**I can Represent Numbers in More Then One Way**

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| **Lesson Plan Title**  I can represent numbers in more then one way |
| **Lesson Summary**  Working collaboratively- then independently students will represent numbers in more then one way-using partitioning as the main way to represent numbers. |
| **Curriculum Outcomes**  N04-students will be expected to represent and partition numbers to 100 |
| **Assessment Of Learning or Assessment For Learning**  Observation, Conversation, Product  Observations   * Were students able to break the number 15 apart in more then one way? * Were they able to explain their thinking when asked how they partitioned the number?   Product   * Can students represent a number in 4 or more ways (with variety) in their math journal? (see rubric below) |
| **Communication/Vocabulary**   * Partition * Represent * Ten Frames * Tallies * Part-Part-Whole |
| **Technology**   * iPads |
| **Materials**   * Ten Frames (magnetic, paper, OR drawn) * Counters (magnetic) * Part-Part-Whole (paper, magnetic, white boards) * Sticky Notes (Post It Notes) * Washable Markers * iPad’s if needed * Base 10 blocks * Math Journals- My math journals are the hilroy scribblers where half the page is for writing and half is for drawing. It looks something like this.   http://images.earlyyearsresources.co.uk/images/products/zoom/1390481469-14118600.jpg |
| **Mental Mathematics**  Review counting forwards by 2’s, 5’s, and 10’s (to 100)  Beep Beep Back up (make beeping sounds as students count backwards like a truck) by 2’s, 5’s, and 10’s (from 50 back)  Calendar work- reviewing days of the week and months of the year, adding todays date to the calendar |
| **Development**  This lesson provides evidence of how students represent numbers when given a set of manipulatives.  **Time To Teach**  Activate prior knowledge by asking students to count forwards and backwards by 2’s, 5’s, and 10’s to 100. Then show students the “I Can Represent Numbers” Key note presentation.  **Time to Practice**  Have students work collaboratively- Think Pair Share the information about the number of the day on the hundreds chart (if up to 100 then I have the helper choose a number from the hundreds chart). Have them work together to invent a number expression that represents the chosen number.  Once students have had the opportunity to represent numbers they can work in their math journals to represent a number. Have them write the number on a sticky note (this allows you to check and see who is still writing numbers/numerals backwards etc) Then have them glue the sticky note on a fresh page of their math journal (I have them glue because the sticky’s don’t always stick). Then ask the students to represent the number in as many ways as they can. (Please note some students always stick to numbers that are low, if they are capable help them choose a higher number).  **Tech Integration**  If you have enough iPads you could have the groups of students present their work on iPads using PicCollage or the ShowMe App.  http://ecx.images-amazon.com/images/I/51vgfA2GMqL.png  For more information: <http://pic-collage.com/>  http://startl.org/wp-content/uploads/2012/03/showme_app.jpg  For more information: <http://www.showme.com/>  **Time to Share**  Debrief the lesson and draw out key ideas. Areas of focus for discussion may include the following or may include other topics based upon your observations.  NOTE: Information gathered during the observation will be used to direct the “after” section of this lesson.  Ask selected students to share their representations of the number of their number. If available in the students’ work, ensure that the whole class sees an example of:   * at least one manipulative representation showing a set of a number * different manipulatives used to represent a set of their number (base-ten blocks, ten-frames, classroom objects, coins, etc.) * pictorial representations of a set of their number * number words * numerals * different ways to partition their number into two or more parts concretely, pictorially, and symbolically * Number Expressions * Base 10 * Language use More then, Less then   If many or all of the students were focusing on one particular strategy then discuss the other strategies that were represented. For example if many students used ten frames accurately but few attempted to use part-part-whole in the after section choose a student who used part-part-whole and ask them to share their strategy and have a class discussion about how to use part-part-whole. |
| **Differentiation**  Provide fewer than 10 objects for the student who cannot work with a number greater than 10.  Provide a Model with labels in each of the four sections (counters, tallies, part-part-whole, and addition subtraction) to help a student organize his/her work.  Ask students to record all possible partitions (2 parts) for their number less then 10. Ask them to explain how they know they have identified all of the 2-part partitions. |

**Teacher Assessment**

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| 4 | Student shows the number in four or more ways. With the whole of the total being accurate each time. |
| 3 | Student shows the number in four or more ways. The whole of the total in one is not accurate. |
| 2 | Student shows the number in less then four ways. The whole of the total in two or more is not accurate. |
| 1 | Student is unable to show the number in any way. |

If you notice:

-A student is a 4 however only uses one method (ie: number expressions) to represent the number, a guided math group to show other ways may be necessary.

-A student is a 4 and represents using many representations enriched math for partitioning may be needed

-A student is a 3 they may need a guided math group to recheck their work

-A student is a 2 a guided math group to work on errors that are present may be needed

-A student is consistently a 1 they may require extra support in the area of partitioning.