Unit Title: Unit 1 Cardiovascular System, Lymphatic and Immune System

Stage 1: Desired Results

Standards & Indicators:

HS-LS1-1. Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells

HS-LS1-2. Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms

Career Readiness, Life Literacies and Key Skills			
Standard	Performance Expectations	Core Ideas	
9.4.12.Cl.1	Demonstrate the ability to reflect, analyze, and use creative skills and ideas (e.g., 1.1.12prof.CR3a)	With a growth mindset, failure is an important part of success.	
9.4.12.Cl.2	Identify career pathways that highlight personal talents, skills, and abilities (e.g., 1.4.12prof.CR2b, 2.2.12.LF.8).	Innovative ideas or innovation can lead to career opportunities	
9.4.12.CT.2	Explain the potential benefits of collaborating to enhance critical thinking and problem solving (e.g., 1.3E.12profCR3.a)	Collaboration with individuals with diverse experiences can aid in the problem-solving process, particularly for global issues where diverse solutions are needed.	
9.4.12.CT.4	Participate in online strategy and planning sessions for course-based, school-based, or other projects and determine the strategies that contribute to effective outcomes.	Collaboration with individuals with diverse experiences can aid in the problem-solving process, particularly for global issues where diverse solutions are needed.	
9.4.12.GCA.1	Collaborate with individuals to analyze a variety of potential solutions to climate change effects and determine why some solutions (e.g., political. economic, cultural) may work better than others (e.g., SL.11-12.1., HS-ETS1-1, HS-ETS1-2, HS-ETS1-4, 6.3.12.GeoGI.1, 7.1.IH.IPERS.6, 7.1.IL.IPERS.7, 8.2.12.ETW.3).	Solutions to the problems faced by a global society require the contribution of individuals with different points of view and experiences	
9.4.12.TL.1	Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task (e.g., W.11-12.6.).	Digital tools differ in features, capacities, and styles. Knowledge of different digital tools is helpful in selecting the best tool for a given task.	

 Central Idea/Enduring Understanding: The Cardiovascular System supplies blood to the organs, tissues, and cells of the human body. The Immune and Lymphatic Systems function to protect the human body from infection. 	Essential/Guiding Question: What are the components of blood and their function in the body? What are the structures that make up the human heart and how are they organized? What is the pathway of blood takes through the heart? What is the function of valves in the heart? How does the structure of arteries and veins relate to their functions? How do the different components of specific immunity assist in humoral and cellular immunity?	
 Content: Components and major functions of blood Composition and functions of plasma Characteristics and functions of red blood cells Blood types White blood cell structure and function Platelet structure and function Clotting mechanism Heart anatomy Blood flow through the heart Conduction system of the heart The cardiac cycle Types of blood vessels Mechanisms that regulate blood flow and pressure Pulmonary and systemic circuits of the heart Nonspecific and specific immune response Major components of the lymphatic system Cell-mediated and humoral immunity 	 Skills(Objectives): Demonstrate your knowledge of the major functions and composition of blood. Describe the characteristics and functions of red blood cells. Describe the categories of white blood cells and their functions. Demonstrate your knowledge of the four blood types. Describe the function of platelets and mechanisms of control of blood loss after injury. Describe the anatomy of the heart including the surface features, chambers, and valves. Demonstrate your knowledge of factors that influence heart rate. Describe the structure and function of the three types of blood vessels. Describe the control mechanisms that interact to regulate blood flow and pressure in tissues. Demonstrate your knowledge of nonspecific versus specific immune defenses. 	

Interdisciplinary Connections:

- Case study incorporating knowledge of body systems with aspects of history taking, differential diagnoses, and treatment

WHST.1112.9 Research to Build and Present Knowledge. Draw evidence from informational texts to support analysis, reflection, and research.

