**I can solve subtraction story problems using part part whole**

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| **Lesson Plan Title**  I can solve subtraction story problems using part part whole |
| **Lesson Summary**  Students are expected to use personal strategies to solve a wide variety of story problems |
| **Curriculum Outcomes**  N04- Students will be expected to represent and partition numbers to 100  Performance Indicator N04.06- Represent a given number using number expressions  N09- Students will be expected to demonstrate an understanding of addition (limited to 1- and 2- digit numearls) with answers to 100 and the corresponding subtraction  Performance Indicator- N09.01- Solve a given story problem of any type by modelling it with materials or a diagram and write a number sentence that represents the thinking in the solution. |
| **Assessment Of Learning or Assessment For Learning**  Observation, Conversation, Product  Observations   * Can students use part-part-whole to solve a wide variety of story problems?   Conversations   * Can a student explain why they might use part part whole to solve a story problem?   Product   * Can students demonstrate that they have used part part whole to solve the story problems on the story problem sheet below? |
| **Communication/Vocabulary**   * Part part whole * Partition * Subtraction, take away, minus, less then * Number Expression (formally Number Sentence) |
| **Technology**   * Key Note Presentation I can subtract using part part whole   <http://jkeithgrade2mathns.weebly.com/problem-solving.html>   * iPads (PaperPort Notes App, Show Me App, K-2Math Tools App) |
| **Materials**   * Part Part Whole sheet * I can solve story problems using part part whole sheet (please note that I use local examples and my own students’ names along with interests in my story problems) * Counters ( if needed) * Sticky Notes (Post It Notes) * Example of a part part whole- One of my students this year recognized the wall was an example of part part whole. I made digit cards and would attach them onto the wall when using examples of part part whole   Thaw Space:ssrsb:Desktop:Weebly Website:Math Wall:Math Wall photos:IMG_0822.jpg |
| **Mental Mathematics**  Review addition strategies such as double plus one and related subtraction facts  Review addition strategies such as adding to 10 and related subtraction facts  Review adding using 0 (ie: 10+0= 10) and related subtraction facts |
| **Time To Teach**  Activate prior knowledge by putting a blank part part whole on the board (I use the smart board for this). In grade one the students should have use part part whole as a strategy when working with numbers to 20. Ask the students if they can explain what this is and how it is used.  If not go through an example- In the top section we put in the whole number in the bottom section we put two numbers that add up to the whole number. The show them how to create a number expression out of that. For example: 22=11+11  Then watch the Key Note Presentation I can subtract using part part whole <http://jkeithgrade2mathns.weebly.com/problem-solving.html>  **Time to Practice**  Hand students the part part whole sheet with sticky notes (I use sticky notes because students can write the numbers on them and throw them out afterwards meaning we can reuse the part part whole sheets more times).  Hand out the I can solve problems using part part whole sheet. Tell students they will be working independently to solve these problems for about 20 minutes. If they do not understand after 20 minutes you will help. During this time I would allow the students to collaborate to help one another.  **Time to Share**  Students will share their answers in small groups and discuss what was the same and what was different. Students will compare their answers and share how they came to the answer. Ask students during this time if they are going to change their answers to use a marker or pencil crayon so you can compare what they had to what they have changed to.  **Tech Integration**  Using the PaperPort Notes App students can take a picture of the part part whole sheet and complete it using the App.  http://a5.mzstatic.com/us/r30/Purple6/v4/9c/53/c5/9c53c54c-0481-dab6-3297-55b693599f7a/icon175x175.jpeg  For more information: <http://www.paperportnotes.com/>  Some students may choose to show their work using the Show Me App, they can use it like a white board.  http://moodle.episd.org/pluginfile.php/130/course/section/55/ShowME.JPG  For more information: <http://www.showme.com/>  Some students may need to use the App K-2 Math Tools App this app has a 10X10 Addition Grid which may be easier for students who struggle to solve addition problems in their head (mostly for students identified with working memory problems).  icture  For more information: <https://itunes.apple.com/us/app/k-2-math-tools/id1000444174?mt=8> |
| **Differentiation**   * For students who struggle you may need to change the numbers in the problems to be smaller numbers * Students who struggle may also require a guided math group to help solve problems * Students who require enrichment may need to work with bigger numbers * Students who finish early should be asked to write their own story problem that others’ in the class will solve |

**Part Part Whole**

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**I can solve addition problems using part-part-whole**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| **Josh and Cameron baked muffins at Cameron’s house. They baked 26 cookies together. When Josh went home he took 5 cookies (one for everyone in his family) how many cookies are left at Cameron’s house?** |
| **Izzi had 47 crayons. Some were yellow and 13 were red. How many yellow crayons did Izzi have?** |
| **Challenge question: Dylan was collecting hockey cards. His mum gave him 12 new cards, now Dylan has 54 cards, how many cards did Dylan have BEFORE his mum gave him some?** |

Steps to Solving a Word Problem

1. Read the word problem

2. Read the word problem and underline important information.

3. Think addition or subtraction?

4. Draw a picture or make part-part-whole

5. Write a number expression (adding and subtracting)

6. Write a word sentence answering the question