



EVERETT PUBLIC SCHOOLS		
INTRODUCTION TO HEALTH SCIENCE CAREERS		
Course: Introduction to Health Science Careers		Total Framework Hours: 180 Hours
CIP Code: 510000	⊠Exploratory  □Preparatory	Date Last Modified: 07.2022
Career Cluster: Health Sciences Clus		Cluster Pathway: Health and Human Services

#### **Industry-Recognized Certificates:**

#### Work-Based Learning:

#### Course Information:

This course provides a student experience that develops practices, knowledge, and skills within various health care career clusters and pathway standards to promote college and career readiness. There are eighteen Healthcare Areas (HCA) including: Communication, Biomedical Engineering, Biotechnology R & D, Clinical Lab Practices, Dentistry, Emergency Medical Technician, Environmental Health & Safety, Forensics, Health Information Management, Medical Imaging, Mental Health, Nursing, Ophthalmology, Pharmacology, Speech Therapy, Sports Medicine, Therapeutic Services, and Veterinary Medicine. Students will work productively in small teams of 2, use technology to enhance productivity, plan education and career paths, utilize critical thinking, define problems, and persevere in solving them, demonstrate creativity and innovation, employ valid and reliable research methods, and apply appropriate academic & technical skills. Every unit requires that students submit evidence of learning for each activity, write in context (narrative & argumentative), and complete 2 objective assessments as proof of knowledge and skill attainment. The instructional time in all units dedicated to hands-on project-based learning is approximately 70% of the time. Every unit of instruction contains a Planning Your Career component that has students applies career specific skills related to the unit and at the end has the student pick two related health care careers that involve using these skills to research and find more out about the career path.

#### Units include:

Unit 1: Communication in Healthcare
Unit 2: Biomedical Engineering
Unit 3: Biotechnology Research and
Development (STEM focus)
Unit 4: Clinical Lab Practices
Unit 5: Dentistry (STEM focus)
Unit 6: Emergency Medical Technician

Unit 7: Environmental Health & Safety Unit 8: Forensics

Unit 9: Health Information Management

Unit 10: Medical Imaging

Unit 11: Mental Health Unit 12: Nursing

Unit 13: Ophthalmology

Unit 14: Pharmacology

Unit 15: Speech Therapy (STEM focus)
Unit 16: Sports Medicine (STEM focus)
Unit 17: Therapeutic Services (STEM focus)

Unit 18: Veterinary Medicine (STEM focus)

#### **COMPONENTS AND ASSESSMENTS**

**Performance Assessments:** Students will demonstrate their understanding through:

- Using appropriate communication techniques (e.g., role play, scenarios, formal presentation), students will gather and assess information which contributes to the determination of the appropriate health care plan for individuals within a diverse client population.
- Students will analyze, clarify, document, and distribute information to the health care team, including at least one situation that requires conflict resolution skills.

# Leadership Alignment:

- Students will collaborate in diverse teams to role-play situations in which individuals have simulated barriers (language, learning/hearing/visual disabilities, stroke victim, or cultural) and will determine and practice communication techniques to communicate clearly in simulations.
- Students will use and manage information accurately and creatively for the issue and problem at hand while attending to various health care team scenarios.

## **Standards and Competencies**

#### **Unit 1: Communication in Healthcare**

#### **Industry Standards and/or Competencies**

#### **Total Learning Hours for Unit: 10**

## **Foundation Standard 2: Communications**

#### Demonstrate methods of delivering and obtaining information, while communicating effectively.

- 2.1 Concepts of Effective Communication
- 2.2 Medical Terminology
- 2.21 Use common roots, prefixes, and suffixes to communicate information.
- 2.22 Interpret medical abbreviations to communicate information.
  - a. Common abbreviations
- 2.3 Written Communication Skills
- 2.31 Utilize proper elements of written and electronic communication (spelling, grammar, and formatting).
- 2.32 Prepare examples of technical, informative, and creative writing.

#### Foundation Standard 4: Employability Skills

#### Utilize employability skills to enhance employment opportunities and job satisfaction.

- 4.3 Career Decision-making
- 4.31 Research levels of education, credentialing requirements, and employment trends in health professions.
- 4.32 Distinguish differences among careers within health science pathways (diagnostic services, therapeutic services, health informatics, support services, or biotechnology research and development).

#### Foundation Standard 5: Legal Responsibilities- Describe legal responsibilities, limitations, and implications on healthcare worker actions.

- 5.2 Legal Practices
- 5.2.6 Describe the concept of scope of practice.

## Foundation Standard 8: Teamwork Identify roles and responsibilities of individual members as part of the healthcare team.

- 8.1 Healthcare Teams
- 8.1.1 Evaluate roles and responsibilities of healthcare team members.
- 8.1.2 Identify characteristics of effective teams.
  - Defined roles
  - Common purpose
  - Effective communication
  - Effective leadership
  - Measurable processes and outcomes
  - Mutual respect
  - Shared goals
- 8.2 Team Member Participation
- 8.2.1 Recognize methods for building positive team relationships.

# Aligned Washington State Learning Standards

# Educational Technology 2. Digital Cit

- **1. Empowered Learner-** Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.
- **2. Digital Citizen-** Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.
- **6. Creative Communicator-** Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.

English Language Arts	CCSS.ELA-LITERACY.RST.11-12.5- Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.  CCSS.ELA-LITERACY.RST.11-12.7- Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.  W.1.11-12: Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.  SL.1.11-12: Initiate and participate effectively in a range of collaborative discussions (one-on- one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.  L.2.11-12: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when
	writing.
Health and Physical Education	H1.W1.HS- Analyze personal dimensions of health and design a plan to balance health. H2.W2.HSa,- Analyze prevention, lifestyle factors, and treatment of communicable and noncommunicable diseases. H2.W2.HSb Assess personal risk factors and predict future health status. H3.W4.HS- Create a resource that outlines where and how students can access valid and reliable health information, products, and services. H5.W6.HS- Predict potential short- and long-term outcomes of a personal health-related decision. H2.Sa1.HS- Compare how family, peers, culture, media, technology, and other factors influence safety and injury prevention practices and behaviors. H1.Sa3.HS- Analyze potential dangers of sharing personal information through electronic media.
Science	Disciplinary Core Ideas (DCI): HS-ETS1-1: Analyze a major global challenge to specify qualitative and quantitative criteria ad constraints for solutions that account for societal needs and wants. HS-ETS1-2: Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering. HS-ETS1-3: Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.  Cross Cutting Concepts (CCCs)- Systems and system models Cause and Effect Structure and Function Patterns  Science and Engineering Practices (SEPs)- All Developing and using models Planning and carrying out investigations

Asking questions and defining problems
Analyzing and interpreting data
Using mathematics and computational thinking
Constructing explanations and designing solutions
Engaging in argument from evidence
Obtaining, evaluating, and communicating information

#### **COMPONENTS AND ASSESSMENTS**

**Performance Assessments:** Students will demonstrate their understanding through:

- Evidence of using technology to acquire, manipulate, analyze and report data.
- Describing and following safety, health and environmental standards related to science, technology, engineering, and mathematics (STEM) workplaces.
- Through completion of a written assessment, summarize the goals of biomedical engineering and the use of biotechnology research and development within legal and ethical protocols.
- Application of the fundamentals of biochemistry, cell biology, genetics, mathematical concepts, microbiology, molecular biology, and organic chemistry to make a stent and a hand device to increase a patient's quality of life.
- Demonstrating basic knowledge of recombinant DNA, genetic engineering, bioprocessing, monoclonal antibody production, nanotechnology, bioinformatics, genomics, proteomics and transcriptomics to conduct biotechnology research and development.
- Demonstrating the principles of solution preparation, sterile techniques, contamination control, and measurement and calibration of instruments used in biotechnology research.
- Determining processes for product design and production and how that work contributes to an understanding of the biotechnology product development process.
- Summarizing and explaining the larger ethical, moral and legal issues related to biotechnology research, product development and use in society.
- Successful completion of a written test assessment demonstrating mastery of the Biomedical Engineering Terminology, Muscle Function Analysis, and performing a Craniotomy Skull Bone Repair.
- Demonstration of using and working with prosthetic materials in a plaster mold to biomedically engineer a hand device to improve a patient's quality of life.
- Demonstration of how to make a stent and using sensors.
- Completion of the Career Planning Research project researching the means to achieve the opportunities on two related careers to this unit.
- **Leadership Alignment:** Students will practice reasoning effectively using critical thinking and problem solving as they engage in the application of the fundamentals of biochemistry, cell biology, genetics, mathematical concepts, microbiology, molecular biology, and organic chemistry to make a stent and a hand device to increase a patient's quality of life.
- Students will use systems of thinking to analyze how parts of a whole interact with each other to produce overall outcomes in complex systems when designing and engineering a prosthetic limb to provide a solution to increase a patient's quality of life. Students will Implement Innovations by acting on creative ideas to make a tangible and useful contribution to the field in which the innovation will occur through development of a prosthetic limb that enhances a patient's quality of life.
- Students will think creatively and work with others implementing innovations following the HOSA *Medical Innovations* competition guidelines to gain knowledge and skills required to impact the future of health and/or the delivery of healthcare through the development of these innovations.

#### Standards and Competencies

## **Unit 2: Biomedical Engineering (STEM focus)**

In this unit students will:

- Identify opportunities and training requirements for careers in biomedical engineering occupations.
- Identify some of the requirements for designing a prosthetic limb.
- Recognize the process for how patients are fitted with prosthetic limbs and other body parts.
- Identify considerations for selecting materials used in products placed inside the body.
- Recognize design considerations in developing devices that monitor vital signs and other aspects of a person's health.

Recognize design considerations in developing products that replace organs and other body functions.

#### **Industry Standards and/or Competencies**

#### **Total Learning Hours for Unit: 10**

#### **Foundation Standard 2: Communications**

#### Demonstrate methods of delivering and obtaining information, while communicating effectively.

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- 2.31 Utilize proper elements of written and electronic communication (spelling, grammar, and formatting).
- 2.32 Prepare examples of technical, informative, and creative writing.

#### Foundation Standard 3: Systems-Identify how key systems affect services performed and quality of care.

- 3.1. Healthcare Delivery Systems
- 3.1.3 Analyze the impact of emerging issues of healthcare delivery systems.
  - Addictions
  - Bioethics
  - Epidemiology
  - Socioeconomics
  - Technology

# Foundation Standard 4: Employability Skills

# Utilize employability skills to enhance employment opportunities and job satisfaction.

- 4.3 Career Decision-making
- 4.31 Research levels of education, credentialing requirements, and employment trends in health professions.
- 4.32 Distinguish differences among careers within health science pathways (diagnostic services, therapeutic services, health informatics, support services, or biotechnology research and development).

## Foundation Standard 5: Legal Responsibilities - Describe legal responsibilities, limitations, and implications on healthcare worker actions.

- 5.2 Legal Practices
- 5.2.6 Describe the concept of scope of practice.

# Foundation Standard 8: Teamwork Identify roles and responsibilities of individual members as part of the healthcare team.

- 8.1 Healthcare Teams
- 8.1.1 Evaluate roles and responsibilities of healthcare team members.
- 8.1.2 Identify characteristics of effective teams.
  - Defined roles
  - Common purpose
  - Effective communication
  - Effective leadership
  - Measurable processes and outcomes
  - Mutual respect
  - · Shared goals
- 8.2 Team Member Participation
- 8.2.1 Recognize methods for building positive team relationships.

## Aligned Washington State Learning Standards

	1. Empowered Learner- Students leverage technology to take an active role in choosing, achieving and demonstrating
	competency in their learning goals, informed by the learning sciences.
	2. Digital Citizen- Students recognize the rights, responsibilities and opportunities of living, learning and working in an
Educational Technology	interconnected digital world, and they act and model in ways that are safe, legal and ethical.
	6. Creative Communicator- Students communicate clearly and express themselves creatively for a variety of purposes using the
	platforms, tools, styles, formats and digital media appropriate to their goals.
	CCSS.ELA-LITERACY.RST.11-12.5-
	Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance
	understanding of findings, reasoning, and evidence and to add interest.
	CCSS.ELA-LITERACY.RST.11-12.7-
	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video,
	multimedia) in order to address a question or solve a problem.
	<u>W.1.11-12:</u>
English Language Arts	Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly
	and accurately through the effective selection, organization, and analysis of content.
	SL.1.11-12:
	Initiate and participate effectively in a range of collaborative discussions (one-on- one, in groups, and
	teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.
	L.2.11-12:
	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when
	writing.
	H1.W1.HS- Analyze personal dimensions of health and design a plan to balance health.
	H2.W2.HSa,- Analyze prevention, lifestyle factors, and treatment of communicable and noncommunicable diseases.
	H2.W2.HSb Assess personal risk factors and predict future health status.
	H3.W4.HS- Create a resource that outlines where and how students can access valid and reliable health information, products,
Health and Physical Education	and services.
	H5.W6.HS- Predict potential short- and long-term outcomes of a personal health-related decision.
	H2.Sa1.HS- Compare how family, peers, culture, media, technology, and other factors influence safety and injury prevention
	practices and behaviors.
	H1.Sa3.HS- Analyze potential dangers of sharing personal information through electronic media.  Disciplinary Core Ideas (DCI):
	HS-ETS1-1:
	Analyze a major global challenge to specify qualitative and quantitative criteria ad constraints for solutions that account for societal
	needs and wants.
	HS-ETS1-2:
	Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be
Saionas	solved through engineering.
Science	<u>HS-ETS1-3:</u>
	Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of
	constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.
	Cross Cutting Concepts (CCCs)-
	Systems and system models
	Cause and Effect

Structure and Function

**Patterns** 

Science and Engineering Practices (SEPs)- All

Developing and using models

Planning and carrying out investigations

Asking questions and defining problems

Analyzing and interpreting data

Using mathematics and computational thinking

Constructing explanations and designing solutions

Engaging in argument from evidence

Obtaining, evaluating, and communicating information

#### **COMPONENTS AND ASSESSMENTS**

**Performance Assessments:** Students will demonstrate their understanding through:

- Successful completion of a written test assessment demonstrating mastery of the Biotechnology Research & Development Terminology. Providing written explanation of the healthcare worker's role within their department, organization, and the overall health care system. Being able to identify potential hazards to clients, coworkers, visitors, and self in the healthcare workplace. Demonstrating on the test the ability to be able to evaluate the roles and responsibilities of individual members as part of the healthcare team and explain their role in promoting the delivery of quality health care. Being able to analyze the legal and ethical responsibilities, limitations and implications of actions within the healthcare workplace. Demonstrating on the test how to evaluate accepted ethical practices with respect to cultural, social and ethnic differences within the healthcare workplace
- Successful demonstration of lab safety when completing the labs like testing antibiotics.
- Being able to precisely measure bacteria inhibition
- Using pre-clinical testing with analyzing the development of sunscreen
- Explaining biodiversity with bacterial inhibition with using spices
- Analyzing Bacteria Growth & the playing the CODON Game
- Creating a DNA Model
- Being able to conduct critical trials and analyze statistics from those trials.
- Completion of the Career Planning Research project researching the means to achieve the opportunities on two related careers to this unit.

