

Lesson plan for [Fraction Matcher](http://phet.colorado.edu/)  
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**Learning Goals:** Students will be able to:

- Find matching fractions using numbers and pictures
- Make the same fractions using different numbers
- Match fractions in different picture patterns
- Compare fractions using numbers and patterns

**Background:**

This could be used with many age and grade level that need help with fractions. The simulation mixes multiple representations of fractions from 0-6 in both improper and mixed forms. Students do not have to use reduced forms of fractions, but rather relate many representations like  $1/2 = 4/8$  and images of objects like cakes and squares sliced in pieces.

**Fraction Matcher Introduction:**

Students that we interviewed had great success using the simulation with no directions. These teacher tips are meant to help you quickly understand the game operation. We have provided multiple representations to help them with their sense making; they may not use all the representations. Our studies show that student exploration not explicit directions enable the students to get the most value from this sim. See the Tips for Teachers for explanations that might be useful for a teacher; students tend to like the sim better is they have to figure out how to use it.

**Lesson:** I will have the students work in pairs for the first time we use the sim, but plan to enable every student to do some of the game levels by themselves. There is no tracking of student progress after they close the sim and I want to track student progress. I have made 2 sample reporting sheets that could be handed out to help with the tracking. It would also be easy to have the students make Excel spreadsheets and charts to track their progress.

After doing the activity, I'll use this simulation with the recording sheet to monitor student progress. I see my students working with the sim in three ways:

- As a warm-up activity on the days that we work on the word problem software
- Outside of class for students having deficiencies in these basic math skills
- During assigned make-up time in my classroom (At our school, if students are on the D/F list or have attendance issues, they are assigned extra time in the teacher's classroom)

**Post Lesson:** I plan to use my interactive white board to project the sim and have students take turns demonstrating their strategies on levels of their choosing.