

CAPSTONE LABORATORY INVESTIGATION

OBJECTIVE/RATIONALE

The ability to identify an unknown bacteria is an integral part of working in a medical laboratory. The student will identify an unknown organism.

TEKS 121.14 (c) 1A, 1B, 1C, 2A, 2B, 3C, 3E, 3F

TAKS ELA 1, 4

Mathematics 8

Science 1, 2, 4

National Science Education Standards A9-12; C9-12; E9-12; F9-12;G9-12

National Health Care Skills Standards .01,.02, .03, .04, .05, .06, .07, .08, .09

National Curriculum Standards for School Mathematics S1; S3; S10; S11; S12

KEY POINTS

Teacher note: Explain to the students that they will be given an unknown organism to identify. Include the unknown organism within a case study presentation. The students will use notes and knowledge gained throughout the course to identify the unknown and write their case study presentation. If time permits, students may then present their findings to the class as a medical grand rounds presentation.

I. Case study sample one:

The patient is a 25 year old male with chief complaints of abdominal cramps, vomiting, diarrhea and loss of appetite for two days. The patient admits to eating two hamburgers and potato salad at a family reunion picnic one day prior to the start of his symptoms. On examination, the physician found the patient to be febrile and appearing dehydrated. The stool sample specimen tested negative for ova and parasites.

II. Case study sample two:

The patient is a 75 year old non-smoking female presenting with a productive cough and thick sputum for one week duration. The patient has a history of no previous respiratory illnesses. On examination, the physician found the patient to be febrile and appear weak. The sputum specimen appears bloody.

ACTIVITIES

I. Identify the unknown specimen bacteria.

II. Prepare a written Case Study Presentation.

MATERIALS

Case Study Presentation Rubric

ASSESSMENT

Case Study Presentation Rubric

ACCOMMODATIONS

For reinforcement, the student will review materials and repeat the identification of the unknown.

For enrichment, the student will present the findings to the class using medical grand rounds.

REFLECTIONS

**MEDICAL MICROBIOLOGY
CASE STUDY PRESENTATION**

The following components are required:

1. IDENTIFICATION PAGE:	Give case study name Your name Grade level	5 points
2. TABLE OF CONTENTS:	List in order each project component and page numbers.	5 points
3. INTRODUCTION:	State the case study.	5 points
4. RESEARCH:	Restate the case study as a topic paragraph. Introduce background knowledge of pathogenic and non-pathogenic microorganisms. State what you think will occur during the experiment and why (use knowledge gained from gram stains, dichotomous keys, and other case studies). References should include: books, journals, Internet, magazines, and interviews.	15 points
5. MATERIALS:	List of equipment and supplies.	10 points
6. PROCEDURE:	Number and list each step in the order performed.	10 points
7. RESULTS:	Give raw data (data recorded during the experiment, smooth data (data placed in charts and tables), and analyzed data (data interpreted in graphs, charts, and tables).	20 points
8. CONCLUSION:	Restate the case study as a topic paragraph. State in paragraph form the conclusion you reached. Refer to the analyzed data to explain how you reached your conclusions. Each major point gets its own paragraph. Refer to the research to support your data and your conclusions when you refer to the analyzed data. In a paragraph, summarize all your conclusions and the major points you used to make your conclusions.	15 points
9. SUGGESTED IMPROVEMENTS:	Explain how your project can be improved or expanded beyond what was tested.	5 points
10. BIBLIOGRAPHY:	Use APA format to cite all references used.	5 points
11. ACKNOWLEDGEMENTS:	Use APA format to cite all people who helped you with the project.	5 points
12. LABORATORY NOTEBOOK:	Your notebook will be collected with the case study presentation.	

DATE DUE: