

Content Area Assessment Plan Paper

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**Why did you choose the specific learning standards and objectives will you be assessing?
What learning outcomes were you looking for, and what makes them important?**

I chose to focus on Number and Operations: Math Standards for third grade. Meeting these standards helps students to understand the concepts of and become proficient with the skills of fractions, communicate and reason through fractions and become problem solvers using the appropriate strategies to figure out fractions.

Standards:

Numbers & Operations: Fractions

1. Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$.
2. Understand a fraction as a number on the number line; represent fractions on a number line diagram.
 - a. Represent a fraction $1/b$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $1/b$ and that the endpoint of the part based at 0 locates the number $1/b$ on the number line.
 - b. Represent a fraction a/b on a number line diagram by marking off a lengths $1/b$ from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.
3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
 - a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
 - b. Recognize and generate simple equivalent fractions, e.g., $1/2 = 2/4$, $4/6 = 2/3$. Explain why the fractions are equivalent, e.g., by using a visual fraction model.
 - c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. Examples: Express 3 in the form $3 = 3/1$; recognize that $6/1 = 6$; locate $4/4$ and 1 at the same point of a number line diagram.
 - d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.

I wanted my students to be able to meet this common core standards which will help them to achieve the specific learning outcomes. These standards are a big part of the mathematics curriculum and students are going to need to be able to carry these specific skills into their future learning experiences and build on them.

The specific learning outcomes that I am looking for include:

Outcomes:

At the end of this unit, the student will:

1. Recognize that a fraction is a part of a whole (S1)
2. Label and understand correct vocabulary related to fractions (S1)
3. Represent a fraction on a number line (S2)
 4. Analyze a number line to find which fractions make a whole (S2)
 5. Create a number line utilizing various fraction amounts (S2)
 6. Compare fractions to determine equivalent fractions (S3)
 7. Express whole numbers as fractions (S3)
 8. Design visual representation of fractions to determine differences (S3)
 9. Reason about the size of fractions to compare/contrast fractions within the same whole.
10. Work with manipulatives to demonstrate fractions.

Why are they important?

The learning outcomes are important because it helps students to be introduced to many tasks which will help them to build and improve upon their skills and increase their knowledge of recognizing fractions and applying them to real life situations.

Before beginning this unit, students must be able to recognize that a fraction is part of whole and that there is a numerator and denominator. I will teach this concept by using a real life manipulative to show how fractions are all around us and that we could fold a piece of paper and discover a fraction. If we fold the paper another way, we will have a new fraction. Throughout the lesson and especially from the start it is important to identify key vocabulary terms that can be used when fractions are involved. Through modeling, I will show students how to represent fractions on a number line. This number line will help students visually see the different parts that make up a whole. Once students are about to recognize fractions on a number line, then they will be able to analyze the number line and choose which fractions make a whole. Students will be taught that there are many different fractional amounts that make a whole. Students are able to compare these fractions and see what fraction hold a greater than, less then, or equal to value. Students will also be able to discover that fractions can represent whole numbers; students can see this visually when comparing circles in the Think-pair-share activity. Throughout the lesson students will be comparing and contrasting the visual representations and will use manipulatives to reason through their thinking and observations. Being able to compare and contrast is a very important skill for students to have, understand, and apply. When students understand the importance of comparing and contrasting, they will be able to apply this skill to other areas of their education and life.

2. Assume that you will have your students keep a portfolio to collect their assessments for this plan.

A. What is the purpose and audience for the portfolio? Think about why you will be using a portfolio.

The portfolio should be used to tell the story of a student. Students are actively involved in constructing their own story of themselves. The artifacts in the portfolio can demonstrate what the students know and can do and also these artifacts can provide an ongoing record of the student's accomplishments. A portfolio allows students reveal their strengths and reflect on their

work and areas they may need to improve upon. Its purpose is also to keep students involved in their learning and assessments. Students visually see their work that they have done throughout the year.

What makes it useful for your purposes?

A portfolio is helpful to teachers because it provides a way for educators with student assessment and evaluation. The portfolio is a way for teachers to collect, select, organize, and reflect student's work. As a future teacher I can use the portfolio process as an assessment too which will ensure that the portfolio is continuous and ongoing, multidimensional, selective, reflective, and has a clearly defined criteria. These steps of selection and reflection are vital because they create the necessary conditions for the use of the portfolio as an assessment tool to support students learning. I think the portfolio holds student's accountable for their work and motivates them to take pride in their own work. This helps to teach self-regulation and has students take responsibility for their learning. By students taking ownership of their personal work, this allows them to be more motivated and take pride in their assignments. Keeping this work in a portfolio allows students access to their work and they can reflect on how well they have completed their work. Dewey states, "We do not learn from experience. We learn from reflecting on experience." (Rolheiser,2000,p.31)

Who will see the portfolio?

