



Math game

-Dominumbers-



Educational Goals

- ❖ Highlight the playful potential of mathematics
- ❖ Develop the mathematical vocabulary
- ❖ Work on the different representations of decimal numbers

Key Features of the Targeted Competency

- ❖ To mobilize mathematical concepts and processes appropriate to the situation (C2)
- ❖ To apply mathematical processes appropriate to the situation (C2)
- ❖ To justify actions or statements by referring to mathematical concepts and processes (C2)

Concepts Used

- ❖ Representing a number with a drawing
- ❖ Percentage
- ❖ Fraction
- ❖ Decimal number

Materials

- ❖ Crayons
- ❖ Paper
- ❖ Scissors

Targeted Academic Level



Targeted Competency



Mathematical Field Concerned



Suggested Teaching Formulas



Time Required

Approximately 25 to 35 minutes



Suggested Process



Step 1: Game time (dominos provided) (15 minutes)

You will find in the appendix two sets of dominos. They are standard dominoes, but the usual integers have been replaced by decimal numbers. You can cut out the sets before or ask the students to cut out the set they will use.

Place the students in pairs. Each team gets a set of dominos. The goal of the game is to place the pieces end to end to form the longest chain possible. To juxtapose pieces, the numbers represented on the pieces' parts that are touching have to be equivalent. You can make the two students work as a team to create the longest chain possible or have them play a standard game of dominoes.¹ The students play in turns. If needed, come back over the different representations of rational numbers with the class.

Step 2: Making a set (10 minutes)

You will find in the appendix an example of how to make a set of dominos.

Share out the dominos to make among the students (one or two pieces per student) and ask them to make them by being creative and alternating the way they represent the numbers. You can plan ahead to make several sets with different numbers for more variety and so several students can play at the same time.

Step 3: Game time (variable duration)

The students can now play with the set they made.

If you made only one set for the whole class, place a piece on the board where it can easily be seen and ask the students to come add the pieces they made.

If you made several sets, place the students in teams so they can play.

We advise you to keep the set or sets that were made and to offer the students to play when they have some spare time.

Short on Time?

Here are some suggestions for an "express" process:

- Cut out the sets of dominos provided yourself and only do step 1: the game!
- Explain the activity and give sets of dominos to make at the beginning of the day or the week and leave the materials available for the students. Ask the students to make their pieces when they have spare time, or when they finish their work early.
- Spread out the activity over a few days, dedicating approximately fifteen minutes to it each time, for example before lunch or after recess. This way, the students could complete approximately one step per day.

¹ In the standard game, the dominos are distributed face down to the players. The first player places a domino. The next player tries to add another domino (to do so, he must place side by side parts representing equivalent quantities). If a player plays all his pieces, he wins. If it is not possible to add pieces anymore, the player who has the least pieces left wins.

Making the set of dominos:

Make a set of dominos using the decimal numbers you want to work on with your students as the numbers. For example, you could select the numbers:

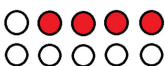
$\frac{3}{4}$ 1,5 5 50% 4/10 6/3 and 10%

Each quantity may be written as a number, a fraction, a drawing or a percentage. The set should include a representation of every kind for a same number. So, it is important to alternate the way of representing the numbers. The following table shows the different dominos combinations you could find. Each row represents a domino to make. Give one or two rows to each student and ask him to make the domino requested.

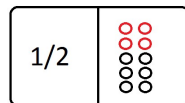
Number on the left	Number on the right
$\frac{3}{4}$	$\frac{3}{4}$
$\frac{3}{4}$	1,5
$\frac{3}{4}$	5
$\frac{3}{4}$	50%
$\frac{3}{4}$	4/10
$\frac{3}{4}$	6/3
$\frac{3}{4}$	10%
1,5	1,5
1,5	5
1,5	50%
1,5	4/10
1,5	6/3
1,5	10%
5	5
5	50%
5	4/10
5	6/3
5	10%
50%	50%
50%	4/10
50%	6/3
50%	10%
4/10	4/10
4/10	6/3
4/10	10%
6/3	6/3
6/3	10%
10%	10%

Examples of writing for the number 4/10:

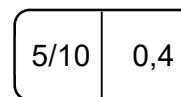
Number: 0,4 Fraction: 4/10

Drawing:  Percentage: 40%

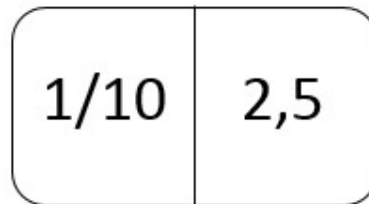
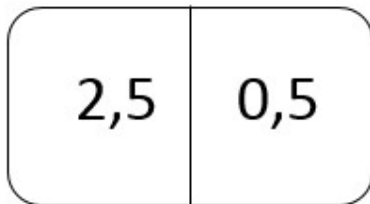
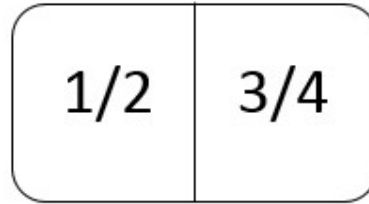
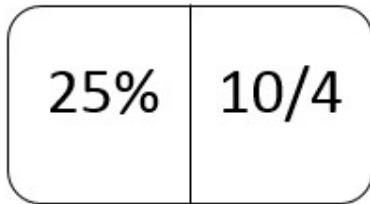
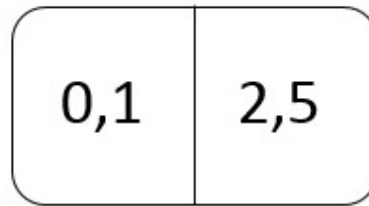
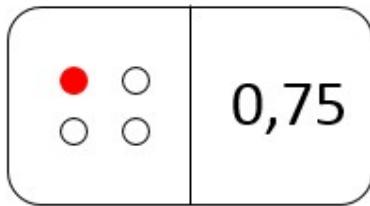
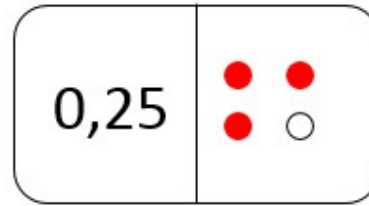
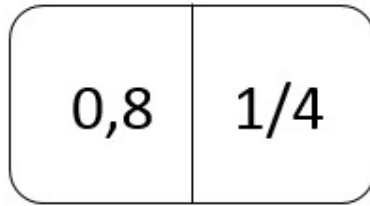
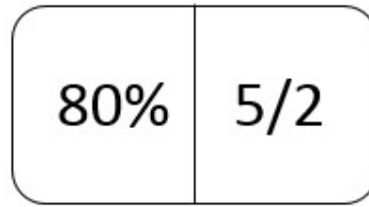
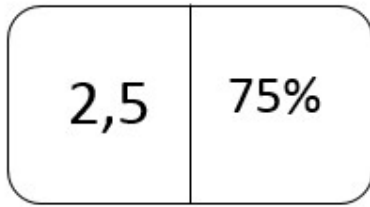
So, the domino 50% | 4/10 could look like:



or



Set A



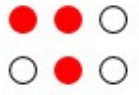
Set B

$\frac{4}{5}$	$\frac{4}{20}$
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50%	0,05
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$\frac{1}{5}$	0,2
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0,8	$\frac{1}{20}$
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	200%
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1	2
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$\frac{9}{10}$	5%
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$\frac{1}{5}$	80%
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$\frac{4}{5}$	$\frac{2}{40}$
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100%	0,9
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