagonistic muscles.		skeletal muscle.	Performance: Skill Demonstration	3. **Antagonist** 4. **Chondrocyte** 5. **Connective tissue** 6. **Endoskeleton** 7. **Epithelium** 8. **Exoskeleton** 9. **Fast-twitch fibers** 10. **Hydrostatic skeleton** 11. **Insertion** 12. **Matrix** 13. **Muscle fatigue** 14. **Muscle fiber** 15. **Myosin** 16. **Organ** 17. **Origin** 18. **Slow-twitch fibers** 19. **Synergist** 20. **Tissue** 21. **Twitch**	Losos, and Singer. McGraw-Hill Companies 2002.

	SC11.2.5 Students properly use appropriate scientific and safety equipment, recognize hazards and safety symbols, and observe standard safety procedures. 									
Fueling Body Activities: Digestion (Week 27, 4 Weeks)	WY: Science **WY: Grades 9-12** Concepts & Processes 1: Concepts and Processes Science is a dynamic process; concepts and processes in life systems, earth and space systems, and physical systems are best learned through inquiry and investigation. Students develop an understanding of scientific content through inquiry within the context of these unifying concepts and processes: • Systems, classification, order, and organization • Evidence, models, and explanations • Change, constancy, and measurement • Evolution and equilibrium • Form and function LIFE SYSTEMS SC11.1.6 Behavior and Adaptation: Examine behavior as the sum of responses of an organism to stimuli in its environment, which evolves through adaptation, increasing the potential for species survival. Identify adaptations as characteristics and behaviors of an organism that enhance the chance for survival and reproductive success in a particular environment. Science as Inquiry 2: Science as Inquiry Students demonstrate knowledge, skills, and habits of mind necessary to safely perform scientific inquiry. Inquiry is the foundation for the development of content, teaching students the use of processes of science that enable them to construct and develop their own knowledge. Inquiry requires appropriate field, classroom, and laboratory experiences with suitable facilities and equipment. SC11.2.1 Students use research scientific information and present findings through appropriate means. SC11.2.2 Students use inquiry to conduct scientific investigations. • Pose problems and identify questions and concepts to design and conduct an investigation. • Collect, organize, analyze and appropriately represent data. • Give priority to evidence in drawing conclusions	Understand that all organisms require energy to live and carry out life functions. Understand the variety of methods that are used by the animal kingdom for obtaining energy and nutrients. Understand the differences in structure of digestive systems and how each is adapted to a particular diet.			Communicate results of lab in written form.		Report lab results in written format.	Chapter 43 Test: Written Amylase Lab Performance: Lab Assignment	1. herbivores 2. carnivores 3. omnivores 4. cecum 5. duodenum 6. jejunum 7. ileum 8. villi 9. coprophagy 10. essential nutrients	Biology, 7th edition; Raven, Johnson, Losos, and Singer. McGraw-Hill Companies 2002.

	and making connections to scientific concepts. • Clearly and accurately communicate the result of the investigation. SC11.2.3 Students clearly and accurately communicate the result of their own work as well as information from other sources. SC11.2.5 Students properly use appropriate scientific and safety equipment, recognize hazards and safety symbols, and observe standard safety procedures. Copyright © 2015, Wyoming Department of Education									
Circulation and Respiration (Week 31, 5 Weeks)	WY: Science **WY: Grades 9-12** Concepts & Processes 1: Concepts and Processes Science is a dynamic process; concepts and processes in life systems, earth and space systems, and physical systems are best learned through inquiry and investigation. Students develop an understanding of scientific content through inquiry within the context of these unifying concepts and processes: • Systems, classification, order, and organization • Evidence, models, and explanations • Change, constancy, and measurement • Evolution and equilibrium • Form and function LIFE SYSTEMS SC11.1.3 Biological Evolution: Explain how species evolve over time. Understand that evolution is the consequence of various interactions, including the genetic variability of offspring due to mutation and recombination of genes, and the ensuing selection by the environment of those offspring better able to survive and leave additional offspring. Discuss natural selection and that its evolutionary consequences provide a scientific explanation for the great diversity of organisms as evidenced by the fossil record. Examine how different species are related by descent from common ancestors. Explain how organisms are classified based on similarities that reflect their evolutionary relationships, with species being the most fundamental unit of classification. SC11.1.6 Behavior and Adaptation: Examine behavior as the sum of responses of an organism to stimuli in its environment, which evolves through adaptation, increasing the potential for species survival. Identify adaptations as characteristics and behaviors of an organism	Circulatory systems are the transportation mechanism in animals. The circulatory and respiratory systems ahve evolved together in vertebrates. Respiration had evolved to maximize the rate of gas diffusion. Recognize the differences in circulatory and respiratory systems among animals.		Understand the difference between open and closed circulatory systems. Understand the composition and function of blood and the types of blood vessels. Understand the cardiac cycle and its impact on blood flow and blood pressure. Understand the differences in types of circulatory systems of animals. Understand the differences in types of respiratory systems of animals. Understand the relationship between surface area and diffusion rate in respiratory membranes. Understand the structures and	Use a variety of information resources to research scientific information. Communicate effectively in written format.	Compare the respiratory and circulatory systems of animals in terms of structure, function and efficiency.		Career Investigation Oral: Presentation Test Chapter 44 Test: Written Dissection Performance: Skill Demonstration Heart Rate Performance: Lab Assignment Vital Capacity Performance: Lab Assignment	1. Alveoli 2. Artery 3. Atria 4. Capillary 5. Closed circulatory system 6. Concurrent exchange 7. Countercurrent exchange 8. Crosscurrent exchange 9. Diastolic 10. Double circulation 11. Ectotherm 12. Endotherm 13. Hemoglobin 14. Larynx 15. Open circulatory system 16. Plasma 17. Single circulation 18. Systolic 19. Vasoconstriction 20. Vasodilation 21. Vein 22. Ventricle	Biology, 7th edition; Raven, Johnson, Losos, and Singer. McGraw-Hill Companies 2002.

