

STUDY GUIDE – VOCABULARY – QUESTIONS

STEVE TRASH SCIENCE – PRESENTED BY OJP - APRIL 11 – MAY 11, 2022

1. POLLINATORS 2. RENEWABLE VS NON-RENEWABLE 3. THE WATER CYCLE 4. REDUCE REUSE RECYCLE 5. POLLUTION 6. EARTH IS WICKED AWESOME 7. BONUS – COMPUTATIONAL THINKING (each episode is approximately 10 minutes long – 70 minutes of content total).

EPISODE 1. TITLE: POLLINATORS - MESSY BABIES AND POLLINATORS SUBJECT: POLLINATION AND POLLINATORS

WHAT IS POLLINATION?

HOW DOES NATURE MAKE POLLINATION HAPPEN?

WHAT ARE SOME POLLINATORS WE SEE AROUND US?

WHY ARE POLLINATORS IMPORTANT?

WHAT IS POLLEN AND HOW DOES IT HELP MAKE NEW PLANTS? HOW CAN HUMANS HELP POLLINATORS?

VOCABULARY:

NECTAR POLLINATION POLLEN POLLINATOR PISTIL OVULE SYMBIOSIS HABITAT

EPISODE 2. RENEWABLE VS NONRENEWABLE - THE BIG MATCH-UP - RENEWABLE VS NONRENEWABLE

SUBJECT: RENEWABLE AND NON RENEWABLE RESOURCES.

WHAT ARE NATURAL RESOURCES?

GIVE 3 EXAMPLES OF A NATURAL RESOURCE.

HOW ARE RENEWABLE RESOURCES DIFFERENT FROM NON RENEWABLE RESOURCES?

GIVE EXAMPLES OF RENEWABLE AND NON RENEWABLE RESOURCES.

EXPLAIN WHY TREES ARE A RENEWABLE RESOURCE.

ABOUT HOW LONG DOES IT TAKE A WATER MOLECULE ON EARTH'S SURFACE TO TRAVEL THROUGH THE WATER CYCLE?

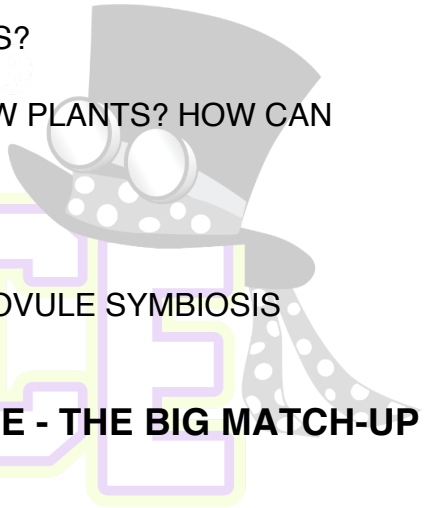
WHAT ARE TWO NATURAL RESOURCES THAT CAN BE USED TO MAKE POWER?

NAME THREE SPECIFIC CYCLES IN NATURE.

GIVE TWO EXAMPLES OF FOSSIL FUELS.

HOW DO WE GET ENERGY OUT OF FOSSIL FUELS?

HOW HAVE FOSSIL FUELS HELPED AND HARMED HUMANS?



NAME THREE ALTERNATIVE RENEWABLE ENERGY SOURCES.
HOW CAN WIND AND SUN PRODUCE ELECTRICAL ENERGY?
HYDRO POWER IS ENERGY CAPTURED FROM WHAT?
WHERE IS GEOTHERMAL ENERGY MADE?
HOW IS BIOMASS OR BIOFUEL ENERGY MADE?
HOW IS USING RENEWABLE INSTEAD OF NONRENEWABLE RESOURCES
PREFERABLE?

VOCABULARY:

NATURAL RESOURCES RENEWABLE NON RENEWABLE WATER CYCLE WIND
ENERGY MAGMA FOSSIL FUEL COAL ALTERNATIVE ENERGY SOLAR PANEL
HYDRO OR WATER POWER GEOTHERMAL BIOMASS BIOFUEL

EPISODE 3. WATER CYCLE - WATER WATER WATER CYCLE

SUBJECT: WHAT IS THE WATER CYCLE AND WHY IT IS IMPORTANT?

WHAT DRIVES THE WATER CYCLE?
CAN WE DRAW A PICTURE REPRESENTING THE WATER CYCLE?
WHAT PERCENTAGE OF WATER ON EARTH IS USEABLE FRESHWATER? WHY IS
IT IMPORTANT TO HAVE SAFE, CLEAN WATER?
WHY SHOULD WE NOT DUMP ANYTHING INTO STORM DRAINS?
WHAT ARE SOME WAYS TO CONSERVE WATER?
WHAT THREE PHYSICAL FORMS CAN WATER BE FOUND IN?
DOES THE OVERALL AMOUNT OF WATER ON EARTH EVER CHANGE?

VOCABULARY:

WATER CYCLE CONDENSATION PRECIPITATION INFILTRATION EVAPORATION
GROUNDWATER RUN OFF TRANSPIRATION

**EPISODE 4. REDUCE REUSE RECYCLE – WASTE AND NATURAL
RESOURCES**

SUBJECT: WHAT IS “GARBAGE” AND HOW WE CAN REDUCE THE AMOUNT OF
GARBAGE WE HAVE.

