



2024-2025

Rapid City
Stevens High School

Microbiology

RCAS Policies/Procedures:

Students will be required to follow all RCAS policies and procedures. To view the RCAS High School Student Handbook, click [handbook](#).

Course Description:

The practical laboratory techniques used in this class would be beneficial for any student considering a career in any lab or medical related field. In this hands-on class, students will spend the majority of their time in the laboratory on the study, identification, isolation, and control of microorganisms, with emphasis on bacteria.

Textbook:

Nester Microbiology

Required Resources:

None

“Limited Choice” Resources: (students will be asked to choose at least one title from this list)

None

Student Choice:

Will student be asked to choose additional reading material from the classroom or school library?

No

Essential Questions:

HS-LS1-5, HS-LS2-5, HS-LS2-7, HS-ESS3-4: How do microbes impact the world medically, environmentally, and economically?

INDICATOR #HS2 1, INDICATOR #IMD 2: What careers are available for people with microbiology backgrounds and what do their jobs look like?

INDICATOR #HS2 1, INDICATOR #IMD 2: How can knowledge of microbes and foundational laboratory techniques be used to identify unknown bacteria?

HS-LS1-2, HS-LS4-2, HS-LS4-4: What are the different categories of microbes and how are they different from each other?

Essential Learning Intentions:

INDICATOR #HS2 1, INDICATOR #IMD 2: Students will learn how to use aseptic technique to keep themselves, their workspace and their samples clean and safe.

INDICATOR #HS2 1, INDICATOR #IMD 2: Students will learn how to grow, isolate and identify bacteria.

INDICATOR #HS2 1, INDICATOR #IMD 2: Students will learn how to use important laboratory equipment to conduct microbiology experiments: incubator, autoclave, microscope, spectrophotometer, micropipettes, etc.

HS-LS1-2: Students will learn how to categorize different microbes and how different ones are able to cause infection/disease.

HS-LS1-2: Students will learn how different microorganisms reproduce and how they affect the body.

HS-LS1-5, HS-LS2-5, HS-LS2-7, HS-ESS3-4: Students will learn how microbes impact the environment and how they are used to create environmental solutions.

HS-LS4-2, HS-LS4-4: Students will learn how and why some microbes can adapt and become resistant to modern medicine.