# Leadership Alignment:

- Students will work in teams, thinking creatively to refine, analyze, and evaluate their own ideas in order to improve and maximize creative efforts in the development of sunscreen.
- Students will work creatively with others to view failure as an opportunity to learn and understand that creativity and innovation is a long-term process and frequent mistakes while inhibiting bacterial growth and conducting clinical trials.

# Standards and Competencies

## Unit 3: Biotechnology Research and Development (STEM focus)-

Students in this unit will:

- Recognize the career opportunities and requirements in biotechnology research and development.
- Demonstrate selected techniques used by technicians in a biotech lab.
- Identify some of the strategies used by scientists to develop new medications
- Identify how researchers use fungi, bacteria, and viruses to develop medications.
- Recognize the role of DNA and genetics in the development of new medications.
- Recognize how researchers identify needs and evaluate new medications.

# **Industry Standards and/or Competencies**

Total Learning Hours for Unit: 10

# Foundation Standard 4: Employability Skills- Utilize employability skills to enhance employment opportunities and job satisfaction.

- 4.3 Career Decision-making
- 4.31 Research levels of education, credentialing requirements, and employment trends in health professions.
- 4.32 Distinguish differences among careers within health science pathways (diagnostic services, therapeutic services, health informatics, support services, or biotechnology research and development).

# Foundation Standard 5: Legal Responsibilities- Describe legal responsibilities, limitations, and implications on healthcare worker actions.

- 5.2 Legal Practices
- 5.2.6 Describe the concept of scope of practice.

#### Foundation Standard 7: Safety Practices

Identifying existing and potential hazards to clients, co-workers, and self. Employ safe work practices and follow health and safety policies and procedures to prevent injury and illness.

- 7.1 Infection Control
- 7.1.1 Explain principles of infection transmission.
- 7.1.2 Differentiate methods of controlling the spread and growth of pathogens.
- 7.2 Personal Safety
- 7.2.1 Apply personal safety procedures based on Occupational Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations.
- 7.2.2 Demonstrate principles of body mechanics during patient care.
- 7.2.3 Demonstrate and apply the use of personal protective equipment (PPE).
- 7.3 Environmental Safety
- 7.3.1 Apply safety techniques in the work environment.
- 7.4 Common Safety Hazards
- 7.4.1 Observe all safety standards related to the occupational exposure to hazardous chemicals standard (safety data sheets [SDS]).
- 7.4.2 Comply with safety signs, symbols, and labels.
- 7.5 Emergency Procedures and Protocols
- 7.5.1 Practice fire safety in a healthcare setting.
- 7.5.2 Apply principles of basic emergency response in natural disasters and other emergencies (safe location, contact emergency personnel, follow facility protocols)

## Foundation Standard 8: Teamwork Identify roles and responsibilities of individual members as part of the healthcare team.

- 8.1 Healthcare Teams
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  - Mutual respect
  - Shared goals
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- 8.2.1 Recognize methods for building positive team relationships.

# Aligned Washington State Learning Standards

# **Educational Technology**

- **1. Empowered Learner-** Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.
- **2. Digital Citizen-** Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.

	<b>6. Creative Communicator-</b> Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.
English Language Arts	CCSS.ELA-LITERACY.RST.11-12.5- Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.  CCSS.ELA-LITERACY.RST.11-12.7- Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.  W.1.11-12: Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.  SL.1.11-12: Initiate and participate effectively in a range of collaborative discussions (one-on- one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.  L.2.11-12: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when
Health and Physical Education	writing.  H1.W1.HS- Analyze personal dimensions of health and design a plan to balance health. H2.W2.HSa,- Analyze prevention, lifestyle factors, and treatment of communicable and noncommunicable diseases. H2.W2.HSb Assess personal risk factors and predict future health status. H3.W4.HS- Create a resource that outlines where and how students can access valid and reliable health information, products, and services. H5.W6.HS- Predict potential short- and long-term outcomes of a personal health-related decision. H2.Sa1.HS- Compare how family, peers, culture, media, technology, and other factors influence safety and injury prevention practices and behaviors.
Mathematics	H1.Sa3.HS- Analyze potential dangers of sharing personal information through electronic media.  CCSS Math HSS.MD.B.5: Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values CCSS Math HSS.MD.B.6: Use probabilities to make fair decisions CCSS Math HSS.MD.B.7: Analyze decisions and strategies using probability concepts CCSS Math HSA-CED.2: Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales CCSS Math HSF-IF.5: Relate the domain of a function to it's graph and, where applicable, to the quantitative relationship it describes. CCSS Math HSF-LE.6: Apply quadratic functions to physical problems CCSS Math HSF-IF.7a: Graph quadratic functions and show intercepts maxima and minima (by hand & with technology)

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	CCSS Math HSN-Q.1:
	Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units
	consistently in formulas; choose and interpret the scale and the origin in graphs and data displays
	CCSS Math HSA-CED.4:
	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.
	Disciplinary Core Ideas (DCI):
	HS-LS1-2:
	From Molecules to Organisms: Structures and Processes
	HS-LS1-3:
	From Molecules to Organisms: Structures and Processes
	HS-LS3-1:
	Heredity: Inheritance and Variation of Traits
	HS-ETS1-1:
	Analyze a major global challenge to specify qualitative and quantitative criteria ad constraints for solutions that account for societal
	needs and wants.
	HS-ETS1-2:
	Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be
	solved through engineering.
	HS-ETS1-3:
	Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of
Science	constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.
	Cross Cutting Concepts (CCCs)-
	Systems and system models
	Cause and Effect
	Structure and Function
	Patterns
	Science and Engineering Practices (SEPs)- All
	Developing and using models
	Planning and carrying out investigations
	Asking questions and defining problems
	Analyzing and interpreting data
	Using mathematics and computational thinking
	Constructing explanations and designing solutions
	Engaging in argument from evidence
	Obtaining, evaluating, and communicating information

# COMPONENTS AND ASSESSMENTS

#### Performance Assessments: Students will demonstrate their understanding through:

- Participate in a lab safety review in a team activity regarding lab safety guidelines by successful completion of an review activity that causes students to discuss, describe, collaborate around lab safety in various clinical situations.
- Successful completion of a written test assessment demonstrating mastery of the clinical lab practices and terminology, examining a blood cell and communicating observations, and identification of bacteria. Providing written explanation of the healthcare worker's role within their department, organization, and the overall health care system. Being able to identify potential hazards to clients, coworkers, visitors, and self in the healthcare workplace. Demonstrating on the test the ability to be able to evaluate the roles and responsibilities of individual members as part of the healthcare team and explain their role in promoting the delivery of quality health care. Being able to analyze the legal and ethical responsibilities, limitations and implications of actions within the healthcare workplace. Demonstrating on the test how to evaluate accepted ethical practices with respect to cultural, social and ethnic differences within the healthcare workplace.
- Demonstration of how to perform glucose testing
- Performing a Urinanalysis
- Conducting clinical trials for tissue examination
- Completion of the Career Planning Research project researching the means to achieve the opportunities on two related careers to this unit.
- Successful completion of a blood chemistry activity

#### **Leadership Alignment:**

- Students will demonstrate taking initiative and work independently as they, monitor, define, prioritize, and complete tasks without direct oversight when performing glucose testing, blood cell examination, bacteria identification, urine analysis, and the examination of tissue, while analyzing data to determine a cause.
- Students will interpret information and draw conclusions based on the best analysis during numerous diagnostic tests.

#### Standards and Competencies

#### Unit 4: Clinical Lab Practices-

In this unit students will:

- Recognize the job opportunities in clinical laboratories and the requirements for those careers.
- Identify the components of blood and some common blood tests.
- Recognize how blood is analyzed to determine patient health.
- Recognize the role of blood banks and clinical chemistry testing facilities.
- Explain diagnostic methods for identifying infections and diseases.
- Recognize the work of anatomic laboratory practices.

## **Industry Standards and/or Competencies**

**Total Learning Hours for Unit: 10** 

# Foundation Standard 4: Employability Skills- Utilize employability skills to enhance employment opportunities and job satisfaction.

4.3 Career Decision-making

- 4.31 Research levels of education, credentialing requirements, and employment trends in health professions.
- 4.32 Distinguish differences among careers within health science pathways (diagnostic services, therapeutic services, health informatics, support services, or biotechnology research and development).

## Foundation Standard 5: Legal Responsibilities- Describe legal responsibilities, limitations, and implications on healthcare worker actions.

- 5.2 Legal Practices
- 5.2.6 Describe the concept of scope of practice.

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- 7.1.2 Differentiate methods of controlling the spread and growth of pathogens.

- 7.2 Personal Safety
- 7.2.1 Apply personal safety procedures based on Occupational Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations.
- 7.2.2 Demonstrate principles of body mechanics during patient care.
- 7.2.3 Demonstrate and apply the use of personal protective equipment (PPE).
- 7.3 Environmental Safety
- 7.3.1 Apply safety techniques in the work environment.
- 7.4 Common Safety Hazards
- 7.4.1 Observe all safety standards related to the occupational exposure to hazardous chemicals standard (safety data sheets [SDS]).
- 7.4.2 Comply with safety signs, symbols, and labels.
- 7.5 Emergency Procedures and Protocols
- 7.5.1 Practice fire safety in a healthcare setting.
- 7.5.2 Apply principles of basic emergency response in natural disasters and other emergencies (safe location, contact emergency personnel, follow facility protocols)

Aligned Washington State Learning Standards		
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	6. Creative Communicator- Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.	
English Language Arts	CCSS.ELA-LITERACY.RST.11-12.5  Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.  CCSS.ELA-LITERACY.RST.11-12.7-  Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.  W.1.11-12:  Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.  SL.1.11-12:  Initiate and participate effectively in a range of collaborative discussions (one-on- one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.  L.2.11-12:  Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.	
Health and Physical Education	H1.W1.HS- Analyze personal dimensions of health and design a plan to balance health. H2.W2.HSa,- Analyze prevention, lifestyle factors, and treatment of communicable and noncommunicable diseases. H2.W2.HSb Assess personal risk factors and predict future health status. H3.W4.HS- Create a resource that outlines where and how students can access valid and reliable health information, products, and services. H5.W6.HS- Predict potential short- and long-term outcomes of a personal health-related decision. H2.Sa1.HS- Compare how family, peers, culture, media, technology, and other factors influence safety and injury prevention practices and behaviors. H1.Sa3.HS- Analyze potential dangers of sharing personal information through electronic media.	

**Disciplinary Core Ideas (DCI):** 

HS-LS1-2:

From Molecules to Organisms: Structures and Processes

HS-LS1-3:

From Molecules to Organisms: Structures and Processes

HS-LS3-1:

Heredity: Inheritance and Variation of Traits

**HS-ETS1-1**:

Analyze a major global challenge to specify qualitative and quantitative criteria ad constraints for solutions that account for societal needs and wants.

**HS-ETS1-2**:

Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.

**HS-ETS1-3:** 

Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.

**Cross Cutting Concepts (CCCs)-**

Systems and system models

Cause and Effect

Structure and Function

**Patterns** 

#### **COMPONENTS AND ASSESSMENTS**

**Performance Assessments:** Students will demonstrate their understanding through:

- Successful completion of a written test assessment demonstrating mastery of Dentistry Overview and Terminology, mastery of Tooth Anatomy and Charting, the importance of dental hygiene and outcomes when the patient doesn't have it, and explain the process of dental radiography. Providing written explanation of the healthcare worker's role within their department, organization, and the overall health care system. Being able to identify potential hazards to clients, coworkers, visitors, and self in the healthcare workplace. Demonstrating on the test the ability to be able to evaluate the roles and responsibilities of individual members as part of the healthcare team and explain their role in promoting the delivery of quality health care. Being able to analyze the legal and ethnical responsibilities, limitations and implications of actions within the healthcare workplace. Demonstrating on the test how to evaluate accepted ethical practices with respect to cultural, social and ethnic differences within the healthcare workplace.
- Demonstrating how to remove tooth decay and treating it.
- Performing a Dental Research Project.
- Making a Dental Impression and Casting a Tooth Model.
- Demonstrating how to perform a Dental Exam and fill a Cavity.
- Completion of the Career Planning Research project researching the means to achieve the opportunities on two related careers to this unit.