As a teacher, students and I will meet individually every week to communicate their progress. The portfolio can also be seen by the student's parents during parent-teacher conferences. As students get comfortable with their portfolios, I would enjoy if they are able to communicate to me what they feel are their strengths and what areas of their work need some improvement. These little short meetings allow students to self-reflect and also boost their self-esteem. Use of the portfolio in student-led conferences creates the conditions for a shared understanding of student abilities, areas for further development, and the supports needed to ensure continued student growth with respect to curricular objectives as well as the other goals of education.

How will this affect the way the portfolio is developed and kept?

Students will have their work kept in a binder with clear sheet protectors so that their work is kept safe and will not be ruined or ripped out easily. The portfolio will be managed every week and students will continue to put their work in it throughout the year. At the beginning of the year I will have students see completed and well done portfolios. This modeling technique will help students visually see what is expected of them and also will show them how important taking ownership of their work is and how well it can be done. The portfolio will have separate sections which include; attendance, grades, work samples, and self-reflection sheets. Through the provision of guidelines to support the selection of artifacts and the reflection on those pieces of student work, the portfolio transforms into a valuable file.

B. What assessments will you have students put in their portfolios?**Specific Assessments included in student's portfolio:**

The assessment will test student's knowledge of using fractions in a real-life application. Recipes for different types of foods/juices that include different types of fractions would be given to students. Students will then have to follow the recipe and reduce the fractions for each ingredient. For example, from our assessment of our paper folding for the kites, students will know that $\frac{2}{4}$ is equal to $\frac{1}{2}$. Also in the recipe, some of the measurements will be represented as an arrow on a number line where students have to determine where the fraction is placed on the number line. As an end product, students will make their recipe using the new fractions and ingredients and complete a worksheet in their pairs with the rewritten fractions/recipe. Students will showcase their thinking, what ingredients, their measuring tools, and fractions that they used to complete the recipe. Then they will share their recipes with other classes as authentic audiences. For scaffolding, students will be able to have their fraction paper with them during their summative assessment to use as reference for equivalent fractions. The class will also have a conversion table for different measuring tools. This lesson can relate to students prior knowledge and interests if they have baked. It also allows them to see a real-life application of their knowledge.

Assessments:

- Build your own fraction number line.
- Build own kite with fraction parts.
- Make puzzle with colors and write out fractions within it to describe parts of puzzle.
- Make juice based off of a recipe involving different fractions.
- Complete crossword puzzle with fraction vocabulary given definitions.
- Complete coloring worksheet of pie fractions.
- Create own fraction tree.
- Write own word problem using fractions

Summative Assessment: As a summative assessment for our fraction unit, we will do surveys. Each student will collect data from eight other peers on a topic of their choice (Favorite ice cream- with choices, favorite sport, etc.). Then, the students will represent how many of their peers voted for each choice in the category as a fraction. For example, 2 of the 8 students I asked like chocolate ice cream the best, so this, as a fraction is $\frac{2}{8}$ which is $\frac{1}{4}$. The students can then display their data in a pie chart, using fractions, and present it to the class. Students may choose to display the data in another type of graph as well. One formative assessment that we will use is a paper folding activity. The students will take a piece of 8 and $\frac{1}{2}$ by 11 inch piece of paper and follow the instructions of folding to understand the concept that a fraction is a part of a whole. Students will continue to follow directions, finding different variations of the fractions and recording them on a worksheet. (Bloom: create, understand) The next formative assessment we will do will be a Think-Pair-Share where we provide guiding questions such as, "QUESTIONS" (Bloom: analyze, evaluate, create)

Describe how these will show that the students met the objectives.

- The data will provide students with proof of their progress towards meeting each objective.
- I will collect and store my data about the students' understanding of the paper folding activity by observing students while completing the activity as a class using my checklist. I can observe and walk through the steps on how to discover new fractions and ask questions to check for understanding as well. Students will be given a worksheet to complete. I will collect these worksheets to analyze and grade.
- I will collect and store my data by using exit cards to check for student understanding of placing fractions on a number line. I will collect the exit cards at the end of the lesson. These exit cards will provide me with an understanding of which students understood the material and met the objectives and which did not.
- I will collect and store data from the Think-Pair-Share worksheet that I hand out. I will analyze this data by using an answer key to correct the answers and write down observations for the last question that the students share with the class. I will see if the students created an appropriate model and how they demonstrate a representation of the fraction. I will add the points from each worksheet and put them in an Excel document in order to see the range of scores for each part of the TPS.
- I will analyze data from the Fraction Fluency game by seeing which students have a grasp on what fractions are bigger and which fractions are smaller. This fraction fluency worksheet/scorecard will help the teacher see which students are just guessing and which students are actually thinking about the fractions and understanding their meaning and value. Also, I can see who is participating in and understands the concepts and fractions best and who needs help.

Will there be any elements of choice here for students?

