

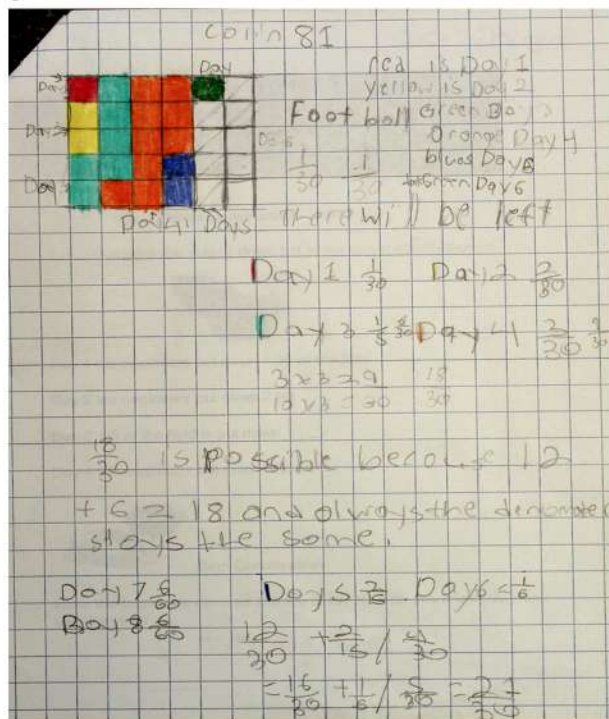
# TURF TOUCHDOWN!

**OPERATION E** Add and subtract fractions with unlike denominators (e.g., 2 and 7) using models and symbols

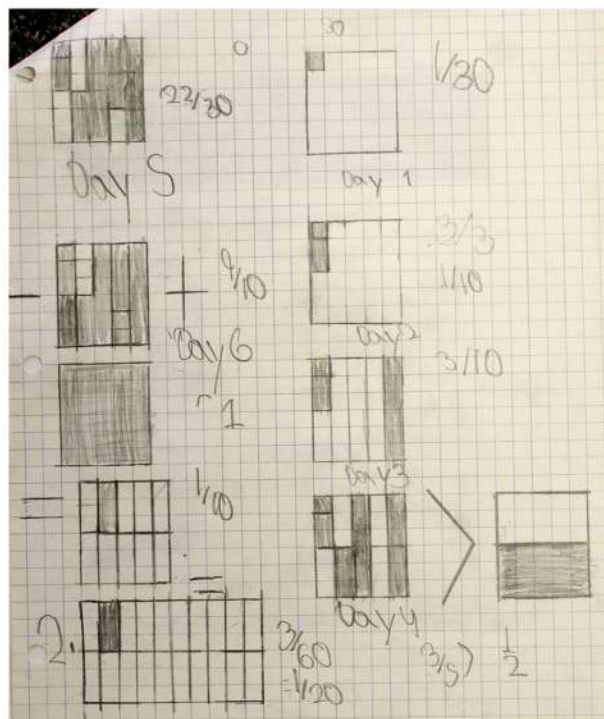
SAMPLE 5

Both pairs of students used a scale with 1 square representing one-thirtieth of the area of the field. Note that in Sample A, the students stated that since the denominators are the same, they need to only consider the numerators. The student pair in Sample B created a new whole referent each time, which would be an interesting strategy to discuss as a whole class. Note that they have included a physical referent of  $\frac{1}{2}$  to compare progress.

SAMPLE A



SAMPLE B



SAMPLE 6

This pair of students could not conceive of splitting  $\frac{3}{30}$  into two equal parts. It would be helpful for these students to be directed back to their model to see where the  $\frac{3}{30}$  is represented and to consider what it means to visually split it into two equal parts. By reminding the students that

the pieces must be the same size when naming fractional parts, they could see that each  $\frac{1}{30}$  can be further partitioned to create two  $\frac{1}{60}$ . Note that this is more conceptual than a procedure for eliminating the decimal, such as doubling the numerator and denominator, and supports student understanding of equivalent fractions as equivalent quantities.

the workers can't do the same amount of work on day 7<sup>th</sup> and day 8<sup>th</sup> because they need only  $\frac{3}{30}$  left to cover and you can't divide 3 on 8 because it gives you a decimal. there is no decimals in fractions.