

Unit Project

Inquiry Investigation

How Disease Affects Organs (Student textbook page 98)

Pedagogical Purpose

Students design and conduct an experiment to determine the effects of different types of compost on plant growth.

Planning	
Materials	Internet access resources about common diseases and their effects materials to construct healthy and diseased organ models BLM 1-44 Inquiry Investigation: How Disease Affects Organs (optional) BLM G-13 How To Do a Research Based Project (optional) BLM G-16 Scientific Research Planner (optional) BLM G-17 Research Worksheet (optional) BLM G-18 Internet Research Tips (optional) BLM A-47 Unit 1 Inquiry Investigation Rubric (optional)
Time	90 min in class 10 min preparation

Skills Focus

- formulate scientific questions
- identify and locate relevant resources
- gather, organize, and interpret data
- communicate in a variety of formats, using appropriate terminology

Activity Notes and Troubleshooting

- Have students review the Assessment Checklist before they begin, and again once they complete the project to ensure they have not missed any steps.
- Introduce the project early in the unit, so that students can incorporate relevant information and skills from the topics into their project.
- Establish interim checkpoints to keep students on track. For example, require that students show you their list of questions before they begin researching. At that time talk with them about possible sources of information.
- If your school has access to pamphlet making software, make it available for students and ensure they know how to use it.
- If possible, show students pamphlets that were created in previous years as examples.
- Remind student that they can refer to Literacy Skills Toolkit 5, Organizing Your Learning: Using Graphic Organizers on pages 412 to 417 to help them choose an appropriate graphic organizer for step 1 of Analyze and Interpret. They can use Science Skills Toolkit 5, Scientific Drawing on pages 382 and 383 to help them create a drawing for step 3 of Perform and Record.
- Discuss the issue of plagiarism with students, and ways to avoid it.
- You could supply students with **BLM 1-44 Inquiry Investigation: How Disease Affects Organs**.
- Students could use **BLM G-13 How To Do a Research Based Project**, **BLM G-16 Scientific Research Planner**, **BLM G-17 Research Worksheet**, and/or **BLM G-18 Internet Research Tips**, to help plan and organize their research.

Additional Support

- **DI** Allow students to choose a different format for their information, if they wish. Examples could include a public service announcement for television or a Web page.
- **ELL** English language learners can conduct research and write a first draft in their first language. Pair English language learners with fluent English writers to help them with wording of the pamphlet.
- Ask students what difficulties they encountered in this investigation and brainstorm how these difficulties could be handled in future projects.

Rubric

Achievement Chart Category	Level 1	Level 2	Level 3	Level 4
Knowledge & Understanding	Few questions were asked about the disease and organ chosen.	Asked fewer than ten questions about the disease and organ chosen.	Asked ten questions about the disease and organ chosen.	Asked more than ten questions about the disease and organ chosen.
	Answers to questions demonstrated little understanding of the disease.	Answers to questions demonstrated some understanding of the disease.	Answers to questions demonstrated a good understanding of the disease.	Answers to questions demonstrated an excellent understanding of the disease.
Thinking & Investigation	Models of a normal and a diseased organ included little accuracy or detail.	Models of a normal and a diseased organ included some accuracy.	Accurate models of a normal and a diseased organ were created.	Very detailed and accurate models of a normal and a diseased organ were created.
Communication	The pamphlet included little information and few ways to prevent the disease.	The pamphlet included some information and ways to prevent the disease.	The pamphlet was informative and creative; included ways to prevent the disease.	The pamphlet was very informative and creative; included ways to prevent the disease.
	Numerous problems with format and terminology resulted in information not being communicated effectively.	Some problems with format and terminology resulted in information not being communicated effectively.	Used an appropriate format and terminology to communicate the information effectively.	Used an appropriate format and terminology to communicate the information with a high degree of effectiveness.
Application	Little explanation of the medical technology used to diagnose and treat the disease provided.	Some explanation of the medical technology used to diagnose and treat the disease provided.	A good explanation of the medical technology used to diagnose and treat the disease provided.	A detailed explanation of the medical technology used to diagnose and treat the disease provided.
	There is no discussion included of how other organs or organ systems in the body are affected by this disease.	Little discussion included of how other organs or organ systems in the body are affected by this disease.	A discussion included of how other organs or organ systems in the body are affected by this disease.	An in-depth discussion included of how other organs or organ systems in the body are affected by this disease.

Please also see **BLM A-47 Unit 1 Inquiry Investigation Rubric**.

