

Are We Alone in the Universe?

Name: _____

Space scientists are using technology to expand our knowledge of the universe. One key discovery is that our *solar system* (a system of planets and other bodies orbiting a star, such as the sun) isn't the only one out there. In the past decade, scientists have discovered more than 100 planets orbiting other stars. That's big news: It suggests the universe may contain other places capable of supporting life.

Naturally, space scientists are eager to know more about these planets. Are the planets warm enough to sustain life? Do they have water? To answer these questions, NASA needs telescopes capable of gathering signals from sources billions of miles away, yet precise enough to take measurements just an atom wide. Scientists will work hand in hand with engineers to create these tools of the future.



Research the answers to these questions:

- 1 What do scientists believe a planet needs to support life as we know it?

- 2 What three recent discoveries support the theory that life may exist on other planets?

- 3 What tools have helped scientists make these discoveries? Name at least two.

- 4 What makes the search for life on other planets challenging?

- 5 What is your conclusion? Is there life on other planets, or are humans alone in the universe? Write a paragraph on the back of this page explaining your position.

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Out of This World

The *James Webb Space Telescope*—expected to launch in 2011—will operate nearly a million miles beyond Earth's orbit. The high-tech telescope will observe

objects *billions* of light-years away. The telescope will have a mirror 20 feet in diameter. It will fold up to fit into a rocket, and spring open while it is out in space.

Visit www.jwst.nasa.gov to get a sneak peek!