

# Balancing Act

Kindergarten

ELA Unit 2 – Tell a Story, 1-2-3

Text Connections: *Apples Up on Top* by Dr. Seuss

## Design Challenge Summary

**Challenge:** What will the students be required to do?

Design a working balance using items such as cylinders and rectangular prisms. (For example: cans and shoe boxes)

**Standards:** What standards are addressed?

### Science:

- NS.1.K.1 Record observations pictorially, orally, and in writing
- NS.1.K.2 Ask questions based on observations
- NS.1.K.3 Conduct scientific investigations as a class and in teams
- NS.1.K.4 Estimate and Measure length...using non-standard units
- NS.1.K.6 Collect empirical evidence as a class
- NS.1.K.7 Use age-appropriate equipment and tools in scientific investigations
- NS.1.K.8 Apply appropriate rules of safety related to daily activities
- NS.1.K.9 Apply lab safety rules as they relate to specific science lab activities

### Math:

Mathematical Practice Standards

- K.CC.1 Count to 100 by ones and by tens
- K.CC.4 Understand the relationship between numbers and quantities; connect counting to cardinality.
  - a. When counting objects say the number names in standard order, pairing each object with one and only one number name and each number name with one and only object.
  - b. Understand that the last number name said tells a number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
  - c. Understand that each successive number name refers to a quantity that is one larger.
- K.CC.6 Identify whether a number of objects in one group is greater than, less than, or equal to the number of objects in another group.
- K.MD.1 Describe measurable attributes of objects, such as length or weight.
- K.MD.2 Directly compare two objects with a measurable attribute in common. (greater than, less than)

### ELA:

- W.K.3 Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.
- W.K.8 With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
- SL.K.1 Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups
- SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood
- SL.K.6 Speak audibly and express thoughts, feelings, and ideas clearly.

# Balancing Act

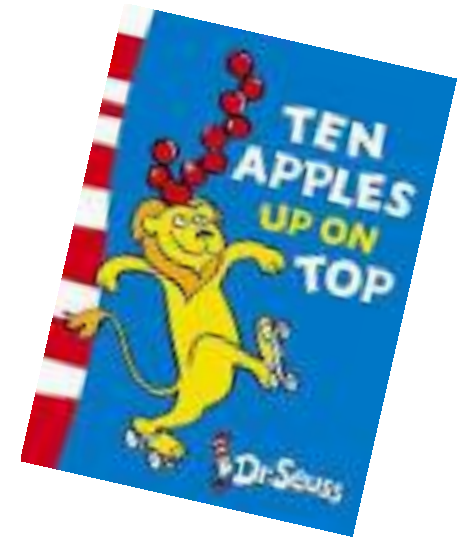
<b>Result:</b> What will students know, value, and be able to do as a result of the lesson? What's the big idea?
Know and apply the engineering design loop process. Work collaboratively on solving a problem. Measure and compare the weight of objects using a working student designed balance.
<b>Assessment:</b> What evidence will be used to determine student learning?
Did they build a working balance? Did they follow the design loop process? Did they have an understanding of greater than, less than, and equal to? Did they work collaboratively?
<b>Prior Knowledge/Experiences:</b> What prior content knowledge and skills will the students need?
Experiences with the Engineering Design Loop Process Connections to the Mathematical Practices Investigations/inquiry in Science Experiences with basic number sense Experiences with weight & comparison (heavier than/lighter than...greater than/less than)
<b>Summary/Connections:</b> How will this design challenge connect with new/future learning, other content areas, real world experiences, etc.?
This lesson will help students develop problem solving skills and collaboration skills that are essential in succeeding in the 21 <sup>st</sup> century. It will allow students the opportunity to transfer and apply skills from various content areas within one task.  As a summary activity, you could engage students in: <b>W.K.3</b> Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.
<b>Extensions:</b> Continue to explore using the balance to predict or determine the weight of various objects in the science station.
<b>Materials/Equipment/Preparation:</b> What materials and equipment will students need to successfully complete this design challenge?
Materials: Cylinder (ex: can) Rectangular prism (ex: cheese box, shoe box) Various objects for weighing (teddy bear counters, unifix cubes, coins, other classroom items & manipulatives)

## ADDITIONAL INFORMATION

The idea for the balance came from this blog: <http://www.kindergartenkindergarten.com/measurement/>  
Scroll down to the entry for 07/09/2012 – Math: Measurement-Weight. The Balance activity is Day 2. This blog also provides great ideas for investigating the ideas of weight.

<http://www.youtube.com/watch?v=OB-5s02AsUU> Ten Apples Up on Top – YouTube – song version of the story to the Jason Mraz tune of “I’m Yours”

# ***Balancing Act***



Design a working balance using a variety of items such as cylinders (can) and rectangular prisms (boxes).

## Group Supplies:

Cans

Boxes

Various objects to weigh