Interactive Trail *Draft 4*

The trail begins at the Ela Sanctuary Information Station

Answer all questions in your notebook.

Exercise 10

Station 6

Acre Makers

The **acre** is one of the basic unit of land measurement. It is important to have some idea how much land is enclosed in one acre. Follow the directions below to outline approximately one acre of land.

Part 1

1. Use your compass to mark out the area described below. You may need to step around trees to continue in a straight line but try to keep your measurement as straight as possible. **If you find something blocking your progress that could be harmful to you, do not proceed.** *Questions 1 - 7, (4.102, 5-1.05, 5-4.22)*
2. Starting near post # 6, place a clipboard or some other object at the starting point and walk 100 steps in a direction of 0°.
3. Walk another 100 steps in a direction of 90°. Use another clipboard to mark this point.
4. Walk another 100 steps in a direction of 180°. Use your backpack to mark this point.
5. Walk another 100 steps in a direction of 270°. This point should be marked, as you should be back at, or within a few feet, of your starting point.
6. You will have outlined the area covered by one acre of land. If one pace equals 2 feet, determine the number of feet on one side of acre.
7. The side of one acre is actually 208 feet. Assuming that each step you took measured 2 feet, decide whether the acre you measured was slightly smaller or slightly larger than an acre measured with a tape measure to be exactly 208 feet.

Part 2

1. Most of the cottonwood trees in the acre are about the same size. Why do you think they are all about the same size? *(5-1.08)*
2. What do you think caused the cottonwood seeds to all germinate (start to grow) at the same time? *(5-1.08)*
3. In your pack you will find a **crosscut section** of a cottonwood tree that was growing in this area. Assuming that the cross-section you have was cut this year, count the rings and determine how old the trees are. *(5-1.08)*
4. Assuming it was a flood that started the cottonwood trees to grow, in what year did a flood occur in this area?

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Part 3

1. Count the total number of trees in the acre you outlined?
2. What is the **density** of cottonwood trees per acre in this area? (density = trees/acres) *(4-7.04, 5-7.05)*
3. The area covered by the small cottonwoods has been measured and they cover about 4 acres. Estimate the total number of small cottonwoods in the area.
4. Can you find any animal signs in or around the cottonwoods? (nests, feathers, droppings, woodpecker holes, insect holes, cocoons, spider webs, leaves that have been eaten, teeth marks, other signs) If so, list the signs you notice and you may wish to include them in the list of signs found under exercise 3.

Go to the next interactive post or follow the instructions of your teacher.

Don't forget to look for animal signs as you walk to the next post.