**Viruses: Are they Alive? – Answer Key**

1. Why can you not take antibiotics for a virus?

**They only work on bacteria**

1. What do all viruses have in common?

**They contain genetic material**

1. What is a retrovirus?

**A virus that uses RNA instead of DNA**

1. What do they mean why they say the virus is “very, very specific”?

**It only goes after certain types of cells**

1. What are the 2 reproductive cycles of the virus?

**Lytic and lysogenic**

1. What does lyse mean?

**Rupture, break open**

1. What makes HIV so dangerous?

**Attacks immune cells, so they cannot respond to other invaders (colds)**

1. What is a positive use for viruses?

**Gene therapy or crop protection**

1. What does the term “host” refer to?

**The cell being invaded by the virus**

1. What is the name for the protein coat around the nucleic acid core?

**Capsid**

1. Why would you not consider a virus a cell?

**No cellular membrane, no organelles/cytoplasm, no ribosomes**

1. What is a bacteriophage and why is it important to the study of viruses?

**Virus that invades bacteria, host (bacteria) multiplies quickly, can study more generations of it**

1. What does viral specificity tell you about viruses when compared to the evolution of organisms?

**Organisms had to evolve first, but viruses also had to evolve. If viruses never evolved, they would not exist for “higher” life forms. Does the fact they evolve make them alive?**

1. What are the 5 characteristics of all living things?

**Living things are made up of cells**

**Living things reproduce**

**Living things grow and develop**

**Living things use energy**

**Living things respond to their environment**

1. Do viruses follow these characteristics?

**no**

1. What are the arguments for a virus being alive?

**they evolve, they contain DNA/RNA, reproduce (with help from the host cell)**

1. Would you consider a virus to be similar to a parasite? Why or Why not?

**Yes/no, uses host for its own gain but will kill the host or not living and parasites are living and belong to a food web or ecosystem**

1. Make an argument as the whether or not you think that viruses should be classified as living or not. Use at least three points.
2. Do you think it is necessary for humans to draw such black and white lines for life on Earth? Why/why not?