**Fractions to Decimals (Day 1)**

**Standard:** Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.

**Practices:**

* Make sense of problems and persevere in solving them.
* Construct viable arguments and critique the reasoning of others.
* Look for and make sense of structure.
* Look for and express regularity in repeated reasoning.

**Objective:** Students will recognize a connection between fractions with denominators of 10 and 100 and their decimal equivalents.

1. **Warm-up:** Make a list of everything you know about FRACTIONS.
2. Give each group a set of fractions.
3. Have them complete the “SHOW me” worksheet once they have sorted the fractions.
4. Once the sheet is finished, give each group a set of decimals.
   1. Ask students: Can you find a place where these decimals fit nicely into your original sort or do you have to change it so they do?
5. After students have sorted and combined the decimals and fractions, have them complete the second “SHOW me” worksheet in order to document their groups rationale, and thinking.
6. If students are finishing early…ask them to come up with a different way to sort the decimals and fractions.

**Fractions to Decimals (Day 2)**

**Standard:** Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.

**Practices:**

* Make sense of problems and persevere in solving them.
* Construct viable arguments and critique the reasoning of others.
* Look for and make sense of structure.
* Look for and express regularity in repeated reasoning.

**Objective:** Students will make a connection between fractions and decimals. They will write a rule that we can use for changing fractions to decimals with denominators of 10 and 100.

1. Warm-up: Decimal vs. Fraction Venn Diagram
2. Give students an example of one of the ways that students sorted their decimals yesterday. For example: 1/2, 5/10, and 0.5.
3. Using the same set of fractions from yesterday, ask students if they can make any other sets similar to this example.
4. Once they have made their groups, ask students to write a rule that we can follow that would help us change fractions to decimals.

**Fractions to Decimals (Day 3)**

Standard: Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.

**Practices:**

* Make sense of problems and persevere in solving them.
* Construct viable arguments and critique the reasoning of others.
* Look for and make sense of structure.
* Look for and express regularity in repeated reasoning.

**Objective:** Students will recognize that they rules we came up with yesterday do not work for ALL fractions and decimals, so we will change it so it does.

1. **Warm-up:** Give students the “rule” that they came up with yesterday along with a few fractions. Ask them to prove that rule to be true. They will be able to prove this to be true because the fractions you give them will all work.
2. Discuss the warm-up…give students an example of a fraction that doesn’t work with the rule. Ask them: Are there others that it doesn’t work for?
3. The rule will only work for certain kinds of fractions. Ask students: What kinds of denominators will work for the rule?
4. How can we change the rule so that it works for ALL fractions?
5. Explain to students that if the fractions can’t be converted into an equivalent fraction with a denominator of 10, 100, 1,000 etc. then they have to divide the numerator by the denominator in order to change it into a decimal.
6. Give students some practice problems.

**Fractions to Decimals (Day 4)**

**Standard:** Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.

**Practices:**

* Make sense of problems and persevere in solving them.
* Construct viable arguments and critique the reasoning of others.
* Look for and make sense of structure.
* Look for and express regularity in repeated reasoning.

**Objective:** Students will recognize and begin to question the different kinds of decimals.

1. Give students a set of fractions.
2. Ask them to CONVERT them to decimals.
3. Once they have the decimals…have them group the decimals and explain WHY their group sorted them the way they did.