## **Leadership Alignment:**

- Students will guide and lead others to understand by training others in the importance of dental daily hygiene practices and understanding consequences.
- Using the National HOSA competitive event guidelines for the *Dental Science* event, students will communicate clearly to peers and instructors while they execute the various task scenarios presented to them to work through and successfully provide care to the patient. Students will play roles in the scenarios.

# Standards and Competencies

Unit 5: Dentistry

Science

In this unit students will:

- Identify the roles of dental professionals, and the preparation for each occupation.
- Recognize parts of the jaw, teeth, and mouth.
- Identify appropriate dental care at each developmental stage.
- Identify common dental problems.
- Recognize how to correct common dental problems.
- Recognize common diseases of teeth, gums, the jaw, and the mouth.

#### **Industry Standards and/or Competencies**

**Total Learning Hours for Unit: 10** 

## Foundation Standard 2: Communications- Demonstrate methods of delivering and obtaining information, while communicating effectively.

- 2.1 Concepts of Effective Communication
- 2.2 Medical Terminology
- 2.21 Use common roots, prefixes, and suffixes to communicate information.
- 2.22 Interpret medical abbreviations to communicate information.
  - a. Common abbreviations
- 2.3 Written Communication Skills
- 2.31 Utilize proper elements of written and electronic communication (spelling, grammar, and formatting).
- 2.32 Prepare examples of technical, informative, and creative writing.

## Foundation Standard 4: Employability Skills- Utilize employability skills to enhance employment opportunities and job satisfaction.

- 4.3 Career Decision-making
- 4.31 Research levels of education, credentialing requirements, and employment trends in health professions.

#### Foundation Standard 5: Legal Responsibilities- Describe legal responsibilities, limitations, and implications on healthcare worker actions.

- 5.2 Legal Practices
- 5.2.6 Describe the concept of scope of practice.

# Foundation Standard 9: Health Maintenance Practices- Differentiate between wellness and disease. Promote disease prevention and model healthy behaviors.

- 9.1 Healthy Behaviors
- 9.1.1 Promote behaviors of health and wellness.
  - Exercise
  - Nutrition
  - Sleep habits
  - Stress management
  - Weight control
- 9.1.3 Describe strategies for prevention of disease.
  - Community health education outreach programs
  - Immunizations
  - Medical, dental, and mental health screenings
  - Routine physical exams
  - Stress management

## Aligned Washington State Learning Standards

- **1. Empowered Learner-** Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.
- **2. Digital Citizen-** Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.
- **6. Creative Communicator-** Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.

**Educational Technology** 

English Language Arts	CCSS.ELA-LITERACY.RST.11-12.5- Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.  CCSS.ELA-LITERACY.RST.11-12.7- Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.  W.1.11-12: Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.  SL.1.11-12: Initiate and participate effectively in a range of collaborative discussions (one-on- one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.  L.2.11-12: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
Health and Physical Education	H1.W1.HS- Analyze personal dimensions of health and design a plan to balance health. H2.W2.HSa,- Analyze prevention, lifestyle factors, and treatment of communicable and noncommunicable diseases. H2.W2.HSb Assess personal risk factors and predict future health status. H3.W4.HS- Create a resource that outlines where and how students can access valid and reliable health information, products, and services. H5.W6.HS- Predict potential short- and long-term outcomes of a personal health-related decision. H2.Sa1.HS- Compare how family, peers, culture, media, technology, and other factors influence safety and injury prevention practices and behaviors. H1.Sa3.HS- Analyze potential dangers of sharing personal information through electronic media.
Science	Disciplinary Core Ideas (DCI): HS-LS1-2: From Molecules to Organisms: Structures and Processes HS-LS1-3: From Molecules to Organisms: Structures and Processes HS-ETS1-1: Analyze a major global challenge to specify qualitative and quantitative criteria ad constraints for solutions that account for societal needs and wants. HS-ETS1-2: Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering. HS-ETS1-3: Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.  Cross Cutting Concepts (CCCs)- Systems and system models Cause and Effect Structure and Function Patterns

Science and Engineering Practices (SEPs)- All

Developing and using models

Planning and carrying out investigations

Asking questions and defining problems

Analyzing and interpreting data

Using mathematics and computational thinking

Constructing explanations and designing solutions

Engaging in argument from evidence

Obtaining, evaluating, and communicating information

#### **COMPONENTS AND ASSESSMENTS**

Performance Assessments: Students will demonstrate their understanding through:

- Successful completion of a written test assessment demonstrating mastery of the EMT overview and terminology and demonstrating knowledge and explanations as to the ABCs. Providing written explanation of the healthcare worker's role within their department, organization, and the overall health care system. Being able to identify potential hazards to clients, coworkers, visitors, and self in the healthcare workplace. Demonstrating on the test the ability to be able to evaluate the roles and responsibilities of individual members as part of the healthcare team and explain their role in promoting the delivery of quality health care. Being able to analyze the legal and ethical responsibilities, limitations and implications of actions within the healthcare workplace. Demonstrating on the test how to evaluate accepted ethical practices with respect to cultural, social and ethnic differences within the healthcare workplace.
- Demonstration of how to apply a splint
- Explaining the procedures and precautions to take for infection control
- Demonstrating how to perform wound care on various types of wounds
- Discussion of textiles that are flammable and how to handle and protect a patient from them
- Demonstrating how to perform CPR
- Demonstrating how to use an Automatic External Defibrillator
- Completion of the Career Planning Research project researching the means to achieve the opportunities on two related careers to this unit.

# Leadership Alignment:

- Using the National HOSA competitive event guidelines for the *Emergency Medicine Technician* event, students will make judgments and decisions based on interpreting information and drawing conclusions of a given scenario.
- Students will reflect critically on prior learning experiences and processes to respond to the scenario and provide patient care fast.
- Students will work in teams to respond to various EMT scenarios, collaborating with others, demonstrating ability to work effectively and respectfully within diverse teams.

# Standards and Competencies

# Unit 6: Emergency Medical Technician

In this unit students will:

- Recognize the role of Emergency Medical Technicians in the healthcare industry.
- Identify the steps for the primary survey (checking Airway, Breathing and Circulation and blood pressure.)
- Recognize the differences between viral and bacterial disease, and how to prevent disease transmission.
- Identify how to control bleeding, common types of wounds, and bandaging for various wounds.
- Identify the first aid steps for common emergencies: choking, poison, and burns.
- Recognize the signs of a heart attack.
- Demonstrate how to perform CPR and how to use an AED.

## **Industry Standards and/or Competencies**

**Total Learning Hours for Unit: 10** 

Foundation Standard 4: Employability Skills- Utilize employability skills to enhance employment opportunities and job satisfaction.

- 4.3 Career Decision-making
- 4.31 Research levels of education, credentialing requirements, and employment trends in health professions.
- 4.32 Distinguish differences among careers within health science pathways (diagnostic services, therapeutic services, health informatics, support services, or biotechnology research and development).

#### Foundation Standard 5: Legal Responsibilities- Describe legal responsibilities, limitations, and implications on healthcare worker actions.

- 5.2 Legal Practices
- 5.2.6 Describe the concept of scope of practice.

# Foundation Standard 8: Teamwork Identify roles and responsibilities of individual members as part of the healthcare team.

- 8.1 Healthcare Teams
- 8.1.1 Evaluate roles and responsibilities of healthcare team members.
- 8.1.2 Identify characteristics of effective teams.
  - Defined roles
  - Common purpose
  - Effective communication
  - Effective leadership
  - Measurable processes and outcomes
  - Mutual respect
  - Shared goals
- 8.2 Team Member Participation
- 8.2.1 Recognize methods for building positive team relationships.

# Foundation Standard 9: Health Maintenance Practices- Differentiate between wellness and disease. Promote disease prevention and model healthy behaviors.

- 9.1 Healthy Behaviors
- 9.1.3 Describe strategies for prevention of disease.
  - · Community health education outreach programs
  - Immunizations
  - Medical, dental, and mental health screenings
  - Routine physical exams
  - Stress management

# Foundation 10: Technical Skills: Apply and demonstrate technical skills and knowledge common to health career specialties.

- 10.1 Technical Skills
- 10.1.1 Demonstrate procedures for measuring and recording vital signs including the normal ranges.
  - Blood pressure
  - Temperature
  - Oxygen saturation
  - Pain
  - Pulse
  - Respirations
- 10.1.2 Obtain training or certification in
  - Automated external defibrillator (AED)
  - Cardiopulmonary resuscitation (CPR)
  - First aid
  - Foreign body airway obstruction (FBAO)

# Aligned Washington State Learning Standards

# **Educational Technology**

1. Empowered Learner- Students leverage technology to take an active role in choosing, achieving and demonstrating

	competency in their learning goals, informed by the learning sciences.
	2. Digital Citizen- Students recognize the rights, responsibilities and opportunities of living, learning and working in an
	interconnected digital world, and they act and model in ways that are safe, legal and ethical.
	6. Creative Communicator- Students communicate clearly and express themselves creatively for a variety of purposes using the
	platforms, tools, styles, formats and digital media appropriate to their goals.
	CCSS.ELA-LITERACY.RST.11-12.5- Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.
	CCSS.ELA-LITERACY.RST.11-12.7-
English Language Arts	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.  W.1.11-12:
	Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.
	SL.1.11-12:
	Initiate and participate effectively in a range of collaborative discussions (one-on- one, in groups, and
	teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and
	expressing their own clearly and persuasively.
	L.2.11-12:
	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when
	writing. H1.W1.HS- Analyze personal dimensions of health and design a plan to balance health.
	H2.W2.HSa,- Analyze prevention, lifestyle factors, and treatment of communicable and noncommunicable diseases. H2.W2.HSb Assess personal risk factors and predict future health status.
Health and Physical Education	H3.W4.HS- Create a resource that outlines where and how students can access valid and reliable health information, products, and services.
Health and Physical Education	H5.W6.HS- Predict potential short- and long-term outcomes of a personal health-related decision.
	H2.Sa1.HS- Compare how family, peers, culture, media, technology, and other factors influence safety and injury prevention
	practices and behaviors.
	H1.Sa3.HS- Analyze potential dangers of sharing personal information through electronic media.
	Disciplinary Core Ideas (DCI):
	HS-LS1-2:
	From Molecules to Organisms: Structures and Processes
Science	HS-LS1-3:
	From Molecules to Organisms: Structures and Processes
	<u>HS-LS3-1:</u>
	Heredity: Inheritance and Variation of Traits

#### **COMPONENTS AND ASSESSMENTS**

**Performance Assessments:** Students will demonstrate their understanding through:

• Successful completion of a written test assessment demonstrating mastery of the environmental health & safety terminology (prevention of needle sticks, steps to practice sanitation, preparing for possible disasters) and petri dish preparation to examine and analyze bacteria in various stages of growth and make conclusions about bacterial infections. Providing written explanation of the healthcare worker's role within their department, organization, and the overall health care system. Being able to identify potential hazards to clients, coworkers, visitors, and self in the healthcare workplace. Demonstrating on the test the ability to

be able to evaluate the roles and responsibilities of individual members as part of the healthcare team and explain their role in promoting the delivery of quality health care. Being able to analyze the legal and ethical responsibilities, limitations and implications of actions within the healthcare workplace. Demonstrating on the test how to evaluate accepted ethical practices with respect to cultural, social and ethnic differences within the healthcare workplace.

- Demonstrating how to calibrate equipment
- Explaining all the necessary steps, procedures, and precautions to ensure hospital safety.
- Completion of the Career Planning Research project researching the means to achieve the opportunities on two related careers to this unit.

#### Leadership Alignment:

- Students will guide and lead others leveraging strengths of the team to accomplish a common goal of maintaining health and safety of the healthcare environment.
- Students will demonstrate health literacy by preparing a media product convincing the public that your healthcare setting has developed a successful emergency response plan for a pandemic.

#### Standards and Competencies

#### Unit 7 Environmental Health & Safety:

In this unit students will:

- Recognize the careers involved in keeping the medical environment safe.
- Recognize safety hazards and procedures to prevent hazards in a medical setting.
- Identify procedures for preventing patients form getting infections in the hospital.
- Identify procedures for maintaining the safety of a medical environment.
- Demonstrate procedures for maintaining the safety of a medical environment.
- Recognize how hospitals prepare for disasters and epidemics.

#### **Industry Standards and/or Competencies**

**Total Learning Hours for Unit: 10** 

#### **Foundation Standard 3: Systems**

Identify how key systems affect services performed and quality of care.

- 3.1 Healthcare Delivery Systems
- 3.1.1 Differentiate healthcare delivery systems and healthcare related agencies.
- c. Government
  - Veterans Administration (VA)
  - Centers for Disease Control and Prevention (CDC)
  - Food and Drug Administration (FDA)
  - Occupational Safety and Health Administration (OSHA)
  - Public Health Service (PHS)
- 3.1.3 Analyze the impact of emerging issues of healthcare delivery systems.
  - Addictions
  - Bioethics
  - Epidemiology
  - Socioeconomics
  - Technology

## Foundation Standard 5: Legal Responsibilities- Describe legal responsibilities, limitations, and implications on healthcare worker actions.

- 5.2 Legal Practices
- 5.2.6 Describe the concept of scope of practice.

