Figure 2. Final Summative Assessment and Scoring Guide

Name:                                                    Date:                         Period:

Physics: **Lesson 5 Assessment**

**Why Does a Ball Start, Keep Going, and Stop?**

1. **What you will do:**  You will **explain** why a bouncy ball released from 20cm **drops, keeps bouncing, and eventually stops.**
   1. Assume the ball is bouncing straight up and down and does not roll.
   2. Describe the different energies involved.
   3. Describe the energy conversions and transfers that take place, highlighting that energy is neither created nor destroyed, but rather converted into different forms of energy or transferred.
   4. Relate what is happening to the ball with what is happening to the energy (e.g. As the ball is dropping, the gravitational energy...)
   5. Include the main energy conversions; where each energy is at a maximum; which energies are zero; which energies are increasing and which are decreasing; and the terms drop height, reference point.
   6. Describe what is going on the whole way through, not just at specific points.  [You can say that certain things repeat.]
   7. Include diagrams if you wish but **they must be made by you** and you have to explain them in your product.
   8. Use full sentences (unless you are doing the poem).
   9. Use your resources, including the lesson handouts and your composition notebook.

**2.  Product:** You may choose one from the following.

1. Instructional Document:  You give the information like a teacher or textbook would.
2. Play-by-Play:  Pretend you are a sportscaster and you are reporting on what is happening to the ball as it is happening.
3. Interview:  You are interviewing the ball or you are the ball being interviewed.  Give both parts either way.
4. Poem:  Here you can get more creative and not use full sentences, but make sure you include all the information and that the meaning is clear.
5. Take the ball’s perspective.  This can take the form of
   * 1. A diary (make sure your “dates” are not in days but seconds)
     2. A travelogue or letter

1. **Format:**  Select the appropriate format for your product from the choices below.  I will not be able to help you with technology.
   1. Paper document
   2. Electronic document
   3. Slideshow
   4. Video (no longer than 3 minutes)
   5. Other, but clear it through me first

1. **To improve your work, share and develop your product.**  Share your work with a significant adult or someone else.  You might want to show the ball bouncing in slow motion video linked to my web site or bounce the ball for them.  Explain elasticity.   Use the comments and questions they had to improve your product.

 5.  **Submit your work.**

**Scoring Guide for a Total of 50 points** [This was not included in the student’s version]:

* 14 points: describing energy changes and were energies were at a max and zero
  + GE max, zero, increase, decrease
  + KE max, zero, increase, decrease, increase, decrease (in the air and on the surface)
  + EE max, zero, increase, decrease
  + SE
  + TE table
  + TE ball
* 10 points: identifying and describing the 5 energy conversions (GE🡪KE🡪EE🡪KE🡪GE and KE🡪TE)
* 10 points: identifying and defining and/or giving the factors for the 5 main energies studied here
* 4 points: identifying the 4 main energy transfers (Ball to air on the way up and down, ball to table particles, ball to table vibrations, table vibrations to air vibrations)
* 8 points: 2 for explaining how the ball starts, 3 for explaining how the ball keeps going, and 3 points for explaining why the ball stops
* 4 points: explaining that energy is conserved