Energy and Resources Review for final

1) Materials that occur in nature and are essential or useful to humans are called?
NATURAL RESOURCES

	define	example
Non-renewable resource	**ONCE GONE, IT'S GONE**	**COAL, OIL, NAT GAS, URANIUM**
Renewable resource	**CAN COME BACK IN A HUMAN LIFETIME**	**BIOMASS, WIND, GEOTHERMAL, SOLAR, HYDRO**
Limited resource	**THERE IS ONLY SO MUCH OF IT**	**BIOMASS, COAL, OIL, NAT GAS, URANIUM**
Unlimited resource	**NEVER RUNS OUT**	**WIND, GEO, SOLAR, HYDRO**

Why should Fossil fuel use be reduced ? (give 3 reasons)

2) 1 **THEY CAUSE POLLUTION**
3) 2 THEY MAKE CO2= GREENHOUSE EFFECT
4) 3 THEY ARE NON RENEWABLE AND LIMITED

5) Put the statements in order:
A =Steam turns the blades of a turbine
B =Steam is created
C =The turbine spins its magnets near a coil of wire
D =Electricity is created
E =Water is heated

E, B, A, C, D

List at least 5 alternatives to using fossil fuels.

6) 1 WIND
7) 2 GEOTHERMAL
8) 3 SOLAR
9) 4 HYDROPOWER
10) 5 BIOMASS

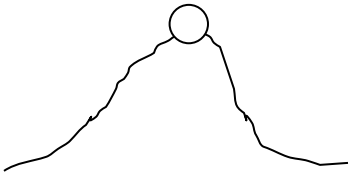
11)

	define	example
POTENTIAL		
Chemical potential energy	FOUND IN THE BONDS OF MOLECULES	FOOD
Elastic potential energy	STORED IN OBJECTS BY APPLICATION OF FORCE	STRETCHED SPRING, RUBBER BAND, BOUNCY BALL
Gravitational potential energy	ENERGY OF POSITION OR PLACE; THE HIGHER, THE GREATER THE ENERGY	ROCK AT THE TOP OF A HILL, ITEMS ON A SHELF
Nuclear potential energy	ENERGY MADE FROM THE SPLITTING OR FUSING OF ATOMS	HUMANS DOING FISSION SUN DOING FUSION

	define	example
KINETIC		
motion kinetic energy	ENERGY OF MOVEMENT	SPINNING TIRE
Thermal kinetic energy	HEAT ENERGY CAUSED BY MOVING MOLECULES	HOT SOUP

Electrical kinetic energy	**ELECTRONS MOVING IN WIRES**	**ELECTRICITY IN WIRE**
Radiant kinetic energy	**LIGHT ENERGY CAUSED BY MOVING PHOTONS**	**LIGHTBULB GLOWING**
Sound kinetic energy	**ENERGY MOVING THROUGH COMPRESSION WAVES**	**PERSON TALKING**

12) A person running demonstrates what type of energy?
MOTION
13) The energy found in food is?
CHEMICAL
14) The energy in a moving bouncy ball is?
MOTION
15) The energy in a bouncy ball that is compressing as it hits the floor is?
ELASTIC
16) The energy in a nuclear bomb before it explodes?
NUCLEAR
17) The energy in a nuclear bomb just after it explodes?
RADIANT AND THERMAL
18) A screaming child, a bouncing basketball, and a car screeching its tires all show?
SOUND
19) A big rock on the top of a hill represents?
GRAVITATIONAL
20) The energy flowing through a wire is?
ELECTRICAL



Place the name of the energy source next to its disadvantage and advantage. There is only one advantage and disadvantage for each. Be careful, because some advantages and disadvantages could be used for more than one energy source. Treat it like a puzzle, and answer the ones you know FOR SURE first.

ENERGY SOURCES word bank

SOLAR CELLS	HYDROELECTRIC	COAL
WIND POWER	BIOMASS	PETROLEUM/OIL
GEOTHERMAL	NATURAL GAS	NUCLEAR

ADVANTAGES:

21) __ **BIOMASS** _ Can get rid of garbage

22) __ **GEOTHERMAL** __ Earth's heat never runs out, can heat a home and cool a home

23) __ **SOLAR** _ Supply never runs out, can be used in remote areas, can be put in unused spaces like roofs

24) __ **HYDRO**__ Supply never runs out, makes no air pollution, runs 24 hours a day, most efficient electricity maker

25) __**WIND**____ Supply never runs out, most homes could have their own turbine in the air