## Foundation Standard 7: Safety Practices

Identifying existing and potential hazards to clients, co-workers, and self. Employ safe work practices and follow health and safety policies and procedures to prevent injury and illness.

7.1 Infection Control

- 7.1.1 Explain principles of infection transmission.
- 7.1.2 Differentiate methods of controlling the spread and growth of pathogens.
- 7.2 Personal Safety
- 7.2.1 Apply personal safety procedures based on Occupational Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations.
- 7.2.2 Demonstrate principles of body mechanics during patient care.
- 7.2.3 Demonstrate and apply the use of personal protective equipment (PPE).
- 7.3 Environmental Safety
- 7.3.1 Apply safety techniques in the work environment.
- 7.4 Common Safety Hazards
- 7.4.1 Observe all safety standards related to the occupational exposure to hazardous chemicals standard (safety data sheets [SDS]).
- 7.4.2 Comply with safety signs, symbols, and labels.
- 7.5 Emergency Procedures and Protocols
- 7.5.1 Practice fire safety in a healthcare setting.
- 7.5.2 Apply principles of basic emergency response in natural disasters and other emergencies (safe location, contact emergency personnel, follow facility protocols)

# Foundation Standard 9: Health Maintenance Practices- Differentiate between wellness and disease. Promote disease prevention and model healthy behaviors.

- 9.1 Healthy Behaviors
- 9.1.1 Promote behaviors of health and wellness.
  - Exercise
  - Nutrition
  - Sleep habits
  - Stress management
  - Weight control
- 9.1.3 Describe strategies for prevention of disease.
  - Community health education outreach programs
  - Immunizations
  - Medical, dental, and mental health screenings
  - Routine physical exams
  - Stress management

## Aligned Washington State Learning Standards

- **1. Empowered Learner-** Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.
- **2. Digital Citizen-** Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.
- **6. Creative Communicator-** Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.

#### - 20 -

**Educational Technology** 

	T
English Language Arts	CCSS.ELA-LITERACY.RST.11-12.5- Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.  CCSS.ELA-LITERACY.RST.11-12.7- Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.  W.1.11-12: Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.  SL.1.11-12: Initiate and participate effectively in a range of collaborative discussions (one-on- one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.  L.2.11-12: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
Health and Physical Education	H1.W1.HS- Analyze personal dimensions of health and design a plan to balance health. H2.W2.HSa,- Analyze prevention, lifestyle factors, and treatment of communicable and noncommunicable diseases. H2.W2.HSb Assess personal risk factors and predict future health status. H3.W4.HS- Create a resource that outlines where and how students can access valid and reliable health information, products, and services. H5.W6.HS- Predict potential short- and long-term outcomes of a personal health-related decision. H2.Sa1.HS- Compare how family, peers, culture, media, technology, and other factors influence safety and injury prevention practices and behaviors. H1.Sa3.HS- Analyze potential dangers of sharing personal information through electronic media. H2.Sa3.HS- Evaluate societal influences on violence. H7.Sa3.HS- Demonstrate effective peer resistance, negotiation, and collaboration skills to avoid potentially violent situations.
Science	Disciplinary Core Ideas (DCI): HS-LS1-2: From Molecules to Organisms: Structures and Processes HS-ETS1-1: Analyze a major global challenge to specify qualitative and quantitative criteria ad constraints for solutions that account for societal needs and wants. HS-ETS1-2: Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering. HS-ETS1-3: Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.

# **COMPONENTS AND ASSESSMENTS**

#### Performance Assessments: Students will demonstrate their understanding through:

- Successful completion of a written test assessment demonstrating mastery of the forensics overview and terminology, including knowledge of how to work with solutions and dilutions, how to analyze blood, hair samples, urine to solve a mystery and when/how to call time of death. Providing written explanation of the healthcare worker's role within their department, organization, and the overall health care system. Being able to identify potential hazards to clients, coworkers, visitors, and self in the healthcare workplace. Demonstrating on the test the ability to be able to evaluate the roles and responsibilities of individual members as part of the healthcare team and explain their role in promoting the delivery of quality health care. Being able to analyze the legal and ethical responsibilities, limitations and implications of actions within the healthcare workplace.
- Explain what goes into computer reconstruction and how the tool helps to solve mysteries.
- Completion of the Career Planning Research project researching the means to achieve the opportunities on two related careers to this unit.

#### **Leadership Alignment:**

- Using the National HOSA competitive event guidelines for *Forensic Science*, students will work as a team to apply critical thinking, effective reasoning, and decision making to create a solution to a forensic science-related problem.
- Students will analyze information from a crime scene and demonstrate media literacy by creating a media product for an audience on crime scene safety.

# Standards and Competencies

#### **Unit 8: Forensics**

In this unit students will:

- Identify the care of criminal evidence from crime scene to lab.
- Demonstrate proper Chain of Custody methods.
- Identify what must be included in Evidence Reports.
- Demonstrate use of a microscope and its care.
- Demonstrate personal safety when handling/examining evidence

# **Industry Standards and/or Competencies**

**Total Learning Hours for Unit: 10** 

#### **National Health Science Standards**

Foundation Standard 1: Academic Foundation- Understand human anatomy, physiology, common diseases and disorders, and medical math principles.

1.1 Human Anatomy and Physiology

- 1.11 Identify basic levels of organization of the human body.
  - a. Chemical
  - b. Cellular
  - c. Tissue
  - d. Organs
  - e. Systems
  - f. Organisms
- 1.12 Identify body planes, directional terms, cavities, and quadrants.
- a. Body planes (sagittal, mid-sagittal, coronal/frontal, transverse/horizontal).
- b. Directional terms (superior, inferior, anterior/ventral, posterior/dorsal, medial, lateral, proximal, distal, superficial, and deep).
- c. Cavities (dorsal, cranial, spinal, thoracic, abdominal, and pelvic).
- d. Quadrants (upper right, lower right, upper left, and lower left).
- 1.2 Diseases and Disorders
- 1.23 Describe biomedical therapies as they relate to the prevention, pathology, and treatment of disease.
- c. Human proteomics
- 1.3 Medical Mathematics
- 1.31 Demonstrate competency in basic math skills and mathematical conversions as they relate to healthcare.
- b. Mathematical (average, ratios, fractions, percentages, addition, subtraction, multiplication, division)
- 1.32 Demonstrate the ability to analyze diagrams, charts, graphs, and tables and interpret healthcare results.

# Foundation Standard 2: Communications- Demonstrate methods of delivering and obtaining information, while communicating effectively.

- 2.1 Concepts of Effective Communication
- 2.2 Medical Terminology
- 2.21 Use common roots, prefixes, and suffixes to communicate information.
- 2.22 Interpret medical abbreviations to communicate information.
  - a. Common abbreviations
- 2.3 Written Communication Skills
- 2.31 Utilize proper elements of written and electronic communication (spelling, grammar, and formatting).
- 2.32 Prepare examples of technical, informative, and creative writing.

#### Foundation Standard 3: Systems-Identify how key systems affect services performed and quality of care.

- 3.1. Healthcare Delivery Systems
- 3.1.3 Analyze the impact of emerging issues of healthcare delivery systems.
  - Addictions
  - Bioethics
  - Epidemiology
  - Socioeconomics
  - Technology

#### Foundation Standard 4: Employability Skills- Utilize employability skills to enhance employment opportunities and job satisfaction.

- 4.3 Career Decision-making
- 4.31 Research levels of education, credentialing requirements, and employment trends in health professions.
- 4.32 Distinguish differences among careers within health science pathways (diagnostic services, therapeutic services, health informatics, support services, or biotechnology research and development).

# Foundation Standard 5: Legal Responsibilities- Describe legal responsibilities, limitations, and implications on healthcare worker actions.

- 5.2 Legal Practices
- 5.2.6 Describe the concept of scope of practice.

Aligned Washington State Learning Standards		
Educational Technology	<b>1. Empowered Learner-</b> Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.	
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	1.244.42
	L.2.11-12:
	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when
	writing.
	H2.W2.HSb Assess personal risk factors and predict future health status.
	H3.W4.HS- Create a resource that outlines where and how students can access valid and reliable health information, products,
Health and Physical Education	and services.
,	H5.W6.HS- Predict potential short- and long-term outcomes of a personal health-related decision.
	H2.Sa1.HS- Compare how family, peers, culture, media, technology, and other factors influence safety and injury prevention
	practices and behaviors.
Mathematics	CCSS Math.HSN-Q.1:
	Use units as a way to understand problems and to guide the solution of multi-step problems
	Disciplinary Core Ideas (DCI):
	HS-LS1-2:
	From Molecules to Organisms: Structures and Processes
	HS-LS1-3:
	From Molecules to Organisms: Structures and Processes
	<u>HS-LS3-1:</u>
	Heredity: Inheritance and Variation of Traits
	<u>HS-ETS1-1:</u>
	Analyze a major global challenge to specify qualitative and quantitative criteria ad constraints for solutions that account for societal
	needs and wants.
	<u>HS-ETS1-2:</u>
	Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be
	solved through engineering.
	HS-ETS1-3:
	Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of
Saiomaa	constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.
Science	
	Cross Cutting Concepts (CCCs)-
	Systems and system models
	Cause and Effect
	Structure and Function
	Patterns
	Science and Engineering Practices (SEPs)- All
	Developing and using models
	Planning and carrying out investigations
	Asking questions and defining problems
	Analyzing and interpreting data
	Using mathematics and computational thinking
	Constructing explanations and designing solutions
	Engaging in argument from evidence
	Obtaining, evaluating, and communicating information
	t grant and the second of the

# **COMPONENTS AND ASSESSMENTS**

#### Performance Assessments: Students will demonstrate their understanding through:

- Successful completion of a written test assessment demonstrating mastery of the health information management overview and terminology including how to input information into medical records, how to read and interpret medical records, breaking down medical and coding terms, and explaining coding and procedures. Providing written explanation of the healthcare worker's role within their department, organization, and the overall health care system. Being able to identify potential hazards to clients, coworkers, visitors, and self in the healthcare workplace. Demonstrating on the test the ability to be able to evaluate the roles and responsibilities of individual members as part of the healthcare. team and explain their role in promoting the delivery of quality health care. Being able to analyze the legal and ethical responsibilities, limitations and implications of actions within the healthcare workplace.
- Examine a medical record of a patient to determine which government program or type of health insurance plan would work best for your patient and their healthcare needs.
- Demonstrate how to bill and explain what the compliances are with billing
- Research and explain various types of insurance plans related to payment for health care.
- Discuss Cancer statistics
- Discuss and explain ethics and privacy with confidentiality of patient's medical records and medical information.
- Completion of the Career Planning Research project researching the means to achieve the opportunities on two related careers to this unit.

#### **Leadership Alignment:**

- Students will reason effectively as they collaborate with others to problem solve various scenarios around patient privacy and medical records, as well as practicing how to effectively code for billing.
- Students will evaluate information critically and competently while working with patient medical records and information to determine which government program or type of health insurance plan would work best for your patient and their healthcare needs.

#### Standards and Competencies

#### **Unit 9: Health Information Management**

In this unit students will:

- Recognize the role of the Health Information Management professional.
- Identify information on a medical record.
- Recognize how coding is used in health records.
- Identify the benefits of electronic health records (EHR) and health information technology.
- Identify the tasks involved in health billing and compliance.
- · Recognize privacy issues associated with health records, including HIPAA requirements and professional ethics.

# **Industry Standards and/or Competencies**

**Total Learning Hours for Unit: 10** 

#### **National Health Science Standards**

# Foundation Standard 2: Communications- Demonstrate methods of delivering and obtaining information, while communicating effectively.

- 2.1 Concepts of Effective Communication
- 2.2 Medical Terminology
- 2.21 Use common roots, prefixes, and suffixes to communicate information.
- 2.22 Interpret medical abbreviations to communicate information.
  - a. Common abbreviations
- 2.3 Written Communication Skills
- 2.31 Utilize proper elements of written and electronic communication (spelling, grammar, and formatting).
- 2.32 Prepare examples of technical, informative, and creative writing.

## Foundation Standard 3: Systems- Identify how key systems affect services performed and quality of care.

## 3.1 Healthcare Delivery Systems

- 3.1.1 Differentiate healthcare delivery systems and healthcare related agencies.
- a. Types of practice settings
  - Acute care

- Ambulatory care
- Behavioral and mental health services
- Home care
- Long-term care
- Medical and dental practices
- 3.1.4 Analyze healthcare economics and related terms.
- a. The history and role of health insurance and employer/employee benefits.
- b. Fundamental terms related to health insurance
  - Claim
  - Coinsurance
  - Co-payment
  - Fraud
  - HIPAA
  - Premium
- c. Types of insurance plans
  - Private health insurance plans
  - Managed Care
    - -Health Maintenance Organization (HMO)
    - -Independent Practice Association (IPA)
    - -Preferred Provider Organization (PPO)
  - Government programs
    - -Affordable Care Act (ACA)
    - -Medicaid
    - -Medicare
    - -Tricare
    - -Workers' Compensation

# Foundation Standard 4: Employability Skills- Utilize employability skills to enhance employment opportunities and job satisfaction.

- 4.3 Career Decision-making
- 4.31 Research levels of education, credentialing requirements, and employment trends in health professions.

#### Foundation Standard 5: Legal Responsibilities- Describe legal responsibilities, limitations, and implications on healthcare worker actions.