Students will be able to choose which work samples they would like to include in their portfolios. Students will be provided with a checklist which will allow them to see what work samples must be included.

To what extent do your assessments fit the principles of authentic assessment?

Wiggins points out that we should think of assessment as information for improving. The tasks that assessments require for students help to educate them about the types of challenges they may face in real world situations. In the real world this is how we learn and are tested. Assessments are used to advance learning for teachers and for students. The authentic and formative assessments will help me to engage my students and give them feedback immediately. Informing them of their strengths and areas for improvement can help my students and I develop plans together.

“There are three important aspects or concepts that should accompany any type of authentic assessment: connecting, reflecting, and feedback.” (Scott, 2000, p.33)

1.Connecting- It is extremely important for students to be able to make connections to the concepts and facts that they are learning. The authentic assessments in my plan focus on having students make connections with what they have learned and applying it to real life situations and problem solving. Many of my authentic assessments have students drawing from their learning experiences which help them to make connections.

2.Reflecting- The key to improving student assessment is helping students develop their self-awareness and reflective skills. A key aspect of many forms of authentic assessment is the opportunities that are provided for students to reflect on their thinking, practices, and learning. (Scott, 2000, p.34) Many of authentic assessments in my plan focus on giving students opportunities to self-reflect and help them to recognize the gaps that exist in their understanding. The rubric in my plan allows students to see the expectations that are set for their different assignments that they are given. Also there are self-reflection questions at the end of the unit for students to answer which helps students to see their strengths and areas of improvement. This gives students the opportunity to assess themselves which will help them improve upon their learning.

3. Feedback- “Learners need information that will help them self-assess and self-correct so that assessment becomes integrated through- out the learning experience.” (Scott, 2000, p.36) Through the feedback process the teacher and students become partners in the learning process. Feedback helps students to monitor their progress and performance and helps students think whether they are on the right track. Feedback is best when it becomes an integral part of a student’s own mental processes; I provide this feedback in my plan through the rubric comments and comments in their portfolio. Students will also receive feedback during student-teacher conferences that will be held once a week. Also students will peer review each other’s portfolio’s so they can get feedback but also see other ways of thinking that they might have never discovered on their own.

How well do they cover all levels of Bloom’s taxonomy?

The assessments in my plan focus on a mixture of lower and higher levels of learning. I think this is a great way to keep students engaged, confident and challenged. The assessments have students constructing, creating, and building on their prior knowledge. Students are able to develop a sense of fractions by making connections with their real life situations and the concept of what a fraction is.

How will the information gained from the assessments be useful to you? To your students?

The information gained from these assessments will help provide me with information about student’s skills and understanding of the material. This will help me to adjust my instruction and strategies for future assessments. By assessing students’ progress and areas of strength and need for improvement, it will allow me to find better ways to meet their individual needs. I will be able to see if I must raise the expectations or see how I can help those students who didn’t quite meet the standards expected of them.

C. How will you keep the portfolio—will it be electronic or paper? What storage/organization system or software will you use to keep the portfolio? Why? This can be one of the toughest questions to answer. You will need to consider what is available to you (or might be available at a future school), what types of artifacts will be in the portfolio, and what the best way is of organizing it.

How I would keep my portfolio would definitely rely on the amount of technology that is available to me at my school. I think a paper-based portfolio would be the best and most useful to have right in the classroom. It would be useful to have the portfolio in the room available for me as a teacher and also for the students. Yes it may take up room in the classroom but I think that it is a very important part of the students learning and giving students the accessibility will help them keep track of what goes in and out of it. Also I can refer to it any time to conference with students which can be a helpful tool in the classroom. Having it on the computer would be helpful but at the same time it can be very time consuming to have scan all the students work onto the computer. Having the portfolio in the classroom gives students access to it constantly.

D. How will you “publish” the portfolio? Who will see the portfolio when it is complete? Will parents, other teachers, and other students see it? If so, how? Why?

The portfolio will be an ongoing work in progress for students. Students will be using it daily and weekly to keep track and add new pieces of work to it. It will be published in a binder and the artifacts will be kept in clear covers. Throughout the school year, students will have access to their portfolios. When the portfolio is complete, which will be at the end of the year, students, teachers and parents will be able to access it. Students and I will be able to discuss their portfolios weekly and parents can see them during parent-teacher conferences. Other teacher can access them too so that they can see what kind of work students that they may have in the future are capable of. I think at the end of the year I would have a day for student’s share their portfolio’s with their peers, parents and teachers. This also allows for students to share their thinking and creative learning with others. By making students accountable for their portfolios, students will want to take pride in their work and they will be more motivated to take responsibility for their work, especially since they will have to share it with others. It is also important that students recognize what a good job they have done with their portfolio’s, and giving them opportunities to share their well done work with others will also help to boost their confidence and self-esteem.

