

Video Supplement

Norms for Watching Video (if not using your own)

- Speak from the “I” perspective. For example: “If I could rewind the tape and ask students a question, I would ask...”
- Be inquisitive, not judgmental. For example: “I wonder what might happen if,” instead of “the teachers should have...”
- Justify your ideas and conjectures based on the video clip, and not other parts of the lesson that you didn’t see. For example: “I think that the student understands...because in the video she...”
- Focus on how what you learned from the video might help you implement this (or similar lessons) with your own students.

School Context

- School Type: Urban Public School
- School Demographic Information (approximate):
 - Students of color: 95%
 - Free and reduced lunch: 80%
 - English language learners: 5%
 - Students with special needs: 20%

Lesson Context

- Subject: Algebra
- Unit: Probability
- Number of students in class: 32
- Lesson duration: 90 minutes
- Prior preparation: Students have learned probability, conditional probability, and ways of representing probability (e.g., sample space, etc.)

Video Context

Students have tried the Lucky Dip problem at home before coming in for the day’s lesson. The teacher reviewed first attempts, identified common issues and used the suggested questions from the lesson guide. If a students’ responses included more than one issue from the first column of the table, then the teacher highlighted more than one corresponding suggestion.

At the beginning of class students were given time to review the prompts and suggestions the teacher had attached to their original solutions and write down new ideas about the problem. Then they were asked to each go around and share before coming up with one whole-group solution to share.

Discussion Questions

Agency, Ownership, and Identity: *Do I get to explain, to present my ideas? Are they built on? Am I recognized as being capable and able to contribute in meaningful ways?*

1. How are students’ ideas presented and built upon? How are students recognized as being capable and able to contribute in meaningful ways?
2. As a teacher, what questions might we ask or moves might we make that better build students’ thinking and recognize them as being capable and able contributors towards important mathematical ideas?

Video Transcript

Legend		
T	Teacher	Per and within dialogue
S1 – S4	Students 1 - 4	Per and within dialogue
C	Class	Per and within dialogue
[]	Actions/Non-verbal	Dialogue
{{x}}	Sounds like	Dialogue
{ }	Inaudible	Dialogue

1 S1: 0:00 You have six and three are white and three are black. We are getting two of the same color, you have like $\frac{1}{2}$ chance. And, yeah so, I think it should be fair to get the same color, and then here, I had the question as “suppose you labeled each ball with a different letter, what are the different combinations you can take out of the bag?” So, I named them A through F [showing work on whiteboard], and then there is like 25 chances or variations that you can get. And then, the second question was “Imagine picking a black ball from the bag. What is the probability of picking a black ball?” I said it’s 3 out of 6, or $\frac{1}{2}$. Then it says, “What is the probability of picking another black ball?” and then I said 2 out of 5, since if you take one out that will be 5, and that’s it.

2 S2: Uh, I agree with you with the highlighted question, I did the same thing actually, I labeled them A through F, and I also got 25 different combinations [pointing to board], um, for the first, the Lucky Dip, I agree with you that it’d be, it is correct and that it is fair, at first I didn’t think it was fair, because he would have a higher chance since, there is, you have like a higher probability of getting mixed up at least I thought, but then I just gave it the color of like pink and blue [pointing at paper], and then I thought, Pink-Pink, Pink-Blue, Blue-Pink, or Blue-Blue, so her chance is winning is half and his chance of winning is half as well. So, it is a fair probability.

