**CODE: 205** 

### **Background**

Imagine you are teaching a math lesson to a class of 16 second grade students. The purpose of this lesson is to examine the ways properties of operations can be used to add numbers.

You have asked the students to work with a partner to solve the problem 27 + 23 using any method that works best for them. The partners have completed their work. Now you plan to select 3 individual students to present their work to the class.

Look at the strategies below and the descriptions of the students. Then choose which three students you would like to have present.

#### **The Problem**

27 + 23

#### **Learning Goal**

Your goal is for the students to be able to understand how properties of operation can be used to add numbers.

- · You want the students to understand that two numbers can be added in any order (commutative property).
  - Example: 3 + 4 = 4 + 3
- You also want the students to understand that 3 numbers can be regrouped and added in any order (associative property).
  - $\cdot$  Example: 9 + (1 + 7) = (9 + 1) + 7

#### **2nd Grade Student Descriptions** Oliver (he/him) Ava (she/her) Angel (she/her) Camille (she/her) Angel is a Black girl who Camille is a white girl who Ava is a white girl who speaks : Oliver is a white boy who English as her first language. speaks English as his first speaks English as her first speaks French as her first She has no identified language. He has no language. She has no language. She is an EL disabilities. She receives free identified disabilities, and he identified disabilities, and she student who speaks English or reduced lunch. She has a does not receive free or does not receive free or at an advanced level. She has reduced lunch. She has a history of low success and low reduced lunch. He has a no identified disabilities, and participation during math history of high success and history of low success and low she does not receive free or lessons. She also loves high participation during math participation during math reduced lunch. She has a gardening. lessons. He also enjoys riding lessons. She also enjoys history of high success and high participation during math his bike. making origami. lessons. She also does karate. Strategy A Strategy B • I broke the 27 into 25 and 2. First I added 20 and 20 to get 40. • Then I added the 2 and 23 to make 25. Then I added 3 more to get 43. 25 + 2Then I knew that 25 plus 25 is 50 because 2 quarters are 50 cents. 25 40 + 3 = 4325 + 2550 Liam (he/him) Mason (he/him) Alejandro (he/him) Mateo (he/him) Liam is a white boy who Mason is a white boy who Aleiandro is a Latino boy who Mateo is a Latino boy who speaks English as his first speaks English as his first speaks Spanish as his first speaks Spanish as his first language. He has no language. He is on an IEP for language. He is an EL student language. He is an EL student identified disabilities, and he severe ADHD. He receives who speaks English at a who speaks English at an does not receive free or free or reduced lunch. He has beginner level. He has no intermediate level. He has no reduced lunch. He has a a history of high success and identified disabilities. He identified disabilities. He history of average success low participation during math receives free or reduced receives free or reduced and average participation lessons. He also enjoys lunch. He has a history of low lunch. He has a history of high during math lessons. He also singing. success and low participation success and average loves comic books. during math lessons. He also participation during math loves to play Minecraft. lessons. He also likes to play the guitar. Strategy D Strategy C Step 1 1. I made 27 and 23 +25 with the blocks. 2. I combined the tens together. Then I combined the ones. That's 4 tens, which is 40. Plus 10 ones, 25 23 0 50 which is 50. • I started at 23. Step 2 Then I took 2 from the 27 to make a jump of 2. That makes 25. • Then I only needed to add 25 more, so I made another jump and got 50.

#### Carter (he/him) Daniela (she/her) Carter is a Black boy who Daniela is a Latina girl who speaks English as his first speaks English as her first language. He has no language. She has no identified disabilities, and he identified disabilities, and she receives free or reduced does not receive free or lunch. He has a history of reduced lunch. She has a average success and little to history of average success and low participation during no participation during math lessons. He also loves to cook math lessons. She also loves and bake. to dance. Strategy E 23 + 27 I made it 23 + 27 because that's easier for me to think about. 23 + (2 + 25)Then I broke the 27 into 2 and 25. (23 + 2) = 25Then I combined the 2 with the 23, and I got CJ (they/them) Adriel (he/him) CJ is a gender fluid white child who speaks English as their first language. They have first language. He has no

no identified disabilities, and

they do not receive free or reduced lunch. They have a

history of high success and

average participation during

to draw and paint.

Strategy G

1.

math lessons. They also love

Adriel is an Indigenous boy who speaks English as his identified disabilities, and he receives free or reduced lunch. He has a history of average success and low participation during math lessons. He also loves to play

# 1. I made 27 and 23 with the blocks 2. I pulled 2 apart from the 27 to make 25.

3. I put the 2 with the 23 to make 25. That makes 25 + 25 which is 50.

# Valentina (she/her)

Valentina is a Latina girl who speaks English as her first language. She has an IEP for speech impairment (stuttering). She does not receive free or reduced lunch. lunch. She has a history of She has a history of average success and low participation during math lessons. She also lessons. She also loves enjoys spending time in nature.

Jackie (she/they) Jackie is a white transgender girl who speaks English as her first language. She has no identified disabilities. She receives free or reduced average success and low participation during math animals.

## Strategy F

- First, I added 7 and 3 to get 10. I put a zero under the 7.
- Then I put the 1 up above the 2. Last I added 1 + 2 + 2 to get 50.

Jada is a Black girl who speaks English as her first language. She has no identified disabilities, and she dyslexia. She does not does not receive free or reduced lunch. She has a history of high success and high participation during math lessons. She also plays on a softball team.

Jada (she/her)

Grace is an Asian girl who speaks English as her first language. She has an IEP for receive free or reduced lunch. She has a history of low success and average participation during math lessons. She also plays basketball.

Grace (she/her)

# Strategy H

27 + 23

20 + 20 = 40

7 + 3 = 10

40 + 10 = 50

- First I added 20 and 20 to get 40.
- Then I added 7 and 3 to get 10.
- Then I added 40 and 10 to get 50.