How will you evaluate and collect data on the assessments you will be using? Why did you choose to collect data the way you did?

Paper Folding Assessment- I will collect and store our data about the students’ understanding of the paper folding activity by observing students while completing the activity as a class using our

checklist. I can observe and walk through the steps on how to discover new fractions and ask questions to check for understanding as well. Students will be given a worksheet to complete. The teacher will collect these worksheets to analyze and grade. This checklist will provide me with information on which fractions students understood best and similarly, what misunderstandings students had about specific fractions. I can observe which students understand specific fractions and need to do something more advanced, and who is struggling with understanding specific fractions and how to make the concept more concrete, provide extra practice, etc. This will help me as the teacher to understand which specific fractions and concepts need to be reviewed and/or introduced again. The worksheet will provide me with feedback that shows who understands fractions and how they relate to math and our lives. The worksheet will further reflect student understanding. I can take the grades from the worksheet to further analyze students' needs for learning.

Exit Card Assessment- I will collect and store our data by using exit cards to check for student understanding of placing fractions on a number line. I will collect the exit cards at the end of the lesson. I will use the information from the exit cards to group students and see what similar misunderstandings some students might have and this will help me to know what we must review and change about the way I am presenting our information and these concepts to my students.

Think-Pair-Share Assessment- I will collect and store data from the Think-Pair-Share worksheet that we hand out. Once observing the results of the data for each of the concepts (questions) on the Think-Pair-Share worksheet, the teacher will decide which concepts need to be more explicitly taught and how - concrete, pictorial, or abstract.

Game Assessment- I will collect and store data on the Fraction Fluency game assessment by having students keep score on the Fraction Fluency worksheet. I will use the Fraction Fluency worksheet and my teacher observations during this activity see what the common misunderstandings amongst the class are. This will help me as a teacher to go over these misunderstandings which the class and then play this same game another day.

Summative Assessment- I will have the students collect data from classmates and record their findings on their Data Collection Sheets, then write the fractions for each option on it. They will then construct a pie graph or bar graph which will be handed in with the worksheet after the student shares the results with the class. I will use the overall grades and comments made on each child's rubric to see where the struggles may be or what students are proficient in learning fractions. I can observe, from students' sharing who has fully mastered the concepts of fractions as a part of a whole. This will let me know whether we are done with our unit, need to go back and reteach certain parts, or move onto a higher level concept about fractions (like mixed fractions) or a different math topic all together.

Why did you choose to create your rubric(s) the way you did?

“It is also important to note that rubrics are typically developed and used as open communication devices. Rubrics become an effective mechanism for clarifying and openly communicating the expectations of learning activities.” (Scott, 2000, p.41)

Creating these rubrics is a way for students to see the expectations that are set for the different activities and also helps me as a teacher communicate to students what needs to be included in order for students to meet expectations. Communication is a key, especially for younger students they need to know what is expected of them and need to understand what steps they must take to meet them. Providing students with specific criteria helps to make assessments more objective and specific. We made 4 main performance expectations which clarify the criteria students must meet. The main areas of the rubric identify with the learning outcomes and objectives.

How do you expect the data to be useful to you and to your students?

Paper Folding Assessment- The worksheet students will be given to complete has a checklist in it. This will motivate them to get each part done. Their checklist will be very similar to the teachers’ and will help students check for their own understanding and see which specific fractions are giving them trouble or which ones they are struggling with. It will be returned to them once they are corrected so students can see what they did wrong and will be given an opportunity to change their answers if necessary and hand it back in as a “re-do.”

Exit Card Assessment- I will share this data with our students by handing back the exit cards after reviewing the concepts that were misunderstood and do the exit card activity together as a class. Students in the future will receive a similar exit card that they will have to complete on their own. I can then assess the reviewed instruction and reflect on ways that worked and ways that did not.

Think-Pair-Share Assessment- Students will be sharing what they create with each other and the class in order to see different ways of representing a fraction.

Game Assessment- I will share the data with our students by discussing the fractions game and what strategies students use and used to come to their answers. Students can also then talk with their partners about different strategies and ways that helped them.

Summative Assessment- Students will get feedback via their rubric with room for specific comments as well as verbal responses to the sharing of the graphs with the class. Students will be able to display their graphs for all of the class to see (labeled with fractions) or bar graphs.

- The data provided for students on each assessment will help in student learning and will allow me to effectively change my instruction to meet the needs of my students. This data will help me to communicate with students and parents about student progress.

How will you translate your data into summary grades for report cards?

Student's grades on the assessments and participation grade will be averaged to form a grade of the report card. But when looking at the data, I will be able to provide information about personal strengths and areas for improvement for each student. Although the assessments will provide me with information on what instructional strategies work and which ones are not as effective, when it comes down to personal report cards, I will want to use individual data to provide students and parents with feedback.

Why did you decide to do it that way?

