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| Educ 475 – Lesson #2 Number Games |
| Lesson Summary This lesson wasn’t about number games. It was really about *numbers* and *games*. Although they were treated together these are two distinct elements. The first element – number – deals with the different roles that numbers play. First of all, a number is an idea or abstraction that represents a quantity. When used in this manner it is referred to as a **cardinal number**. But a number is also an element in a list (1, 2, 3, …). When used as such it is called an **ordinal number**. The third role is an **identification number** like a phone number, address, jersey number, etc. Although it seems pretty clear, which is appropriate when, consider the concept of number from a child’s perspective. Young children often combine cardinal and ordinal numbers. Take for example a child telling you how many cars there are. They may respond with “1, 2, 3, 4 cars.” Later they must learn to identify a symbol with a quantity – this is the merging of identification and cardinality. This is important if they are to be able to make comparative associations between numbers in a symbolic modality. Because of the power of the number line metaphor I propose that there is a fourth way to think of number – as a position on a number line, or **positional**.  The number games discussed: Nim, Khala, War, 10’s compliment all aid in children’s merging and distinguishing of the different roles of numbers. But this introduces a question of the role of games in teaching mathematics. I like to make a distinction between hands-on learning and minds-on learning. Hands-on learning is anything where the child is interacting with a non-abstracted environment (usually something tactile). Minds-on learning is when their mind is engaged in an appropriate mathematical activity in order to solve a problem situation. The difference is that it takes very little effort to create hands-on learning (and the verdict is still out on whether there is any real learning going on) whereas it takes a great deal of pedagogy to ensure that there is minds-on learning. This is usually achieved through one of two means: situational setting or focusing questions/comments.  For an example of minds-on provoking situational setting think about the first lesson’s activity. For focusing questions/comments think about this lesson’s activities. |
| Readings Chapter 8 |
| Problem Solving Homework *Seed Numbers*: Consider the following number pattern: 1, 2, 3, 5, 8 where each number is the sum of the two numbers before it. The first two numbers (1, 2) are called the seed numbers and they are responsible for generating the rest of the number pattern. I am interested in the fifth number – I want it to be equal to 100. Find all the seed numbers that will make the fifth number 100.  **MUST BE COMPLETE BEFORE NEXT day!** |
| Written Journal  * What is mathematics? * If nothing that Peter does is arbitrary then I wonder why ...? * Respond to today’s reading. * What were the invariants in the activities from today’s class? |