CTE CONTENT AREA: Health Sciences
CONTENT MODULE TITLE: Health Science Career Pathways

MODULE DESCRIPTION

This module provides students with opportunities to examine five health science career pathways: diagnostic services, health informatics, support services, therapeutic services, and biotechnology research and development. Students will investigate job tasks and requirements for positions in each pathway to understand the responsibilities of professionals in health science careers. Students will explore future career possibilities by identifying the knowledge, skills, education, and training necessary for success within the health science pathways.

GUIDING QUESTION

What personal skills, abilities, and aptitudes are needed for success in health science careers?

MODULE CONTENT

Health Science Career Pathways

1. Health Science Pathways

Students will
a) Define the term "Career Cluster" and explain the career cluster system
b) Explain how the health science career cluster is organized into five pathways: diagnostic services health informatics, support services, therapeutic services, and biotechnology research and development
c) Explain ways health and wellness are promoted by health science workers across the pathways
d) Explore the health care settings for health career pathways, such as hospitals, ambulatory, long-term care, home health care, medical dental, mental health, pharmacy, office, and clinic
e) Participate in classroom activities to identify personal interest, aptitude, and ability for skills required in health science career pathways

2. Health Science Workplace Expectations

Students will
a) Identify the appropriate health science career for an identified need or task (e.g., medical technician for labeling client samples)
b) Compare and contrast the opportunities for individual initiative, teamwork, collaboration, and leadership in health science careers
c) Describe strategies for assessing and adjusting personal behaviors to meet workplace expectations in health science careers
d) Explain how the primary activities, client contact, and work environment for a specific health science career could be either a benefit or a challenge for an individual
e) Explain the purpose and importance of ongoing education and training for health science professionals

f) Understand the requirements for accurate and appropriate communication of health/medical information
g) Tell how health science careers are interdependent (i.e., relate to one another)

3. Diagnostic Services Pathway
  Students will
  a) Distinguish the diagnostic services pathway as careers related to the tests and evaluations that aid in the detection, diagnosis, and treatment of diseases, injuries, or other physical conditions
  b) Examine the professional standards that apply to diagnostic services professionals
  c) Identify the education and preparation required for levels of credentials and accreditation in diagnostic services careers
  d) List and describe the health care settings, and roles within those settings, for diagnostic services professionals
  e) Assess personal interest and aptitude for skills needed by diagnostic services professionals through practice of these skills in a variety of classroom simulations

4. Health Informatics Pathway
  Students will
  a) Distinguish the health informatics pathway as all aspects of managing health care agencies, patient data and information, financial information, and computer applications related to health care processes
  b) Examine the professional standards that apply to health informatics professionals
  c) Identify the education and preparation required for levels of credentials and accreditation in health informatics careers
  d) List and describe the health care settings, and roles within those settings, for health informatics professionals
  e) Assess personal interest and aptitude for skills needed by health informatics professionals through practice of these skills in a variety of classroom simulations

5. Support Services Pathway
  Students will
  a) Distinguish the support services pathway as careers that interact with patients or the public to provide a therapeutic environment for the delivery of health care
  b) Examine the professional standards that apply to support services professionals
  c) Identify the education and preparation required for levels of credentials and accreditation in support services careers
  d) List and describe the health care settings, and roles within those settings, for support services professionals
  e) Assess personal interest and aptitude for skills needed by support services professionals through practice of these skills in a variety of classroom simulations

6. Therapeutic Services Pathway
  Students will
  a) Distinguish the therapeutic services pathway as occupations focused primarily on changing the health status of patients over time through direct care, treatment, counseling, or health education information
  b) Examine the professional standards that apply to therapeutic services

professionals
- c) Identify the education and preparation required for levels of credentials and accreditation in therapeutic services careers
- d) List and describe the health care settings, and roles within those settings, for therapeutic services professionals
- e) Assess personal interest and aptitude for skills needed by therapeutic services professionals through practice of these skills in a variety of classroom simulations

7. Biotechnology Research and Development Pathway

Students will
- a) Distinguish the biotechnology research and development pathway as careers involved in bioscience research and development as it applies to human health; professionals may study diseases, discover new treatments, invent medical devices, or improve the accuracy of diagnostic tests
- b) Examine the professional standards that apply to biotechnology research and development professionals
- c) Identify the education and preparation required for levels of credentials and accreditation in biotechnology research and development careers
- d) List and describe the health care settings, and roles within those settings, for biotechnology research and development professionals
- e) Assess personal interest and aptitude for skills needed by biotechnology research and development professionals through practice of these skills in a variety of classroom simulations

8. Careers in Health Science Pathways

Students will
- a) Investigate a specific career in health science and identify the education and training pathways used to reach that career
- b) Explore local, regional, state, and national employment outlooks for health science career pathways

ILLUSTRATIVE ACTIVITIES by Theme Module

Career and Community Connections

Career Path Visuals

Students work in five small groups with each group assigned to one of the five health science career pathways. Student groups construct visual career paths. For each step along the path, groups include specific jobs, educational requirements, settings, salaries, and outlook. Groups hang their visual career paths and choose a spokesperson to present to the class. Following presentations, students write reflections identifying the health science career path of greatest personal interest and the step they would like to be in 10 years.

Communication and Interpersonal Relationships

Community Health

Students work in pairs to find definitions of the terms "community" and "health" and to devise a definition of "community health." Pairs share their findings with the entire class. As a group, the class develops a working definition with the instructor serving as a facilitator.

Students investigate ways health science professionals in their school and community promote health practices that are in line with their definition. As a class, choose a community health practice that could be advertised through the school's social media to minimize illness and promote a healthy environment.

