**CODE: 43** 

# **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 Jackie (she/they) Jada (she/her) Daniela (she/her) Oliver (he/him) Jackie is a white transgender Jada is a Black girl who Daniela is a Latina girl who Oliver is a white boy who speaks English as her first girl who speaks English as speaks English as her first speaks English as his first her first language. She has no language. She has no language. She has no language. He has no identified disabilities. She identified disabilities, and she identified disabilities, and she identified disabilities, and he receives free or reduced does not receive free or does not receive free or does not receive free or reduced lunch. She has a lunch. She has a history of reduced lunch. She has a reduced lunch. He has a average success and low history of high success and history of average success history of high success and participation during math high participation during math and low participation during high participation during math lessons. She also loves lessons. She also plays on a math lessons. She also loves lessons. He also enjoys riding his bike. animals. softball team. to dance. 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) Carter (he/him) Mason (he/him) Liam (he/him) Adriel is an Indigenous boy Carter is a Black boy who Mason is a white boy who Liam is a white boy who who speaks English as his speaks English as his first speaks English as his first speaks English as his first first language. He has no language. He has no language. He is on an IEP for language. He has no identified disabilities, and he identified disabilities, and he severe ADHD. He receives identified disabilities, and he receives free or reduced receives free or reduced free or reduced lunch. He has does not receive free or lunch. He has a history of lunch. He has a history of a history of high success and reduced lunch. He has a average success and low average success and little to low participation during math history of average success participation during math no participation during math lessons. He also enjoys and average participation lessons. He also loves to play lessons. He also loves to cook singing. during math lessons. He also soccer. and bake. loves comic books. 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 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.

and got 50.

• Then I only needed to add 25 more, so I made another jump

#### CJ (they/them) Ava (she/her) Mateo (he/him) Valentina (she/her) Ava is a white girl who speaks : CJ is a gender fluid white Valentina is a Latina girl who Mateo is a Latino boy who English as her first language. child who speaks English as speaks English as her first speaks Spanish as his first She has no identified language. She has an IEP for language. He is an EL student their first language. They have disabilities. She receives free no identified disabilities, and speech impairment who speaks English at an or reduced lunch. She has a they do not receive free or (stuttering). She does not intermediate level. He has no history of low success and low reduced lunch. They have a receive free or reduced lunch. identified disabilities. He She has a history of average participation during math history of high success and receives free or reduced lessons. She also loves average participation during success and low participation lunch. He has a history of high math lessons. They also love during math lessons. She also success and average gardening. to draw and paint. enjoys spending time in participation during math lessons. He also likes to play nature. 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 me to think about. Then I put the 1 up 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 Camille (she/her) Alejandro (he/him) Grace (she/her) Angel (she/her) Camille is a white girl who Aleiandro is a Latino boy who Grace is an Asian girl who Angel is a Black girl who speaks French as her first speaks Spanish as his first speaks English as her first speaks English as her first language. She is an EL language. He is an EL student language. She has an IEP for language. She has no identified disabilities, and she student who speaks English who speaks English at a dyslexia. She does not at an advanced level. She has beginner level. He has no receive free or reduced lunch. does not receive free or identified disabilities. He no identified disabilities, and She has a history of low reduced lunch. She has a she does not receive free or receives free or reduced success and average history of low success and low reduced lunch. She has a lunch. He has a history of low participation during math participation during math history of high success and success and low participation lessons. She also plays lessons. She also enjoys high participation during math during math lessons. He also basketball. making origami. lessons. She also does loves to play Minecraft. karate. Strategy G Strategy H 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 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