

Following Up With Students

1 Mister Strong: Can I ask you guys a question? Is this a division or is this a multiplication
2 problem?
3 Markel: Technically it's kind of both. Kind of sort of, but since we multiply by the
4 reciprocal it will be multiplication even though it starts off as division.
5 Mister Strong: It starts off as division?
6 Students: Mm-hmm (affirmative).
7 Mister Strong: Would you agree to that, Ester?
8 Ester: I need to look at the question again.
9 Mister Strong: Well look at it. You tell me is this ... Am I dividing or am I multiplying?
10 Ester: I think you're dividing.
11 Lucian: Yeah I do too.
12 Mister Strong: So if it's a division problem, let me ask you this, what's being divided?
13 What is actually being divided in this problem?
14 Ester: The miles.
15 Mister Strong: Okay. So what number is that?
16 Ester: 4.
17 Mister Strong: Okay.
18 Mister Strong: Does order matter when we're talking about this?
19 Lucian: No, 4 is not being divided.
20 Mister Strong: 4 isn't being divided?
21 Lucian: $\frac{1}{3}$'s being divided.
22 Jasper and Lucian: $\frac{1}{3}$.
23 Mister Strong: $\frac{1}{3}$ is being ...
24 Lucian: 'Cause it's $\frac{1}{3}$ of the mile.
25 Mister Strong: Okay, so I'm dividing $\frac{1}{3}$ up?
26 Lucian: No.
27 Jasper: No, you're dividing 4.
28 Lucian: Wait.
29 Students: You have to think-
30 Ester: You're dividing...
31 Mister Strong: I'm confused.
32 Lucian: Oh wait, no you are dividing.
33 Sorry. You are dividing 4 up.
34 Mister Strong: So I'm dividing 4?
35 Students: Into $\frac{1}{3}$.
36 Mister Strong: Does it matter if I put the four on this side or the 4 on that side.
37 Lucian: It does matter.
38 Ester: Yes, it does.
39 Jasper: Yes.
40 Students: It does.
41 Andrew: Why?
42 Lucian: 'Cause then like this, you're gonna get the wrong answer if you do this.

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43 Mister Strong: Okay, so 4 is the one being divided and I'm dividing it by $\frac{1}{3}$. What is this
44 then?
45
46 Jasper: That's this problem.
47 Ester: That's when you go in to work on the problem, you have to multiply by
48 the reciprocal.
49 Mister Strong: What does that mean?
50 Ester: There are 3 in 1 mile of our – where is that?
51 Then like, so I was trying to think, "How would $\frac{1}{3}$ become three over 1?"
52 Cause that's the reciprocal.
53 Mister Strong: Okay, so talk to me about that. Where, if you're saying both of these will
54 get me the same answer, where's the three in here?
55 Ester: Yeah, that's what I'm trying to think.
56 Mister Strong: Do you know where? Do you guys wanna pitch in on this?