I think averaging is helpful for students so that they know that they must meet expectations in many different areas of the course. It will also help them to take pride in assessments they might not like so much, but motivates them to try to achieve higher in those assessments that are not their favorites. Students will also be graded on participation, which isn't a difficult stressful grade. If students even if they are quiet, do their work and participate here and there, they will earn full credit.

4. How will you teach self-regulation as part of this assessment? What aspect of self-regulation will you be addressing in particular?

I will focus on teaching students to evaluate and regulate themselves. Students need to be able to judge their personal effectiveness and be able to improve themselves from this evaluation. In my class students will be aware of their expectations and they will set goals each week which they will do their best to achieve. "Students should be encouraged to become actively involved in the assessment process through metacognitive reflection, establishing criteria and performance indicators required to develop effective scoring rubrics, and using these scoring instruments to assess their own work." (Scott, 2000, p.48)

What self-regulation strategies will your students be learning, and how will you teach them?

Monitoring- Some self-regulation objectives for our students are that they will monitor their learning and completion of class activities. In order to self-assess, we have a rubric for their summative assessment that they can fill out as well as the teacher. This will allow students to analyze their work and progress and reflect on it. Then the teacher can see how the students are learning about their learning and reflecting upon it. Students can monitor their performance by checking off their paper folding and then representing it either in writing or as a drawing. Also, during the fraction game, students will keep track of the ones they get correct and incorrect in order to assess their own mastery of the content and fraction fluency skills.

Modeling- We will do a modeling think-aloud in front of the class demonstrating how to self-assess using a rubric, meeting the goals explained within it, to refer to as you work. We will also

explain the significance of checking off your progress as you work, to make sure you complete each step. Before the fraction game, we will go over strategies for fraction fluency and tips to come to an answer quicker (ex. Imagining the manipulatives we have used in their heads to visualize them).

Planning: Students will look at the teacher grade and feedback on the rubric and have students reflect on their strengths and weaknesses.

Journal Writing: Students will write in their journals to self-reflect on how well they did, following specific questions to guide their thinking. They can write about what they will do differently in the future, what they did well, and will specifically state a goal for next time using the formula: My goal is ____ because _____ and I will reach my goal it by _____. Then, the teacher can comment and provide feedback for the students, deciding whether the goal is appropriate for the student. The student will do this for future assignments as well.

Why did you choose those strategies and that way of teaching them?

We will teach students to write in order to reflect on work, as well as fill out rubrics for themselves to see how well they met the goals of the assignment. For content-specific strategies, students will learn strategies for fraction sense. One would be how to understand that fractions are a part of a whole, by creating pie charts and shading the fractions, and using other methods of drawing pictures or creating concrete representations to better visualize fractions. Another strategy is using a number line. Another strategy for students is to have a peer look over their work and check for any errors. We will teach students a strategy of using the classroom environment for help if they struggle. For instance, there may be helpful charts or number lines on the walls. Also, utilizing the “Ask three then me” strategy can help students try to come to an answer on their own without going straight to the teacher. We will teach students to use resources such as the classroom environment, peers, number lines, flash cards, Cuisenaire rods, and pattern blocks. They can also go online and refer to the ten helpful fraction strategies on ConceptuaMath.com. Additionally, students will be directed to use their free choice time to go on sites like BrainPop to practice their fractions, and use other online games and practice websites. In order to ensure that students talk about their resources and strategies, we will make sure that students do activities like our formative assessment, “Think-Pair-Share” and use peer assistance as much as possible. Also, during math games and activities, students are encouraged to work together and share their strategies with each other or the teacher.

What kinds of questions will you ask to get students to reflect?

1. *Did you meet complete all tasks?*
2. *Did you meet your goal? What could you improve?*
3. *What would you change?*
4. *What were your strengths through the activities?*
5. *What areas did you struggle with?*

How will you ask them?

Students will be asked these questions with a self-reflection unit sheet.

How do these questions relate to the aspects of self-regulation you are teaching?

I would have them review their reflection questions, most specifically the question in which they discuss what they could improve on and we would have them develop new goals based on their own answers. I will also have them set new goals when I show them their data from their line graph that tracked their progress. Monitoring, modeling, planning, and journal writing are strategies that will help students answer these reflection questions

Why did you choose them?

I chose these questions because as a teacher it is good if students can write about if they met their goals for the lesson, what areas did they feel strongly about when completing the lesson, what areas did they struggle with and found were unclear, and what was their favorite activity and what activity helped them to grasp the concept the best. The students would collect data from their checklist, the graph that the teacher keeps and their rubrics so that they could reflect using both quantitative and qualitative data.

References:

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Name _____ Date _____

Math: (Fractions Unit)

SET GOALS:

In math, I struggle with

I want to work on my _____ skills in math.

My goal for math this year is to

In order to achieve this goal I will:

- 1.
- 2.
- 3.

