**Lesson 4: Comparing James Webb Space Telescope with the Hubble telescope**

Read the article about the Hubble and James Webb space telescopes or visit <http://jwst.nasa.gov/comparison_about.html>. Use the information to complete the following chart

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Hubble Space Telescope** | **James Webb Space Telescope** | **Why it is different in the Webb telescope than in the Hubble.** |
| Type of radiation examined |  |  |  |
| Types of objects that are/ will be visible |  |  |  |
| Size of telescope |  |  |  |
| Diameter of the primary mirror |  |  |  |
| Distance from the Earth |  |  |  |
| What it will orbit |  |  |  |
| How it was/ will be launched |  |  |  |
| How it is / will be repaired |  |  |  |
| Is there a sun shield? (why or why not) |  |  |  |
| Type of galaxies that will be observed |  |  |  |

**Into the Unknown video study guide**

1. What are three things that the Hubble telescope taught us about the Universe?
2. Why is a new infrared space telescope needed?
3. How much more powerful will the James Webb Space Telescope be than the Hubble?
4. How is a telescope like a time machine?
5. Why do we see fewer galaxies as we look farther away from Earth?
6. What is red shift?
7. How will the Webb telescope help astronomers deal with red shift?
8. How small of an object is the Webb telescope capable of seeing?
9. What are two questions scientists hope to answer about the Universe by using the Webb telescope?

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