CHAPTER 5

ACTIVITY 4: Walking Work and Power Calculated

Activity Objective:

Definition: Work is the product of a force and the distance through which the force acts. Simply expressed, work is force (pounds-Newton) times distance (the foot-meter); hence, the foot-pound or Newton-meter. **Work = Force x Distance**.

Power is defined as the rate of doing work or the rate at which work is being done.

$$Power = \frac{Work}{Time}$$

Materials: Chapter 1, paper, computer, printer, Internet Access

Procedure:

1. Work as partners or small teams
2. Time single team members walking around a series of 4 chairs in a circle or rectangle. Use their weight, distance and time to calculate their power or rate of doing work.

3. First using a bathroom scale to weigh each team member that will participate in the walking around the chairs.

4. Place four chairs in a pattern that you can measure the distance.
5. Next, measure the distance that each member will walk.
6. Using this data, you can calculate the work being performed for each team member walking around the chairs
   a. Work = Force (weight of each person x Distance)
   b. List each member and the work they performed in the three column table below.
7. Now time each member walking the same distance and calculate the power or rate of doing work.
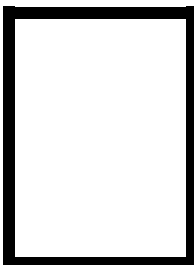
$$Power = \frac{Work}{Time}$$

   a. List each member and their power in the last column

Team Member	Work/Pound-Feet	Power/Watts

RUBRIC

4 World-Class Learner	3 Proficient Learner	2 Developing Learner	1 Emergent Learner
Learner at this level has gone beyond mastery of knowledge, skills, & attitudes described in project. World-class learner consistently exhibits high-quality performance.	Learner at this level has had opportunities to apply knowledge, skills, & attitudes of component of project. Proficient learner has mastered essential attributes, thus proving mastery.	Learner at this level has been exposed to & had opportunity to apply knowledge, skills, & attitudes of project. Developing learner may have only a few essential attributes to master before mastery.	Learner at this level may or may not have been exposed to knowledge, skills, & attitudes required by academic standards of the project.

1= Emergent Learner

2 = Developing Learner

3 = Proficient Learner

4 = World-Class Learner