

Pocket Subtraction

Materials:

- “Pocket Subtraction numbers with 0s” Smart Notebook file
- Mini Whiteboards and markers for each student

Instructions:

Slide	Instructions
Which question is easier to solve? $\begin{array}{r} 40 \\ -17 \\ \hline \end{array} \quad \text{or} \quad \begin{array}{r} 39 \\ -17 \\ \hline \end{array}$ 	Say, “Take a moment to look at both of these questions by yourself. Which one is easier to solve in your head?” Give students a moment. Say, “Discuss with your seat partner. Which one do you think is easier to solve in your head? Explain why.” Say, “Who would like to share?” Ask, “How are these two questions the same?” <i>both subtraction</i> <i>Both – 17</i> Ask, “How are these two questions different?” <i>40 vs 39</i>
How do I use to help me solve? $\begin{array}{r} 39 \\ -17 \\ \hline \end{array} \quad \begin{array}{r} 40 \\ -17 \\ \hline \end{array}$ 	Say, “Solve 39-17 in your head.” Say, “Explain to your seat partner how you did that.” Ask, “Who’d like to share how to solve this?” and record on the board. Ask, “I don’t want to start from scratch to figure out 40-17. How do I use the answer 22 to figure out the answer to question 40-17?”

What can I do to make this
easier to solve?

$$\begin{array}{r} 60 \\ -24 \\ \hline \end{array}$$



Say, "Let's look at this question. 60's not a very easy number to work with when subtracting. What could I change the 60 to in order to make it super easy to subtract? 59.

Say, "So, if I remove 1 from the 60, I have 59 left. What will I do with that extra 1? I know, I'll put it in my pocket for now."

Write the number 1 on the pocket image.

Say, "I don't want to forget about that one though. Don't let me forget about it!"

Say, "So if I remove 1 from the 60, what do I have left?" 59

Draw an arrow beside the 60 pointing to the right and write 59 beside that.

Say, "So now I have 59 minus"

Write "- " below the 59

Say "24".

Write "24" beside the 24 so that now you have 59-24 beside 60-24.

Solve this in your head.

Ask, "What's 59-24?" 35

Write "35".

Ask, "If 59-24 is 35, what's 60 - 24?" 36

What can I do to make this easier to solve? $\begin{array}{r} 90 \\ -47 \\ \hline \end{array}$ 	Ask, "What will I change the 90 to?" 89 Say, "Solve 89-47" 42 Ask, "What do I do now?" <i>Add what's in the pocket.</i> Ask, "So what's my answer?" 43
What can I do to make this easier to solve? $\begin{array}{r} 260 \\ -23 \\ \hline \end{array}$ 	NOTE: These questions are above Grade 2 expectations. I've only included these in the file because it originally began as a grade 3 file. You can use these questions if you want as an extension. Otherwise, stop on the previous slide! Say, "Here's a puzzler! Remember, a puzzler is a bit more challenging. A puzzler will make you think. And you know what, you might not figure out the answer in the amount of time I give you but that's ok as long as you keep working. I'm going to give you 1 minute to see what you can do with this question." Ask, "What did you do to the 260 to make it easier to work with?" <i>Discuss.</i> If nobody comes up with change it to 259, cover up the 2 in 260 and ask, "What would you do if it was 60 – 23?" <i>Change it to 59. "So what could you change 260 to? 259.</i> Say, "I'll give you another minute on this one." Work through on board together.
How would you deal with this? $\begin{array}{r} 400 \\ -36 \\ \hline \end{array}$ 	Say, "Another puzzler! I'll give you a minute to see what you can do." Discuss. <i>Change to 399</i> Solve together.

How would you deal with this? $\begin{array}{r} 800 \\ -57 \\ \hline \end{array}$ 	Say, "Try this one."
How would you deal with this? $\begin{array}{r} 500 \\ -132 \\ \hline \end{array}$ 	Another practice question.
How would you deal with this? $\begin{array}{r} 700 \\ -584 \\ \hline \end{array}$ 	Another practice question.
Extra Question Space 	Space for you to make up extra questions IF you need it.

Puzzler How would you deal with this? $\begin{array}{r} 601 \\ -243 \\ \hline \end{array}$ 	Say, "Here's another puzzler. I'll give you 1 minute to work on it." You'll see students who just change it to 600 by putting 1 in the pocket. Ask them if this is helpful. Ask them what else they could do. Discuss. If nobody got it, follow these steps: Ask, "what did you do first?" <i>put 1 in my pocket.</i> Write "1" in the pocket. Ask, "What do I have left?" 600 Write "600 – 243" Say, "Hmmm...that 600 isn't very helpful. What can I do to the 600 to make it easier to work with it?" <i>Put one in the pocket.</i> Write another 1 in the pocket. Ask, "How much do I have left? 599 Write 599-243. Say, "Solve 599-243." 356 Ask, "Now what?" <i>Add 2.</i> But if they say "Add 1", ask "But how much do I have in my pocket?"
Advancing to Decimals	Start the notebook file again from the beginning but change every number by adding a decimal. For example, 40 – 17 and 39 – 17 become 4.0 - 1.7 and 3.9 - 1.7