

OUR HOSPITAL WASTE

Performance Standards 13B/12E/11A/13A.H

Students will apply the processes of scientific inquiry to explore natural resource conservation and management programs in Health Occupations accordingly:

- *Knowledge:* identify the issues associated with hospital waste and the environment.
- *Application:* conduct research about the parameters which influence the existence and future of disposing of hospital waste.
- *Communication:* correlate individual research presentations to final conclusions about the generation and disposal of local hospital waste.

Procedures

1. ***In order to know and apply concepts that describe the interaction between science, technology and society (13B); concepts that describe the features and processes of the Earth and its resources (12E); the concepts, principles and processes of scientific inquiry (11A); and the accepted practices of science (13A),*** students should experience sufficient learning opportunities to develop the following:

- Formulate an issue hypothesis for investigating local hospital waste.
- Design an issue investigation which addresses the hypothesis from classroom decisions.
- Select (and delegate) responsibilities for associated research, analysis and communication components.
- Preview associated research and governmental policies related to hospital wastes, such as:
 - the variety, generation and disposal of hospital waste,
 - the decomposition or stability of materials sent to local landfills and
 - the basis of safety practices, procedures and regulations.
- Determine applicability of qualitative and quantitative data.
- Research conceptual, mathematical and physical models.
- Collect pertinent data from expert local sources.
- Propose applicable survey instrument to conduct and assess depths of informed opinions on local hospital waste issues (such as the effectiveness and support of policies for hospital waste disposal, etc.)
- Interpret and represent analysis of survey data, research and policy correlation.
- Evaluate survey validity.
- Report, display and defend the process and findings of investigation.
- Propose action response options for the future prospects of local hospital wastes.
- Generate further questions or related issues for consideration.

Note to teacher: This activity integrates information as suggested in Standard 13B at Stage H. It incorporates information from Standard 12E, the processes of scientific inquiry for issue investigations from Standard 11A, as well as the understanding of the accepted safety practices of science described in Standard 13A. Health care workers should understand the principles and techniques of resource management. They should meet or exceed the practice of recycling and waste management and be able to identify and solve potential problems.

2. Have students review and discuss the assessment task and how the rubric will be used to evaluate their work.
3. Begin investigation of the disposal of hospital waste. Brainstorm the variety of wastes generated in a hospital. Predict a total volume of wastes produced daily. Have students generate possible questions about where the waste goes (and stays). Present some of the regulations associated with body/specimen, paper, food or hazardous wastes, etc. Organize a classroom investigation which explores current research and policies associated with the hospital waste disposal considerations of different hospital departments and their volumes (daily/monthly/annually). The investigation should include research on the geology, economics, safety and governmental factors, as well as current departmental or category disposal practices. Consider scientific reports and community perceptions. Organize and conduct a public opinion survey which addresses the depth of understanding of the community about the issues associated with the disposal of hospital waste. Generate a final report from student assignments as a proposal and justification to explain the future of hospital waste disposal. Individual students should generalize the process and findings of the classroom issue investigation and survey; they should submit a personal reflection journal summary.

4. Evaluate each student's work using the Science Rubric as follows and add the scores to determine the performance level:
- *Knowledge*: the impact of different factors affecting hospital waste disposal and the environment were addressed qualitatively and quantitatively.
 - *Application*: the descriptions of the interactions associated with the past and future of the disposal of hospital waste were thorough, well-detailed and accurate.
 - *Communication*: the final conclusions from the individual presentations and personal reflection journal were thorough and well reasoned.

Examples of Student Work

- [Meets](#)
- [Exceeds](#)

Time Requirements

- One to two class periods for investigation orientation and delegation of questions and duties; 3-5 days for group work in research (within or beyond classroom), survey development, data collection and analysis, etc; 1 day for presentation preparation; 1 day for presentation and journal reflection

Resources

- Access to health occupation experts (knowledgeable about hospital wastes)
- Research resources
- Resources for conducting public opinion surveys and samples used by hospital public relations departments
- Science Rubric

SCIENCE RUBRIC

Exceeds - must receive no more than one 3 and the rest 4s in the other areas of the rubric.

Meets - may receive no more than one 2 and a combination of 3s and 4s in the other areas of the rubric.

Approaches - may receive no more than one 1 and a combination of 2s, 3s or 4s, in the other areas of the rubric.

Begins - must receive at least a 1 in all 3 areas of the rubric.

	KNOWLEDGE	APPLICATION	COMMUNICATION
	Knows and understands scientific terms, facts, concepts, principles, theories and methods.	Applies scientific knowledge, skills and methods to manipulate, analyze, synthesize, create and evaluate.	Communicates scientific knowledge and applications through writing, speech and visual displays.
4	<ul style="list-style-type: none"> • Descriptions of scientific terms, facts, concepts, principles, theories and methods are complete and correct. 	<ul style="list-style-type: none"> • Applications are thorough, appropriate and accurate. 	<ul style="list-style-type: none"> • Written, oral and/or visual communication is well organized and effective.
3	<ul style="list-style-type: none"> • Descriptions of scientific terms, facts, concepts, principles, theories and methods are mostly complete and correct. 	<ul style="list-style-type: none"> • Applications are mostly thorough, appropriate and accurate. 	<ul style="list-style-type: none"> • Most of the written, oral and/or visual communication is well organized and effective.
2	<ul style="list-style-type: none"> • Descriptions of scientific terms, facts, concepts, principles, theories and methods are somewhat complete and correct. 	<ul style="list-style-type: none"> • Applications are somewhat appropriate and accurate. 	<ul style="list-style-type: none"> • Some of the written, oral and/or visual communication is organized and effective.
1	<ul style="list-style-type: none"> • Descriptions of scientific terms, facts, concepts, principles, theories and methods are minimally present or correct. 	<ul style="list-style-type: none"> • Applications are minimally appropriate and accurate. 	<ul style="list-style-type: none"> • Little of the written, oral and/or visual communication is organized and effective.
0	<ul style="list-style-type: none"> • All descriptions of scientific terms, facts, concepts, principles, theories and methods are missing and/or incorrect. 	<ul style="list-style-type: none"> • All applications are missing and/or incorrect. 	<ul style="list-style-type: none"> • All of the written, oral or visual communication is missing and/or lacks organization.
Score			