

Work and Energy

Note Title

10/11/2011

Work: Displacement as a result of Force Applied.

$$W = F \cdot d \cos \theta$$

displacement



$$W = F \cdot d \cos 0$$

$$W = F \cdot d$$

FORCE



$$W = F \cdot d \cos \theta$$

friction



$$W = F \cdot d \cos 180^\circ$$

$$W = -(F \cdot d)$$

NOT WORK:

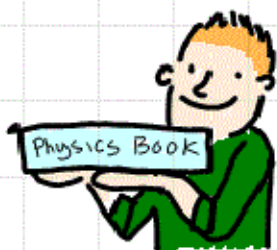
There will be questions where work = 0. You must understand when work is not done.



$$W = F \cdot d \cos 90^\circ$$

$$W = 0$$

Who Does the work?



A student lifts a book

Student does \oplus Work onto book

A student Lowers a book

Student does \ominus Work onto book

this is because the book is doing the work!

If we include both up and down motion, The total work on the book is **ZERO!**

However, if we just talk about the student, the work is **NON-ZERO**