- 5.1 Legal Responsibilities and Implications
- 5.1.1 Analyze legal responsibilities and implications of criminal and civil law.
  - Abuse
  - Assault
  - Battery
  - Invasion of privacy
  - Libel
  - Malpractice
  - Negligence
  - Slander
- 5.2 Legal Practices
- 5.2.1 Apply standards for the safety, privacy and confidentiality of health information.
  - HIPAA
  - Privileged communication

- 5.2.2 Describe advance directives.
- 5.2.3 Summarize the essential characteristics of a patient's basic rights within a healthcare setting.
- 5.2.4 Differentiate informed and implied consent.
- 5.2.5 Explain laws governing harassment.
- 5.2.6 Describe the concept of scope of practice.
- 5.2.7 Utilize procedures for reporting activities and behaviors that affect the health, safety, and welfare of others (incident report).

# Foundation Standard 6: Ethics Understand accepted ethical practices with respect to cultural, social, and ethnic differences within the healthcare environment.

- 6.1 Ethical Practice
- 6.1.1 Differentiate between ethical and legal issues impacting healthcare.
- 6.1.2 Identify ethical issues and their implications related to healthcare.
  - Ethics committee
  - Euthanasia
  - In vitro fertilization
  - Organ donation
  - Scope of practice
- 6.2 Cultural, Social, and Ethnic Diversity
- 6.2.1 Discuss religious and cultural values as they impact healthcare.
  - Ethnicity
  - Gender
  - Race
  - Religion
- 6.2.2 Demonstrate respectful and empathetic treatment of ALL patients/clients.
  - Civility
  - Customer service
  - Patient satisfaction

# Foundation Standard 11: Information Technology in Healthcare Apply information technology practices common across health professions.

- 11.1 Key Principles, components, and practices of Health Information Systems
- 11.1.1 Identify components of an electronic health record (EHR) and/or electronic medical record (EMR).
  - Diagnostic tests
  - History and physical
  - Medications
  - · Patient demographics
  - Progress notes
  - Treatment Plan
- 11.1.2 Explore different types of health data collection tools.
  - · Medical wearable devices
  - Patient monitoring equipment
  - Phone application
  - Telemedicine/telehealth
- 11.1.3 Create electronic documentation that reflects timeliness, completeness, and accuracy.
- 11.1.4 Adhere to information systems policies, procedures, and regulations as required by national, state, and local entities.

# Aligned Washington State Learning Standards

# **Educational Technology**

**1. Empowered Learner-** Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.

	2. Digital Citizen- Students recognize the rights, responsibilities and opportunities of living, learning and working in an
	interconnected digital world, and they act and model in ways that are safe, legal and ethical.
	6. Creative Communicator- Students communicate clearly and express themselves creatively for a variety of purposes using the
	platforms, tools, styles, formats and digital media appropriate to their goals.
	CCSS.ELA-LITERACY.RST.11-12.5-
	Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance
	understanding of findings, reasoning, and evidence and to add interest.
	CCSS.ELA-LITERACY.RST.11-12.7-
	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video,
	multimedia) in order to address a question or solve a problem.
	<u>W.1.11-12:</u>
Carlish Language Auto	Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly
English Language Arts	and accurately through the effective selection, organization, and analysis of content.
	SL.1.11-12:
	Initiate and participate effectively in a range of collaborative discussions (one-on- one, in groups, and
	teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and
	expressing their own clearly and persuasively.
	L.2.11-12:
	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when
	writing.
	Disciplinary Core Ideas (DCI):
Science	HS-LS1-2:
	From Molecules to Organisms: Structures and Processes
	HS-LS1-3:
	From Molecules to Organisms: Structures and Processes
	HS-LS3-1:
	Heredity: Inheritance and Variation of Traits
	Cross Cutting Concepts (CCCs)-
	Systems and system models
	Cause and Effect
	Structure and Function
	Patterns
	Science and Engineering Practices (SEPs)- All
	Developing and using models
	Planning and carrying out investigations
	Asking questions and defining problems
	Analyzing and interpreting data
	Using mathematics and computational thinking
	Constructing explanations and designing solutions
	Engaging in argument from evidence
	Obtaining, evaluating, and communicating information

# COMPONENTS AND ASSESSMENTS

#### Performance Assessments: Students will demonstrate their understanding through:

- Successful completion of a written test assessment demonstrating mastery of the medical imaging overview and terminology including x-ray anatomy, the positioning needed for x-rays, and identification of injuries. Providing written explanation of the healthcare worker's role within their department, organization, and the overall health care system. Being able to identify potential hazards to clients, coworkers, visitors, and self in the healthcare workplace. Demonstrating on the test the ability to be able to evaluate the roles and responsibilities of individual members as part of the healthcare.
- Explaining how to perform fetal measurements
- Explaining and demonstrating the process of performing an endoscopy simulation
- Describing how magnetism and MRIs can help diagnose an injury.
- Explaining what the risks are with radiation
- Completion of the Career Planning Research project researching the means to achieve the opportunities on two related careers to this unit.

#### Leadership Alignment:

- Students will apply technology effectively by selecting equipment and tools, apply technology to specific tasks, and maintain and troubleshoot equipment while using the proper diagnostic tool for medical imaging.
- Students will make judgements and decisions by interpreting information and drawing conclusions based on analysis of the various medical imaging tests.

# Standards and Competencies

#### **Unit 10: Medical Imaging**

In this unit students will:

- Recognize the job opportunities in medical imaging and the requirements for those careers.
- Recognize how X-rays are produced and how they work.
- Identify the uses for X-rays and the procedures for taking them.
- Recognize the critical safety requirements for radiation technologies.
- Identify the uses of ultrasounds and the technology that produces them.
- Recognize the sues of MRI, CT, and PET/CT and the technologies that produce them.

## **Industry Standards and/or Competencies**

**Total Learning Hours for Unit: 10** 

#### **National Health Science Standards**

Foundation Standard 1: Academic Foundation- Understand human anatomy, physiology, common diseases and disorders, and medical math principles.

# 1.1 Human Anatomy and Physiology

- 1.11 Identify basic levels of organization of the human body.
  - g. Chemical
  - h. Cellular
  - i. Tissue
  - j. Organs
  - k. Systems
  - Organisms
- 1.12 Identify body planes, directional terms, cavities, and quadrants.
- a. Body planes (sagittal, mid-sagittal, coronal/frontal, transverse/horizontal).
- b. Directional terms (superior, inferior, anterior/ventral, posterior/dorsal, medial, lateral, proximal, distal, superficial, and deep).
- c. Cavities (dorsal, cranial, spinal, thoracic, abdominal, and pelvic).
- d. Quadrants (upper right, lower right, upper left, and lower left).
- 1.2 Diseases and Disorders
- 1.23 Describe biomedical therapies as they relate to the prevention, pathology, and treatment of disease.
- c. Human proteomics
- 1.4 Medical Mathematics
- 1.31 Demonstrate competency in basic math skills and mathematical conversions as they relate to healthcare.

- b. Mathematical (average, ratios, fractions, percentages, addition, subtraction, multiplication, division)
- 1.32 Demonstrate the ability to analyze diagrams, charts, graphs, and tables and interpret healthcare results.

# Foundation Standard 2: Communications- Demonstrate methods of delivering and obtaining information, while communicating effectively.

- 2.1 Concepts of Effective Communication
- 2.2 Medical Terminology
- 2.21 Use common roots, prefixes, and suffixes to communicate information.
- 2.22 Interpret medical abbreviations to communicate information.
  - a. Common abbreviations
- 2.3 Written Communication Skills
- 2.31 Utilize proper elements of written and electronic communication (spelling, grammar, and formatting).
- 2.32 Prepare examples of technical, informative, and creative writing.

#### Foundation Standard 3: Systems-Identify how key systems affect services performed and quality of care.

- 3.1. Healthcare Delivery Systems
- 3.1.3 Analyze the impact of emerging issues of healthcare delivery systems.
  - Addictions
  - Bioethics
  - Epidemiology
  - Socioeconomics
  - Technology

#### Foundation Standard 4: Employability Skills- Utilize employability skills to enhance employment opportunities and job satisfaction.

- 4.3 Career Decision-making
- 4.31 Research levels of education, credentialing requirements, and employment trends in health professions.
- 4.32 Distinguish differences among careers within health science pathways (diagnostic services, therapeutic services, health informatics, support services, or biotechnology research and development).

# Foundation Standard 5: Legal Responsibilities- Describe legal responsibilities, limitations, and implications on healthcare worker actions.

- 5.2 Legal Practices
- 5.2.6 Describe the concept of scope of practice.

# Foundation Standard 9: Health Maintenance Practices- Differentiate between wellness and disease. Promote disease prevention and model healthy behaviors.

- 9.1 Healthy Behaviors
- 9.1.3 Describe strategies for prevention of disease.
  - · Community health education outreach programs
  - Immunizations
  - Medical, dental, and mental health screenings
  - Routine physical exams
  - Stress management

Stress management		
Aligned Washington State Learning Standards		
Educational Technology	<ol> <li>Empowered Learner- Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.</li> <li>Digital Citizen- Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.</li> <li>Creative Communicator- Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.</li> </ol>	
English Language Arts	CCSS.ELA-LITERACY.RST.11-12.5-	

Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest. CCSS.ELA-LITERACY.RST.11-12.7-Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem. W.1.11-12: Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content. SL.1.11-12: Initiate and participate effectively in a range of collaborative discussions (one-on- one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively. L.2.11-12: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. H1.Sa3.HS- Analyze potential dangers of sharing personal information through electronic media. **Health and Physical Education** Disciplinary Core Ideas (DCI): HS-LS1-2: From Molecules to Organisms: Structures and Processes HS-LS1-3: From Molecules to Organisms: Structures and Processes HS-LS3-1: Heredity: Inheritance and Variation of Traits **Cross Cutting Concepts (CCCs)-**Systems and system models Cause and Effect Science Structure and Function Patterns Science and Engineering Practices (SEPs)- All Developing and using models Planning and carrying out investigations Asking questions and defining problems Analyzing and interpreting data Using mathematics and computational thinking Constructing explanations and designing solutions Engaging in argument from evidence Obtaining, evaluating, and communicating information

#### COMPONENTS AND ASSESSMENTS

**Performance Assessments:** Students will demonstrate their understanding through:

• Successful completion of a written test assessment demonstrating mastery of the mental health overview and terminology including defining depression, values, empathy, stress, and identifying myths around mental illnesses. Providing written explanation of the healthcare worker's role within their department,

organization, and the overall health care system. Being able to identify potential hazards to clients, coworkers, visitors, and self in the healthcare workplace. Demonstrating on the test the ability to be able to evaluate the roles and responsibilities of individual members as part of the healthcare.

- Demonstration of active listening
- Creating an Anti-Bullying Poster
- Participation in an ADHD simulation activity
- Completion of the Career Planning Research project researching the means to achieve the opportunities on two related careers to this unit.

#### **Leadership Alignment:**

- Using the National HOSA competitive event guidelines for the *Community Awareness* competitive event, students will work with others collaboratively to create a presentation around educating the community about mental health and how to improve it in the community.
- Students will use self-reflection on past experiences in order to inform future progress related to their own mental health and others.

#### Standards and Competencies

#### Unit 11: Mental Health

In this unit students will:

- Identify the roles of mental health professionals, and the preparation for each occupation.
- Recognize some of the symptoms and treatment for depression, drug and alcohol disorders, and eating disorders.
- Identify the causes and treatments for bullying behavior.
- Identify types of learning disabilities and treatment options.
- Recognize causes and treatment for post-traumatic stress disorder (PTSD).
- Recognize the signs of potential suicide and appropriate intervention.
- Recognize symptoms and causes of mania and bipolar disorder, and schizophrenia.

## **Industry Standards and/or Competencies**

**Total Learning Hours for Unit: 10** 

#### National Health Science Standards

Foundation Standard 1: Academic Foundation- Understand human anatomy, physiology, common diseases and disorders, and medical math principles.

## 1.1 Human Anatomy and Physiology

- 1.11 Identify basic levels of organization of the human body.
- 1.2 Diseases and Disorders
- 1.32 Demonstrate the ability to analyze diagrams, charts, graphs, and tables and interpret healthcare results.

Foundation Standard 2: Communications- Demonstrate methods of delivering and obtaining information, while communicating effectively.

- 2.1 Concepts of Effective Communication
- 2.2 Medical Terminology
- 2.21 Use common roots, prefixes, and suffixes to communicate information.
- 2.22 Interpret medical abbreviations to communicate information.
- a. Common abbreviations
- 2.3 Written Communication Skills
- 2.31 Utilize proper elements of written and electronic communication (spelling, grammar, and formatting).
- 2.32 Prepare examples of technical, informative, and creative writing.

Foundation Standard 4: Employability Skills- Utilize employability skills to enhance employment opportunities and job satisfaction.

- 4.3 Career Decision-making
- 4.31 Research levels of education, credentialing requirements, and employment trends in health professions.

Foundation Standard 5: Legal Responsibilities- Describe legal responsibilities, limitations, and implications on healthcare worker actions.

- 5.2 Legal Practices
- 5.2.6 Describe the concept of scope of practice.

Foundation Standard 9: Health Maintenance Practices- Differentiate between wellness and disease. Promote disease prevention and model healthy behaviors.