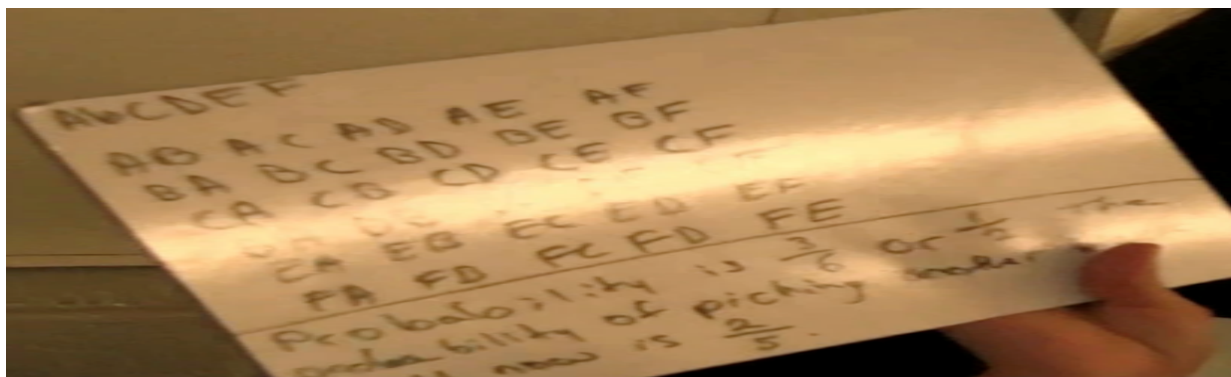


FIGURE 1

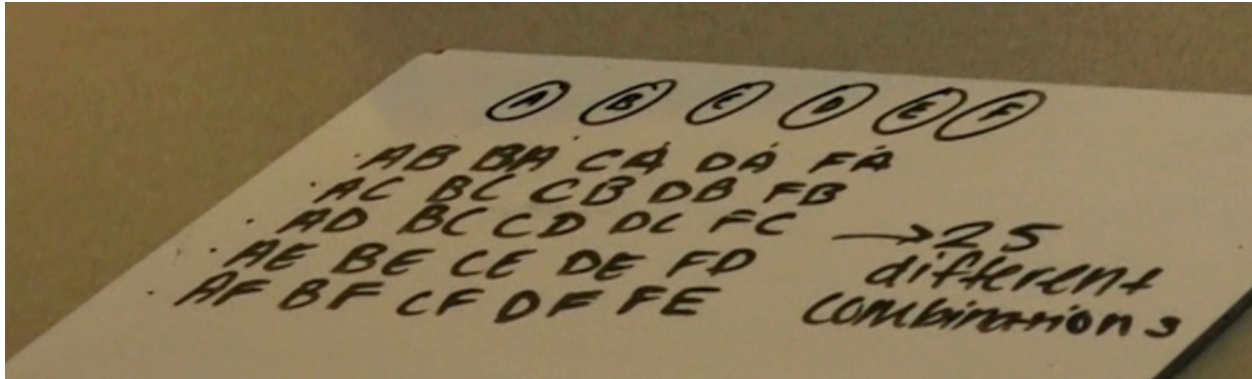


FIGURE 2

- 3 S3: What do you think S4?
- 4 S4: It's your turn.
- 5 S3: 1:46 Um, personally I think it's not fair. Because the outcomes, it's a total number of even numbers, so I feel like, I believe, the probability of getting two of the same kind is not going to be high. Since you see that [pointing to board] I divided by A, ABC, ABC, A sub 1, so you see that they tend to match up, so the odds of you actually picking two of the same color are not too great on the first try, although you guys made a fair point that it is a 50-50, I still feel like that your odds of pulling out two marbles of a different color are much higher.

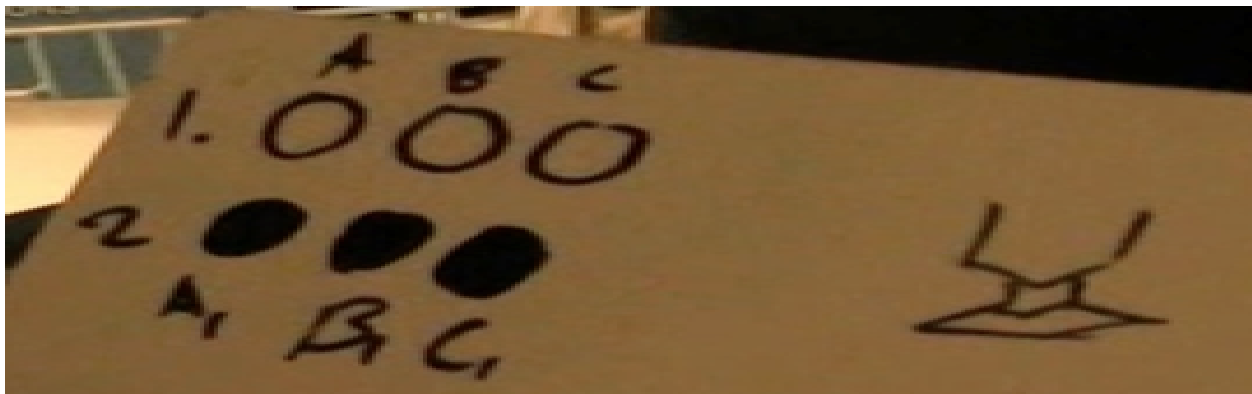


FIGURE 3

- 6 S4: 2:28 Um, I agree with S3, when Ms. T was doing her diagram, with S5 and S6, I thought that Amy was correct, but now I think that, well I wrote that she is incorrect, I don't think she is um, right. Because it seems like there is higher chance of Dominic getting two different color combinations than Amy is going to get two black, um, my diagram is a little unclear, but, I drew a diagram that I understood and I did similar to S2, I drew it exactly like that right on top of each other. And, um, yeah, I think that it is not fair. I think his chances of getting two different is way higher than her's getting two of the same.
- 7 S1: Ok, so, two are pro, two are...
- 8 S3: Against

- 9 S1: 3:14 Against. You have to come up with a solution.
- 10 S4: Yeah.
- 11 S3: You guys are just coming towards our side.
- 12 S2: [Laughs] But we have more statistical work.
- 13 S4: Yeah, you guys do. But, in your diagram, the thing I noticed is that you guys don't have, um, none of them are the same numbers, the letters are they?
- 14 S3: You [pointing at S2's work] put A, B, C, D, you did not recognize the color codes.
- 15 S1: No, they're not, that's the thing when I was doing this, and then I said "maybe it's not..."
- 16 S2: Oh yeah, that's, when you read the problem, it just says...
- 17 S4: Through the thing though...
- 18 S2: Each ball with a different letter, I did not really think that we had to go with the color coding of it, I just labeled each.
- 19 S4: No, no, no, no, that's not, none of them are the same you know. They should, three of them have to be the same, do you understand what I am saying?
- 20 S3: Alright.
- 21 S2: Yeah!
- 22 S3: Alright, but, A, B, and C is white.
- 23 S2: Yeah.
- 24 S3: D, E, and F is black.
- 25 S4: 4:06 Yeah, but the thing is you guys both got that. That's why I thought I was wrong, because you guys both...
- 26 S3: Had the same...
- 27 S4: Right, the same exact thing, um, I was not thinking of that.
- 28 S3: Yeah, I wasn't either.
- 29 S4: That's why I was like "oh, I am wrong." S2, I don't know if you guys are right, are they?
- 30 S3: No, they're not right
- 31 S1: We don't know what the correct answer is.