



## What is the distinction between a Lesson and a Number Talk?

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What is the distinction between a lesson and a Number Talk? This is a question that seems to come up frequently for teachers using Number Talks as a part of their Math Time block. I would like to share my thinking about this.

In a lesson, there is usually a particular goal that a teacher has for her class. She sets up the lesson so that particular relationships (what she wants the children to see) are as obvious as possible. Sometimes the teacher even tells the children what they are working on and the children even review "What we learned today."

However, in my mind, the power in the Number Talks comes from inspiring each child to think and make sense of the mathematics they are presented. They are never trying to figure out what the teacher wants. Rather they are totally engaged in their own sense making process. Too much of school as experienced by children is learning what they are supposed to be learning. But a Number Talk is an opportunity for children to learn that they can figure things out for themselves in the way that makes sense to them. This is the true meaning of "life-long learner."

I see Number Talks as a place where the children can begin to apply what they are learning in lessons and try out any ideas they may be pondering. The Number Talks over time should ask children to search for better and better ways to find out "how many?"

I love the video clip of Troy in first grade who has heard all the complicated ways the others in his class have solved  $28 + 14$  but who says with great confidence, "I counted on my fingers." The search for relationships, along with practice seeing how numbers work through the place value stations, lead him to the place where we see him solving  $24 + 37$ . Have you seen this clip enough times to remember what Troy says?

Troy:  $30 + 24$  equals 54 plus 6 would be... is 60 plus one more equals 61.

Teacher: Where did you get the 6?

Troy: I broke the 7 into 6 and 1."

I don't think this level of thinking by a second grader comes from learning various skills. Rather it comes from noticing how numbers work. Seeing what happens when you break numbers apart and put them back together again. From feeling empowered to examine problems in his own way-without worrying about what others are doing or saying. Instead, the child can think, "I know this because I see it. It is there—in the numbers—not in strategies I have learned and practiced."

The Number Talk could be an unproductive, random experience for children if the teacher is not aware of the long terms goals for the children. Children need a chance to apply what they are learning in math lessons and from listening to others. The short daily practice leads to noticing easier ways to combine or separate numbers.

So the teacher may have a general plan for presenting more and more complex problems over time. She may focus for a time to see if the children can see smaller parts of numbers in larger parts, or working with doubles and doubles plus or minus 1. But it is never "expected" that the children see it in the teacher's way. Many a time I have put up an arrangement of five dots and 4 dots thinking someone might use  $4 + 4$  or  $5 + 5$  to figure it out-only to have children see it in an entirely different way than I expected. I love that. That means they are doing their own looking, their own noticing, their own thinking.

Number Talks should never be predictable for the children. If I used several examples of doubles plus or minus 1, I would stick something in that wasn't doubles. I would mix materials to see if children could see what the relationship was between materials. I might use toothpick cards with 3 on the top and 4 on the bottom along with pattern block shapes with 3 on the top and 4 on the bottom and maybe a dot card with 4 on the top and 3 on the bottom to see if anyone would notice that.

Number talks should also meet a range of needs. My rule of thumb is that I should have a problem hard enough that even the "highest" child would have to do some counting and small enough that the "lowest" child would not need to count. So for example, I might have presented those cards with 3 on the top and 4 on the bottom asking different questions. "What parts do you see?" might get one child to say they saw a 4. Another child, seeing 3 on the top and a matching 3 on the bottom with 1 extra, I might ask, "How many would there be if the card had 4 on the top? Or what if we had 2 of these cards?"

The power of Number Talks as I define them is that they capitalize on the natural quest children have to "get better and better" and to "see more and more." The Number Talk should allow each child to go on their own journey to make sense of numbers, and the teacher to listen to each child and share in that journey as they tell her every day what they noticed, saw, figured out.