ON AVERAGE, HOW MUCH GARBAGE DO AMERICANS MAKE? WHAT EFFECT
DOES GARBAGE HAVE ON THE PLANET? WHAT DOES “REDUCE, REUSE AND
RECYCLE” MEAN?
HOW CAN WE MAKE LESS GARBAGE?

WHAT DOES "UPCYCLE" MEAN?
WHAT THINGS CAN BE RECYCLED?
WHAT ARE THE STEPS IN THE RECYCLING PROCESS? HOW DOES NATURE RECYCLE?

VOCABULARY:

LANDFILL REDUCE REUSE RECYCLE RECHARGEABLE BATTERY DISPOSABLE BATTERY UPCYCLE POST CONSUMER WASTE CLOSED LOOP WATER CYCLE RESOURCE

EPISODE 5. POLLUTION - OH YUCK POLLUTION

SUBJECT: POLLUTION AND WHAT CAN WE DO TO PREVENT IT.

WHAT IS THE DEFINITION OF POLLUTION?
WHAT ARE THE 3 MAIN TYPES OF POLLUTION?
IS MOST POLLUTION CAUSED BY HUMANS?
DEFINE "LITTER" AND GIVE EXAMPLES OF IT.
HOW CAN LITTER HARM ANIMALS?
WHAT SHOULD WE DO WITH USED MOTOR OIL AND WHY?

NAME ONE KIND OF POLLUTION THAT WE CANNOT SEE.
CAN THE EARTH JUST "TAKE CARE" OF POLLUTION BY ITSELF?
WHAT EFFECT DOES POPULATION GROWTH HAVE ON POLLUTION?
EVERYTHING IN THE NATURAL WORLD IS _____. (CONNECTED)
NAME 3 THINGS WE CAN DO TO LIMIT POLLUTION.

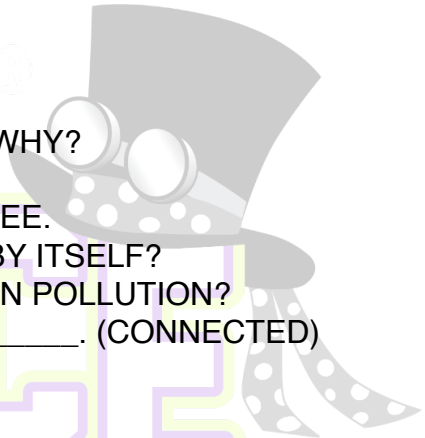
VOCABULARY:

POLLUTION LITTER CARBON MONOXIDE RECHARGEABLE BATTERIES DISPOSABLE BATTERIES

EPISODE 6. EARTH IS WICKED AWESOME

SUBJECT: EARTH: IT'S PLACE IN THE UNIVERSE AND WHY IT IS UNIQUE.

WHAT FORCE HOLDS THE UNIVERSE TOGETHER?
IN ADDITION TO THE 8 PLANETS, WHAT ELSE MAKES UP OUR SOLAR SYSTEM?
WHAT ARE SOME CHARACTERISTICS OF THE PLANETS IN OUR SOLAR SYSTEM?
WHY IS EARTH THE ONLY PLANET THAT SUPPORTS LIFE?
WHAT ARE EARTH'S 4 MAJOR NATURAL SYSTEMS (OR SPHERES) AND HOW ARE THEY CONNECTED?
WHY ARE WE CALLED "CARBON BASED LIFE FORMS"?



HOW DOES EARTH'S ATMOSPHERE BENEFIT THE PLANET?
WHAT IS THE WATER CYCLE?

VOCABULARY:

GALAXY
MILKY WAY SOLAR SYSTEM STAR ASTEROIDS COMETS HABITABLE SPHERES
BIOSPHERE GEOSPHERE ATMOSPHERE HYDROSPHERE BIO
POLLUTION

BONUS - EPISODE 7. ROCK PAPER SCISSORS

SUBJECT: COMPUTATIONAL THINKING - THE THINKING PROCESS FOR

CREATING SIMPLE COMPUTER PROGRAMS TO HELP SOLVE PROBLEMS.

HOW CAN COMPUTATIONAL THINKING HELP US SOLVE A PROBLEM?
WHAT IS A COMPUTER PROGRAM?
WHAT IS ANOTHER WORD FOR "WRITING" A COMPUTER PROGRAM?
WHAT ARE THE LOGICAL STEPS TO TAKE TO WRITE A COMPUTER PROGRAM
TO HELP SOLVE A PROBLEM? (*ORGANIZE/ANALYZE, BREAK INTO SMALLER
PROBLEMS, LOOK FOR PATTERNS, CREATE ALGORITHMS, FIND SIMPLEST
SOLUTION*)

WHAT DOES AN "EVENT" DO?
WHAT IS A FLOWCHART AND WHY IS IT USEFUL?
WHAT IS THE DIFFERENCE BETWEEN COMPUTER CODE AND PSEUDOCODE?
WHAT IS "BLOCK BASED CODE"?

VOCABULARY:

COMPUTER PROGRAM COMPUTATIONAL THINKING ALGORITHM
EFFICIENT FLOWCHART PSEUDOCODE COMPUTER CODE CODING
PROGRAMMING EVENT BLOCK CODING

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