**CODE: 250** 

# **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** Jada (she/her) Oliver (he/him) Grace (she/her) Daniela (she/her) Grace is an Asian girl who Jada is a Black girl who Oliver is a white boy who Daniela is a Latina girl who speaks English as her first speaks English as his first speaks English as her first speaks English as her first language. She has no language. He has no language. She has an IEP for language. She has no identified disabilities, and she identified disabilities, and he dyslexia. She does not identified disabilities, and she does not receive free or does not receive free or receive free or reduced lunch. I does not receive free or reduced lunch. She has a reduced lunch. He has a She has a history of low reduced lunch. She has a history of high success and history of high success and success and average history of average success high participation during math high participation during math participation during math and low participation during lessons. She also plays on a lessons. He also enjoys riding lessons. She also plays math lessons. She also loves to dance. softball team. his bike. basketball. 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. 25 + 2Then I knew that 25 plus 25 is 50 because 2 quarters are 50 cents. 40 25 40 + 3 = 4325 + 2550 Adriel (he/him) CJ (they/them) Jackie (she/they) Mateo (he/him) CJ is a gender fluid white Adriel is an Indigenous boy Jackie is a white transgender Mateo is a Latino boy who who speaks English as his child who speaks English as girl who speaks English as speaks Spanish as his first first language. He has no their first language. They have her first language. She has no language. He is an EL student identified disabilities. She identified disabilities, and he no identified disabilities, and who speaks English at an receives free or reduced they do not receive free or receives free or reduced intermediate level. He has no lunch. He has a history of reduced lunch. They have a lunch. She has a history of identified disabilities. He average success and low history of high success and average success and low receives free or reduced participation during math average participation during participation during math lunch. He has a history of high lessons. She also loves lessons. He also loves to play math lessons. They also love success and average participation during math soccer. to draw and paint. animals. lessons. He also likes to play the guitar. Strategy C Strategy D 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, 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.

#### Alejandro (he/him) Ava (she/her) Camille (she/her) Angel (she/her) Ava is a white girl who speaks Camille is a white girl who Alejandro is a Latino boy who Angel is a Black girl who English as her first language. speaks French as her first speaks Spanish as his first speaks English as her first She has no identified language. He is an EL student language. She has no language. She is an EL disabilities. She receives free identified disabilities, and she student who speaks English who speaks English at a or reduced lunch. She has a at an advanced level. She has beginner level. He has no does not receive free or history of low success and low no identified disabilities, and identified disabilities. He reduced lunch. She has a she does not receive free or receives free or reduced participation during math history of low success and low lessons. She also loves lunch. He has a history of low participation during math reduced lunch. She has a history of high success and success and low participation lessons. She also eniovs gardening. high participation during math during math lessons. He also making origami. lessons. She also does loves to play Minecraft. karate. Strategy F Strategy E First, I added 7 and 3 23 + 27 27 to get 10. I put a zero I made it 23 + 27 because that's easier for + 23 under the 7. me to think about. 23 + (2 + 25)50 • Then I put the 1 up Then I broke the 27 into 2 and 25. (23 + 2) = 25above the 2. Last I Then I combined the 2 with the 23, and I got added 1 + 2 + 2 to get Mason (he/him) Valentina (she/her) Liam (he/him) Carter (he/him) Liam is a white boy who Valentina is a Latina girl who Mason is a white boy who Carter is a Black boy who speaks English as his first speaks English as his first speaks English as her first speaks English as his first language. He is on an IEP for language. He has no language. She has an IEP for language. He has no identified disabilities, and he speech impairment identified disabilities, and he severe ADHD. He receives free or reduced lunch. He has does not receive free or (stuttering). She does not receives free or reduced receive free or reduced lunch. Hunch. He has a history of a history of high success and reduced lunch. He has a low participation during math She has a history of average average success and little to history of average success success and low participation lessons. He also enjoys and average participation no participation during math singing. during math lessons. He also during math lessons. She also lessons. He also loves to cook loves comic books. enjoys spending time in and bake. nature. Strategy G Strategy H 1. I made 27 and 23 with 1. the blocks. 27 + 23• First I added 20 and 20 to get 40. 2. I pulled 2 apart from the Then I added 7 and 3 to get 10. 20 + 20 = 4027 to make 25. • Then I added 40 and 10 to get 50. 3. I put the 2 with the 23 to 7 + 3 = 10make 25. That makes 25 + 25 which is 50. 40 + 10 = 50