

## Fun Frog Activity – Frog Jump

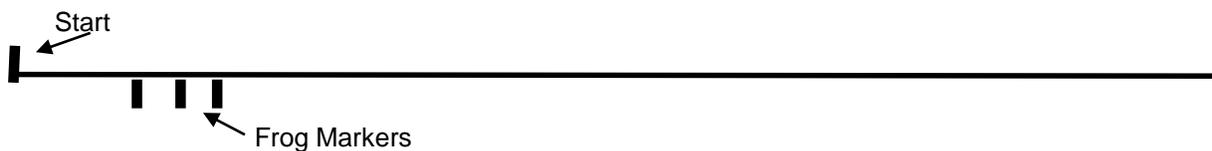
Here is an opportunity for your students to compare their jumping abilities with those of a frog. Both humans and frogs have large, strong thigh muscles. However, frogs can jump much greater distances relative to their small size than a human can. For example, the frog which holds the world record for longest jump is the South African sharp-nosed frog. Although it is only 3 inches long, it can jump over 130 inches in one leap, which is 44 times its body length. To equal that, a 5 foot tall person would need to jump 220 feet in one leap!!! Frogs need to jump quickly to escape predators and catch food. This activity will help your students explore the difference between human and frog anatomy, and how anatomy affects the distance you can jump.

### Materials Needed:

- Pictures of American bullfrog, northern leopard frog and South African sharp-nosed frog with the average size of each frog on the picture
- Tape measure or yard stick
- 100 feet of rope, marked at 5-ft intervals with tape
- Masking tape and markers

### Set Up:

Prepare the rope and lay it out as straight as possible. Use the masking tape and markers to create a “Start” line at one end, then mark the distance from the “Start” line that each frog can jump.



### Instructions

First introduce your students to these three frogs by showing them a picture and size of each. How do they compare in size? Have them look closely at the legs. How do they compare to each other? How do they compare to a human's legs? Have them list ways human and frog legs are the same and different in size, shape, the way they move. Can they predict which frog would have the longest jump?

Next show the students the distance each frog can jump. Where their predictions correct? Have each student go to the “Start” line. Ask them if they can jump as far as the frogs? Then have the student jump, then measure and mark the distance with masking tape. Have the students explain how their jump compares to the distances the frogs can jump. Why are they different?



American Bullfrog

Length of frog = 20.3 cm / 8 inches  
Maximum jump = 213 cm / 83 inches  
Jump/Body Length Ratio: >10



Northern Leopard Frog

Length of frog = 20.3 cm / 5 inches  
Maximum jump = 162.5 cm / 64 inches  
Jump/Body Length Ratio: 13



South African Sharp-Nosed Frog

Length of frog = 7.6 cm / 3 inches  
Maximum jump = 334 cm / 131 inches  
Jump/Body Length Ratio: 44

Next have students calculate the ratio of the length of their jump to the length of their body (their height). They can now compare this to the jump/body length ratio of the frogs. Have students determine how far they would need to jump to compete with a frog if it were the same size. So if a student is 50 inches tall, they would need to jump 10 times that to compete with the bullfrog.

Finally, have the students try to jump from a squatting position, the way a frog jumps. Is it easier or harder to jump from this position? Is there a difference in how far they can jump? Have the students finish with another discussion about the anatomy of the frogs legs and how it compares to a human.