

SAMPLE LESSON PLAN

5th Grade Math

Subject: This lesson is a mathematics lesson for 5th graders about representing percentages on a 10x10 grid.

Content Standard: Specifically, this lesson meets the following Content Standard for 5th grade mathematics:

1.0 Students compute with very large and very small numbers, positive integers, decimals, and fractions and understand the relationship between decimals, fractions, and percents. They understand the relative magnitudes of numbers.

Materials: overhead projector, transparencies with 10x10 grids, copies of 10x10 grids for students, crayons, paper and pencil

OPENING

Attention: Eyes on me please. When everybody is listening we can get started. (Wait until everyone is paying attention.)

Review: Let's review what a percent looks like. Can anyone come up here and write a percent on the board? What does a fraction look like? Can someone give me an example of a fraction? And remember that although percents and fractions look different they can mean the same thing. For example we can CONVERT a fraction to a decimal and it will mean the same thing. Most recently we have been working with fractions and percents on a number line. (Draw a number line and ask a student to show $50/100$ on a number line. Remind them that this can also be marked as 50%).

Goal: Today we are going to learn to show percents and fractions on a square like this (show grid).

BODY

Model: I Do It

Let's start with 34%. I am going to show you how to show 34% on one of these squares. I want you to watch me do this and when I'm done, it will be your turn to do one with me.

- (Using overhead projector). Here is one whole square. It is also called a 10x10 grid because there are 10 squares along this side and 10 squares on this side.
- We want to show 34% of this square. This big square has 100 small squares in it (if we counted each little square there would be 100). So

the best thing to do is to change 34% into a fraction over 100...because there are 100 squares in total.

- Luckily, whenever there is a percent sign, it means you can also write the percent as that number over 100. So 34% is the same as $34/100$.
- So 34% or $34/100$ means 34 out of 100. Therefore, we need to color in 34 of 100 squares. (Count and color in 34 squares on the projector.)
- So now this shaded areas means 34%, which can also be written as $34/100$.

Prompt: We Do It

Now, let's do the next one together. Let's say the percent is 9%. (Use a new grid on the overhead projector.)

- Raise your hand if you remember how many small squares are in this big square? (100 squares).
- So let's try to write 9% as a fraction with 100 at the bottom. Raise your hand if you know how to do that. ($9/100$).
- So raise your hand if you know how to show 9% or $9/100$ on this big square? (Color in 9 squares... now this shaded area means 9%)

Check: You Do It

Have students independently complete three examples (73%, 41%, 5%). I will write these percents on the board and ask students to: 1) convert these percents into fractions with 100 as the denominator 2) show these percents on three separate 10x10 grids. (I will provide them with pre-printed 10x10 grids and crayons for coloring in the boxes.) I will ask them to write down next to the grid, the percent and the fraction represented by the shaded area. I will circle the room to check their work. After the students complete the three independent problems, I will call upon three different students to show and explain their work.

CLOSE

Review: Can anyone review for us what we learned today? (i.e. how to show fractions and percents on a 10x10 grid).

Preview: Next time we will use the 10x10 grids to show percentages that are greater than 100% and also to show fractions (like $\frac{1}{2}$ or $\frac{1}{4}$) that don't have 100 at the bottom.

Independent Work: I'm going to give you a few more percents to work on right now. Change them into fractions with 100 at the bottom and then show each one on a 10x10 grid. Use the examples on the overhead projector to help you.