An Issue to Analyze

Encouraging Healthy Lifestyles (Student textbook page 99)

Pedagogical Purpose

Students analyze the components of a healthy lifestyle and the effects of such a lifestyle on individuals and on society. They present the results of their analysis in a graphic organizer and a media plan.

Planning	
Materials	Internet access resources related to healthy lifestyles BLM 1-45 An Issue to Analyze: Encouraging Healthy Lifestyles (optional) BLM G-13 How To Do a Research Based Project (optional) BLM G-16 Scientific Research Planner (optional) BLM G-17 Research Worksheet (optional) BLM G-18 Internet Research Tips (optional) BLM A-48 Unit 1 An Issue to Analyze Rubric (optional)
Time	60 min in class 5 min preparation

Skills Focus

- select, organize, and record relevant information
- think critically
- communicate conclusions

Activity Notes and Troubleshooting

- Introduce the issue by asking students if they or anyone they know have made changes to their lifestyle for health reasons. Examples may include walking or bicycling to school when they could get a ride, quitting smoking, beginning an exercise program, or wearing sunscreen.
- Introduce the project early in the unit, so that students can incorporate relevant information and skills from the topics into their project.
- Have students review the Assessment Checklist before they begin and again once they complete the project to ensure they have not missed any steps.
- Establish interim checkpoints to keep students on track. For example, require that students show you their list of questions before they begin researching. At that time talk with them about possible places to look for information.
- Remind student that they can refer to Literacy Skills Toolkit 5, Organizing Your Learning: Using Graphic Organizers on pages 412 to 417 to help them choose an appropriate graphic organizer for step 3 of Initiate and Plan.
- Ensure that students understand what a media plan is, and the role that media buyers play. If possible, show some examples of different media plans from previous years.
- As students present their plans, have the other students perform peer assessment. Use a format such as three stars and a wish, in which each assessor records three things that they liked and one suggestion for improvement. After the presentation, volunteers could be selected to share a few of these ideas with the presenter.
- You could supply student with **BLM 1-45 An Issue to Analyze: Encouraging Healthy Lifestyles**.
- Students could use **BLM G-13 How To Do a Research Based Project**, **BLM G-16 Scientific Research Planner**, **BLM G-17 Research Worksheet**, and/or **BLM G-18 Internet Research Tips**, to help plan and organize their research.

Additional Support

- **DI** Requiring students to present their results in a media plan allows for a wide variety of formats. Encourage creativity and a format that students find interesting, manageable, and informative.
- **Enrichment**—Students could create their media presentation and present it to a wider audience at a health fair, when parents are in the school, or online.

Rubric

ACHIEVEMENT CHART CATEGORY	Level 1	Level 2	Level 3	Level 4
Knowledge and Understanding	Few questions were asked about the factors that affect the health of a person.	Asked fewer than ten questions about factors that affect the health of a person.	Asked ten questions about the factors that affect the health of a person.	Asked more than ten questions about factors that affect the health of a person.
	Answers to questions demonstrated little research was done.	Answers to questions demonstrated some research was done.	Answers to questions were well researched.	Answers to questions were very well researched.
Thinking and Investigation	Used few resources to research what government programs exist to educate the public about healthy lifestyles.	Used some resources to research what government programs exist to educate the public about healthy lifestyles.	Used a variety of resources to research what government programs exist to educate the public about healthy lifestyles.	Used numerous resources to research what government programs exist to educate the public about healthy lifestyles.
Communication	Graphic organizers not used to record research.	Used graphic organizers to record research.	Used graphic organizers effectively to record research.	Used graphic organizers very effectively to record research.
	Findings are not presented in a persuasive manner.	Findings are presented in a somewhat persuasive manner.	Findings are presented in a persuasive manner.	Findings are presented in a very persuasive manner.
Application	PMI chart or cost benefit analysis to evaluate effect of adopting a healthier lifestyle was not created.	Had difficulty preparing a PMI chart or cost benefit analysis to evaluate effect of adopting a healthier lifestyle.	Prepared a PMI chart or cost benefit analysis to evaluate effect of adopting a healthier lifestyle.	Prepared a detailed PMI chart or cost benefit analysis to evaluate effect of adopting a healthier lifestyle.
	Media plan lacks a message and the method of delivering the message is not described.	Media plan lacks a clear message and the method of delivering the message is not described.	Creative media plan includes a clear message and the method of delivering the message is described.	Very creative media plan includes a very clear message and the method of delivering the message is thoroughly described.

Please also see **BLM A-48 Unit 1 An Issue to Analyze Rubric**.