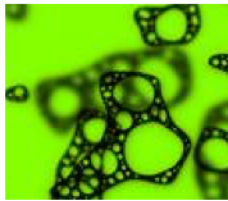


## Disease and MEI

Smithfield High School  
Smithfield, VA, 23430  
(757) 357-7404



**Vetted Project:** Students will investigate the bacteria, viruses, and other microorganisms that are found on something they touch/handle every day - their cell phones! Student will work with other group members to culture and grow bacteria (and other microorganisms) found on their cell phones. In the process, they will discover/research where these microorganisms are found, method of movement/how they are spread, health effects/implications, and more. Then, students will investigate the effectiveness of the cleaning products that are commonly used to disinfect their phones - lysol wipes, alcohol wipes, diluted bleach, ect. They will clean their phones with these products, swab their phones again, and see if there is any further growth. They can use this comparison to determine the effectiveness of the cleaning products. Students will use the information they discover to create awareness campaigns to display around the school for SHS school population. I also want them to give a brief presentation about their campaigns to various packer blocks or other science classes. Curation: The project will be displayed at the school in the next school year because it was completed at the end of this year. Sustainability: The student information campaign will have a lasting effect on students who will be better informed and more aware of the effects of bacteria and its health implications. Driving Question: How gross is my cell phone and what can I do to protect myself? Student Reflection: Question 1 - What were the major steps of the project? Student Response - "We swabbed our phones and transferred the bacteria to a Petri dish, which we put in an incubator. We repeated that process after we cleaned our phones with a cleaner of our choice. We observed the amount of visible bacteria growth each day for three days on each Petri dish. We recorded our observations. We made a public service announcement. It included a QR code that takes you to an information page that goes more in depth about our project and health implications concerning the amount of bacteria on someone's phone. We then presented our projects and shared our data." Question 2 - What is the most important thing you learned in this project? Student Response - "I learned just how much bacteria I come into contact with on a day to day basis, and how easily transferred that bacteria is." Question 3 - What was the most enjoyable part of this project? Student Response - "I enjoyed observing the amount of bacteria growth on my phone." Teacher Reflection: This PBL allowed me to offer my students a different learning experience. This was my first time doing a PBL, so there was a learning curve and I adjusted things as I went - but my students really enjoyed the project and had fun. Lessons Learned: I would try to avoid doing a project so close to the SOL's and try to do it after or well in advance - I think it added another layer of stress for my students. ADDITIONAL RESOURCES available at PBLounge.org.

## I. Authenticity

### Performing

Realistic Role

Speech or Spoken Word Performance

### Demonstrating

Exhibit / Contest

Lab Activity

### Producing / Revising

Portfolio / Presentation Board

Product

## II. Media Produced

### Internet Media

Social Media Page

Website

### Nature-related

Lab Cultivation

### Print Media

Signage

### Technical Writing

Article / Script / Essay (Non-fiction)

FAQs

Lab / Research Report

### Physical Drawings & Fine Arts

Product Drawing or Sketch

## III. Challenging Problems

### Questions

Assist Others

Self Reflection & Evaluation

### Themes

Field-based Work

Research-based

### Topics: Physical World

Human Body

### Topics: Humans in the World

Consumers & Industry

Health, Fitness & Diet

Modern Living

Student Related Issues

### Topics: Of the Mind

Implications of Decisions

## IV. Achieved Literacy Skills

### Project / Work

Adjust to Schedules / Contexts

Balance Various Roles / Responsibilities

Learn / Develop Expertise

Manage Time / Workload

### Leadership

Influence through Leadership not Authority

## **I. Parameters & Feasibility**

Project Timeframe

1-2 Weeks

Assessment Timeframe

Timed Assessment

# of Project Members

Pair

Grade Level

Middle School (Grades 6-8)

High School (Grades 9-12)

Authentic Audience / Evaluators

Peers

Parents

Teachers & Administrators

## **II. Intended Learning Outcomes**

Creativity

Brainstorm

Design / Create

Envision / Invent

Communication

Engage Creatively

Point of View

Collaboration

Assume Shared Responsibility

Encourage Others

Incorporate Feedback

Critical Thinking

Draw Analytic Conclusions

Reflect Critically on Learning

Instilled Citizenship Values

Community & Public Issues

Personal Responsibility

Social Responsibility

## **III. Success Skills & Depth of Knowledge**

Cognitive Demand

Identifying / Remembering

Comprehending / Understanding

Applying

Analyzing

Evaluating

Creating

Social & Emotional Skills

Self-awareness

Self-management

Group-management

Learning Styles / Intelligences

Bodily / Kinesthetic

Interpersonal / Social

Assessment Structures / Resources

Journals

Rubrics

## **IV. CTEs & Disciplines**

Career & Technical

Education

Health Services

STEM Research & Applications

Communication / Media

Nonverbal Communication

Sciences

Biology



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