**Catching Pacific Lamprey at Willamette Falls Math Grade 4**

**Overview:**

Lamprey were an important food source for many Native American tribes in Oregon, particularly those in coastal areas and along the Columbia River watershed, and they continue to be an important link to traditional cultural practices. Like salmon, lamprey are anadromous, meaning they are born in fresh water, spend most of their life in the ocean, and return to freshwater to spawn. Sustaining the population of lamprey has always been important to Native people, and one way to do that is by not overharvesting. In previous generations this was not a problem, but hydroelectric dams, pollution, and destruction of habitat have all led to a drastic reduction in the lamprey population over the past century. Today, tribal biologists use both traditional and Western scientific methods—such as fish tagging—to protect and preserve lamprey, salmon, and other aquatic species. Using this real-world context, this lesson engages students in a mathematical process to determine the weights of lamprey using a fraction with each fraction having the same denominator, organizing the lamprey on a number line from lowest to highest weight, and comparing the weights of lamprey in decimal format.

**Background for teachers:**

There is a wealth of information available on the Pacific lamprey and its importance to Native American tribes in Oregon. When teaching the lesson, consider including the following key ideas:

• Lamprey were an important food source for many tribes in Oregon and particularly those living along the coast and the Columbia River watershed.

• Lamprey were also important for trade and were used in ceremonies.

• Lamprey are a type of anadromous fish, but are often mistaken for eels because of their long, relatively round shape and sucker-like mouths.

• The oil of these fish was also used by some tribes for medicinal purposes or for hair grease.

• Several tribes in Oregon continue to harvest lamprey for food and for use in traditional ceremonies.

**Learning targets:**

• I can use decimal notation for fractions with denominators 10 or 100.

• I can compare two decimals to hundredths by reasoning about their size and recognize that comparisons are valid only when the two decimals refer to the same whole.

• I can record the results of comparisons with the symbols (greater than/less than, equal to) and justify the conclusions, e.g. by using a visual model.

**STANDARDS**: Oregon Math Standards **4.NF.6** – Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram. **4.NF.7** - Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with symbols (greater than/less than, equal to) and justify the conclusions, e.g. by using a visual model.