

## **Pacific Northwest basket weaving**

Read through the cultural background and answer the following questions

1. Name four different types of baskets.
2. What other forms of artwork do the Tlingit have?
3. What were Tlingit baskets used for?
4. What is false embroidery?
5. What are the two main characteristics of the designs utilized in the baskets?
6. What is reflection symmetry?
7. What is rotational symmetry?
8. What is four-fold symmetry?
9. What evidence is there in native American culture that displays the importance of four-fold symmetry?

10. How does the traditional basket designs relate to Math?

11. What is the most common material used in Tlingit baskets?

12. Why are the number of vertical warps always even?

### **Tutorial: How to use the Virtual Basket Weaver**

You need to know how to use the coordinate system and plotting points of the system. Each point has an address called an ordered pair  $(X,Y)$ . The point  $(3,4)$  tells us to go 3 units to the right and 4 units up on the coordinate plane. The point  $(-3, 2)$  tells up to go three units to the left from  $(0,0)$  and 2 units up.

It is the same with the basket weaver. The point tool places a single weave. So if you say  $(4, -2)$ , the program will place your weave at that address  $(4, -2)$ .

A line of weaves has two endpoints. So if you use this feature and say  $(0, 3)$  and  $(0, 7)$ , it will tell the computer to put a line of weaves vertically from where  $y=3$  to where  $y=7$ . You will have weaves at  $(0,3)$ ,  $(0,4)$ ,  $(0,5)$   $(0,6)$  and  $(0,7)$ .

The triangle and rectangle feature uses the vertices (corners) of the design and fills in the middle of the triangle or rectangle.

Iteration is a mathematical term meaning to build on the one previously built. So for example, you could start with

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In this pattern, you have one weave in three rows and then it builds on itself and the next three rows have a weave placed on each side of the “alone” weave making it a row of 3. After those three rows have been made, the next three rows will have five weaves and so on.

**Look up Pascal's Triangle on the internet.**

**What is it? Is it an iteration?**

There are also tools for enlarging your grid and for thread color choices.

### **Creating Your Basket designs on the Virtual Loom**

Remember when you enter the coordinates, you must click on the tool to see the weave. For example, if I am placing one weave, I would use the point tool. I would enter my coordinates and then click on the word point. The weave should appear on the coordinate plane.

NOW COMES THE FUN! Create awesome basket designs.