

Atlatl Antics

adapted from *Poverty Point Expeditions*

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Recommended grade level: 3 – 8

Sunshine State Standards: MA.A.4, MA.B.1, SC.C.2, SS.A.1, SS. B.2

Time required: 45 – 60 minutes dependent on group size

Setting: open field, approximately 50 meters long

Summary: students will use the scientific method to test the difference between the distance a dart can be thrown by hand versus the distance a dart can be thrown with an atlatl

Objectives

Each student will use the scientific method to experiment, gather and record data, analyze results, and draw conclusions about the effect that lengthening the throwing arm has on the distance a dart can be thrown.

Materials

Each group should have the following:

1 atlatl

1 dart

1 chart for measuring distance thrown by hand

1 chart for measuring distance thrown with an atlatl

1 clipboard

1 colored pencil

(To avoid confusion, it is suggested that the fletching on the darts and the colored pencils match and are a vivid color like red, blue, green, or orange.)

For the field:

8 wooden stakes marked in increments of 5 meters (5-40)

Mallet

Tape measure in meters

Background

Before bows and arrows, native hunters were using a devise called an atlatl. An atlatl is a stick with a hook on the end. The dart lays on the atlatl with the back end of the dart (feathered end) fitting into the hook. The user would lightly pinch the dart with their thumb and pointer finger, the rest of their fingers wrapped around the atlatl. Using a motion similar to casting a rod and reel, the user will throw the dart, releasing the atlatl at just the right moment to follow through.

Atlatls varied in size, shape, and complexity. Some had bone hooks, mostly made of deer bone. There were various stones tied to the atlatl to provide extra force. We

suggest using a simplified version for this exercise because it is more cost-effective and durable.

Procedure

1. Mark an open field in increments of 5 meters, from 5 to 40.
2. Divide group into three or four teams. Each team should be assigned a color – red, blue, green, orange. The colored pencils for the graphs and fletching on the darts should match their team’s color designation. This will make it easier for the students to know which dart is theirs – since they do not always go straight.
3. Each team should get a clipboard with their color pencil and two charts – one to measure the distance the dart is thrown by hand and with an atlatl.
4. After everyone has written their name on the chart, the first member of the team steps up to throw their dart by hand. The remaining members of the team need to stand back as far as possible so they are not accidentally injured.
5. The team member throws their dart. There is no right or wrong method – just as long as it goes forward. Once the field is safe, the team member walks out to retrieve their dart – noting the approximate distance that it traveled.
6. This distance is recorded on the chart.
7. The next person steps up and this process repeats until everyone has had their turn.
8. After all team members have thrown a dart by hand and recorded the distance, a quick demonstration of the atlatl is performed.
9. It is suggested that you give the teams a practice round with the atlatl.
10. After everyone has tried to use the atlatl at least once, get the teams back in order to throw for distance.
11. The same sequence from steps 3 through 6 are repeated, until everyone has thrown a dart with the atlatl and recorded the distance on the chart.
12. The teams then get to look at the finished charts and answer some observation questions.

Closure

Looking at the two charts, is there a difference in average distance that the dart flew when thrown by hand and thrown with an atlatl? What could account for this difference? (For those students who were not quite as successful as some “hunters,” they can be assured that using an atlatl is a skill.)

Would it have helped to have a weight tied to the atlatl? Why?

Teacher Tips

Safety first – these are weapons and should be treated with a certain amount of caution and respect. As long as you have an adult leading each team and they are in charge of the field, you should not have any injuries. Make sure that all team members not throwing stand back from the field. Do not let students run or play with the darts.