Today:

Torque

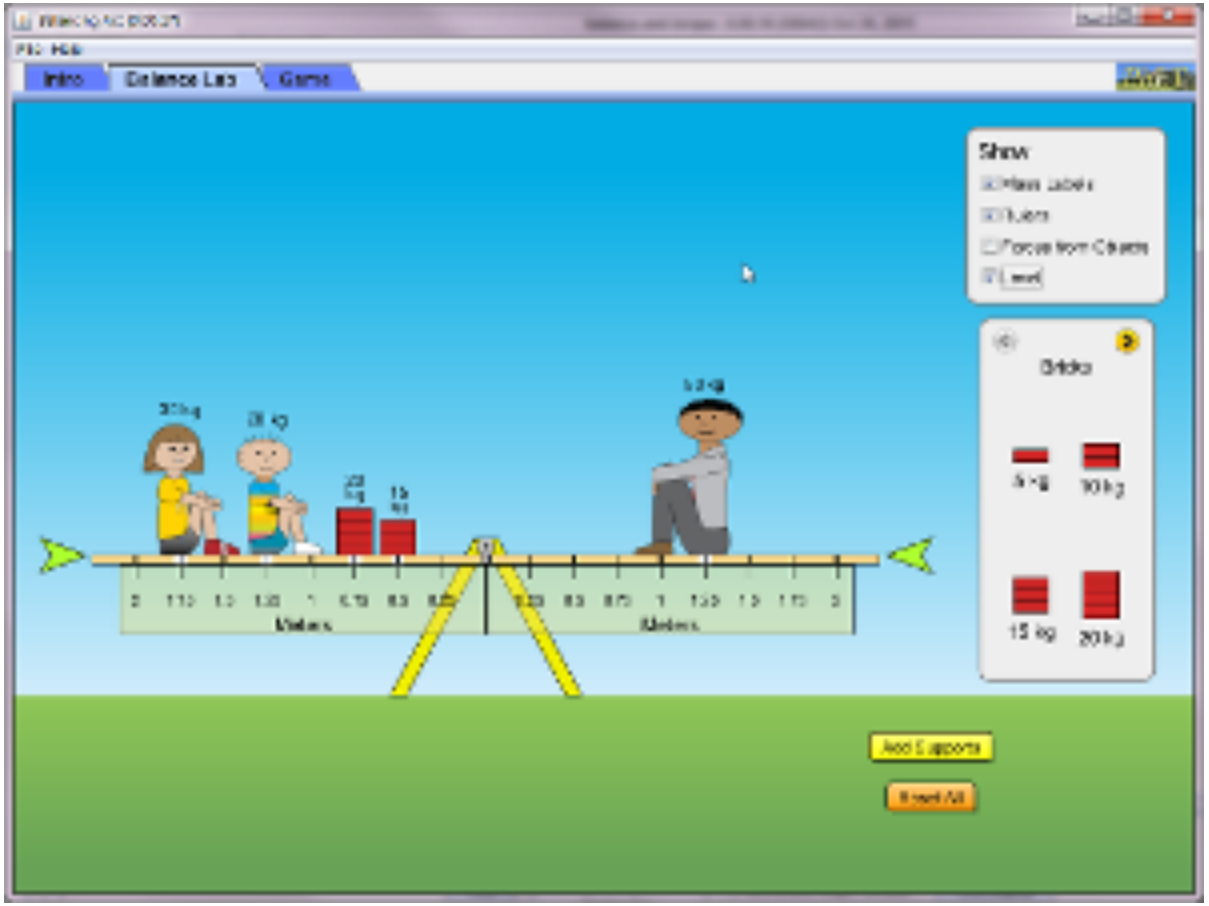
Irish Phrasebook

Culchie/Bogger – Someone who is from the rural parts of the country

Announcements

- Exam 1 on Monday 5th
- Reading question for Ch 4.4-4.6 due Tuesday 6th
- LON-CAPA Ch 3.4-4.2 homework is due Friday 9th

Investigating Balancing Conditions



http://phet.colorado.edu/en/simulation/balancing-act

When you look at the hobbit door of Bag End, the outside has the doorknob in the center of the door, the inside has the doorknob on the edge. Which would be easier to open?

A. The outside because pushing the door is easier than pulling the door.
B. The inside because the knob farther from the hinge means I have to apply less force to get the same amount of torque.
C. They are the same because the door weighs the same.
D. They are the same as long as you push/pull with the same force because the torque depends on the force applied.

