WEEKDAY WONDERS

Content developed by the Tennessee Aquarium Education Department

TENNESSEE AQUARIUM

Animal Olympics: Day 2

The Olympics in Tokyo may have been canceled, but this week we are hosting our own games. Just as humans' abilities are highlighted in the Olympics, animals have special skills as well. They use speed, balance, aim, endurance, flexibility, and many others to accomplish their daily activity—and some of their skills are pretty amazing. This week we will explore these similar abilities that help animals in day to day survival.

These curated activities are listed in a suggested sequence but may be done in the order that works best for you and your young scientists. Learn more about this series in the Introduction to Weekday Wonders.

Question of the Day

Can you compete in the jumping events?

Daily Nature Journal

Have your young scientist go outside to complete a daily nature journal entry. The Guide to Nature Journaling will help you know what your scientist should include in each entry. Nature journaling is a great way to help people begin to notice different aspects of the natural world.

Nature Journal

Some animals may not have the fastest speed. Instead they depend on their ability to hop, jump, or leap their way to safety or to find food. Have your young scientists spend a few minutes brainstorming and creating a list of the animals they know that move primarily by some form of jumping.

Jumping Scientists

Have your young scientist go outside and find a place that he or she can run and jump. Ask him or her to find a line that will indicate the place to start a jump, such as a line between sidewalk sections, the edge of a driveway and grass, or a stick on the ground.

Ask your scientist to run up to the line then jump as far as s/he can, long jump style. Have your scientist mark where s/he landed with a leaf, toy, or other object. Then, have your scientist try this a few more times. If the jump is further than where the mark is, s/he can move the mark, so it should always represent the longest jump.

Once your scientist feels that the marker represents the furthest s/he can jump, ask him or her to find another marker. Have your scientist repeat the long jump, but this time from a standing position. Have your scientist repeat this until s/he feels like the marker represents the longest jump s/he can make from a standing position.

Have your scientist compare the distance s/he was able to jump from standing versus a running start. Why does s/he think there is a difference? Then, have your scientist lay down and see how many "body lengths" s/he was able to jump from standing and with a running start. If you have an older scientist, you can have him or her measure the length of the jumps and compare it to his or her height.

That Animal Jumps How Far?

Gather a lot of small, equally sized items, such as pennies, "holes" from a hole punch, or dry beans. Your scientist can also use graph paper for this activity. He or she will need a pen or pencil and some small slips of paper if s/he is using objects rather than graph paper.

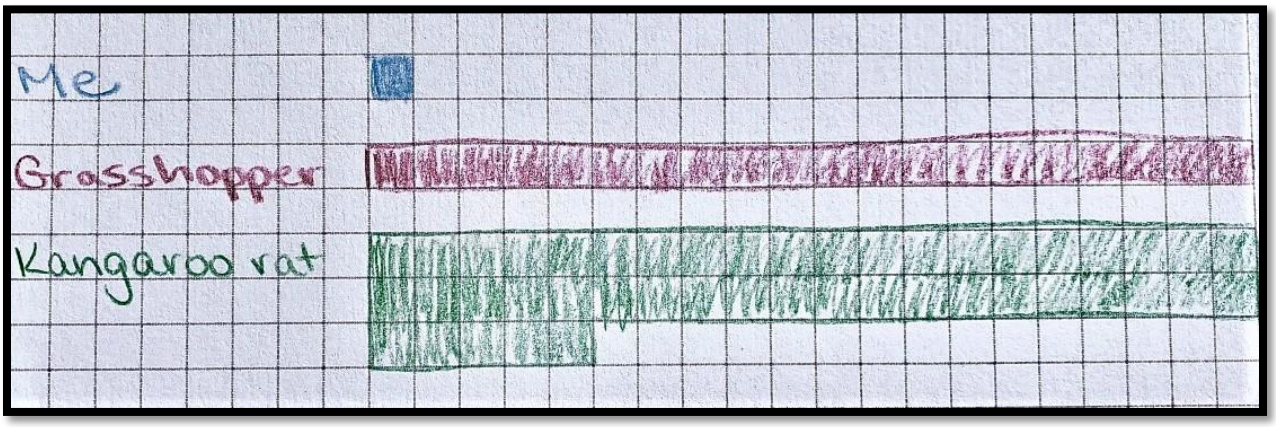
Begin by having your scientist write a label that says, "me." S/he can write this on a slip of paper or along the left edge of the paper near the top. Then, have your scientist think back to the previous activity to decide how many of his or her body lengths s/he could jump. In general, it will probably be about 1 body length, so if your scientist is 4 feet tall, s/he will probably be able to jump about 3-5 feet.

Based on the estimate, have your scientist put one object or color in one square on the graph paper to the right of the "me" label. If the jumps were closer to two body lengths, s/he should add two objects or color in two squares on the graph paper.

Now, have your scientist add some super jumpers to the chart, either by adding names on slips of paper and lining up objects to show how many body lengths or by coloring in squares on the graph paper. Figure 1 shows an example of the first few animals.

Grasshopper	20 times own body length
Kangaroo rat	45 times own body length
Jumping spider	100 times own body length
Tree frog	150 times own body length
Flea	220 times own body length

Figure 1: Sample chart of jumpers.



When your scientist has completed the chart, ask him or her what s/he notices about it. Did the distance that any of the animals could jump surprise your scientist?

Sometimes, it can be hard to imagine what it really means if a kangaroo rat can jump 45 times its body length. Share the following table with your young scientist and see what surprises him or her now! Who would s/he want to recruit for an Olympic team?

Animal	**Distance**	**If the animal were the size of a 4 foot human, it could jump over**
Grasshopper	20 times own body length	1-2 full size school buses
Kangaroo rat	45 times own body length	4 full size school buses
Jumping spider	100 times own body length	8 full size school buses
Tree frog	150 times own body length	13 full size school buses
Flea	220 times own body length	19 full size school buses

Jump Like A…

Share the following with your young scientist. It is not all about jumping long distances. After all, the Olympics also has events like the high jump, where the height of a jump is important, or gymnastics, where it is a benefit to jump high and far at the same time. The natural world has some incredible jumpers. Some jump high. Some jump covering long distances and some do both!

Now have your scientist see how high s/he can jump. Find objects of different heights that your scientist can jump over. Have your scientist jump over each object. Have him or her measure the highest object that s/he can jump over.

If there is more than one scientist available, they can also have one person jump as high as possible next to a wall and have the other scientist place his or her hand on the wall to mark the height of the jump. Then, together they can measure the height of the jump.

Ask your scientist to compare his or her jump to the height some animals can jump.

Animal	**Height**	**If the animal were the size of a 4 foot human, it could jump as high as**
Rabbit	5 times body height	20 feet: about the height of a giraffe
Cougar	8 times body height	32 feet high: almost as high as the top of a football goal
Klipspringer	10 times body height	40 feet: the height of a telephone pole
Froghopper (insect)	70 times body height	280 feet high: the height of a 23 story building
Flea	150 times body height	600 feet: the height of the Washington Monument

Jumping Challenge

Ask your scientist what rules he or she would make if the Olympics included a flea high jump contest.

See if your scientist can jump as many times in a row as a flea—30,000 times. Have your scientist jump and count each jump until s/he runs out of energy.