**Feel the difference (15 min)**

**Summary:** This is the beginning of the uniform day where we’ll be learning about different types of fibers.  Pass out a collection of different types of clothing/fabric samples and ask students to sort them as either made of either natural or synthetic fibers.  They should explain why they made the choices they did- what do they think makes a sample one or the other?

**ILOs:**

1. Develop a definition of natural vs synthetic fibers
2. Realize how challenging it is to determine one from the other

**Equipment list:**

* Sample fabrics (ideally 5 different samples per team, it’s OK if there are two of the same as long as they visually look a little different --> can just buy 5 different jerseys/shirts and cut pieces from them)
* Some potential fabric options
  + Cotton
  + Hemp/linen
  + Nylon jersey
  + Polyester jersey
    - Elastane (spandex)
    - Have samples of different kinds of textures, but same material chemically
  + Cutout from the logo area (polyutherene)
  + Cotton polyester blend
* Testing
  + Water in cups for each group
  + Lighter (depending on safety regulations for the group)
  + Scissors

**Intro:**

The clothes that we wear everyday are made out of a variety of different kinds of materials. Many of them are either of natural fibers, some of them are synthetic fibers, some of them are a combination of both. Choosing the type of material comes down to a variety of different factors - price, texture, accessibility, moisture wicking, stretchiness, durability, etc, etc. For athletic clothes, including clothing for soccer, the factors under consideration are often in the realm of wanting to keep the wearer cool (water resistant and moisture wicking), to be stretchy, to be durable.

**Procedure:**

* Discuss things they consider when choosing fabrics for soccer jerseys, for shorts, for socks, etc
* Ask them to name different kind of materials
  + Are they natural or synthetic?
  + Are there characteristics that natural / synthetic materials share?
* Give each group a selection of fabric samples (make sure there is at least a cotton, polyester, nylon, and a blend sample)
* Ask them to feel the fabrics, try to tear them, drop water onto them to try and figure out if the material is synthetic or natural
  + Group the natural ones together, group the synthetic ones together
* Additional tests
  + Flame tests
  + Puncture test (like with a needle)

**Discussion questions/debrief:**

* What characteristics do you think natural materials have? What about synthetic materials?
* Are most of your clothes natural or synthetic materials?
* Are most soccer-related clothing made of natural or synthetic materials?
* If you were a soccer jersey designer, what new material properties would you want your jersey to have?

**Lab handout needed?**

No, slides provided