

**Talcott Mountain Science Center**

**Topic** Bioengineering

**Home School Science**

**Instructor** Pellino

**Home Links**

**Date** 27 Sep 24

**Here's some information about the activities your student did with us. Links at the bottom will help you explore further. Enjoy!**

### **What did we do (content, skills, data collection)?**

Introductions -  
Engineering basics,  
Engineering disciplines - EE, ME CE, Civil, Genetic, Bio  
Bio-engineering - inside out (biological solutions) and outside in (devices for aid)  
Concrete examples  
- bicycles - interface, gearing, structure, accessories  
- shoes (we will build one)  
The heart as a device  
- cardiac anatomy  
- pulse & pressure

### **How did we do it (materials & methods)?**

Concrete examples  
- demo on a real bike- shifters, derailleur, brakes, gloves, saddles, shoes/cleats, lights, bells  
- shoes - survey of the types and functions of the ones we all had on in class  
The heart as a device  
- cardiac anatomy - guided diagrams  
- stethoscope - self auscultation  
- self pulse measurement  
- self (auto cuff) blood pressure measurement

### **Where can we find out more?**

Bicycling Science 4th Edition by David Gordon Wilson (PDF linked in this site)