***Team Number/Coach:***

Team members:

Date of lesson: March 19, 2013

Time and location:

Instructor:

Grade level: 5th.

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| 1. **Title of the Lesson:**   **Finding the Percent of a Number** |

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| 1. **Research Theme and Initial Question** |
| **What are you trying to find out by studying this lesson? What important mathematical topic is a problem that you are trying to address by teaching and studying this lesson?**   * The total is 100%. * To find 10% of the total; divide the total by 10. * 50% is half of the total * 25% is a fourth of the total |

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| 1. **Goals of this lesson** |
| **What student behaviors is the lesson trying to foster?**  Listen respectfully and treat mistakes as part of the learning process |
| **What Mathematical Practice will your lesson show?**  #1 Make sense of problems and persevere in solving them.  #7 Look for and make use of structure. |

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| 1. **Relationship of the Lesson to the Unit and Mathematics Content Standards across grade levels.** |
| **Which CA standards for this grade level does the lesson address?**  NS 1.2 Interpret percents as a part of a hundred;…compute a given percent of a whole number.  CCSS 6.RP.3c: Find a percent of a quantity as a rate per 100… |

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| **Instructional strategies: Double number line, Benchmark percents**  **Materials needed: Handout with double number line [Math Talk]; Handout with word problems; Assessment: Ticket Out the Door** | | |
| **Sequence of Instructional Tasks** | **Teacher’s Support**  **and things to remember** | **Points of Evaluation during the lesson**  **Or progress checks**  **(What students should be doing)** |
| **Anticipatory Set**  **Introduce myself.**  **Present the norms for the lesson (based on CGI):**   * **We all make mistakes.** * **Listen respectfully.** * **Be ready to re-voice what other students have said.** * **Be ready to share out what was discussed in your group.**   **I DO**  Ask the students:  “If I had a spelling test with 20 words, how many words would I have to spell to get 100% on my test?” [20]  “If I spelled ten words correctly, what percent of the words did I get correct?” [50%]  “Let’s look and see what that would look like on a double number line.”  Show double number line. Mark the percents and numbers.  Ask: “What if I spelled 10% of the questions correctly. What number of the words did I get correct?” [2]  Let’s show the all the percents by tens. [Draw them on the number line.]  Let’s show how many correct words that would be for each percent in the tens. [Draw them on the number line.]  “What if I spelled 25% of the words correctly? How many would that be?” [5]  [Place the above answers on the double number line. Showing that it would be between 20% and 30%.]  “Now what if I spelled 75% of the words correctly. What is the number of words I spelled correctly?” [15] [Draw this on the number line.]  So, what do we see?  Total = 100%  Half = 50% [20 ÷ 2= 10]  Quarter = 25% [20 ÷ 4 = 5]  Tenth = 10% [20 ÷ 10 = 2]  Let’s use what we just discovered to solve a word problem. | Use Math Talk/Number Talk strategies as appropriate throughout the presentation of the Number Talk and main lesson.  Strategies:   * Thinking time. * Show you have an answer with a thumb against chest. * Use other fingers to show how many ways can come up with an answer. * Students share how got the answer. Ask, Why? * With class determine if one of the answers is the right answer. * Use Think, Pair, Share and have students share out what was said in their group. * Use re-voicing to promote participation and reinforce strategies. * Ask students if they have anything to add on. |  |
| **Main Activity**  **WE DO**  Let’s do word problem # 1 together using the Singapore math form. Have students use the double number line to solve the problem.  **YOU DO**  Have the students do word problem #2 by themselves or with partners. Ask students to show their work and explain it.  Assessment: Ticket Out the Door. | What does the teacher need to remember to do during the lesson? | - What should observers look for to tell if students are doing, saying, or thinking about what was intended during each part of the lesson?  - What evidence can observers look for during the lesson to see if students are making sense of the math and are doing original thinking? |
| **Closure**  **100% is the total. From there we can use division to help us find the percents for a tenth, a quarter, a half and three-quarters of a number.** |  |  |

**Math Talk**

**Percent**

0% 100%

0 20

**Number**

**Solution**

**25% 75%**

**Percent**

0% 10% 20% 30% 40% **50%** 60% 70% 80% 90% 100%

0 2 4 6 8 **10**  12 14 16 18 20

**5 15**

**Number**

# 1) Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **The Word Problem:**  **A company donated 200 books to a local library. If 70 of them are fiction, what percent of the donated books are fiction?**  **(CST released question)** |

1. **READ** the entire problem.
2. **Highlight/Underline the question and write the question as an answer:**

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1. Decide **WHO/WHAT** is involved in the problem. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. **Use** the double number line below. **READ** each sentence, one at a time. **REVISE by changing your picture to match the information**.

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| **Model**  **Percent**  **Number of books** |

1. **PUT** the question mark where information is missing.
2. **WORK COMPUTATIONS** below.

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| **COMPUTATIONS** (Use the back of the page if you need more space.) |

7. Go back to number 2 and fill in your answer.

# 2) Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **The Word Problem:**  **Alice spent 40% of her money to buy a new camera. She had $250. How much did she spend on her new camera?** |

1. **READ** the entire problem.
2. **Highlight/Underline the question and write the question as an answer:**

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1. Decide **WHO/WHAT** is involved in the problem. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. **Use** the double number line below. **READ** each sentence, one at a time. **REVISE by changing your picture to match the information**.

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| **Model**  **Percent**  **Money** |

1. **PUT** the question mark where information is missing.
2. **WORK COMPUTATIONS** below.

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| **COMPUTATIONS** (Use the back of the page if you need more space.) |

7. Go back to number 2 and fill in your answer.

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

**Ticket Out the Door**

**How much is 70% of $90? Use a double number line to find the answer.**

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

**Ticket Out the Door**

**How much is 70% of $90? Use a double number line to find the answer.**