Financial and Consumer Literacy

Training Costs

Invite a panel of representatives from agencies that offer credential programs for health science careers, such as comprehensive high schools or BOCES, community and four-year colleges, proprietary schools, and health care facilities. Panelists present the programs available, costs for training, and financial assistance available. Students record information in chart form and use their charts to compare and contrast health science career training opportunities and costs.

Health, Safety, and Wellness

Health Science Settings

Students work in teams to develop lists of "unusual" workplaces for health sciences professionals, such as cruise ships, sports arenas, correctional facilities, schools and colleges, mobile vehicles, and law and insurance offices. Create a class master list. Teams select from the class list and produce a 2-3-minute video presentation describing the job tasks, benefits, and challenges of providing health care in that setting. Conduct a closing class discussion focusing on ways health and wellness are promoted by health science workers across all settings.

Problem Solving and Innovation

Paralympic Athletes

Students read a scholarly article or view a video showing Paralympic athletes. Students research the development of a prosthetic limb for an athlete. Students take note of all the health science professions that are integral to the development of the prosthetic the athlete will use.

Sustainability

Employment Projections

Provide students with data showing employment projections for health science careers over the next ten years. Students analyze the data and develop a list of the ten careers that will have the greatest shortages. Students research the characteristics of those careers to determine possible reasons for the shortages. Students develop a marketing plan to promote the career and build a new cadre of workers. Post the plan on the class website.

STANDARDS ADDRESSED

New York State Career Development and Occupational Studies (CDOS) Standards
Intermediate Level
http://www.p12.nysed.gov/cte/
Standard 1: Career Development
Students will be knowledgeable about the world of work, explore career options, and

relate personal skills, aptitudes, and abilities to future career decisions.

Standard 2: Integrated Learning

Students will demonstrate how academic knowledge and skills are applied in the workplace and other settings.

Standard 3a: Universal Foundation Skills

Students will demonstrate mastery of the foundation skills and competencies essential for success in the workplace.

Common Career Technical Core Standards

https://www.careertech.org/career-ready-practices

Career Ready Practices

1. Act as a responsible and contributing citizen and employee
4. Communicate clearly and effectively and with reason
8. Utilize critical thinking to make sense of problems and persevere in solving them
10. Plan education and career paths aligned to personal goals
11. Use technology to enhance productivity
12. Work productively in teams while using cultural global competence

National Consortium for Health Science Education

https://www.healthscienceconsortium.org/national-health-science-standards/

Foundation Standard 2: Communications

Demonstrate methods of delivering and obtaining information, while communicating effectively

Foundation Standard 4 Employability Skills

Utilize employability skills to enhance employment opportunities and job satisfaction

Foundation Standard 8: Teamwork

Identify roles and responsibilities of individual members as part of the healthcare team

Foundation Standard 10: Technical Skills

Apply technical skills required for all career specialties and demonstrate skills and knowledge as appropriate

Foundation Standard 11: Information Technology Applications

Utilize and understand information technology applications common across health professions

RESOURCES

HOSA: Future Health Professionals
HOSA in the Classroom
http://www.hosa.org/

HOSA in the classroom provides instructional tools for health science teachers. This section of HOSA website provides an opportunity for HOSA advisors to share exciting and valuable lesson plans with teachers from across the United States.

Centers for Disease Control (CDC)
https://www.cdc.gov/careerpaths/

CDC's Career Paths to Public Health (CPP) website is a roadmap for students and

teachers interested in learning and teaching about epidemiology and public health sciences (EPHS). It provides information on CDC workshops, activities, and lesson plans, as well as other resources. These materials are designed to introduce the future public health workforce to EPHS, to promote health literacy, and to provide examples of how math and science are used every day to solve public health problems.

New York State Department of Labor
New York State Career Zone
https://www.careerzone.ny.gov
Career Zone is a no-cost online career exploration and planning tool developed by the New York State Department of Labor. It offers career and education information on thousands of careers, as well as, self-assessment and career planning tools. Career Zone is appropriate for users from middle school through adult.

United States Department of Labor
CareerOneStop
https://www.careeronestop.org
CareerOneStop is the career, training, and job search website for the U.S. Department of Labor. The website serves job seekers, businesses, students, and career advisors with a variety of free online tools, information and resources.

Association of Career and Technical Education
Career Planning Guide
https://www.acteonline.org/wp-content/uploads/2018/02/ACTE_CC_Paper_FINAL.pdf
Research has identified middle school as a time when students can benefit the most from career exploration, a process of building self-awareness, learning about potential careers, and developing a plan for reaching future goals.

AdvanceCTE
Middle Level Career Interest Inventory
https://cte.careertech.org/sites/default/files/StudentInterestSurvey-English.pdf
Advan ceCTE provides a Career Interest Inventory worksheet to use with students in helping them identify the potential matches to the sixteen career clusters available to them.

Association of CTE Administrators (ACTEA)
CTE Strong Videos
http://www.ctestrong.com
Edge Factor has created a series of inspirational videos related to career and education that provide students with a very contemporary perspective on CTE options. Career Cluster videos provide a new look at the many career options that students have in high school and beyond.

New York State Health Sciences Educators Association (NYSHSEA)
http://www.nyshsea.org/home.html
NYSHSEA serves as a resource group for educators seeking consultation concerning Health Science education and promotes communication among NYSHSEA members. NYSHSEA collaborates with other groups and individuals on matters affecting Health Science Education and supports NYSED activities.

Career and Technical Education Technical Assistance Center of New York (CTE TAC)
http://nyctecenter.org/

> The Career and Technical Education Technical Assistance Center (CTE TAC) operates under a state contract to assist the New York State Education Department (NYSED) in carrying out its mission of improving the quality, access, and delivery of career and technical education through research-based methods and strategies resulting in broader CTE opportunities for all students.