Big Ideas/Key Concepts: Technology: Students will investigate how technology is increasingly playing a role in almost all processes, from patient registration to data monitoring, from lab tests to self-care tools. Diagnostic Radiology: Students will explore radiologic safety pertaining to the production of a diagnostic image. They will investigate the use of various diagnostic imaging techniques, radiologic anatomy, and develop an understanding of the principles of and successfully perform interpretation skills for radiographic images.

<table>
<thead>
<tr>
<th>Standards</th>
<th>Student Friendly “I Can” Statements</th>
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<tbody>
<tr>
<td>Technology</td>
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<td>6) Evaluate data from research articles encompassing the reliability of home testing kits (i.e., pregnancy test) and portable diagnostic equipment (i.e., glucometers). Explain findings in an informational essay, citing at least three different peer-reviewed articles and including appropriate medical terminology. (TN Reading 1, 2, 4, 8; TN Writing 2, 7, 9)</td>
<td>I can produce an end product discussing the reliability of home testing kits and portable diagnostic equipment.</td>
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<tr>
<td>Diagnostic Radiology</td>
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<td>8) Research the guidelines pertaining to radiation safety for staff, patients, and family who are receiving any radiological procedure. Develop an informational artifact, public service announcement, or health education presentation (TN Reading 3, 4, 9; TN Writing 2, 6, 9)</td>
<td>I can develop an informational artifact, PSA, or health education presentation that instructs patients/clients on what patients should know about medical radiation safety.</td>
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<td>13) Outline the in-depth normal structure and function of the musculoskeletal, nervous, and respiratory systems, specifically as they relate to radiology. Review directions, planes, and sections of the body in order to perform radiographic images. Summarize appropriate medical text(s) in order to list signs and symptoms of common diseases and disorders associated with each. (TN Reading 1, 2, 3, 4, 9; TN Writing 9; TN A&amp;P 2, 3)</td>
<td>I can identify relevant radiographic anatomical musculoskeletal, nervous, and respiratory structures.</td>
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14) Distinguish between the various types of diagnostic radiology, citing the uses, advantages, and disadvantages of each. Develop an explanation that would be used for beginning health science students, incorporating appropriate industry and medical terminology. (TN Reading 2, 4, 9; TN Writing 2, 4)

15) Research the principles of radiographic physics and explain how the concepts are applied to produce high-quality radiographic images. Discuss the following in the explanation:
   a. Electromagnetic spectrum and ionizing radiation
   b. Properties of X-rays
   c. Production of X-rays
   d. The X-ray tube and other parts of an X-ray machine
   e. Factors affecting the quality and intensity of beam
   f. Interaction of X-rays with matter (TN Reading 2, 4, 9; TN Writing 2, 8, 9; TN Physics 5)

16) Identify the equipment used in radiographic imaging. Describe in a written, oral, or digital format the following:
   a. Properties of a radiographic film and the process related to the formation of a radiographic image
   b. Effects of exposure factors on the film
   c. Uses of cassettes and intensity screens
   d. Implications of these and other considerations on the quality of a diagnostic radiograph (TN Reading 4, 5; TN Writing 2; TN Physics 5, 6)

17) Understand principles of and successfully perform interpretation skills for radiographic images, incorporating rubrics from textbooks or clinical standards of practice. Identify any anatomical abnormalities and document findings per industry standards related to terminology and format. (TN Reading 3, 4; TN Writing 7; TN A&P 2)

Ophthalmological Procedures
21) Outline the in-depth normal structure and function of the eye. Summarize appropriate medical text(s) in order to list signs and symptoms of common diseases and disorders associated with each. (TN Reading 2, 4, 9; TN Writing 8, 9; TN A&P 3)

22) Understand principles of and successfully perform skills related to basic ophthalmic examination, incorporating rubrics from textbooks or clinical standards of practice. Measure pulse and blood pressure, and conduct a history and physical, especially concerning areas related to the eye. (TN Reading 2, 3, 4; TN Writing 8, 9; TN A&P 3)

23) Research the concepts surrounding measurement of visual acuity with associated equipment, and explain corrective measures for abnormalities (i.e., surgery, glasses, or contacts). Specify what measures should be used with each abnormality. (TN Reading 2, 3, 4, 5)

24) Develop a policy and procedure guide for a clinic dealing with frame dispensing, frame alignment and adjustment, and use of a lensometer. Perform skills of assisting a patient to choose the correct frames and correctly adjust for optimal wear. (TN Reading 3, 4)

I can identify the major anatomical structures of the eye and how the eye functions to produce vision.

I can perform a basic ophthalmic vision examination.

I can obtain an accurate BP on a patient.

I can explain how various lenses are used to correct vision.

I can develop a policy and procedure guide for dispensing glasses, frames, and the use of a lensometer.