Stage 2: Assessment Evidence

Performance Task(s): Other Evidence: - Students will complete a dissection of a sheep heart - Unit Test Grade - Students will label a diagram of heart - Writing projects			
anatomy - Students will comple cellular components including red blood and platelets	ete a visual aid of the s of the immune system cells, white blood cells,	 Research proje Google Classro Group activities Classroom disc Student created Rubrics Review Games 	cts om assignments ussions d assessments (Kahoot, Quizlet)
	Stage 3: Learning Plan		
Learning Opportunities/Strategies: Examples of learning opportunities include the following: - Case Studies - Projects - Debates - Team building activities - Cooperative learning activities - Interactive games - Online learning websites - Internet research		Resources: Textbook: Martini, Barth Physiology. Fifth Edition Biodigital.com Inclusive Science Class GLSEN Educator Res	olomew. Essentials of Anatomy & n. 2010 . Pearson Higher Education. a <u>room</u> sources
Differentiation *Please note: Teachers who have students with 504 plans that require curricular accommodations are to refer to			
Struggling and/or Special Needs Section for differentiation			
High-Achieving Students	On Grade Level Students	Struggling Students	Special Needs/ELL

			-
-Use of critical thinking	-Use of critical	-Build background	Any student requiring further
activities	thinking activities	knowledge prior to	accommodations and/or
-Alternative	-Alternative	lessons	modifications will have them
assignments	assignments	-Highlight key	individually listed in their 504 Plan
-Choice of assignment	-Choice of	words	or IEP. These might include, but
related to the	assignment related	-Incorporate the use	are not limited to: breaking
topic-independent	to the	of technology	assignments into smaller tasks,
research	topic-independent	-Provide notes	giving directions through several
-Use of	research	-Provide study	channels (auditory, visual,
student-researched case	-Use of	guides	kinesthetic, model), and/or small
studies	student-researched	-Pre-teaching of	group instruction for
	case studies	vocabulary for	reading/writing
		understanding of	
		concepts	ELL supports should include, but
		-Word Search or	are not limited to, the following::
		crossword puzzles	Extended time
		for vocabulary	Provide visual aids
		reinforcement	Repeated directions
		-Using alternatives	Differentiate based on proficiency
		to written	Provide word banks
		assessments (oral	Allow for translators, dictionaries
		reports, class	
		discussion, and/or	
		projects)	
		-Be consistent with	
		expectations	

Stage 1: Desired Results

Standards & Indicators:

HS-LS1-1. Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells

HS-LS1-2. Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms

Career Readiness, Life Literacies and Key Skills			
Standard	Performance Expectations	Core Ideas	
9.4.12.Cl.1	Demonstrate the ability to reflect, analyze, and use creative skills and ideas (e.g., 1.1.12prof.CR3a)	With a growth mindset, failure is an important part of success.	
9.4.12.Cl.2	Identify career pathways that highlight personal talents, skills, and abilities (e.g., 1.4.12prof.CR2b, 2.2.12.LF.8).	Innovative ideas or innovation can lead to career opportunities	
9.4.12.CT.2	Explain the potential benefits of collaborating to enhance critical thinking and problem solving (e.g., 1.3E.12profCR3.a)	Collaboration with individuals with diverse experiences can aid in the problem-solving process, particularly for global issues where diverse solutions are needed.	
9.4.12.CT.4	Participate in online strategy and planning sessions for course-based, school-based, or other projects and determine the strategies that contribute to effective outcomes.	Collaboration with individuals with diverse experiences can aid in the problem-solving process, particularly for global issues where diverse solutions are needed.	
9.4.12.GCA.1	Collaborate with individuals to analyze a variety of potential solutions to climate change effects and determine why some solutions (e.g., political. economic, cultural) may work better than others (e.g., SL.11-12.1., HS-ETS1-1, HS-ETS1-2, HS-ETS1-4, 6.3.12.GeoGI.1, 7.1.IH.IPERS.6, 7.1.IL.IPERS.7, 8.2.12.ETW.3).	Solutions to the problems faced by a global society require the contribution of individuals with different points of view and experiences	
9.4.12.TL.1	Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task (e.g., W.11-12.6.).	Digital tools differ in features, capacities, and styles. Knowledge of different digital tools is helpful in selecting the best tool for a given task.	