26) __**COAL**____ Most of our nation's electricity comes from burning it (over 50%) because it's CHEAP, and we are very used to using it

27) ___**NAT GAS**___ The gas is easy to transport by flowing through underground pipelines

28) __**PETROLEUM/ OIL**__ The liquid is easy to transport by flowing through underground pipelines

29) ___**NUCLEAR**__ Uses very little fuel, makes huge amounts of energy, and doesn't pollute the air

DISADVANTAGES:

30) __**BIOMASS**__ Burning it may cause unpleasant smells

31) ___**HYDRO**_____ Can kill fish when they hit the turbines

32) __**PETROLEUM/OIL**_____ Makes us rely on other countries

33) ___**SOLAR**____ Only works when it's sunny

34) ___**WIND**_____ Only works when it's windy

35) ___**NAT GAS**_____ Produces greenhouse gases

36) ___**NUCLEAR**_____ Produces hazardous, toxic waste

37) ___**COAL**_____ Produces the MOST air pollution of all the fossil fuels, and mining can damage wildlife habitat and watersheds

38) ___**GEOTHERMAL**____ A closed loop system is more expensive at first than a standard heater, and tubes under your home might be hard to repair if they leak

FILL IN THE CHART. ANSWERS IN THIS LIST WILL BE USED MORE THAN ONCE.

1. Atoms are split to create heat, boil water, make steam, spin turbines (1 time)
2. makes hazardous radioactive waste (1 time)
3. Falling water (dams, waterfalls) spins turbines (1 time)
4. Hydrocarbon fuels are burned to create heat, boil water, make steam, spin turbines (3 times)
5. expensive equipment to start off (6 times)
6. cheap and easy to use because we already have the equipment/ infrastructure (3 times)
7. garbage or crops or alcohol from crops are burned to create heat, boil water, make steam, spin turbines (1 time)
8. Moving air spins turbines (1 time)
9. Spills harm the environment (1time)
10. Mining it can ruin the land and watersheds
11. Fracking for it can create earthquakes and pollute groundwater (2 times)
12. Moving water of a tide spins turbines (1 time)
13. can be noisy (1 time)
14. Panels collect sunlight and convert to electricity (1 time)
15. Would make your heating and cooling bills very cheap (1 time)
16. can be re-grown quickly, or gets rid of waste problem (1 time)
17. only works at certain times (can't go 24 hours a day) (4 times)
18. The earth's heat boils water, makes steam, spins turbines (1 time)
19. only works in certain places (4 times)
20. No CO_2 produced (6 times)
21. CO_2 produced creating greenhouse effect (4 times)
22. Source is free (5 times)
23. Uses very little fuel (1 time)
24. uses no fuel (5 times)

Energy **and** Resources **Review for final**

Energy Sources ↓	How it works (list)	Renewable or non-renewable?	Limited or unlimited?	Advantages (list)	Disadvantages (list)
Nuclear Power	**1**	**Non renewable**	**Limited**	**20, 23**	**2, 5**
Solar Power	**14**	**Renewable**	**Unlimited**	**20, 24, 22**	**5, 17, 19**
Geothermal Power	**18**	**Renewable**	**Unlimited**	**15, 20, 22, 24**	**5, 19**
Tidal Power	**12**	**Renewable**	**Unlimited**	**20, 22, 24**	**5, 17, 19**
Hydroelectric (water) Power	**3**	**Renewable**	**Unlimited**	**20, 22, 24**	**5, 19**
Wind Power	**8**	**Renewable**	**Unlimited**	**20, 22, 24**	**5,13, 17, 19**
Coal Power	**4**	**Non renewable**	**Limited**	**6**	**10, 21**
Oil Power	**4**	**Non renewable**	**Limited**	**6**	**9, 10, 11, 21**
Natural Gas Power	**4**	**Non renewable**	**Limited**	**6**	**10, 11, 21**
Biomass Power	**7**	**Renewable**	**Limited**	**16**	**21**

Give an example of reducing
DON'T BUY VEGGIES WITH PLASTIC WRAP
Reusing?
REUSE PLASTIC CONTAINER VERSUS THROWING OUT
Recycling?
TURN IN PLASTICS, PAPER, AND METAL VERSUS THROWING OUT
Name 5 ways to conserve energy
1 TURN OFF LIGHTS
2TAKE SHORT SHOWERS
3 INSULATE HOUSE
4 GET ENERGY EFFICIENT APPLIANCES
5 CARPOOL, BIKE, WALK,