This is the energy song Sing it once and it won't be long (before you) know all three mechanical energies (2x)We're about to learn, be prepared C G G G Kinetic energy is  $1/2mv^2$ Work and energy in Joules Gravitational Potential Energy The Moon's is lowest at perigee The equation is mgh m the mass, g is 9.81 F C  ${\tt h}$  is the vertical height Above the, gotta set the zero line PE of the Elastic Kind G  $1/2kx^2$  is how it's defined K's the spring constant, and don't be a cheater It's got units of Newtons per meter С Know this in addition  $\mathbf{x}$ 's is the displacement from equilibrium position Work is Fdcos(theta) F the force for all your data Objects moves through displacement d I think that we can all agree (they're only) Two vectors in the work equation The angle between the two of them Be careful, include  $\begin{array}{cccc} & \text{Am} & & \text{E} \\ \text{Only F d magnitudes} \end{array}$ What happens if friction is not there? Flying through the vacuum you can breathe, called F  $\mbox{\ \ \ } \mbox{\ \ \ \ } \mbox{\ \ \ } \mbox{\ \ \ } \mbox{\ \ \ } \mbox{\ \ \ \ \ } \mbox{\ \ \ \ } \mbox{\ \ \ \ \ \ } \mbox{\ \ \ \ \ \ } \mbox{\ \ \ \ \ \ } \mbox{\ \ \ \ \ \ } \mbox{\ \ \ \ \ \ \ \ } \mbox{\ \ \ \ \ \ \ } \mbox{\ \ \ \ \ \ \ \ } \mbox{\ \ \ \ \ } \mbox{\ \ \ \ \ \ } \mbox{\ \ \ \ \ } \mbox{\ \ \ \ } \mbox{\ \ \ \ \ } \mbox{\ \ \ \ } \mbox{\ \ \ \ \ } \mbox{\ \ \ \ \ } \mbox{\ \ \ \ } \mbox{\ \ \ \ \ \ } \mbox{\ \ \ \ \ } \mbox{\ \ \ \ \ \ } \mbox{\ \ \ \ \ \ \ \ \ \ \ } \mbox{\ \ \ \ \ \ \ \ \ } \mbox{\ \ \ \ \ \ \ \ \ \ } \mbox{\ \ \ \ \ \ } \mbox{\ \ \ \ \ \ } \mbox{\ \ \ \ \ \ \ } \mbox{\ \ \ \ \ \ \ \ \ } \mbox{\ \ \ \ \ \ \ \ \ \ \ } \mbox{\ \ \ \ \ \ } \mbox{\ \ \$ All the energies are preserved (because) F  $\qquad$  C Mechanical energy is conserved Please, don't disappoint



Palmer 0144 The Energy Song (with Chords).doc

This is the energy song

 $$\operatorname{\mathtt{Am}}$$   $$\operatorname{\mathtt{E}}$$  Show your initial and your final points!

know all three mechanical energies (2x)

Sing it once and it won't be long (before you)