**Bacteria**

1. **Taxonomy**
	1. Belong to the empire \_\_\_\_\_\_\_\_\_\_\_\_ because they do not contain a \_\_\_\_\_\_\_\_\_\_
	2. Previously, in the kingdom \_\_\_\_\_\_\_\_\_\_ with \_\_\_\_\_\_\_\_\_
2. **Structure**
	1. Size\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	2. Lack \_\_\_\_\_\_\_\_\_\_ organelles
	3. Cell wall composed of \_\_\_\_\_\_\_\_\_\_ contains a \_\_\_\_\_\_\_\_\_\_\_
	4. Some have \_\_\_\_\_\_\_\_\_\_ that protrude from cell \_\_\_\_\_\_\_\_\_\_ through the cell \_\_\_\_\_\_\_\_\_\_; these are used for \_\_\_\_\_\_\_\_\_\_
3. **Obtaining energy**
4. Autotrophs:
	1. Phototropic autotrophs:

Example: \_\_\_\_\_\_\_\_\_\_

* 1. Chemotrophic autotrophs:

Example: \_\_\_\_\_\_\_\_\_\_

1. Heterotrophs
	1. Chemotrophic heterotrophs:

Example: \_\_\_\_\_\_\_\_\_\_

* 1. Humans are also \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_
		1. Many bacteria compete with us for \_\_\_\_\_\_\_\_
		2. Example: \_\_\_\_\_\_\_\_\_\_ grows in raw meat, \_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_
		3. If not properly cooked (to kill the bacteria) they will “eat” this food and release \_\_\_\_\_\_\_\_\_\_ into it, causing the illness we call \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_
1. **Metabolism**
	1. Aerobic or \_\_\_\_\_\_\_\_\_\_\_\_, requires \_\_\_\_\_\_\_\_\_\_\_\_
		1. Obligate aerobes \_\_\_\_\_\_\_\_\_\_\_ O2 or they \_\_\_\_\_\_\_\_\_
		2. Facultative aerobes do not require, but can use, \_\_\_\_\_\_
	2. Anaerobic or \_\_\_\_\_\_\_\_\_\_, does not require \_\_\_\_\_\_\_\_
		1. Obligate anaerobes\_\_\_\_\_\_\_\_\_\_\_ in the presences of \_\_\_\_\_\_
		2. Example organism:
			1. Found in the \_\_\_\_\_\_\_\_
			2. Produce \_\_\_\_\_\_\_\_\_ that cause botulism that interfere with \_\_\_\_\_\_\_\_\_ activity, causing paralysis and sometimes \_\_\_\_\_\_\_\_\_\_
			3. Botox:
	3. \_\_\_\_\_\_\_\_\_\_ anaerobes:
2. **Growth and Reproduction**
	1. Bacterial growth is limited by:
		1.
	2. Binary fission is an example of \_\_\_\_\_\_\_\_\_\_ reproduction



* 1. Conjugation is an example of \_\_\_\_\_\_\_\_\_\_\_ reproduction, which helps introduce \_\_\_\_\_\_\_\_\_\_\_\_\_\_



* 1. Spore formation
		1. Endospore:
		2. During this phase bacterium are \_\_\_\_\_\_\_\_, they do not \_\_\_\_\_\_\_\_ or reproduce
		3. Can remain in this phase for \_\_\_\_\_\_\_\_\_\_ until conditions because more \_\_\_\_\_\_\_\_\_\_
1. **Uses for bacteria**
	1. Bacteria are used to produce
		1.
		2.
		3.
		4.
		5.
		6.
		7.
	2. Industrial uses
		1.
		2.
		3.
		4.
	3. Symbiosis, example: humans and \_\_\_\_\_\_\_\_\_\_
		1. Bacteria benefit by being provided with:
			1.
			2.
			3.
		2. Humans benefit by getting:
			1.
			2.
2. **Bacteria in the Environment**
	1. Nutrient flow, bacteria recycle:
	2. Sewage decomposition: bacteria grow \_\_\_\_\_\_\_\_\_\_ here and as they grow:
	3. Nitrogen fixation:
		1. \_\_\_\_\_\_\_\_\_\_ organisms on Earth are totally \_\_\_\_\_\_\_\_\_\_ on bacteria and archaea for \_\_\_\_\_\_\_\_\_\_
		2. Our atmosphere is \_\_\_\_\_\_\_\_\_\_ % nitrogen gas but living things need it in \_\_\_\_\_\_\_\_\_\_ form.