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Animals, The First Space Travelers

Can fish swim in microgravity? Do bees make honey in space? Can ant farms exist on the Space Station? These are just a few of the questions scientists answer by taking animals into space.

Image to right: We can learn how fish swim in microgravity by simply taking them into space and watching them

Credit: NASA

Animals go into space to help in research. But, they go only when absolutely necessary. Researchers prefer to use computer models or the astronauts. For some experiments, however, only animals will work. Sometimes the experiments need to be watched closely, as in a special diet. Human astronauts don't usually want to eat the same amount and type of food, everyday. Animals, however, usually have special diets. Animal data can transfer to human models and help prevent or solve physical issues people face today.



Image to left: This chimpanzee traveled to space in the early days of space exploration

Credit: NASA

In the early days of space exploration, nobody knew if people could survive a trip to space. Using animals was the best way to find out. In 1948, a monkey named Albert flew inside a rocket. Nine years later, the Soviet Union sent a dog named Laika into orbit. Both of these flights showed that humans could survive the changes in gravity. After several more flights, the number of animals sent into space decreased.

In 1973, a Skylab space project studied sleep patterns. This experiment used several mice. Due to the small amounts of room for animals, the lowest form of life is best for space travel. Often, experiment results using snails and fish can be applied to humans. Inner ear exams can be done in a snail instead of a mammal. Genetic studies can be done on fish. Although it is not exactly like studying humans, it is close enough to gain some knowledge.

Image to right: Animals are cared for in space

Credit: NASA

Taking animals into space requires great planning. For example, what would mice need on a Space Shuttle mission? Space mice have wire mesh cages so their toes can grip a rougher surface. This way, they won't be floating all of the time. Wood chips couldn't be used for bedding. They wouldn't stay in place. Gravity-fed water bottles wouldn't work. Pressurized water containers are needed instead. Food bars are provided for the animals. A special waste containment system is used to clean cages.



Do the animals like living in microgravity? Does floating instead of walking confuse them? "Amazingly, they adapt very quickly," says Laura Lewis. She is on a NASA committee that helps to take care of animals. "Within 5 minutes, mice are floating in their living spaces, grooming themselves, and eating, just as they would on Earth."

In space, fish and tadpoles swim in loops, rather than straight lines. This is because there is no up or down. If a light shines, the fish use that as their guide. They swim towards the light. Baby mammals have a hard time in space because they normally huddle for warmth. In space, it's hard to huddle when bodies drift and float.

Animals that travel in space are cared for ethically and humanely, Lewis says. NASA looks at the most humane ways for taking animals into space. Rules for animal research are more strict than for using people in research. People can give their permission to be used. Animals can't. So, people need to work on their behalf. Even the rules for housing animals are more strict than children's day care centers.

"Animals don't go into space very often," Lewis says. There are few flight opportunities for a mission to include animals. So, the project has to be pretty important to earn a spot on any trip into space. When animals do make the trip, taking care of them is

very important.

Adapted from NASA Explores

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