

Valerie Luscher – Calapooia Middle School

Task name - Princess Dido

Core Math – Understanding maximum area

Strand – Measurement; grades 6-8

Level – Middle/High

Task Implementation: Compare/contrast the area of various shapes to maximize space.

[Valerie.Luscher@albany.k12.or.us](mailto:Valerie.Luscher@albany.k12.or.us)

### **Princess Dido**

Once upon a time, according to an ancient Greek legend, Princess Dido’s brother, Pygmalion, murdered her husband. Dido fled with some loyal supporters to the coast of North Africa near modern Tunis. She asked the local king to sell her some land so that she could build a new city there. When he said no, she won him over by saying, “Just sell me the amount of land that I can enclose by the hide of an ox.” As soon as the king agreed, Dido told her servants to tan an ox-hide and cut it up into long, very narrow strips. Then she sewed all the strips together to make one very long leather strip. With this strip, she formed an area large enough to enclose land for building the new city of Carthage. What shape did Dido use to maximize her area of land?

Getting started;

Take a piece of string and tie the ends together. Put your continuous string on a table and push it around into different positions. What shape should you make your string if you want to enclose the largest area possible inside the loop?

Exploration Challenge;

With nothing but scissors, can you cut an ordinary 3 x 5 index card into a circle big enough to step through?