- 9.1 Healthy Behaviors
- 9.1.2 Examine various aspects of behavioral health.
  - Anxiety
  - Depression
  - Substance Abuse
  - Suicide
- 9.1.3 Describe strategies for prevention of disease.
  - Community health education outreach programs
  - Immunizations
  - Medical, dental, and mental health screenings
  - Routine physical exams
  - Stress management

Stress management		
Aligned Washington State Learning Standards		
Educational Technology	<ol> <li>Empowered Learner- Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.</li> <li>Digital Citizen- Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.</li> <li>Creative Communicator- Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.</li> </ol>	
English Language Arts	CCSS.ELA-LITERACY.RST.11-12.5- Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.  CCSS.ELA-LITERACY.RST.11-12.7- Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.  W.1.11-12: Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.  SL.1.11-12: Initiate and participate effectively in a range of collaborative discussions (one-on- one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.  L.2.11-12: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.	
Health and Physical Education	H1.W1.HS- Analyze personal dimensions of health and design a plan to balance health. H2.W2.HSb Assess personal risk factors and predict future health status. H3.W4.HS- Create a resource that outlines where and how students can access valid and reliable health information, products, and services. H5.W6.HS- Predict potential short- and long-term outcomes of a personal health-related decision. H2.Sa1.HS- Compare how family, peers, culture, media, technology, and other factors influence safety and injury prevention practices and behaviors. H7.Sa3.HS- Demonstrate effective peer resistance, negotiation, and collaboration skills to avoid potentially violent situations.	

#### COMPONENTS AND ASSESSMENTS

**Performance Assessments:** Students will demonstrate their understanding through:

- Successful completion of a written test assessment demonstrating mastery of the nursing overview and terminology. Providing written explanation of the healthcare worker's role within their department, organization, and the overall health care system. Being able to identify potential hazards to clients, coworkers, visitors, and self in the healthcare workplace. Demonstrating on the test the ability to be able to evaluate the roles and responsibilities of individual members as part of the healthcare team and explain their role in promoting the delivery of quality health care. Being able to analyze the legal and ethical responsibilities, limitations and implications of actions within the healthcare workplace. Demonstrating on the test how to evaluate accepted ethical practices with respect to cultural, social and ethnic differences within the healthcare workplace.
- Demonstrating steps to proper hand washing
- Performing how to take vital signs -ABC: Airway, Breathing, Circulation
- Explain what Phlebotomy is, its importance, and how to become a Phlebotomist
- Show how to perform precision measurement, for dilutions, and using calculations to do so.
- Role playing using oral communications for educating patients
- Demonstrating basic suturing
- Create and deliver an oral presentation power point to educate parents on the pros and cons of infant immunizations, in the role of a public health nurse.
- Completion of the Career Planning Research project researching the means to achieve the opportunities on two related careers to this unit.

#### **Leadership Alignment:**

- Students will use and manage information to create a media product to guide and lead others in health literacy regarding the impact of global emerging issues around infant immunizations, in the role of a public health nurse.
- Students will work in teams and demonstrate critical thinking, effective reasoning, and decision making while responding to the various scenarios that nurses will experience in various healthcare systems or settings.

#### Standards and Competencies

#### **Unit 12: Nursing**

In this unit students will:

- Identify commonly used medical terminology relating to anatomy and treatment.
- Identify the responsibilities and relationships between different nursing occupations.
- Recognize the link between sanitation and infection.
- Demonstrate basic nursing skills including taking vital signs, using a stethoscope, taking a blood sample, and treating a wound.
- Demonstrate effective communication skills in working with patients and families.
- Use mathematics to calculate dosages and to evaluate effective treatments.

# Industry Standards and/or Competencies

**Total Learning Hours for Unit: 10** 

## **National Health Science Standards**

Foundation Standard 1: Academic Foundation- Understand human anatomy, physiology, common diseases and disorders, and medical math principles.

# 1.1 Human Anatomy and Physiology

- 1.11 Identify basic levels of organization of the human body.
  - m. Chemical
  - n. Cellular
  - o. Tissue
  - p. Organs
  - q. Systems
  - r. Organisms
- 1.12 Identify body planes, directional terms, cavities, and quadrants.
- a. Body planes (sagittal, mid-sagittal, coronal/frontal, transverse/horizontal).
- b. Directional terms (superior, inferior, anterior/ventral, posterior/dorsal, medial, lateral, proximal, distal, superficial, and deep).

- c. Cavities (dorsal, cranial, spinal, thoracic, abdominal, and pelvic).
- d. Quadrants (upper right, lower right, upper left, and lower left).
- 1.2 Diseases and Disorders
- 1.23 Describe biomedical therapies as they relate to the prevention, pathology, and treatment of disease.
- c. Human proteomics
- 1.5 Medical Mathematics
- 1.31 Demonstrate competency in basic math skills and mathematical conversions as they relate to healthcare.
- b. Mathematical (average, ratios, fractions, percentages, addition, subtraction, multiplication, division)
- 1.32 Demonstrate the ability to analyze diagrams, charts, graphs, and tables and interpret healthcare results.

#### Foundation Standard 2: Communications- Demonstrate methods of delivering and obtaining information, while communicating effectively.

- 2.1 Concepts of Effective Communication
- 2.2 Medical Terminology
- 2.21 Use common roots, prefixes, and suffixes to communicate information.
- 2.22 Interpret medical abbreviations to communicate information.
  - a. Common abbreviations
- 2.3 Written Communication Skills
- 2.31 Utilize proper elements of written and electronic communication (spelling, grammar, and formatting).
- 2.32 Prepare examples of technical, informative, and creative writing.

#### Foundation Standard 3: Systems-Identify how key systems affect services performed and quality of care.

- 3.1 Healthcare Delivery Systems
- 3.1.1 Differentiate healthcare delivery systems and healthcare related agencies.
- a. Types of practice settings
  - Acute care
  - Ambulatory care
  - Behavioral and mental health services
  - Home care
  - Long-term care
  - Medical and dental practices
- b. Specialty medical and dental practices
  - Cosmetic surgery
  - Pulmonology
  - Surgical
  - Orthodontics
- 3.1.2 Examine the healthcare consumer's rights and responsibilities within the healthcare system.
  - Self-advocacy
  - Compliance
  - Patient's Bill of Rights
- 3.1.3 Analyze the impact of emerging issues on healthcare delivery systems.
  - Addictions
  - Bioethics
  - Epidemiology
  - Socioeconomics
  - Technology

## Foundation Standard 4: Employability Skills- Utilize employability skills to enhance employment opportunities and job satisfaction.

- 4.3 Career Decision-making
- 4.31 Research levels of education, credentialing requirements, and employment trends in health professions.

# Foundation Standard 5: Legal Responsibilities- Describe legal responsibilities, limitations, and implications on healthcare worker actions.

- 5.1 Legal Responsibilities and Implications
- 5.1.1 Analyze legal responsibilities and implications of criminal and civil law.
  - Abuse
  - Assault
  - Battery
  - Invasion of privacy
  - Libel
  - Malpractice
  - Negligence
  - Slander
- 5.2 Legal Practices
- 5.2.1 Apply standards for the safety, privacy and confidentiality of health information.
  - HIPAA
  - Privileged communication
- 5.2.2 Describe advance directives.
- 5.2.3 Summarize the essential characteristics of a patient's basic rights within a healthcare setting.
- 5.2.4 Differentiate informed and implied consent.
- 5.2.5 Explain laws governing harassment.
- 5.2.6 Describe the concept of scope of practice.
- 5.2.7 Utilize procedures for reporting activities and behaviors that affect the health, safety, and welfare of others (incident report).

# **Foundation Standard 7: Safety Practices**

Identifying existing and potential hazards to clients, co-workers, and self. Employ safe work practices and follow health and safety policies and procedures to prevent injury and illness.

- 7.1 Infection Control
- 7.1.1 Explain principles of infection transmission.
- 7.1.2 Differentiate methods of controlling the spread and growth of pathogens.
- 7.2 Personal Safety
- 7.2.1 Apply personal safety procedures based on Occupational Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations.
- 7.2.2 Demonstrate principles of body mechanics during patient care.
- 7.2.3 Demonstrate and apply the use of personal protective equipment (PPE).
- 7.3 Environmental Safety
- 7.3.1 Apply safety techniques in the work environment.

# Foundation Standard 9: Health Maintenance Practices- Differentiate between wellness and disease. Promote disease prevention and model healthy behaviors.

- 9.1 Healthy Behaviors
- 9.1.3 Describe strategies for prevention of disease.
  - · Community health education outreach programs
  - Immunizations
  - · Medical, dental, and mental health screenings
  - Routine physical exams
  - Stress management

	Aligned Washington State Learning Standards
Educational Technology	<ol> <li>Empowered Learner- Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.</li> <li>Digital Citizen- Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.</li> <li>Creative Communicator- Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.</li> </ol>
English Language Arts	CCSS.ELA-LITERACY.RST.11-12.5  Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.  CCSS.ELA-LITERACY.RST.11-12.7-  Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.  W.1.11-12:  Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.  SL.1.11-12:  Initiate and participate effectively in a range of collaborative discussions (one-on- one, in groups, and teacher led) with diverse portages and accurate participate effectively in a range of collaborative discussions (one-on- one, in groups, and teacher led) with diverse portages and accurate participate effectively in a range of collaborative discussions (one-on- one, in groups, and teacher led) with diverse portages and accurate participate effectively in a range of collaborative discussions (one-on- one, in groups, and
	teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.  L.2.11-12:  Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
Health and Physical Education	H1.W1.HS- Analyze personal dimensions of health and design a plan to balance health. H2.W2.HSa,- Analyze prevention, lifestyle factors, and treatment of communicable and noncommunicable diseases. H2.W2.HSb Assess personal risk factors and predict future health status. H3.W4.HS- Create a resource that outlines where and how students can access valid and reliable health information, products, and services. H5.W6.HS- Predict potential short- and long-term outcomes of a personal health-related decision. H2.Sa1.HS- Compare how family, peers, culture, media, technology, and other factors influence safety and injury prevention practices and behaviors. H1.Sa3.HS- Analyze potential dangers of sharing personal information through electronic media. H2.Sa3.HS- Evaluate societal influences on violence. H7.Sa3.HS- Demonstrate effective peer resistance, negotiation, and collaboration skills to avoid potentially violent situations.
Mathematics	CCSS Math HSS.MD.B.5: Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values CCSS Math HSS.MD.B.6: Use probabilities to make fair decisions CCSS Math HSS.MD.B.7: Analyze decisions and strategies using probability concepts CCSS Math HSA-CED.2: Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales CCSS Math HSF-IF.5: Relate the domain of a function to it's graph and, where applicable, to the quantitative relationship it describes.

CCSS Math HSF-LE.6:

Apply quadratic functions to physical problems

CCSS Math HSF-IF.7a:

Graph quadratic functions and show intercepts maxima and minima (by hand & with technology)

CCSS Math HSN-Q.1:

Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays

**CCSS Math HSA-CED.4**:

Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.

Disciplinary Core Ideas (DCI):

HS-LS1-2:

From Molecules to Organisms: Structures and Processes

HS-LS1-3:

From Molecules to Organisms: Structures and Processes

HS-LS3-1:

Heredity: Inheritance and Variation of Traits

**HS-ETS1-1**:

Analyze a major global challenge to specify qualitative and quantitative criteria ad constraints for solutions that account for societal needs and wants.

**Cross Cutting Concepts (CCCs)-**

Systems and system models

Cause and Effect Structure and Function

Patterns

Science and Engineering Practices (SEPs)- All

Developing and using models

Planning and carrying out investigations

Asking questions and defining problems

Analyzing and interpreting data

Using mathematics and computational thinking

Constructing explanations and designing solutions

Engaging in argument from evidence

Obtaining, evaluating, and communicating information

#### COMPONENTS AND ASSESSMENTS

**Performance Assessments:** Students will demonstrate their understanding through:

- Successful completion of a written test assessment demonstrating mastery of the ophthalmology overview and terminology including identification of the anatomy of the eye, how to interpret and explain what is happening when a patient has nearsightedness or farsightedness, lens identification, and describing what happens to cause the various eye diseases. Providing written explanation of the healthcare worker's role within their department, organization, and the overall health care system. Being able to identify potential hazards to clients, coworkers, visitors, and self in the healthcare workplace. Demonstrating on the test the ability to be able to evaluate the roles and responsibilities of individual members as part of the healthcare.
- Describing how to select eyeglasses to treat nearsightedness or farsightedness
- Explaining what occurs when a patient undergoes LASIK Surgery

Science

• Completion of the Career Planning Research project researching the means to achieve the opportunities on two related careers to this unit.

# **Leadership Alignment:**

- Students will work creatively with others to develop and create a new pediatric vision test to diagnose pediatric vision disorders.
- Students will interact effectively with others conducting themselves in a respectful and professional manner while helping patients select eye glasses.

# Standards and Competencies

### **Unit 13: Ophthalmology**

In this unit students will:

- Identify the roles of eye care professionals, and the preparation for each occupation.
- Recognize parts of the eye and how vision works.
- Identify common vision problems.
- · Recognize how to correct common vision problems.
- Recognize common diseases that cause vision impairment.

### **Industry Standards and/or Competencies**

**Total Learning Hours for Unit: 10** 

#### **National Health Science Standards**

Foundation Standard 1: Academic Foundation- Understand human anatomy, physiology, common diseases and disorders, and medical math principles.

### 1.1 Human Anatomy and Physiology

- 1.11 Identify basic levels of organization of the human body.
  - s. Chemical
  - t. Cellular
  - u. Tissue
  - v. Organ Systems
  - w. Organisms
- 1.12 Identify body planes, directional terms, cavities, and quadrants.
- a. Body planes (sagittal, mid-sagittal, coronal/frontal, transverse/horizontal).
- b. Directional terms (superior, inferior, anterior/ventral, posterior/dorsal, medial, lateral, proximal, distal, superficial, and deep).
- c. Cavities (dorsal, cranial, spinal, thoracic, abdominal, and pelvic).
- d. Quadrants (upper right, lower right, upper left, and lower left).
- 1.2 Diseases and Disorders
- 1.23 Describe biomedical therapies as they relate to the prevention, pathology, and treatment of disease.
- 1.32 Demonstrate the ability to analyze diagrams, charts, graphs, and tables and interpret healthcare results.