Name _____ Date _____

Paper Folding with FractionsInstructions:

Check each box after you fold the paper and use colored chips to cover the correct part(s) of the whole. Write out how you represented the fraction given.

1. Grab two pages of construction paper
2. The construction paper is equal to 1 whole
3. Using the construction paper: How can we show $\frac{1}{2}$? Fold paper. Place one chip.
4. How can we show $\frac{1}{4}$?

Explain

- i. Can you make our $\frac{1}{4}$ folding equal to $\frac{1}{2}$?

Circle YES or NO and explain how

5. How can we show $\frac{1}{8}$?

Explain

i. Can you make our $\frac{1}{8}$ folding equal to $\frac{1}{4}$?

Circle YES or NO and explain how

ii. Can you make our $\frac{1}{8}$ folding equal to $\frac{1}{2}$?

Circle YES or NO and explain how

6. How can we show $\frac{3}{8} = \frac{2}{2} = \frac{3}{4} = \frac{7}{8}$

Draw on back. How many chips did you use for each?

$\frac{3}{8}$ _____ $\frac{2}{2}$ _____ $\frac{3}{4}$ _____ $\frac{7}{8}$ _____

7. How can we show $\frac{1}{3}$?

Draw:

8. How can we show $\frac{1}{6}$?

Draw:

We can make many fractions which are parts of a whole by creating smaller sections of a whole and representing them as fractions. How else do we use fractions in our lives or where do we see fractions?

Name _____ Date _____

Paper Folding with Fractions – ANSWER KEYInstructions:

Check each box after you fold the paper and use colored chips to cover the correct part(s) of the whole. Write out how you represented the fraction given.

9. Grab two pages of construction paper

10. The construction paper is equal to 1 whole

11. Using the construction paper: How can we show $\frac{1}{2}$? Fold paper. Place one chip. 12. How can we show $\frac{1}{4}$?

Explain

We would have one piece of paper folded in four parts with a chip on one segment of it.

i. Can you make our $\frac{1}{4}$ folding equal to $\frac{1}{2}$? Circle **YES** or **NO** and explain how

We put two chips on the paper, one on the $\frac{1}{4}$ and another on the other $\frac{1}{4}$ to represent $\frac{1}{2}$.

13. How can we show $\frac{1}{8}$?

Explain

We folded the paper into eight sections and put a chip on one.

i. Can you make our $\frac{1}{8}$ folding equal to $\frac{1}{4}$?

Circle **YES** or **NO** and explain how

We put a chip on two 1/8 sections of the paper.

ii. Can you make our $\frac{1}{8}$ folding equal to $\frac{1}{2}$?

Circle **YES** or **NO** and explain how

We would put chips on four of the sections of the 8 to represent 4/8 or $\frac{1}{2}$.

14. How can we show $\frac{3}{8}, \frac{2}{2}, \frac{3}{4}, \frac{7}{8}$

Draw on back. How many chips did you use for each?

$\frac{3}{8}$ _____ $\frac{2}{2}$ _____ $\frac{3}{4}$ _____ $\frac{7}{8}$ _____

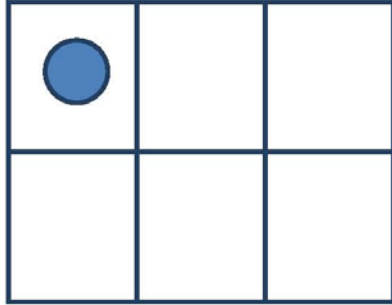
15. How can we show $\frac{1}{3}$?

Draw:



16. How can we show $\frac{1}{6}$?

17. Draw:

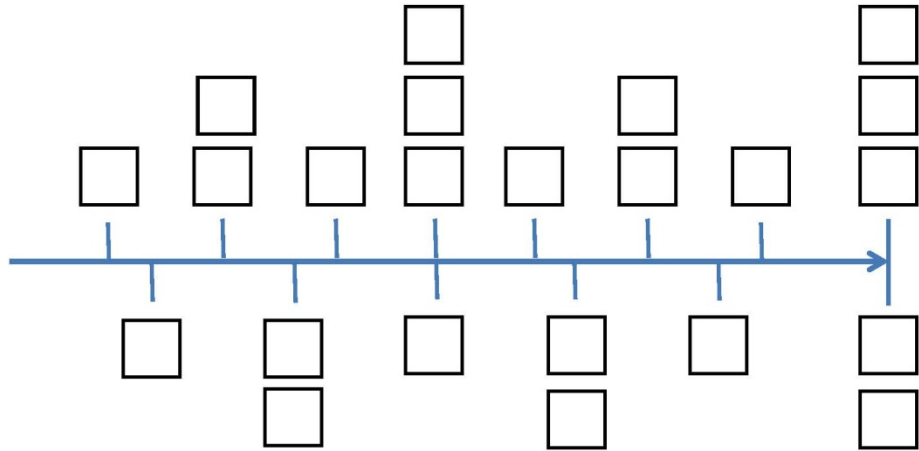


We can make many fractions which are parts of a whole by creating smaller sections of a whole and representing them as fractions. How else do we use fractions in our lives or where do we see fractions?

