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## Georgia Performance Standards Framework for Science – GRADE 7

### “HELP! MY SYSTEM’S FAILING!”

Subject Area: Life Science

Grade: 7th

Standards (Content and Characteristics):

**S7L2. Students will describe the structure and function of cells, tissues, organs, and organ systems.**

- c. Explain that cells are organized into tissues, tissues into organs, organs into systems, and systems into organisms.
- d. Explain that tissues, organs, and organ systems serve the needs cells have for oxygen, food, and waste removal.
- e. Explain the purpose of the major organ systems in the human body (i.e., digestion, respiration, reproduction, circulation, excretion, movement, control, and coordination, and for protection from disease).

**S7CS5. Students will use the ideas of system, model, change, and scale in exploring scientific and technological matters.**

- a. Observe and explain how parts can be related to other parts in a system such as predator/prey relationships in a community/ecosystem.
- b. Understand that different models (such as physical replicas, pictures, and analogies) can be used to represent the same thing.

**S7CS10. Students will enhance reading in all curriculum areas by:**

- c. Read technical texts related to various subject areas

Enduring Understanding:

- Any illness begins at the cellular level.
- Disease and illness come from a variety of sources, including the environment, genetics, exposure to others, etc.
- Illness compromises the body’s ability to meet the basic needs of nutrition, energy conversion, and waste removal.

Essential Questions:

- Why if one part of my body is sick, does the rest of my body feel sick?
- How does illness compromise the body’s ability to meet the basic needs of providing oxygen, food, and waste removal to its cells?
- Why does someone get sick even when no one around them had the illness?

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### ADMINISTRATION PROCEDURES

<b>Outcome / Performance Expectations:</b>	<p>This activity is designed to follow the previous tasks in this unit as well as instruction provided by the teacher. Students will create a multi-media presentation highlighting a specific illness or disease that affects a particular organ/organ system. Students will give a presentation that relates their understanding of how all the body’s organ systems work together to sustain the organism. Students will also produce a model of the organ/organ system affected and use it in as an instruction aid in the presentation of their disease. Students should follow the rubric provided and take on the role of a specialist in their disease, prepared to answer basic questions from the audience.</p>
<b>General Teacher Instructions:</b>	<p>Provide students with the corresponding instructions and rubric for this task. You may find it helpful to provide 1-2 days of class-time for research and questions that students may have and/or computer lab use for multi-media presentations. It is important to emphasize that all components of the assignment must be complete in order for the student to receive a passing grade.</p> <p>Teacher should assign individual diseases/illness to prevent any repeats or prevent a student choosing a disorder that will not suitably meet the requirements. Examples include, but are not limited to: diabetes, lactose intolerance, allergies, asthma, osteoporosis, arthritis, hemophilia, anemia, fibromyalgia, eczema, hyperhidrosis, leukemia</p>
<b>Materials Needed:</b>	<p>Research materials and technology for multi-media presentations. Note: In the absence of multi-media technology, a poster presentation could suffice or provide an alternative a student who is not proficient with multi-media.</p>
<b>Safety Precautions:</b>	<p>None</p>
<b>Task with Student Directions:</b>	<p>As epidemiologists, doctors study the cause of illnesses, evidence-based treatments, and preventative medicine to prevent disease. For this assignment you will assume the role of an epidemiologist whose research is targeted toward the disease you are assigned. You will host an “informative talk” on the specifics of the disease you are researching in order to educate members of the community (your classmates) about this disease. You “talk” must range from 3-5 minutes, and include time at the end for questions from the audience.</p> <p>You will need to prepare a multi-media presentation for your talk. This can be a PowerPoint, short video, etc. but it must include the following:</p> <ul style="list-style-type: none"> <li>• <b>Introduction:</b> What is the name of the disorder and what is the history behind the disorder? Are there any other names by which it is commonly known? When was it discovered?</li> </ul>

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	<ul style="list-style-type: none"> <li>• <b>Mode of transmission:</b> What causes someone to get this disease? Is it inherited, viral, a result of exposure to some carcinogen, etc.</li> <li>• <b><u>Clinical description</u> of the disorder:</b> What are the symptoms and features of the disease? How does it affect the victim? What organ system is primarily affected? What other organs/organ systems may be affected as a result of the primary affliction?</li> <li>• <b>Physical/Psychological:</b> What is it like to have the disease? What is the disorder like externally, internally, biochemically, psychologically, etc. What problems are associated with the disease? Is the disease physically limiting? Is it life-threatening? Is it invariably fatal?</li> <li>• <b>Treatment:</b> What treatment is available for the disease? Is there a cure?</li> <li>• <b>Bibliography:</b> At least 3 sources should come from printed media (books, encyclopedias, periodicals, etc.) If possible, interview a field expert or a person who is affected by the disorder. You must site all references and sources.</li> </ul> <p><b>You are encouraged to share any other information that you feel is relevant that you feel is important for others to know about the disease, its treatment, and/or prevention.</b></p> <p><b>Additionally,</b> you must create a model of the organ and/or organ system affected. Be creative and the sky is the limit! You will use your model to teach your audience about the disease. (For example, if you were doing a report on lung cancer you could create a model of a healthy lung and a diseased lung from paper mache’).</p> <p><b>See rubric for grading guidelines.</b></p>
<b>Resources:</b>	Resources on various diseases. Check with your local media center for books available and internet use. Monitor student use of web resources to ensure quality and soundness of information and prevent plagiarism.
<b>Homework / Extension:</b>	Portions of the assignment will have to be worked on at home depending on time allotted during class by teacher. Model of organ/organ system should be created at home.