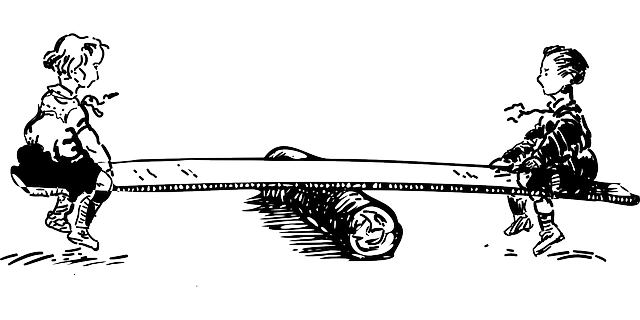
**BONES AS LEVERS AND JOINTS AS FULCRUMS**

**So, what do torques and rotation have to do with building a prosthetic hand?**

In our body, our BONES are rigid bodies that act as LEVERS. Levers are a type of simple machine—a machine to help make work easier.

A **lever** is a **rigid body** that **rotates or pivots** around a **fulcrum** (axis of rotation). A classic example of a lever is teeter totter (see image below). Engineers actually sort levers into three classes (types).



**Effort (applied force)**

**Load (Resisting force)**

**Fulcrum (Axis of Rotation)**

***Sketch the “Classes of Levers” organizer in your notebook.*** Use the web links to complete the “classes of levers” graphic organizer (below), and then answer the questions.

Link 1: <http://www.technologystudent.com/forcmom/lever1.htm>

Link 2: <http://waergo.com/JES/BodyBasics.htm#Lev>

Link 2: <http://www.slideshare.net/lenfaunk/joint-biomechanics> (begin on slide #12)

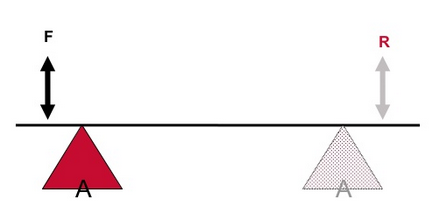
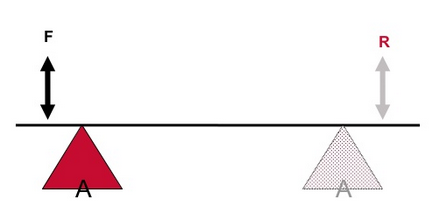
**CLASSES OF LEVERS**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **CLASS 1** | **CLASS 2** | **CLASS 3** |
| **Description** |  |  |  |
| **Sketch** |  |  |  |
| **Real-life Examples** |  |  |  |
| **Example(s) in the Body** |  |  |  |

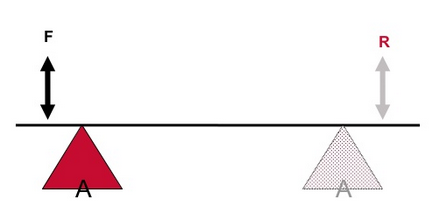
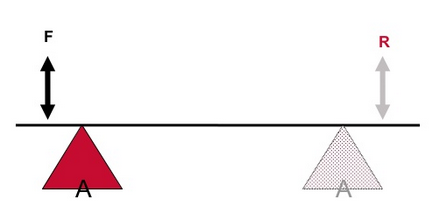
**Q1: What is a lever?**

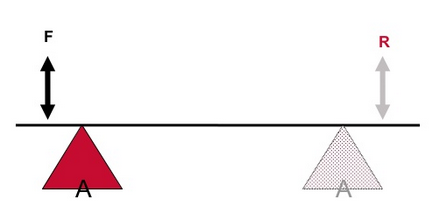
**Q2: What is the purpose of a fulcrum?**

**Q3: How are levers used within the body?**

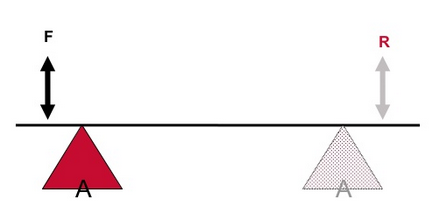
**** **Q4: Think about Class I levers. In which of the following cases will the person need to apply the LEAST force in order to produce a torque? Explain your reasoning.**

**A B**

****

****

**C**

****