# Foundation Standard 2: Communications- Demonstrate methods of delivering and obtaining information, while communicating effectively.

- 2.1 Concepts of Effective Communication
- 2.2 Medical Terminology
- 2.21 Use common roots, prefixes, and suffixes to communicate information.
- 2.22 Interpret medical abbreviations to communicate information.
  - a. Common abbreviations
- 2.3 Written Communication Skills
- 2.31 Utilize proper elements of written and electronic communication (spelling, grammar, and formatting).
- 2.32 Prepare examples of technical, informative, and creative writing.

# Foundation Standard 4: Employability Skills- Utilize employability skills to enhance employment opportunities and job satisfaction.

- 4.3 Career Decision-making
- 4.31 Research levels of education, credentialing requirements, and employment trends in health professions.

# Foundation Standard 5: Legal Responsibilities- Describe legal responsibilities, limitations, and implications on healthcare worker actions.

5.2 Legal Practices

5.2.6 Describe the concept of scope of practice.

- 9.1 Healthy Behaviors
- 9.1.1 Promote behaviors of health and wellness.
  - Exercise
  - Nutrition
  - Sleep habits
  - Stress management
  - Weight control
- 9.1.3 Describe strategies for prevention of disease.
  - Community health education outreach programs
  - Immunizations
  - Medical, dental, and mental health screenings
  - Routine physical exams
  - Stress management

Stress management	ill.
	Aligned Washington State Learning Standards
Educational Technology	<ol> <li>Empowered Learner- Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.</li> <li>Digital Citizen- Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.</li> <li>Creative Communicator- Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.</li> </ol>
English Language Arts	CCSS.ELA-LITERACY.RST.11-12.5- Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.  CCSS.ELA-LITERACY.RST.11-12.7- Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.  W.1.11-12: Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.  SL.1.11-12: Initiate and participate effectively in a range of collaborative discussions (one-on- one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.  L.2.11-12:  Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
Health and Physical Education	H2.W2.HSa,- Analyze prevention, lifestyle factors, and treatment of communicable and noncommunicable diseases. H2.W2.HSb Assess personal risk factors and predict future health status.

	H3.W4.HS- Create a resource that outlines where and how students can access valid and reliable health information, products, and services.  H5.W6.HS- Predict potential short- and long-term outcomes of a personal health-related decision.  H2.Sa1.HS- Compare how family, peers, culture, media, technology, and other factors influence safety and injury prevention practices and behaviors.
Science	Disciplinary Core Ideas (DCI): HS-LS1-2: From Molecules to Organisms: Structures and Processes HS-LS1-3: From Molecules to Organisms: Structures and Processes HS-LS3-1: Heredity: Inheritance and Variation of Traits  Cross Cutting Concepts (CCCs)- Systems and system models Cause and Effect
	Structure and Function Patterns

#### COMPONENTS AND ASSESSMENTS

Performance Assessments: Students will demonstrate their understanding through:

- Successful completion of a written test assessment demonstrating mastery of the pharmacology overview and terminology including: tablet and capsule identification, understanding prescriptions, catching medical errors, compounding, the use of medical mathematics to various medical math problems, and demonstrating how to use the patient information sheet in factoring the determination of the prescription needed. Providing written explanation of the healthcare worker's role within their department, organization, and the overall health care system. Being able to identify potential hazards to clients, coworkers, visitors, and self in the healthcare workplace. Demonstrating on the test the ability to be able to evaluate the roles and responsibilities of individual members as part of the healthcare.
- Completion of the Career Planning Research project researching the means to achieve the opportunities on two related careers to this unit.

# **Leadership Alignment:**

- Students will evaluate information critically and competently to reduce medical errors and understand patient prescriptions.
- Students will use information accurately and creatively for the issue or problem at hand when identifying problems with drug reactions and treatment.

# Standards and Competencies

# Unit 14: Pharmacology

In this unit students will:

- Identify the roles of pharmacy professionals and the preparation for each occupation.
- Demonstrate how to interpret drug labels and warnings.
- Demonstrate correct measurement for dosages.
- Identify common problems with drug reactions and treatment.
- Recognize the differences between trade, generic, and over-the-counter medications.
- Identify common drug delivery systems.

# **Industry Standards and/or Competencies**

**Total Learning Hours for Unit: 10** 

**National Health Science Standards** 

Foundation Standard 1: Academic Foundation- Understand human anatomy, physiology, common diseases and disorders, and medical math principles.

1.6 Medical Mathematics

- 1.31 Demonstrate competency in basic math skills and mathematical conversions as they relate to healthcare.
- b. Mathematical (average, ratios, fractions, percentages, addition, subtraction, multiplication, division)
- 1.32 Demonstrate the ability to analyze diagrams, charts, graphs, and tables and interpret healthcare results.

# Foundation Standard 2: Communications- Demonstrate methods of delivering and obtaining information, while communicating effectively.

- 2.1 Concepts of Effective Communication
- 2.2 Medical Terminology
- 2.21 Use common roots, prefixes, and suffixes to communicate information.
- 2.22 Interpret medical abbreviations to communicate information.
  - a. Common abbreviations
- 2.3 Written Communication Skills
- 2.31 Utilize proper elements of written and electronic communication (spelling, grammar, and formatting).
- 2.32 Prepare examples of technical, informative, and creative writing.

## Foundation Standard 4: Employability Skills- Utilize employability skills to enhance employment opportunities and job satisfaction.

- 4.3 Career Decision-making
- 4.31 Research levels of education, credentialing requirements, and employment trends in health professions.

## Foundation Standard 5: Legal Responsibilities- Describe legal responsibilities, limitations, and implications on healthcare worker actions.

- 5.2 Legal Practices
- 5.2.6 Describe the concept of scope of practice.

	Aligned Washington State Learning Standards
Educational Technology	<ol> <li>Empowered Learner- Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.</li> <li>Digital Citizen- Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.</li> <li>Creative Communicator- Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.</li> </ol>
English Language Arts	CCSS.ELA-LITERACY.RST.11-12.5- Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.  CCSS.ELA-LITERACY.RST.11-12.7- Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.  W.1.11-12: Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.  SL.1.11-12: Initiate and participate effectively in a range of collaborative discussions (one-on- one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.  L.2.11-12: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
Mathematics	CCSS Math HSF-IF.5: Relate the domain of a function to it's graph and, where applicable, to the quantitative relationship it describes.  CCSS Math HSF-LE.6:

Apply quadratic functions to physical problems CCSS Math HSF-IF.7a: Graph quadratic functions and show intercepts maxima and minima (by hand & with technology) CCSS Math HSN-Q.1: Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays CCSS Math HSA-CED.4: Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. Measurement and Conversions Math CCSS.HSN-Q.1: Use units as a way to understand problems and to guide the solution of multi-step problems Math CCSS.HSA-CED.4: Rearrange formulas to highlight a quantity of interest **Disciplinary Core Ideas (DCI):** HS-LS1-2: From Molecules to Organisms: Structures and Processes From Molecules to Organisms: Structures and Processes HS-LS3-1: Heredity: Inheritance and Variation of Traits Science **HS-ETS1-1**: Analyze a major global challenge to specify qualitative and quantitative criteria ad constraints for solutions that account for societal needs and wants. **Cross Cutting Concepts (CCCs)-**Systems and system models Cause and Effect Structure and Function **Patterns** 

#### COMPONENTS AND ASSESSMENTS

### Performance Assessments: Students will demonstrate their understanding through:

- Successful completion of a written test assessment demonstrating mastery of the speech therapy overview and terminology including: the anatomy of speech, defining what has occurred with various speech disorders, defining autism, describing what occurs with hearing loss, and describing what causes abnormal swallowing. Providing written explanation of the healthcare worker's role within their department, organization, and the overall health care system. Being able to identify potential hazards to clients, coworkers, visitors, and self in the healthcare workplace. Demonstrating on the test the ability to be able to evaluate the roles and responsibilities of individual members as part of the healthcare.
- Demonstrating how to perform noise level testing.
- Completion of the Career Planning Research project researching the means to achieve the opportunities on two related careers to this unit.

# **Leadership Alignment:**

- Using the National HOSA competitive event guidelines for the *Public Service Announcement* competitive event, students will interact effectively with others and work with diverse teams to create a PSA around educating the community about Autism or other speech disorders.
- Students will apply technology effectively to research, organize, evaluate, and communicate information by conducting noise level testing in a variety of settings.

# Standards and Competencies

### **Unit 15: Speech Therapy**

In this unit students will:

- Recognize the career requirements and opportunities in speech-language pathology.
- Identify the parts of the body that produce speech.
- Recognize how speech-language pathologists evaluate patients.
- Recognize how speech-language pathologists provide speech therapy.
- Identify strategies that speech-language pathologists use in working with patients with loss of speech.
- Identify strategies that speech-language pathologists use in working with patients who have trouble swallowing.
- Recognize the career requirements and opportunities for audiologists.
- Identify how audiologists measure noise in the environment.

### **Industry Standards and/or Competencies**

**Total Learning Hours for Unit: 10** 

#### **National Health Science Standards**

Foundation Standard 1: Academic Foundation- Understand human anatomy, physiology, common diseases and disorders, and medical math principles.

## 1.1 Human Anatomy and Physiology

- 1.11 Identify basic levels of organization of the human body.
  - x. Chemical
  - y. Cellular
  - z. Tissue
  - aa. Organs
  - bb. Systems
  - cc. Organisms
- 1.2 Diseases and Disorders
- 1.23 Describe biomedical therapies as they relate to the prevention, pathology, and treatment of disease.
- 1.32 Demonstrate the ability to analyze diagrams, charts, graphs, and tables and interpret healthcare results.

#### **Foundation Standard 2: Communications**

Demonstrate methods of delivering and obtaining information, while communicating effectively.

- 2.1 Concepts of Effective Communication
- 2.2 Medical Terminology
- 2.21 Use common roots, prefixes, and suffixes to communicate information.
- 2.22 Interpret medical abbreviations to communicate information.
  - a. Common abbreviations
- 2.3 Written Communication Skills
- 2.31 Utilize proper elements of written and electronic communication (spelling, grammar, and formatting).
- 2.32 Prepare examples of technical, informative, and creative writing.

# Foundation Standard 4: Employability Skills

Utilize employability skills to enhance employment opportunities and job satisfaction.

- 4.3 Career Decision-making
- 4.31 Research levels of education, credentialing requirements, and employment trends in health professions.

Foundation Standard 5: Legal Responsibilities- Describe legal responsibilities, limitations, and implications on healthcare worker actions.

- 5.2 Legal Practices
- 5.2.6 Describe the concept of scope of practice.

- 9.1 Healthy Behaviors
- 9.1.2 Examine various aspects of behavioral health.

<ul> <li>Anxiety</li> </ul>	
Depression	
Substance Abuse	
Suicide	
3.00.00	Aligned Washington State Learning Standards
Educational Technology	<ol> <li>Empowered Learner- Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.</li> <li>Digital Citizen- Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.</li> <li>Creative Communicator- Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.</li> </ol>
	CCSS.ELA-LITERACY.RST.11-12.5- Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.  CCSS.ELA-LITERACY.RST.11-12.7- Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
English Language Arts	W.1.11-12: Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.  SL.1.11-12:
	Initiate and participate effectively in a range of collaborative discussions (one-on- one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.  L.2.11-12:
	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
	Disciplinary Core Ideas (DCI):  HS-LS1-2: From Molecules to Organisms: Structures and Processes
Science	HS-LS1-3: From Molecules to Organisms: Structures and Processes HS-LS3-1:
	Heredity: Inheritance and Variation of Traits

### **COMPONENTS AND ASSESSMENTS**

**Performance Assessments:** Students will demonstrate their understanding through:

- Successful completion of a written test assessment demonstrating mastery of the sports medicine overview and terminology including communicating how heart testing results can help inform treatments, when to face mask or spine board a patient, and steps to take when suspecting a brain injury. Providing written explanation of the healthcare worker's role within their department, organization, and the overall health care system. Being able to identify potential hazards to clients, coworkers, visitors, and self in the healthcare workplace. Demonstrating on the test the ability to be able to evaluate the roles and responsibilities of individual members as part of the healthcare.
- Demonstration and performance of the Basket Weave Tape job and RICE
- Demonstrating how to assess, treat, and tape toe and arch Injuries

- Demonstrating how to assess, treat and rehabilitate, knee injuries
- Completion of the Career Planning Research project researching the means to achieve the opportunities on two related careers to this unit.

# **Leadership Alignment:**

- Students assess and evaluate information while researching emerging issues in the healthcare system while developing awareness of the dangers of steroid addiction and other substances in sports performance.
- Using the National HOSA competitive event guidelines for the *Sports Medicine event*, students will employ social and cross cultural skills to interact appropriately with others knowing when to listen as they work their way through various sports medicine scenarios requiring demonstration of assessing, treating, and rehabilitating ankle, knee, toe, arch, face, spine, and brain injuries.

# Standards and Competencies

# **Unit 16: Sports Medicine**

In this unit students will:

- Recognize the role of the athletic trainer in sports medicine.
- Describe the training and licensing for the athletic trainer.
- Demonstrate treatment procedures for RICE, compression bandaging, splinting, and spine boarding.
- Recognize prevention, warning-signs, and treatment of heart problems in athletes.
- Describe steps to identify, treat, and prevent spine and brain injuries.
- Recognize the dangers of steroids and other substances claiming to boost performance in sports.