 Central Idea/Enduring Understanding: The Respiratory System functions to exchange gases to maintain your body cells. The Digestive System processes our food into energy to maintain functions of the human body. 	Essential/Guiding Question: What is the function of the Respiratory System? How do the respiratory organs exchange gases to maintain body tissues and organs? What are the major functions of the Digestive System? What are the roles of the oral cavity, pharynx, esophagus, stomach, small intestine, large intestine, liver, gallbladder, and pancreas in digestion?
 Content: Functions of the Respiratory System Structures of the Respiratory System and their functions External and internal respiration Mechanisms of respiration Interaction of the Respiratory system with other body systems Organs of the Digestive System and their functions: oral cavity, pharynx, esophagus, stomach, small intestine, large intestine, liver, gallbladder, and pancreas Nutrients required by the body 	 Skills(Objectives): Describe the function of the Respiratory System. Demonstrate your knowledge of the key components that make up the Respiratory System. Demonstrate your knowledge of the mechanism of respiration. Demonstrate your knowledge of the major functions of the Digestive System. Describe the organs of the Digestive System and their role in digestion. Describe nutrient requirements of the human body.
Interdisciplinary Connections:	

- Case study incorporating knowledge of body systems with aspects of history taking, differential diagnoses, and treatment

WHST.1112.9 Research to Build and Present Knowledge. Draw evidence from informational texts to support analysis, reflection, and research.

Stage 2: Assessment Evidence			
 Performance Task(s): Students will label diagrams of the Respiratory System Students will create a Breathing Model Students will label diagrams of organs of the Digestive System Concept Map: Events in Digestion 	Other Evidence: - Unit Test Grade - Quizzes - Writing projects - Research projects - Google Classroom assignments - Group activities - Classroom discussions - Student created assessments - Rubrics		

	- Review Games (Kahoot, Quizlet)
Stago 3	· Loarning Plan
Slayes	. Learning Flan
Learning Opportunities/Strategies:	Resources:
Examples of learning opportunities include the	Textbook: Martini, Bartholomew. Essentials of Anatomy &
following:	Physiology. Fifth Edition. 2010 . Pearson Higher Education.
- Case Studies	
- Projects	<u>Biodigital.com</u>
- Debates	
- Team building activities	Inclusive Science Classroom
- Cooperative learning activities	GLSEN Educator Resources
- Interactive games	
- Online learning websites	
- Internet research	
- Student driven activities	

Differentiation

*Please note: Teachers who have students with 504 plans that require curricular accommodations are to refer to Struggling and/or Special Needs Section for differentiation

High-Achieving Students	On Grade Level Students	Struggling Students	Special Needs/ELL
-Use of critical thinking	-Use of critical	-Build background	Any student requiring further
activities	thinking activities	knowledge prior to	accommodations and/or
-Alternative	-Alternative	lessons	modifications will have them
assignments	assignments	-Highlight key	individually listed in their 504 Plan
-Choice of assignment	-Choice of	words	or IEP. These might include, but
related to the	assignment related	-Incorporate the use	are not limited to: breaking
topic-independent	to the	of technology	assignments into smaller tasks,
research	topic-independent	-Provide notes	giving directions through several
-Use of	research	-Provide study	channels (auditory, visual,
student-researched case	-Use of	guides	kinesthetic, model), and/or small
studies	student-researched	-Pre-teaching of	group instruction for
	case studies	vocabulary for	reading/writing
		understanding of	
		concepts	ELL supports should include, but
		-Word Search or	are not limited to, the following::
		crossword puzzles	Extended time
		for vocabulary	Provide visual aids
		reinforcement	Repeated directions
		-Using alternatives	Differentiate based on proficiency
		to written	Provide word banks
		assessments (oral	Allow for translators, dictionaries
		reports, class	
		discussion, and/or	
		projects)	

-Be consistent with	
expectations	

Unit Title: Unit 3 Endocrine System

Stage 1: Desired Results

Standards & Indicators:

