Name Period Date

Unit 1	Handout _____	*Lesson 7: Introducing Bacteria*

Purpose:	To learn background information about bacteria.
Guiding Questions:	- What are bacteria? - How are bacteria helpful and harmful to us?

What are bacteria?

All bacteria are **unicellular** **prokaryotes**. This is the opposite of a eukaryote (like us, protists, plants, and fungi). Prokaryotes do not have a **nucleus** nor do they have **organelles** in their cell. Therefore, scientists say bacteria are extremely simple organisms. They are also the **oldest** type of life on our planet.

Where do bacteria live?

Bacteria are found nearly everywhere! They can be found in **soil**, inside **rocks**, living in **plants** and **animals**, and even in places that are extremely **hot** or **poisonous** to other forms of life.

How are bacteria classified?

Bacteria are classified into two domains: **Archaea** and **Bacteria**. They have several differences between them but they still have several things in common. For example, both groups of bacteria are **unicellular**, have three **cell** **layers**, have a **nucleoid**, and have **ribosomes** in their cell. The table below shows how they are different.

Bacteria	Archaea
Oldest known life forms. Found in **common** locations. **"Simple"** cell wall.	Found in common locations and **common** locations **"Complex"** cell wall.

Name Period Date

What are some examples of Bacteria and Archaebacteria?

The table below highlights some common types of bacteria.

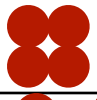
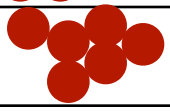
Examples of Bacteria	Examples of Archaea
Produces: use photosynthesis to produce food and oxygen (we love these bacteria!) **Decomposers**: break down organic material; recycle matter. **Parasites**: Harm hosts (ex: *E. coli*, S. *pyogenes*).	**Methanogens**: live in the guts of animals and in swampy areas. **Halophiles**: live in salty areas **Thermophiles**: live in extremely hot or cold locations. **Lithotrophs**: lives underground and gets energy by breaking down chemicals in rocks; helps make soil.

What do bacteria look like?

Bacteria have one of three basic shapes.

Cocci	Bacilli	Spirila
Circle shaped **s: Coccus**	**Rod shaped** **s: Bacillus**	**Spiral shaped**

Bacteria can be arranged in certain ways.

	Definition	Drawing
Diplo- (Bacilli and cocci bacteria only)	**Pairs**	
Strepto- * (Bacilli and cocci bacteria only)	**Chains**	
Tetra- (Cocci bacteria only)	**Fours**	
Staphylo- (Cocci bacteria only)	**Clusters**	

Spirilla bacteria only exist as single cells. However, they take on one of three forms of a spiral shape. Vibrio is a comma-shaped rod, spirillum is a thick, rigid spiral, and spirochete is a thin, flexible spiral.

** Some bacteria form a special chain called a **filament**. Oscillatoria is an example of this.*