### **Industry Standards and/or Competencies**

**Total Learning Hours for Unit: 10** 

#### **National Health Science Standards**

Foundation Standard 1: Academic Foundation- Understand human anatomy, physiology, common diseases and disorders, and medical math principles.

### 1.1 Human Anatomy and Physiology

- 1.11 Identify basic levels of organization of the human body.
  - dd. Chemical
  - ee. Cellular
  - ff. Tissue
  - gg. Organs
  - hh. Systems
  - ii. Organisms
- 1.12 Identify body planes, directional terms, cavities, and quadrants.
- a. Body planes (sagittal, mid-sagittal, coronal/frontal, transverse/horizontal).
- b. Directional terms (superior, inferior, anterior/ventral, posterior/dorsal, medial, lateral, proximal, distal, superficial, and deep).
- c. Cavities (dorsal, cranial, spinal, thoracic, abdominal, and pelvic).
- d. Quadrants (upper right, lower right, upper left, and lower left).
- 1.2 Diseases and Disorders
- 1.23 Describe biomedical therapies as they relate to the prevention, pathology, and treatment of disease.
- 1.32 Demonstrate the ability to analyze diagrams, charts, graphs, and tables and interpret healthcare results.

# Foundation Standard 2: Communications- Demonstrate methods of delivering and obtaining information, while communicating effectively.

- 2.1 Concepts of Effective Communication
- 2.2 Medical Terminology
- 2.21 Use common roots, prefixes, and suffixes to communicate information.
- 2.22 Interpret medical abbreviations to communicate information.
  - a. Common abbreviations
- 2.3 Written Communication Skills

- 2.31 Utilize proper elements of written and electronic communication (spelling, grammar, and formatting).
- 2.32 Prepare examples of technical, informative, and creative writing.

# Foundation Standard 3: Systems- Identify how key systems affect services performed and quality of care.

- 3.1 Healthcare Delivery Systems
- 3.1.3 Analyze the impact of emerging issues on healthcare delivery systems.
  - Addictions
  - Bioethics
  - Epidemiology
  - Socioeconomics
  - Technology

# Foundation Standard 4: Employability Skills- Utilize employability skills to enhance employment opportunities and job satisfaction.

- 4.3 Career Decision-making
- 4.31 Research levels of education, credentialing requirements, and employment trends in health professions.

# Foundation Standard 5: Legal Responsibilities- Describe legal responsibilities, limitations, and implications on healthcare worker actions.

- 5.2 Legal Practices
- 5.2.6 Describe the concept of scope of practice.

- 9.1 Healthy Behaviors
- 9.1.1 Promote behaviors of health and wellness.
  - Exercise
  - Nutrition
  - Sleep habits
  - Stress management
  - Weight control
- 9.1.3 Describe strategies for prevention of disease.
  - Community health education outreach programs
  - Immunizations
  - Medical, dental, and mental health screenings
  - Routine physical exams
  - · Stress management

• Stress management	
Aligned Washington State Learning Standards	
	1. Empowered Learner- Students leverage technology to take an active role in choosing, achieving and demonstrating
Educational Technology	competency in their learning goals, informed by the learning sciences.
	2. Digital Citizen- Students recognize the rights, responsibilities and opportunities of living, learning and working in an
	interconnected digital world, and they act and model in ways that are safe, legal and ethical.
	6. Creative Communicator- Students communicate clearly and express themselves creatively for a variety of purposes using the
	platforms, tools, styles, formats and digital media appropriate to their goals.
	CCSS.ELA-LITERACY.RST.11-12.5-
English Language Arts	Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance
	understanding of findings, reasoning, and evidence and to add interest.
	CCSS.ELA-LITERACY.RST.11-12.7-
	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video,
	multimedia) in order to address a question or solve a problem.

	<u>W.1.11-12:</u>
	Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly
	and accurately through the effective selection, organization, and analysis of content.
	<u>SL.1.11-12:</u>
	Initiate and participate effectively in a range of collaborative discussions (one-on- one, in groups, and
	teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and
	expressing their own clearly and persuasively.
	L.2.11-12:
	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when
	writing.
	H2.W2.HSb Assess personal risk factors and predict future health status.
	H3.W4.HS- Create a resource that outlines where and how students can access valid and reliable health information, products,
	and services.
Health and Physical Education	
	H5.W6.HS- Predict potential short- and long-term outcomes of a personal health-related decision.
	H2.Sa1.HS- Compare how family, peers, culture, media, technology, and other factors influence safety and injury prevention
	practices and behaviors.
	Disciplinary Core Ideas (DCI):
	<u>HS-LS1-2</u> :
	From Molecules to Organisms: Structures and Processes
	<u>HS-LS1-3</u> :
	From Molecules to Organisms: Structures and Processes
	HS-LS3-1:
	Heredity: Inheritance and Variation of Traits
	HS-ETS1-1:
	Analyze a major global challenge to specify qualitative and quantitative criteria ad constraints for solutions that account for societal
	needs and wants.
	HS-ETS1-2:
	Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be
	solved through engineering.
	HS-ETS1-3:
Science	Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of
Science	
	constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.
	Cross Cutting Consents (CCCs)
	Cross Cutting Concepts (CCCs)-
	Systems and system models
	Cause and Effect
	Structure and Function
	Patterns
	Science and Engineering Practices (SEPs)-
	Developing and using models
	Asking questions and defining problems
	Analyzing and interpreting data
	Using mathematics and computational thinking
	Constructing explanations and designing solutions

Engaging in argument from evidence Obtaining, evaluating, and communicating information	
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#### COMPONENTS AND ASSESSMENTS

Performance Assessments: Students will demonstrate their understanding through:

- Successful completion of a practical assessment demonstrating mastery of therapeutic services using range of motion as it relates to muscle testing, post hip replacement surgery, hand therapy, and pediatric therapy. Providing written explanation of the healthcare worker's role within their department, organization, and the overall health care system. Being able to identify potential hazards to clients, coworkers, visitors, and self in the healthcare workplace. Demonstrating on the test the ability to be able to evaluate the roles and responsibilities of individual members as part of the healthcare.
- Performing cognitive assessment and explaining how it helps inform daily living for stroke victims
- Completion of the Career Planning Research project researching the means to achieve the opportunities on two related careers to this unit.

### **Leadership Alignment:**

- Students will interact effectively with others knowing when it is appropriate to listen and when to speak during cognitive assessments.
- Students will guide and lead others using interpersonal and problem solving skills to influence and guide others toward a physical therapy or occupational goal.

# Standards and Competencies

# Unit 17: Therapeutic Services (STEM focus)

In this unit students will:

- Recognized the purpose of Physical Therapy and Occupational Therapy
- Identify the similarities and differences between PT and OT
- Describe how Therapists evaluate patients.
- Identify the purpose of Pediatric Occupational Therapy
- Demonstrate treatment exercises prescribed by PT/OT Practitioners.

## Industry Standards and/or Competencies

**Total Learning Hours for Unit: 10** 

#### National Health Science Standards

Foundation Standard 2: Communications- Demonstrate methods of delivering and obtaining information, while communicating effectively.

- 2.1 Concepts of Effective Communication
- 2.2 Medical Terminology
- 2.21 Use common roots, prefixes, and suffixes to communicate information.
- 2.22 Interpret medical abbreviations to communicate information.
  - a. Common abbreviations
- 2.3 Written Communication Skills
- 2.31 Utilize proper elements of written and electronic communication (spelling, grammar, and formatting).
- 2.32 Prepare examples of technical, informative, and creative writing.

# Foundation Standard 4: Employability Skills- Utilize employability skills to enhance employment opportunities and job satisfaction.

- 4.3 Career Decision-making
- 4.31 Research levels of education, credentialing requirements, and employment trends in health professions.
- 4.32 Distinguish differences among careers within health science pathways (diagnostic services, therapeutic services, health informatics, support services, or biotechnology research and development).

# Foundation Standard 5: Legal Responsibilities - Describe legal responsibilities, limitations, and implications on healthcare worker actions.

- 5.2 Legal Practices
- 5.2.6 Describe the concept of scope of practice.

# Aligned Washington State Learning Standards

# **Educational Technology**

**1. Empowered Learner-** Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.

	<ul> <li>2. Digital Citizen- Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.</li> <li>6. Creative Communicator- Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.</li> </ul>
English Language Arts	CCSS.ELA-LITERACY.RST.11-12.5- Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.  CCSS.ELA-LITERACY.RST.11-12.7- Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.  W.1.11-12: Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.  SL.1.11-12: Initiate and participate effectively in a range of collaborative discussions (one-on- one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.  L.2.11-12: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
Health and Physical Education	H5.W6.HS- Predict potential short- and long-term outcomes of a personal health-related decision.
Science	Disciplinary Core Ideas (DCI):  HS-LS1-2: From Molecules to Organisms: Structures and Processes  HS-LS1-3: From Molecules to Organisms: Structures and Processes  HS-LS3-1: Heredity: Inheritance and Variation of Traits

#### **COMPONENTS AND ASSESSMENTS**

### Performance Assessments: Students will demonstrate their understanding through:

- Successful completion of a written test assessment demonstrating mastery of the veterinary overview and terminology including identification of dog/cat skeletal systems, identification of parasites on slides, communicating steps and precaution to prevent disease transmission, listing x-ray procedures, listing the steps to prep for surgery, and planning for safety with animals. Providing written explanation of the healthcare worker's role within their department, organization, and the overall health care system. Being able to identify potential hazards to clients, coworkers, visitors, and self in the healthcare workplace. Demonstrating on the test the ability to be able to evaluate the roles and responsibilities of individual members as part of the healthcare.
- Demonstrating CPR for animals
- Completion of the Career Planning Research project researching the means to achieve the opportunities on two related careers to this unit.

### **Leadership Alignment:**

- Students will reason effectively using inductive and deductive reasoning as appropriate to the situation to demonstrate CPR for animals.
- Students will work creatively with others and be open and responsive to new diverse perspectives and incorporate group input and feedback, while learning to restrain animals safely.

# Standards and Competencies

## **Unit 18: Veterinary Medicine**

In this unit students will:

- Recognize how diseases are transmitted between people and animals and how to prevent disease transmission.
- Define major anatomy and skeletal terms for small animals.
- Identify how to restrain small animals and perform emergency CPR.
- Recognize body planes and methods for preparing to take X-rays.
- Define veterinary surgical tools and demonstrate how to prepare a surgical pack.
- Identify common animal parasites.

# **Industry Standards and/or Competencies**

**Total Learning Hours for Unit: 10** 

#### **National Health Science Standards**

Foundation Standard 1: Academic Foundation- Understand human anatomy, physiology, common diseases and disorders, and medical math principles.

#### 1.1 Human Anatomy and Physiology

- 1.11 Identify basic levels of organization of the human body.
- 1.12 Identify body planes, directional terms, cavities, and quadrants.
- a. Body planes (sagittal, mid-sagittal, coronal/frontal, transverse/horizontal).
- b. Directional terms (superior, inferior, anterior/ventral, posterior/dorsal, medial, lateral, proximal, distal, superficial, and deep).
- c. Cavities (dorsal, cranial, spinal, thoracic, abdominal, and pelvic).
- d. Quadrants (upper right, lower right, upper left, and lower left).
- 1.2 Diseases and Disorders
- 1.23 Describe biomedical therapies as they relate to the prevention, pathology, and treatment of disease.
- 1.32 Demonstrate the ability to analyze diagrams, charts, graphs, and tables and interpret healthcare results.

#### Foundation Standard 2: Communications- Demonstrate methods of delivering and obtaining information, while communicating effectively.

- 2.1 Concepts of Effective Communication
- 2.2 Medical Terminology
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- 4.3 Career Decision-making
- 4.31 Research levels of education, credentialing requirements, and employment trends in health professions.
- 4.32 Distinguish differences among careers within health science pathways (diagnostic services, therapeutic services, health informatics, support services, or biotechnology research and development).

# Foundation Standard 5: Legal Responsibilities- Describe legal responsibilities, limitations, and implications on healthcare worker actions.

- 5.2 Legal Practices
- 5.2.6 Describe the concept of scope of practice.

# Foundation Standard 7: Safety Practices

Identifying existing and potential hazards to clients, co-workers, and self. Employ safe work practices and follow health and safety policies and procedures to prevent injury and illness.

- 7.1 Infection Control
- 7.1.1 Explain principles of infection transmission.
- 7.1.2 Differentiate methods of controlling the spread and growth of pathogens.
- 7.2 Personal Safety

- 7.2.1 Apply personal safety procedures based on Occupational Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations.
- 7.2.2 Demonstrate principles of body mechanics during patient care.
- 7.2.3 Demonstrate and apply the use of personal protective equipment (PPE).
- 7.3 Environmental Safety
- 7.3.1 Apply safety techniques in the work environment.

- 9.1 Healthy Behaviors
- 9.1.3 Describe strategies for prevention of disease.
  - Community health education outreach programs
  - Immunizations
  - Medical, dental, and mental health screenings
  - Routine physical exams
  - Stress management

Olicas managi	Aligned Washington State Learning Standards
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Science	Disciplinary Core Ideas (DCI):  HS-LS1-2: From Molecules to Organisms: Structures and Processes  HS-LS1-3: From Molecules to Organisms: Structures and Processes  HS-LS3-1: Heredity: Inheritance and Variation of Traits Constructing explanations and designing solutions

Engaging in argument from evidence
Obtaining, evaluating, and communicating information