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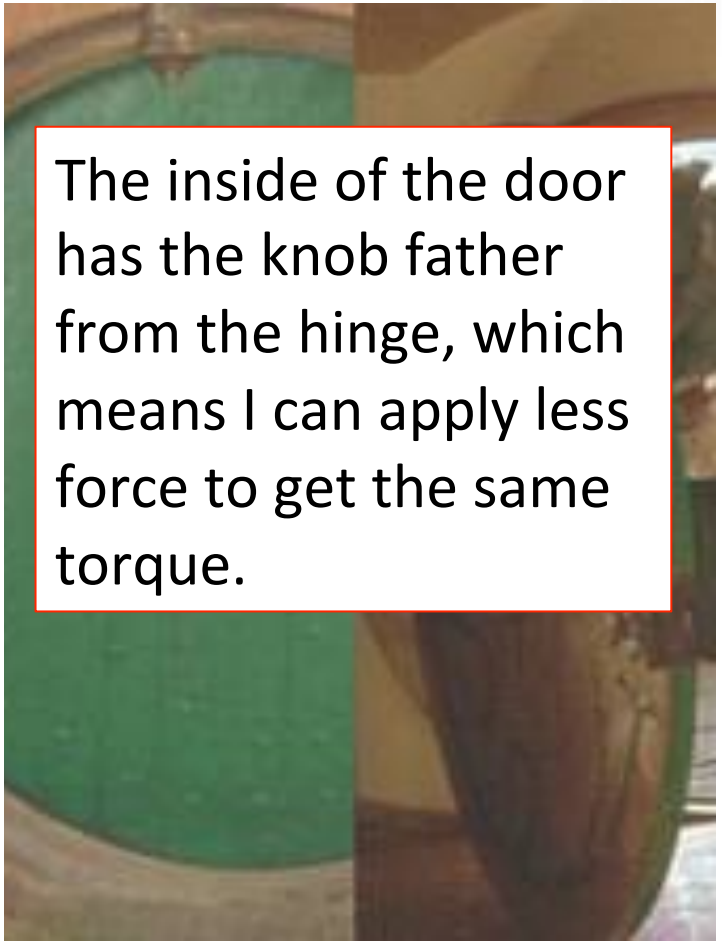
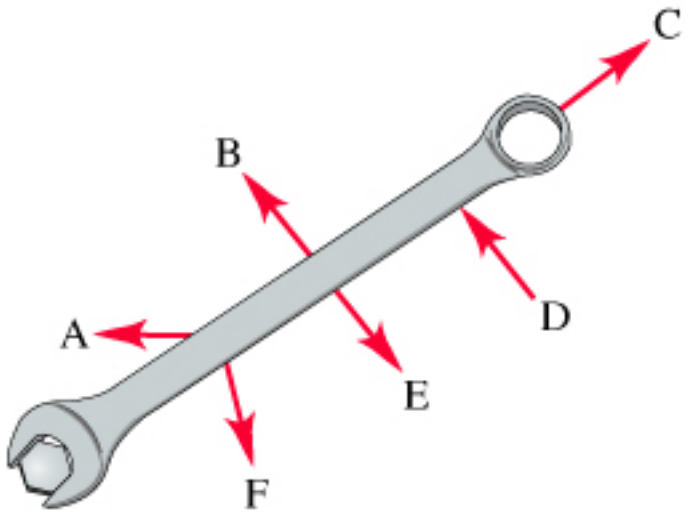


The wrench in the figure has 6 forces with equal magnitudes acting on it. Rank these forces (A through F) based on the magnitude of the torque they apply to the wrench, measure about the axis centered on the bolt.

A. A, F, E=B, D, C
B. B = E, D, F, A, C
C. D, E=B, F, A, C
D. None of these
E. I don't even know where start



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The force applied at the farthest distance will be the largest torque (D), then E&B because they are farther than F & A.
F will be bigger than A because it's angle is more perpendicular than A. C will be 0 because it's completely parallel to the moment arm.

A person doing leg lifts, raises one leg to an angle of 30 degrees. She has a 9kg weight attached to her ankle .84 meters from her hip. What is the torque on her leg due to this weight?

A. 64.4 Nm
B. 37.3 Nm
C. 74.8 Nm
D. 0 Nm
E. Something else