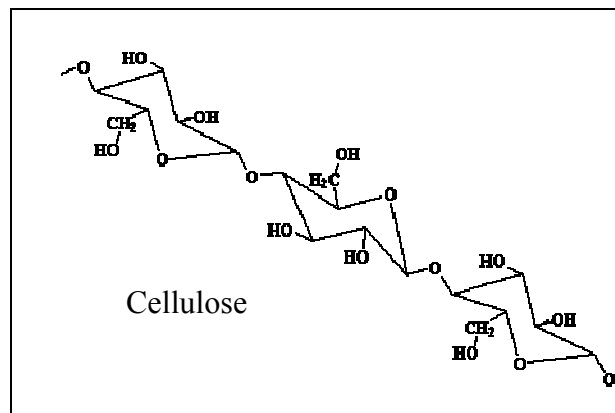
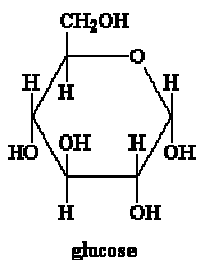


# What to Wear?

Imagine this scenario. School has just let out and you are about to go to practice (whatever you choose). So you reach down into your gym bag and get your old cotton t-shirt and some shorts. As you get dress you think about all the hard work you are going to do in the upcoming moments. You think about how much your going to sweat and how good of a workout this is going to be, right? ... Wrong. Did you know in sports cotton is the enemy. Let's discover why cotton is not the wisest choice for athletic apparel and what is!



Cotton is a natural polymer named cellulose, which is made of repeat units of glucose. Glucose is a sugar and therefore cellulose is a polysaccharide (poly meaning many and saccharide many sugar). Here is a glucose molecule (monomer) and a cellulose molecule below.



Today we will be observing some websites about cotton and Under Armour® and their properties. We will also make some microscope observations about them both. But first

let's see how the companies that make these materials describe them.

Search materials on the company websites

<http://www.cottoninc.com>

- Click AG Research
- Go to Cotton Sustainability (view and read the slide show)
- You may want to search other interesting facts about cotton

[www.underarmour.com](http://www.underarmour.com)

- Click about under armour (bottom of page)
- Click about under armour (left side) and read
- Click "Tech Specs" (left side) and read

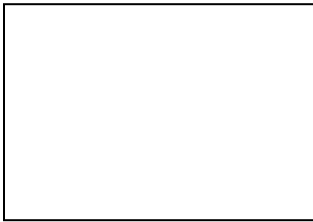
Name \_\_\_\_\_

Observations:

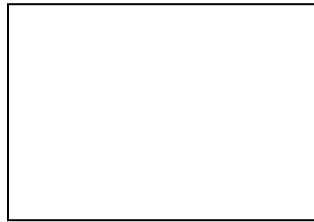
It's kind of obvious that Cotton t-shirts and Under Armour® shirts are different because of the materials they are made up of. Let's look at the materials under the microscope and see if we can see the difference between the materials. We will make copious observations as we learn the technology behind sports clothing.

Sketch images of cotton at 40X, 100X, and 400X using the compound light microscopes provided.

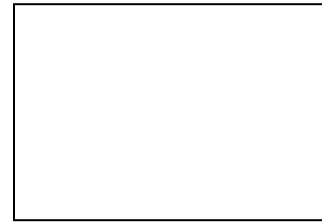
Cotton:



40X



100X



400X

Under Armour®



40X



100X



400X

Follow Up:

1. What are wicking fibers? (Use whatever source you want to answer this question)
2. Visually, how are they different?
3. Aside from t-shirts use the internet to find some other application of wicking fibers?
4. Design an experiment to test the wicking properties of cotton vs. polyester. Be sure to include all the details and how you would prepare samples and amounts you would use.