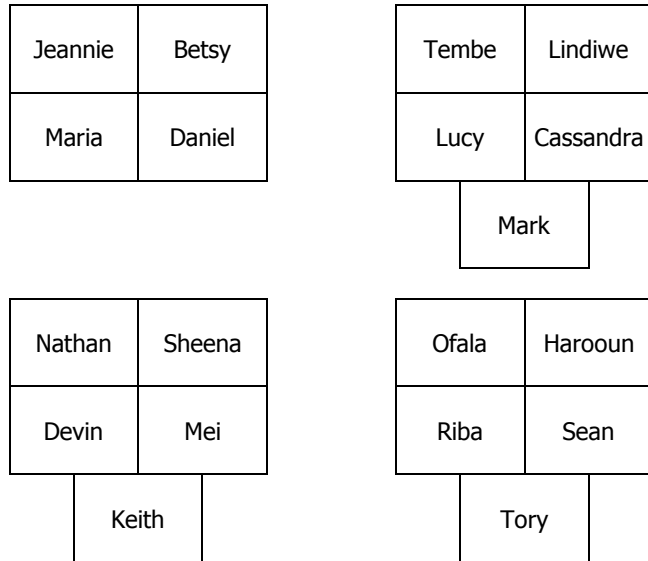


## Transcript: Critique of an Explanation for $Odd + Odd = Even$

Third grade, Public Elementary School, Michigan  
Wednesday, January 31, 1990

### Seating Arrangement



**January 31, 1990.**

*The class is discussing a conjecture:*

Betsy's conjecture:  
An odd number plus an odd number equals an even number.

*This is one of several conjectures on the table in the class. Others include: an even number plus an even number equals an even number, and an odd number plus an even number equals an odd number. The children have been providing examples of the conjecture, and considering a revision Betsy had proposed, but that the class ultimately ruled out.*

*Focus questions:*

- *How can students' contributions be seen as moving the mathematics forward?*
- *What is the teacher doing to establish an environment that encourages mathematical reasoning? What else might the teacher do?*

1:07:21

- |    |          |  |
|----|----------|--|
| 1  | Teacher: | Does anybody want to comment either on the example or on Betsy's proof? Do people think that does prove that an odd plus an odd would always be even?  |
| 2  |          |  |
| 3  |          |  |
| 4  | Riba:    | No.  |
| 5  | Teacher: | Why not, Mei?  |
| 6  | Mei:     | I don't think so because you don't know about, like, in the thousands and you don't know the numbers yet.  |
| 7  |          |  |
| 8  |          | Like you don't even know what's- how you pronounce it or how you say it.   |
| 9  |          |  |
| 10 | Teacher: | What do other people think? Does this- Does the thing that Betsy did- Does that show that any time you have an odd number plus an odd number, you get an even number? Mei thinks it doesn't because you wouldn't know about big- very big numbers. Jeannie, you think it does show it? |
| 11 |          |  |
| 12 |          |  |
| 13 |          |  |
| 14 |          |  |
| 15 |          |  |
| 16 | Jeannie: | I don't think so, because she didn't say it had to be those two numbers, those two odd numbers. It could be any two odd numbers because there's always one left.   |
| 17 |          |  |
| 18 |          |  |
| 19 |          |  |
| 20 | Mei:     | <i>I know, but that is not, like, telling- I- It's- This is what I am trying to say: I'm trying to say that that's only one example. You can't really say that it will work for every</i>  |
| 21 |          |  |
| 22 |          |  |

23 *odd number, even- I don't think it would work for*  
24 *numbers that we can't say or figure out what they are.*

25 Teacher: What do other people think about this argument that  
26 Jeannie and Mei are having? Mei's saying she's still not  
27 convinced that this could apply for all numbers, big, big  
28 numbers and Jeannie's saying that it would always be  
29 true because there'd always be one left over from each  
30 odd number. Riba, what do you think about that?

31 Riba: How does- How does Jeannie know that it would  
32 always- She never tried all the numbers.

33 Betsy: That's my point. Mathematicians can't even do that.  
34 You would die before you counted every number.

35 Riba: I know, that's why I mean- that's why I mean you don't  
36 know if it always works.

37 Teacher: Anyone else have a comment? Sheena?

*1:09:34*

NAME	GENDER	RACE	COUNTRY	ENGLISH PROFICIENCY	HOW LONG AT THIS SCHOOL <sup>1</sup>
Lindiwe	M	African-American	U.S.A./South Africa	fluent	3 weeks
Nathan	M	White	Ethiopia	fluent	3 years
Betsy	F	White	Canada	native speaker	4 months
Daniel	M	Asian	Indonesia	developing	3 years
Jeannie	F	White	U.S.A.	native speaker	3 years
Keith	M	African-American	U.S.A.	native speaker	3 weeks
Tembe	M	African Black	Kenya	fluent	3 years
Mei	F	Asian	Taiwan	fluent	2 years
Lucy	F	White	U.S.A.	native speaker	3 years
Maria	F	Latina	Nicaragua	beginning	4 months
Mark	M	White	U.S.A.	native speaker	2 years
Ofala	F	African Black	Nigeria	fair	3 years
Devin	M	White	Nepal	beginning	9 months
Riba	F	White	Egypt	good	3 years
Haroun	M	Asian	Indonesia	developing	16 months
Sean	M	White	U.S.A.	native speaker	2 years
Sheena	F	African-American	U.S.A.	native speaker	4 months
Tory	F	White	U.S.A.	native speaker	3 weeks
Cassandra	F	African-American	U.S.A.	native speaker	16 months

<sup>1</sup>NOTE: This column reflects the length of time the child had been in this *school* as of 1/26/90. No one had been in this *class* longer than 4 months (since September).