**CODE: 114** 

# **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).
  - Example: 9 + (1 + 7) = (9 + 1) + 7

#### **2nd Grade Student Descriptions** Mason (he/him) Daniela (she/her) CJ (they/them) Alejandro (he/him) CJ is a gender fluid white Mason is a white boy who Daniela is a Latina girl who Alejandro is a Latino boy who speaks Spanish as his first speaks English as his first speaks English as her first child who speaks English as language. He is on an IEP for language. She has no their first language. They have language. He is an EL student severe ADHD. He receives identified disabilities, and she no identified disabilities, and who speaks English at a free or reduced lunch. He has does not receive free or they do not receive free or beginner level. He has no a history of high success and reduced lunch. She has a reduced lunch. They have a identified disabilities. He low participation during math history of average success history of high success and receives free or reduced lessons. He also enjoys and low participation during average participation during lunch. He has a history of low singing. math lessons. She also loves math lessons. They also love success and low participation during math lessons. He also to dance. to draw and paint. loves to play Minecraft. Strategy B Strategy A 27 + 23 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. Then I knew that 25 plus 25 is 50 because 2 quarters are 50 cents. 40 + 3 = 4325 + 2550 Angel (she/her) Ava (she/her) Liam (he/him) Grace (she/her) Angel is a Black girl who Ava is a white girl who speaks Liam is a white boy who Grace is an Asian girl who speaks English as his first speaks English as her first English as her first language. speaks English as her first language. She has no She has no identified language. He has no language. She has an IEP for identified disabilities, and she disabilities. She receives free identified disabilities, and he dyslexia. She does not does not receive free or or reduced lunch. She has a does not receive free or receive free or reduced lunch. reduced lunch. She has a history of low success and low reduced lunch. He has a She has a history of low history of low success and low participation during math history of average success success and average participation during math lessons. She also loves and average participation participation during math lessons. She also enjoys gardening. during math lessons. He also lessons. She also plays making origami. loves comic books. basketball. Strategy C Strategy D Step 1 1. I made 27 and 23 +2 +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, 23 n 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.

#### Valentina (she/her) Camille (she/her) Jada (she/her) Jackie (she/they) Valentina is a Latina girl who Camille is a white girl who Jada is a Black girl who Jackie is a white transgender speaks English as her first speaks French as her first speaks English as her first girl who speaks English as language. She has an IEP for language. She has no her first language. She has no language. She is an EL identified disabilities. She speech impairment student who speaks English identified disabilities, and she (stuttering). She does not at an advanced level. She has does not receive free or receives free or reduced receive free or reduced lunch. no identified disabilities, and reduced lunch. She has a lunch. She has a history of she does not receive free or She has a history of average history of high success and average success and low success and low participation high participation during math reduced lunch. She has a participation during math during math lessons. She also history of high success and lessons. She also plays on a lessons. She also loves enjoys spending time in high participation during math softball team. animals. lessons. She also does nature. karate. Strategy E Strategy F First, I added 7 and 3 27 to get 10. I put a zero 23 + 27 + 23 under the 7. I made it 23 + 27 because that's easier for 50 • Then I put the 1 up me to think about. 23 + (2 + 25)Then I broke the 27 into 2 and 25. above the 2. Last I (23 + 2) = 25Then I combined the 2 with the 23, and I got added 1 + 2 + 2 to get Oliver (he/him) Carter (he/him) Adriel (he/him) Mateo (he/him) Oliver is a white boy who Adriel is an Indigenous boy Mateo is a Latino boy who Carter is a Black boy who speaks English as his first speaks English as his first who speaks English as his speaks Spanish as his first language. He has no language. He has no first language. He has no language. He is an EL student identified disabilities, and he identified disabilities, and he identified disabilities, and he who speaks English at an does not receive free or receives free or reduced receives free or reduced intermediate level. He has no reduced lunch. He has a identified disabilities. He lunch. He has a history of lunch. He has a history of receives free or reduced average success and little to average success and low history of high success and high participation during math no participation during math participation during math lunch. He has a history of high lessons. He also loves to cook lessons. He also loves to play success and average lessons. He also enjoys riding participation during math his bike. and bake. soccer. lessons. He also likes to play the guitar. Strategy H Strategy G 1. 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 27 + 23 First I added 20 and 20 to get 40. + 25 which is 50. Then I added 7 and 3 to get 10. 20 + 20 = 40• Then I added 40 and 10 to get 50. 7 + 3 = 1040 + 10 = 50