Teaching With LEGO

First Day Lesson

This lesson can be used with any class that is using LEGO (Robotics, Simple Machines, Story Starter, etc.) you would just have to modify it according to subject and age of students.

***Learning Target – I can use observation and manipulation to determine various properties of LEGO pieces.***

**Procedure – Explain to students the word LEGO is a corruption of two Dutch words “Leg” and “Godt” which loosely translated mean, “play well.”  LEGO is a tool that can be used to play with, to build, to design with, etc.  There is always a learning element to LEGO play.**

**Hand pairs of students the following (or have students retrieve these pieces on their own depending on how your classroom is organized): two #15 beams, two black pins, two grey pins.**

**Tell students they are going to use observation to discern the difference between the black and grey pin. They should look at them closely and make a list or chart (I let students choose) of at least five differences between the two pins. Give them about five minutes to do this part.**

**Students can share their findings with the class.**

**You may hear differences such as: the black one has slits at the top and bottom, the grey one is smoother, the black one has little bumps, etc.**

**Ask students to hypothesize what the differences are for and to again share their ideas with the class.**

**Now tell students they can use the beams and put them together with the pins to see if they can tell the functional difference between the two color pins.**

**The students will discover that the black pin is tight, not allowing the beams to move freely, while the grey ones are looser, allowing freer movement.**

**Students should write down paired words to describe the new differences they have discovered between the two pins. I have received such answers as: loose and tight, free and restricted, spinny and non-spinny, and other such pairs. Once I had a student use cemented and unrestricted!**

**Finally you want to work the students towards the term “friction,” as the black pin is actually called the friction pin.**

**I then show the students a scissor lift made out of #15 beams and gray pins as an example of a structure where one type of pin is desirable over another.**

 **Use this process of student play and discovery, observation and manipulation as a basis for all further lessons and work in this course.**

[**Please see my blog for some examples of this lesson.**](http://chowmiller.wordpress.com/2014/09/10/first-day/)

