Making Math Visible

Teaching Lab

Planning for Concrete - Visual - Abstract Representations

Task:

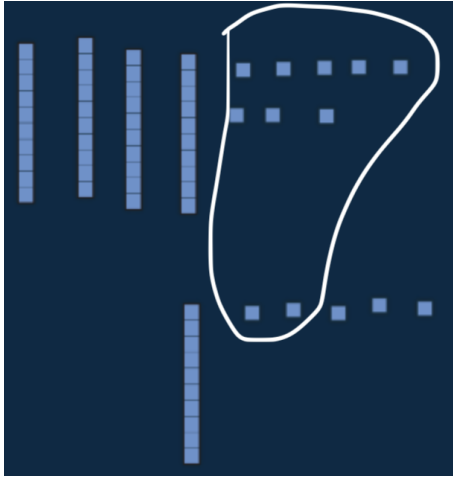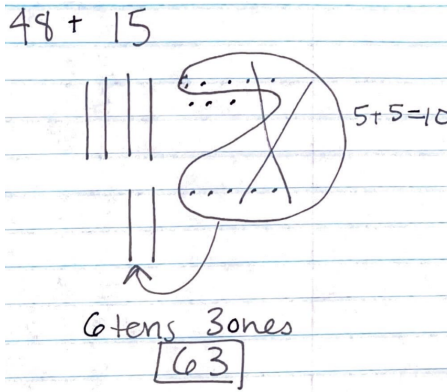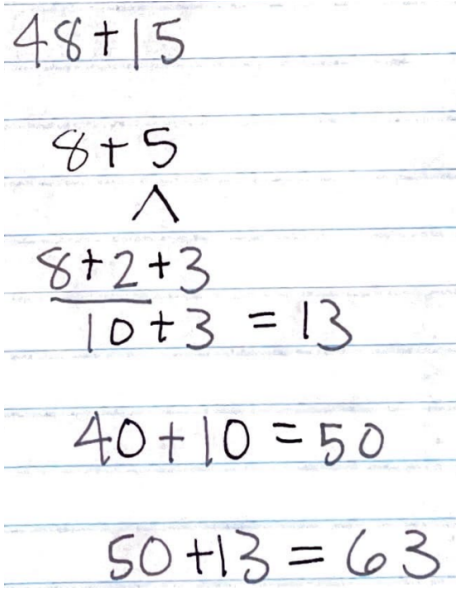| Concrete[1]	Visual	Abstract
What concrete strategy will I highlight? Why?	**What visual strategy will I highlight? Why?**	**What abstract strategy will I highlight? Why?**
What focusing questions will I ask about this strategy?	**What focusing questions will I ask about this strategy?**	**What focusing questions will I ask about this strategy?**
What focusing questions will I ask to help students connect the strategies? What focusing questions will I ask about the underlying concepts?		

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[1] Note: a common misconception in math education is that concrete representations are only for learners who are struggling. In reality, concrete resources are useful for students across all grades and ages

Sample Plan for Concrete - Visual - Abstract Representations

Task:

48 + 15

Concrete	Visual	Abstract
What concrete strategy will I highlight? Why?	**What visual strategy will I highlight? Why?**	**What abstract strategy will I highlight? Why?**
6 tens and 3 ones = 63 • Base 10 blocks to represent 4 tens, 8 ones, and 1 ten, 5 ones • Look for students who make 10 (ask - how did you make 10?) • This strategy is directly connected to the abstract representation making ten with the ones	 • Quick tens and ones to represent 48 and 15 • Make 10 in the ones place - look for a different way to make 10 than concrete to show that no one right way • Bridges to the next strategy	 • Decomposing 5 to make 10 with 8 • Connect to concrete representation with 8 and 2
What focusing questions will I ask about this strategy?	**What focusing questions will I ask about this strategy?**	**What focusing questions will I ask about this strategy?**
• Why are there 6 tens in the sum when we only see 5 represented with base 10 blocks? • How did this student make 10?	• Where did the new ten come from? • Why are some ones circled? • What does 5+5=10 represent?	• Why did the student change 8+5 into 8+2+3? • What does the 40+10 represent? • What does 10+3 represent?

What focusing questions will I ask to help students connect the strategies? What focusing questions will I ask about the underlying concepts?

- What connections do you see between representations?
- How does each representation make 10?
- What differences do you see across representations?
- What place value thinking is the same in all of these strategies?