	that enhance the chance for survival and reproductive success in a particular environment. Science as Inquiry 2: Science as Inquiry Students demonstrate knowledge, skills, and habits of mind necessary to safely perform scientific inquiry. Inquiry is the foundation for the development of content, teaching students the use of processes of science that enable them to construct and develop their own knowledge. Inquiry requires appropriate field, classroom, and laboratory experiences with suitable facilities and equipment. SC11.2.1 Students use research scientific information and present findings through appropriate means. SC11.2.2 Students use inquiry to conduct scientific investigations. • Pose problems and identify questions and concepts to design and conduct an investigation. • Collect, organize, analyze and appropriately represent data. • Give priority to evidence in drawing conclusions and making connections to scientific concepts. • Clearly and accurately communicate the result of the investigation. SC11.2.3 Students clearly and accurately communicate the result of their own work as well as information from other sources. SC11.2.4 Students investigate the relationships between science and technology and the role of technological design in meeting human needs. SC11.2.5 Students properly use appropriate scientific and safety equipment, recognize hazards and safety symbols, and observe standard safety procedures. Copyright © 2015, Wyoming Department of Education			mechanisms of breathing. Understand the mechanism of gas transport in the blood.						
Nervous System and Senses (Week 36, 2 Weeks)	WY: Science **WY: Grades 9-12** Concepts & Processes 1: Concepts and Processes Science is a dynamic process; concepts and processes in life systems, earth and space systems, and physical systems are best learned through inquiry and investigation. Students develop an understanding of scientific content through inquiry within the context of these unifying concepts and processes: • Systems, classification, order, and organization • Evidence, models, and explanations	Understand the basic cellular components of the nervous system and their functions. Understand how nerve impulses are produced on the axonal membrane.		Compare and contrast the structure and function of the nervous systems within the animal kingdom	Use several resources to gather information, organize information and report in wriiten form.		Research Paper	Human Disease Paper Written: Informative Chapter 45 Test: Written	1. Ganglia 2. Axon 3. Nerve net 4. Brain stem 5. Autonomic nervous system 6. Central nervous system 7. Cerebellum 8. Cell body 9. Neurotransmitter	Biology, 7th edition; Raven, Johnson, Losos, and Singer. McGraw-Hill Companies 2002.

	• Change, constancy, and measurement • Evolution and equilibrium • Form and function LIFE SYSTEMS SC11.1.6 Behavior and Adaptation: Examine behavior as the sum of responses of an organism to stimuli in its environment, which evolves through adaptation, increasing the potential for species survival. Identify adaptations as characteristics and behaviors of an organism that enhance the chance for survival and reproductive success in a particular environment. Science as Inquiry 2: Science as Inquiry Students demonstrate knowledge, skills, and habits of mind necessary to safely perform scientific inquiry. Inquiry is the foundation for the development of content, teaching students the use of processes of science that enable them to construct and develop their own knowledge. Inquiry requires appropriate field, classroom, and laboratory experiences with suitable facilities and equipment. SC11.2.1 Students use research scientific information and present findings through appropriate means. SC11.2.3 Students clearly and accurately communicate the result of their own work as well as information from other sources. History & Nature of Science in Personal and Social Decisions 3. History and Nature of Science in Personal and Social Decisions Students recognize the nature of science, its history, and its connections to personal, social, economic, and political decisions. Historically, scientific events have had significant impacts on our cultural heritage. SC11.3.2 Students examine how scientific information is used to make decisions. • Interdisciplinary connections of the sciences and connections to other subject areas and career opportunities. • The role of science in solving personal, local, national, and global problems. • The origins, limitations, and conservation of natural resources, including Wyoming examples. 	Understand the structure of a synapse and how nerve impulses are transmitted across a synapse. Understand the structure of the nervous systems of the animal king dom. Understand the divisions of the nervous system of vertebrate animals.							10. Cerebrum 11. Motor neuron 12. Node of Ranvier 13. Dendrite 14. Interneuron 15. Peripheral nervous system 16. Neuroglia 17. Synapse 18. Schwann cell 19. Myelin 20. Sensory neuron 21. Somatic nervous system	