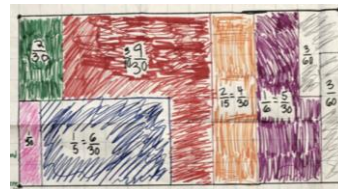


## Turf Touchdown!

### Description

Students represent the installation of turf, which is installed at different fractional rates each day, in a newly constructed field. By creating a model and determining common fractional units, they will be able to establish how much turf needs to be installed on the final two days.



### Mathematics

Addition and subtraction of fractions is frequently introduced using the algorithm of determining common denominators without students understanding why. Students benefit from opportunities to connect the addition and subtraction of fractions to the addition and subtraction of other numbers, all of which require a common unit. When students engage in concrete tasks in which they are required to identify the need for common units and use their understanding of fractions to create equivalent units, they are better able to add fractions appropriately and without error as well as develop fraction number sense.

### Curriculum Connections

Students will:

- add fractions with unlike denominators to reach one whole;
- compare the cumulative quantity to the benchmark  $\frac{1}{2}$ ;
- determine a missing addend;
- partition a physical model to show the missing addend.

### Instructional Sequence

1. Pair students and distribute BLM 1. Review the instructions, reminding them to stop construction when the instructions indicate to do so.
2. As the students work, encourage them to use their model as a thinking tool. This makes the model an ACTIVE space for thinking rather than just ‘showing a solution’.
3. Have students share their thinking and solutions through a gallery walk or whole class discussion.

### Highlights of Student Thinking

Students may:

- correctly respond to the comparison of the amount of turf installed by the end of Day 4 to one-half by saying it is ‘greater than’ or ‘more than’ half but need prompting to use their model to prove they are right;
- add from  $\frac{27}{30}$  to find the missing value of  $\frac{3}{30}$ ;
- work backward from  $\frac{30}{30}$  to  $\frac{27}{30}$  to determine the missing value;
- correct errors in algorithmic calculations by referring to their model;
- struggle to divide  $\frac{3}{30}$  of the turf over 2 days of work;
- use number lines reflecting days rather than fractional amounts;
- add fractional amounts for multiple days;
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### Key Questions

1. How does your model show the amount of turf installed so far?
2. Why did/didn’t you choose to use equal partitions on your model?
3. How could you modify your model (i.e., change the partitions) to allow you to split  $\frac{3}{30}$  equally?

### Materials

BLM 1 (one copy/pair of students)  
coloured pencils/markers

blank and grid paper (one piece/pair of students)  
selection of manipulatives