

THIS CLASS CONCENTRATES OF BIOTIC AND ABIOTIC FACTORS AND HOW LIVING ORGANISMS INTERACT WITH EACH OTHER AND THEIR ENVIRONMENT. WE START WITH AN UNDERSTANDING OF LEVELS OF ORGANIZATION IN ECOLOGY. WE LOOK AT THE NATURAL WORLD FOR RENEWABLE AND NONRENEWABLE RESOURCES. OUR GOAL IS TO TEACH CONSERVATION AS WELL AS STUDY HOW HUMANS ARE LEAVING THEIR FOOT PRINT IN OUR BIOGEOCHEMICAL CYCLES AND HOW WE MAY BE INTERFERING WITH OUR FOOD CHAINS AND FOOD WEBS. WE TAKE A LOOK AT OUR DIFFERENT ECOSYSTEMS AND STUDY THE BIOMES EMBEDDED. ALSO, WE INVESTIGATE HOW POPULATIONS ARE AFFECTED WITH REPRODUCTIVE EXPLOSIONS, POACHING, THE REMOVAL OF TREES, POLLUTION AND CLIMATE CHANGE, POVERTY AND INVASIVE SPECIES. WE STUDY THE VOCABULARY EMBEDDED IN OUR ECOSYSTEMS INCLUDING THE AREAS OF WATER, LAND, AND AIR BIOMES. STUDENTS WILL BEGIN TO UNDERSTAND HOW IMPORTANT BIODIVERSITY IS IN ALL ECOSYSTEMS AS WE TRACK THE FLOW OF ENERGY THROUGH TROPHIC CASCADES AND LOOK AT HOW LIVING THINGS ARE INTERDEPENDENT UPON EACH OTHER.

STUDENTS WILL KEEP AN INTERACTIVE NOTEBOOK WHERE THEY CAN TAKE NOTES IN THE FORM OF ANSWERING QUESTIONS. THEY WILL HAVE ACCESS TO QUESTIONS AND ANSWERS ON GOOGLE CLASSROOM. GRADES WILL BE DETERMINED BY A POINT SYSTEM WITH AN EXAMPLE GIVEN TO EACH STUDENT IN FIRST WEEK OF SCHOOL. POWER POINTS AND LECTURE GUIDES ARE COMMON IN THIS CLASS TO COVER THE ABOVE SUBJECT MATERIAL.

#### TABLE OF CONTENTS:

##### \*\*\*INTRODUCTION TO ECOLOGY/ENVIRONMENTAL SCIENCE

- COMPARE THE TERMS OF ECOLOGY AND ENVIRONMENTAL SCIENCE
- PROBLEMS THAT WE FACE IN THIS CENTURY
- MOVIE-WHO KILLED THE ELECTRIC CAR
- MOVIE THE GREAT PACIFIC GARBAGE DUMP AND 4 OTHER AREAS

##### \*\*\*THE SCIENTIFIC METHOD USED IN SCIENCE AND HOW WE USE GRAPHING FOR DATA

##### \*\*\*THE ORGANIZATION OF LIFE

### \*\*\*THE DYNAMIC EARTH

### \*\*\*THE BIOSPHERE

- INTRODUCTION TO GLOBAL SYSTEMS-PARTS OF THE BIOSPHERE
- LEVELS OF ORGANIZATION
- BIOTIC AND ABIOTIC FACTORS
- CLIMATE, WEATHER AND LIFE
- CLIMATE CHANGE AND GLOBAL WARMING
- BIOMES AND AQUATIC ECOSYSTEMS

### \*\*\*ECOSYSTEMS

- ENERGY, PRODUCERS, AND CONSUMERS
- FOOD CHAINS AND FOOD WEBS
- ECOLOGICAL PYRAMIDS THAT CAN BE USED THREE WAYS
- BIOLOGICAL MAGNIFICATION

### \*\*\*BIOGEOCHEMICAL CYCLES

- WATER CYCLE
- CARBON CYCLE
- NITROGEN CYCLE
- PHOPHORUS CYCLE
- EUTROPHICATION

### \*\*\* POPULATIONS

- EXPONENTIAL GROWTH
- LOGISTIC GROWTH
- CARRYING CAPACITY-INTERPRETING CHARTS
- AGE STRUCTURE DIAGRAMS AND HUIMAN POPULATION GROWTH
- DENSITY DEPENDENT LIMITING FACTORS
- DENSITY INDEPENDENT LIMITING FACTORS
- PREDATOR PREY RELATIONSHIPS
- TYPES OF SYMBIOSIS

### \*\*\*COMMUNITIES AND ECOSYSTEM DYNAMICS

-HABITATS AND NICHES

-COMPETITIVE EXCLUSION PRINCIPLE

-KEYSTONE SPECIES

-SUCCESSION BOTH- PRIMARY, SCNDARY AND AQUATIC

\*\*\*PROPERTIES OF WATER

\*\*\*RESOURCES

-RENEWABLE RESOURCES

-NONRENEWABLE RESOURCES