HS-LS1-1. Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells

HS-LS1-2. Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms

HS-LS1-3. Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis

Career Readiness, Life Literacies and Key Skills			
Standard	Performance Expectations	Core Ideas	
9.4.12.CI.1	Demonstrate the ability to reflect, analyze, and use creative skills and ideas (e.g., 1.1.12prof.CR3a)	With a growth mindset, failure is an important part of success.	
9.4.12.CI.2	Identify career pathways that highlight personal talents, skills, and abilities (e.g., 1.4.12prof.CR2b, 2.2.12.LF.8).	Innovative ideas or innovation can lead to career opportunities	
9.4.12.CT.2	Explain the potential benefits of collaborating to enhance critical thinking and problem solving (e.g., 1.3E.12profCR3.a)	Collaboration with individuals with diverse experiences can aid in the problem-solving process, particularly for global issues where diverse solutions are needed.	
9.4.12.CT.4	Participate in online strategy and planning sessions for course-based, school-based, or other projects and determine the strategies that contribute to effective outcomes.	Collaboration with individuals with diverse experiences can aid in the problem-solving process, particularly for global issues where diverse solutions are needed.	
9.4.12.GCA.1	Collaborate with individuals to analyze a variety of potential solutions to climate change effects and determine why some solutions (e.g., political. economic, cultural) may work better than others (e.g., SL.11-12.1., HS-ETS1-1, HS-ETS1-2, HS-ETS1-4, 6.3.12.GeoGI.1, 7.1.IH.IPERS.6, 7.1.IL.IPERS.7, 8.2.12.ETW.3).	Solutions to the problems faced by a global society require the contribution of individuals with different points of view and experiences	
9.4.12.TL.1	Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task (e.g., W.11-12.6.).	Digital tools differ in features, capacities, and styles. Knowledge of different digital tools is helpful in selecting the best tool for a given task.	

 Central Idea/Enduring Understanding: The Endocrine System is responsible for regulating a range of bodily functions through the release of hormones. 	Essential/Guiding Quest What is the function of the What effect do hormones What are the roles of the system? How do the different gland together to maintain home	tion: e Endocrine System? have on the human body? different glands in the endocrine ds of the Endocrine System work eostasis?
 Content: Hormones and their effect on the human body Mechanism of hormone action Endocrine glands and hormones: pituitary gland, pineal gland, hypothalamus, thyroid gland, parathyroid gland, thymus gland, adrenal gland, pancreas, ovary, testis Effects of endocrine hormones: Growth Hormone, prolactin, FSH, LH, thyroid hormone, ACTH Pathology of the Endocrine System 	Skills(Objectives): - Describe the effect maintaining home - Demonstrate your action of hormone - Describe the anat - Demonstrate your glands and organ regulation of vario - Describe how the together to maintai	cts of hormones and their role in eostasis in the human body. Ir knowledge of the mechanism of es. tomy of the Endocrine System. Ir knowledge of the role of different as of the Endocrine System in the ous body systems. Endocrine glands and organs work ain homeostasis in the human body.

- Case study incorporating knowledge of body systems with aspects of history taking, differential diagnoses, and treatment

WHST.1112.9 Research to Build and Present Knowledge. Draw evidence from informational texts to support analysis, reflection, and research.

Stage 2: Assessment Evidence		
Performance Task(s):	Other Evidence:	
 Students will label a diagram of the 	- Unit Test Grade	
Endocrine glands.	- Quizzes	
- Students will complete the Endocrine Body	- Writing projects	
Project: create a body with labeled	- Research projects	
endocrine glands, their hormones, and	- Google Classroom assignments	
functions.	- Group activities	
	- Classroom discussions	
	- Student created assessments	

	 Rubrics Review Games (Kahoot, Quizlet)
Stage 3	: Learning Plan
Learning Opportunities/Strategies:	Resources:
Examples of learning opportunities include the	Textbook: Martini, Bartholomew. Essentials of Anatomy &
following:	Physiology. Fifth Edition. 2010 . Pearson Higher Education.
- Case Studies	
- Projects	Biodigital.com
- Debates	
 Team building activities 	Inclusive Science Classroom
 Cooperative learning activities 	GLSEN Educator Resources
- Interactive games	
- Online learning websites	
- Internet research	
- Student driven activities	
Differentiation	