Students can respond in a variety of ways:

Ex. We see fractions with food. Pizzas and fruits can be divided into smaller parts so we can all share. These parts are fractions.

Exit Card Directions:
Label all of the equivalent fractions on the
number line. Do as many as you can.
Try to label all 23!



Names _____

THINK-PAIR-SHARE

From what you know about fractions, which of the following are larger, smaller, or equal?

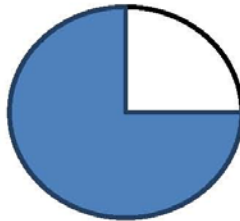
(Use greater than >, Less than <, or Equal to = signs)

$\frac{1}{2}$ $\frac{1}{4}$ $\frac{2}{8}$ $\frac{3}{8}$ $\frac{3}{3}$ 1

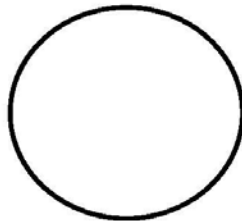
With your partner, color (using different colors) in the circles to represent the fractions.

Example:

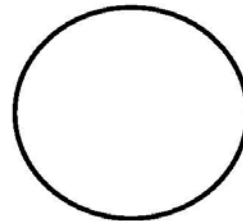
$\frac{3}{4} =$



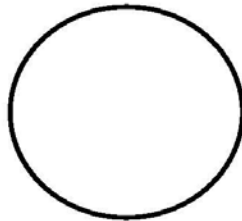
$\frac{2}{4} =$



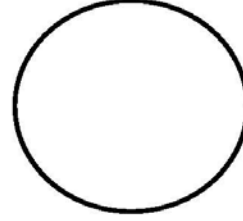
$\frac{1}{8} =$



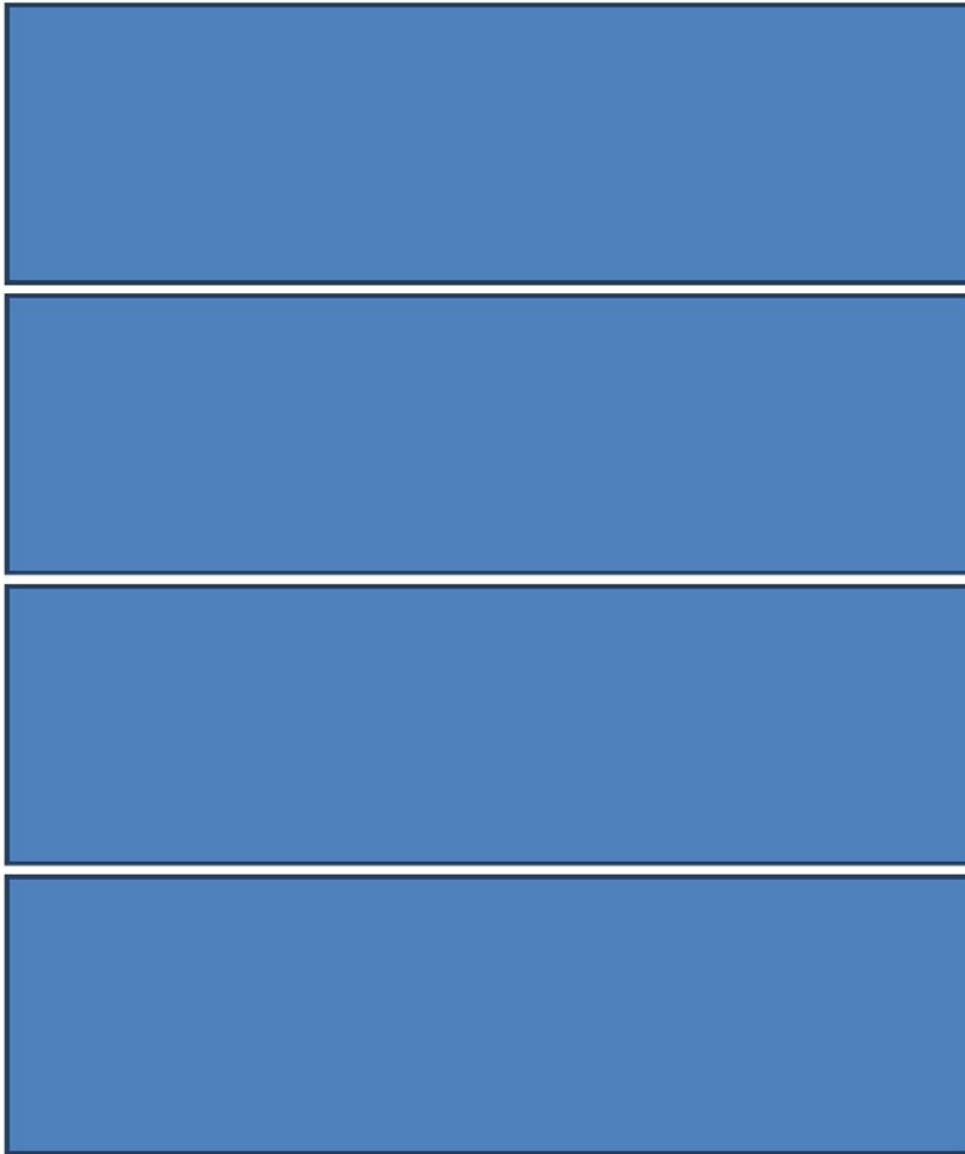
$\frac{2}{8} =$



$\frac{4}{4} =$



Build a concrete model showing your thinking using Cuisenaire rods. Using the four boxes below to show your thinking.

The image contains four identical, vertically stacked rectangular boxes. Each box is filled with a solid blue color and has a thin black border. These boxes are intended for the student to draw a concrete model using Cuisenaire rods to illustrate their mathematical thinking.

Names _____

THINK-PAIR-SHARE

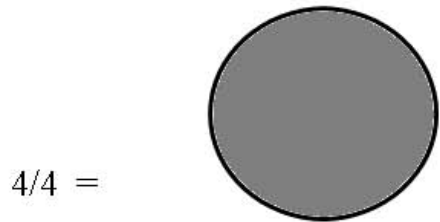
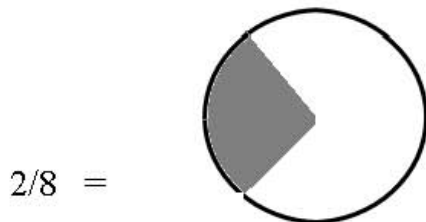
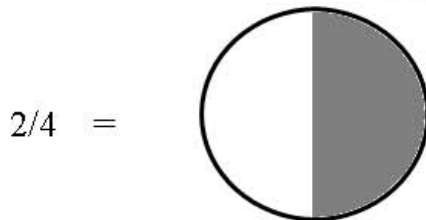
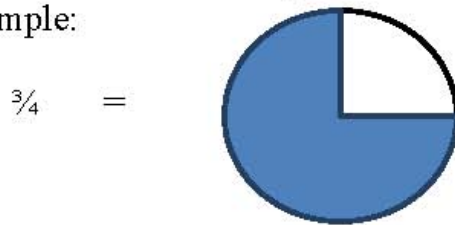
Answer Key

From what you know about fractions, which of the following are larger, smaller, or equal? (Each correct is 1 point)
 (Use greater than >, Less than <, or Equal to = signs)

$\frac{1}{2}$ > $\frac{1}{4}$ = $\frac{2}{8}$ < $\frac{3}{8}$ < $\frac{3}{3}$ = 1

With your partner, color (using different colors) in the circles to represent the fractions. (Each correct is 1 point)

Example:



We will go around to all of the pairs and check what rods they used to make and compare fractions. This will be marked on their worksheets.

