Physics Integration Lesson 6 – Physics and Discernment

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Our primary goal for studying physics is to glorify God by understanding the lawfulness of His creation and use it as wise stewards to serve others. However, there are numerous practical benefits for physics, one of which is discernment. What become crucially important, to anybody who spends considerable time studying physics, are conservation principles. The first one to be introduced in a physics course is conservation of energy. Energy is neither created nor destroyed, but transferred from one form and location to another. Although simple to state, it provides a profound power to distinguish between what is possible and what is impossible.

Given the ubiquitous nature of social media, we are often called upon to exercise discernment. Is this image/video faked? Were my tax dollars really spent to study that? Is this new invention too good to be true? In each case we need information beyond the post, tweet or steam to make a judgment call. With regard to new inventions, some offer a cheaper or even free means of generating energy in your home. When this statement is made, one should immediately be skeptical. While solar panels and wind turbines are legitimate and provide energy for 'free,' the initial cost of the product must be factored in when calculating the real cost of your energy.

What requires real discernment are a class of devices called perpetual motion machines. They come in all flavors and varieties and are no more useful than the snake oil of the 19th century. Just run a search on 'perpetual motion' at YouTube and you will find videos both defending and debunking these machines. Invariably these devices, if they are going to generate energy for free, will not work as advertised. Although a mechanical or electromagnetic reason can be given for its failure, even a physics novice can know the device will fail because it violates conservation of energy.

- 1. Find a perpetual motion machine online and describe how it is 'supposed' to work.
- 2. Some use conservation of energy as an argument for the existence of a creator. If the universe had a beginning, then there must have been a source for the matter and energy of the universe. Do you feel this is a strong argument? Why or why not.