*Please note: Teachers who have students with 504 plans that require curricular accommodations are to refer to Struggling and/or Special Needs Section for differentiation

High-Achieving	On Grade Level	Struggling Students	Special Needs/ELL
Students	Students		
-Use of critical thinking	-Use of critical	-Build background	Any student requiring further
activities	thinking activities	knowledge prior to	accommodations and/or
-Alternative	-Alternative	lessons	modifications will have them
assignments	assignments	-Highlight key	individually listed in their 504 Plan
-Choice of assignment	-Choice of	words	or IEP. These might include, but
related to the	assignment related	-Incorporate the use	are not limited to: breaking
topic-independent	to the	of technology	assignments into smaller tasks,
research	topic-independent	-Provide notes	giving directions through several
-Use of	research	-Provide study	channels (auditory, visual,
student-researched case	-Use of	guides	kinesthetic, model), and/or small
studies	student-researched	-Pre-teaching of	group instruction for
	case studies	vocabulary for	reading/writing
		understanding of	
		concepts	ELL supports should include, but
		-Word Search or	are not limited to, the following::
		crossword puzzles	Extended time
		for vocabulary	Provide visual aids
		reinforcement	Repeated directions
		-Using alternatives	Differentiate based on proficiency
		to written	Provide word banks
		assessments (oral	Allow for translators, dictionaries
		reports, class	

discussion, and/or projects) -Be consistent with	
expectations	

Unit Title: Unit 4	Urinary System,	Reproductive System
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Stage 1: Desired Results

Standards & Indicators:

HS-LS1-1. Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells

HS-LS1-2. Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms

Career Readiness, Life Literacies and Key Skills			
Standard	Performance Expectations	Core Ideas	
9.4.12.Cl.1	Demonstrate the ability to reflect, analyze, and use creative skills and ideas (e.g., 1.1.12prof.CR3a)	With a growth mindset, failure is an important part of success.	
9.4.12.Cl.2	Identify career pathways that highlight personal talents, skills, and abilities (e.g., 1.4.12prof.CR2b, 2.2.12.LF.8).	Innovative ideas or innovation can lead to career opportunities	
9.4.12.CT.2	Explain the potential benefits of collaborating to enhance critical thinking and problem solving (e.g., 1.3E.12profCR3.a)	Collaboration with individuals with diverse experiences can aid in the problem-solving process, particularly for global issues where diverse solutions are needed.	
9.4.12.CT.4	Participate in online strategy and planning sessions for course-based, school-based, or other projects and determine the strategies that contribute to effective outcomes.	Collaboration with individuals with diverse experiences can aid in the problem-solving process, particularly for global issues where diverse solutions are needed.	
9.4.12.GCA.1	Collaborate with individuals to analyze a variety of potential solutions to climate change effects and determine why some solutions (e.g., political. economic, cultural) may work better than others (e.g., SL.11-12.1., HS-ETS1-1, HS-ETS1-2, HS-ETS1-4, 6.3.12.GeoGI.1, 7.1.IH.IPERS.6, 7.1.IL.IPERS.7, 8.2.12.ETW.3).	Solutions to the problems faced by a global society require the contribution of individuals with different points of view and experiences	
9.4.12.TL.1	Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task (e.g., W.11-12.6.).	Digital tools differ in features, capacities, and styles. Knowledge of different digital tools is helpful in selecting the best tool for a given task.	

