

## Brazilian Jiu Jitsu and Physics

**Inquiry Question: How Does a Brazilian Jiu Jitsu practitioner's understanding of physics make him or her more effective?**

*Concepts:* Load, Torque, Lever, Force, Center of Mass (Gravity), Turning Force, Impulse, Fulcrum and Unbalanced Forces.

**Assessment:** Create a blog post that uses what you saw answer the fundamental Inquiry Question. Your post should have 4 parts:

1. Introduction (a brief overview of Brazilian Jiu Jitsu, a framing of the with the question [why we are doing this] and a definition of each of the terms)
2. Choose 2 of each of the technique areas:
  - a. Take an image of each technique (Control, Joint Lock and Choke)
  - b. Draw on each of the technique image to show the required physics concepts (see each section)
3. Answer the question using what you have learned.

**Basic Principles of Brazilian Jiu Jitsu: Why does Jiu Jitsu follow this progression?**

1. Get your opponent to the ground



2. Get past your opponent's legs (or attack their legs)



or

3. Control their hips and shoulders (or their legs)



or

4. Add a submission



**Guard/Top/Side control – Breaking base and Posture**

Take several images of control positions – Can you determine the Center of Mass, Center of Gravity or any other unbalanced forces? Use a program to draw all the above items on the image.

- Guard



- Top Mount



- Side Mount

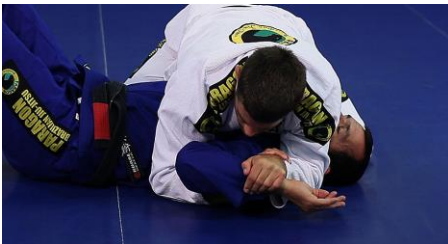


Take Several Images of joint locks – Can you determine the lever, fulcrum, load, torque and turning force? Use a program to draw all the above items on the image.

- Armbar



- Americana



- Kimura



- Straight ankle lock



## Anatomy of a Choke

Take several images of chokes – Can you determine the lever, fulcrum, load, torque and turning force?  
Use a program to draw all the above items on the image.

- Triangle



- Rear naked



- Guillotine

