



Grades 2 and 3 Sample

Grades: 2/3	Groupings: Independently/Pairs created by Teacher
Big Idea: You can represent a number in a variety of ways. Each representation of a number can focus on a different aspect of the number.	
Prior Knowledge (scaffold): Students have been exploring patterning in shapes and 100 charts. They have been required to identify, extend and create both number and shape patterns. Students have been working on skip counting by 2's, 5's, 10's and 100's and counting and number placement on number lines.	
<p>Description of Activity: Students were given the option of the number 50 or 500. They were given simple instructions: "Tell me everything you know about the number 50(0)." The teacher declined to indicate what was 'acceptable' as a response when asked and repeated the instructions. Independently, each student had a piece of paper, pencil and eraser. They were to choose a comfortable area to work in the classroom. They were given a 10 minute time limit. When time was up, students turned their answers in to the teacher as a baseline sample.</p> <p>During the next activity, students were paired by the teacher for best productivity and approximate achievement levels. They were asked to tell everything they knew about the number 12 using chart paper and markers. After the ten minute time limit had passed, students presented their work to the class on the carpet. The only response given by the teacher was "That's one way to show the number 12."</p> <p>For the final activity, students were given the option of working independently or in their pairings. They were instructed to choose any number they liked and to tell everything they knew about that number. After a ten minute time limit, students presented their work to the class on the carpet.</p>	

Demonstration of Knowledge: Students will be able to write and reflect on a number that is familiar and with which they are comfortable. They will use examples in numbers and from their own life experiences. Students will feel confident showing their work to the class and want to participate in this aspect of the task.

Reflections: Students were initially uncomfortable with the activity presented, especially with the 'vague' instructions and were looking for immediate confirmation that their thinking was 'right.' As I continued to repeat the instructions, most students gradually began to write something on paper. Most answers focused on numbers ("I know that 50 is smaller than 100."). Few students made 'real-life' connections ("I know that 50 is a bigger number than I am").

During the second activity when students were paired, the focus was generally numeric but some answers related to discussions from math class (rods and loose ones). When students came to present, they were reluctant at first (there were two volunteers). I used the phrase 'That's one way to show the number twelve' in response to each presentation. After two presentations, all students wanted to present. Some students began to indicate how much they liked this activity and asked if we could do it again.

During the third activity, students really enjoyed being able to choose their number and whether they worked with a partner. Students were eager to share during presentations. There were a greater number of 'real-life' experiences.

Critical Thinking Math Activities and Reflections

During the first activity, students were very anxious with the lack of extensive instructions and my refusal to indicate what a correct answer looked like (a couple of students were at the point of tears). There was also no structure, template or method given to respond to the instruction. This also made students uncomfortable. Students appeared to be mostly concerned with 'getting the right answer.'

Using a statement that held as little judgment as possible seemed to make students more comfortable and eager to share during presentations. They also seemed to listen more to their peers and take ideas from each others' work. They sometimes gave praise to an idea they really liked or hadn't thought of themselves.

Students seem to be most concerned with getting the job done, getting the right answer and found exploration and creativity in math to be uncomfortable. As they became more comfortable with the idea, they enjoyed it more and began to make connections between numbers and their own knowledge and experiences. This continues to be a favourite activity with the class. It also provided opportunity to discover the extent of students' understanding and misunderstandings around quantity in relationship to numbers.

2.112

$$5. 12 + 0 = 12$$

7. 12 people

4.11 12th

In 50 there is a 5 and a 0 means that there are none 5 means that there are some all together there is 50. I also know that 50 can be put in to a sentence. I also know that 5 is an odd number and 0 is nothing. I also know that you can count to 50 by 10 is the second fastest way to get to 50. 5's is the first fastest way to get to the number 50. If you were in a big hurry that is what I think the fastest way to get there that is what I would count by because that is what I think.

The END!

Nick Enneally

$$10 + 2 = 12$$

~~1212~~ $5+1+6=12$

$$|0+1|+1=|2| \quad 6+6=12$$

$$18 - 1 = 17 \quad 8 + 4 = 12$$

$$8+3+1=12 \quad 1+1+1+7+1+1+1+1+1+1+1+1$$

A hand-drawn diagram on grid paper. On the left, there is a vertical column of numbers: 10, 9, 8, 7, 6, 5. To the right of these numbers is a bracketed '15'. Further to the right is a vertical column of 15 empty boxes, with the number '15' written in the top box. To the right of this column is another vertical column of 15 empty boxes, with the number '15' written in the top box.

Daniel and Bree.V.

15. dozen

- 112 is 1 dozen

2. 1 ten and 2 ones makes 12.

16. ~~2 4 6 8 10 12~~

3.12 is half of 6

4. 12

5.  

6. twelve

$$7. 10 + 2 = 12$$

8. 24 is 12 more than 12

9.21 is backwards from 12

10. $6+6=12$

11. $16 - 4 = 12$

12 

$$\begin{array}{r} 13.6 \\ + 6 \\ \hline 19.6 \end{array}$$

14.

I know that 50 is bigger than the number one.

I know that 50 is smaller than 100.

I know that 50 has the number 5 in it.

I know that 50 has the number 0 in it.

I know that the number 50 is a bigger number than I am.

I know the number 50 does not have the number 1 in it.

I know that the number 50 is the same number of some people.

I know that the number 50 is not the same number of everyone in my house.

I know the number 50 is not the number of everyone in our class.

500 has 2 zeros 1 5 it is a vary vary vary vary high. Number I like high numbers probably love some people like 500 some people don't they don't even want to touch about 500 I was a preschooler if they like my number did you now mummy can say 500 and house is numbers of 500 is a number of a house my number of a house is not 500 not even close to 500 some animals live to 500 but not vary much animals 500 minutes and hours is a lot and a lot it is so much it is more than a day 500 is one of the highest numbers I don't know how they got the number 500 but I like it very much I fall down probably it is a perfect number for me because I don't know how to spell the number 500 it is letters hard I don't know how to count to 500 but I will try in till I get it right and then I will tell mummy and daddy that I can count to 500 and tell my family that my family that I like 500