 Central Idea/Enduring Understanding: The Urinary System aids in maintaining homeostasis in the human body by filtering the blood to remove wastes and producing urine. The biological function of the Reproductive System is to provide the means for producing offspring 	Essential/Guiding Question: What are the functions of the organs of the Urinary System? How do the kidneys maintain homeostasis through blood filtration and the production of urine? What is the function of the Reproductive System? What are the functions of the ovaries, fallopian tubes, uterus, cervix, and vagina? What are the functions of the seminal vesicle, prostate gland, vas deferens, urethra, epididymis, scrotum, penis, and testes? What is the interaction between the Reproductive and Endocrine Systems?
 <u>Content</u>: Functions of the Urinary System Components of the Urinary System Structural features of the kidney Functions of the nephron Anatomy and functions of the ureters, urinary bladder, and urethra Fluid balance, electrolyte balance, and acid-base balance and their importance in maintaining homeostasis Function of the Reproductive System Organs of the Reproductive System Anatomy of the male reproductive system Anatomy of the female reproductive system 	 Skills(Objectives): Demonstrate your knowledge of the organs of the Urinary System. Describe the functions of the structures of the Urinary System. Describe how the kidneys filter blood and produce urine. Describe how the kidneys help maintain homeostasis. Describe the basic anatomy and functions of the female/male reproductive system. Describe the functions of the ovaries, fallopian tubes, uterus, cervix, and vagina. Describe the functions of the seminal vesicle, prostate gland, vas deferens, urethra, epididymis, scrotum, penis, and testes.
 Interaction of the Reproductive System with other organ systems Interdisciplinary Connections; 	

- Case study incorporating knowledge of body systems with aspects of history taking, differential diagnoses, and treatment

WHST.1112.9 Research to Build and Present Knowledge. Draw evidence from informational texts to support analysis, reflection, and research.

Stage 2: Assessment Evidence		
 Performance Task(s): Students will label diagrams of the female and male Urinary Systems. Dissection of a sheep kidney Students will label diagrams of the Urinary System 	Other Evidence: - Unit Test Grade - Quizzes - Writing projects - Research projects - Google Classroom assignments - Group activities - Classroom discussions - Student created assessments - Rubrics - Review Games (Kahoot, Quizlet)	
Stage 3	: Learning Plan	
Learning Opportunities/Strategies: Examples of learning opportunities include the following: - Case Studies - Projects - Debates - Team building activities - Cooperative learning activities - Interactive games - Online learning websites - Internet research - Student driven activities	Resources: Textbook: Martini, Bartholomew. Essentials of Anatomy & Physiology. Fifth Edition. 2010 . Pearson Higher Education. Biodigital.com Inclusive Science Classroom GLSEN Educator Resources	

*Please note: Teachers who have students with 504 plans that require curricular accommodations are to refer to Struggling and/or Special Needs Section for differentiation

High-Achieving Students	On Grade Level Students	Struggling Students	Special Needs/ELL
-Use of critical thinking	-Use of critical	-Build background	Any student requiring further
activities	thinking activities	knowledge prior to	accommodations and/or
-Alternative	-Alternative	lessons	modifications will have them
assignments	assignments	-Highlight key	individually listed in their 504 Plan
-Choice of assignment	-Choice of	words	or IEP. These might include, but
related to the	assignment related	-Incorporate the use	are not limited to: breaking
topic-independent	to the	of technology	assignments into smaller tasks,
research	topic-independent	-Provide notes	giving directions through several
-Use of	research	-Provide study	channels (auditory, visual,
student-researched case	-Use of	guides	kinesthetic, model), and/or small
studies	student-researched	-Pre-teaching of	group instruction for
	case studies	vocabulary for	reading/writing
		understanding of	
		concepts	ELL supports should include, but
		-Word Search or	are not limited to, the following::
		crossword puzzles	Extended time
		for vocabulary	Provide visual aids
		reinforcement	Repeated directions
		-Using alternatives	Differentiate based on proficiency
		to written	Provide word banks
		assessments (oral	Allow for translators, dictionaries
		reports, class	
		discussion, and/or	
		projects)	
		-Be consistent with	
		expectations	

Pacing Guide

Course Name	Resource	Standards
MP1		
UNIT 1 Cardiovascular System Lymphatic System 22 days	CHAPTERS 11-14	HS-LS1-1 HS-LS1-2
MP1		
UNIT 2 Respiratory System Digestive System 23 days	CHAPTERS 15-17	HS-LS1-1 HS-LS1-2
MP2		
UNIT 3 Endocrine System 22 days	CHAPTER 10	HS-LS1-1 HS-LS1-2 HS-LS1-3
MP		

UNIT 4	CHAPTERS 18-20	HS-LS1-1 HS-LS1-2
Offilary System		
Reproductive System		
23 Days		