Assignment:\_\_\_\_ Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Bacteria – Small and Successful**

**Bacterial Characteristics**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (3.5 billion) most \_\_\_\_\_\_\_\_\_\_\_\_ organisms
* Bacteria are \_\_\_\_\_\_\_\_\_\_\_
* Bacteria are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ No nucleus or membrane organelles

**Where can you find bacteria?**

* Every \_\_\_\_\_\_\_\_\_\_\_\_
* Deep \_\_\_\_\_ vents
* \_\_\_ \_\_\_\_\_\_\_\_\_\_ under ground
* In/on \_\_\_\_\_\_
	+ There are more bacterial cells on your body than human cells in it

**What do Bacteria eat?**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Sunlight
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Sugar, dead stuff, parasites
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Chemical potential energy

**Bacterial Reproduction**

* Bacteria reproduce by \_\_\_\_\_\_\_\_\_ in \_\_\_\_\_\_: \_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ NOT \_\_\_\_\_\_\_\_\_\_\_
	+ Why can’t bacteria do mitosis?
		- Mitosis is division of the nucleus and bacteria have no nuclei
* Bacteria can have sex?
	+ \_\_\_\_\_\_ exactly
	+ Bacteria can \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
		- Basically they can transfer DNA from one to another

**Bacterial Classification**

* Shapes
	+ 3 basic shapes
		- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
		- \_\_\_\_\_\_\_\_
		- \_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Gram Staining
	+ Stain sticks to cell wall - \_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Stain does not stick, extra layer - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
		- This extra layer provides immunity to some \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Bacterial Importance**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Cycle nutrients
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_
	+ Provide usable N for plants
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ E. coli aid in our digestion
* Bacterial Manufacturing
	+ Make \_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_ etc.

**Bacteria as Pathogens**

* What is a pathogen?
	+ A pathogen is anything that \_\_\_\_\_\_\_\_\_\_\_ an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Not all bacteria are pathogens all the time
* What illnesses are caused by bacteria?
	+ Salmonella
	+ Strep Throat
	+ TB
	+ Leprosy
	+ Lyme Disease
		- Generally the bacteria themselves are harmless, but they can produce deadly toxins that cause the disorder
* Infected? How did that happen?
	+ Physical Contact
	+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
		- Ricks, mosquitoes etc.
	+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
		- Cough/sneeze (sneeze = 100 mph)
* What can I did to protect myself?
	+ Avoid \_\_\_\_\_\_\_\_\_\_ people
	+ Good \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_/sanitation
	+ \_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_
		- Refrigeration, cooking, pasteurization, irradiating
	+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
		- Stimulates the bodies defenses
* What if it’s too late?
	+ Wait for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
		- Body will defend itself from invaders
	+ Antibiotics
		- Means against living, kills bacteria
		- Doesn’t work on \_\_\_\_\_\_\_\_\_\_\_\_
		- Work in many ways
			* Some break down \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ etc
		- Kill bacteria \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
			* Good bacteria die as well
			* Causes abdominal pain, diarrhea, etc.
	+ Antibiotic Resistance
		- Some bacteria \_\_\_\_\_\_\_\_\_\_\_\_\_\_
		- Can be \_\_\_\_\_\_\_\_\_\_\_\_\_
			* Similar to plague resistance gets passed on
	+ How do bacteria become resistant?
		- Antibiotics over \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
		- People don’t take \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_
		- Prescribed for \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
		- Conjugation
		- Mutation
			* Random mutations can lead to resistance