Students will reflect on their thinking by answering the following questions:

1. During the Think-Pair-Share did I use concrete thinking? How and how did this help me understand the math?
2. How did sharing my ideas with my partner to create the fractions with Cuisenaire rods help me to learn better?
3. Did I use pictorial thinking? How and how did this help me understand the concept?

CLASS SURVEY

Name _____

What is your favorite _____?

Student	Option 1	Option 2	Option 3	Option 4	Other
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					

How many people, out of 12 chose:

Option 1: _____ As a fraction: _____

Option 2: _____ As a fraction: _____

Option 3: _____ As a fraction: _____

Option 4: _____ As a fraction: _____

Other: _____ As a fraction: _____

	4	3	2	1	0
Data Collection	Student collected data from ten classmates and recorded results in Data Collection Worksheet.	Student collected data from ten classmates and recorded some results in the Data Collection Worksheet.	Student collected data from five to ten classmates and recorded some results in the Data Collection Worksheet.	Student collected little to no data from classmates (less than five) and recorded few results in the Data Collection Worksheet.	Student did not collect any data from classmates and/or did not record results in the Data Collection Worksheet.
Representation of Data as Fractions	Student accurately represented all the data they collected as fractions with no errors.	Student accurately represented <i>all</i> the data they collected as fractions with very few errors.	Student accurately represented <i>some</i> of the data they collected as fractions with few errors.	Student attempted to accurately represent the data they collected as fractions but many errors were present.	Student did not represent the data collected as fractions.
Representation of Data as Chart/Graph Creativity	Student accurately represented all the data they collected as a chart or graph with no errors. Creatively represented information as a graph.	Student accurately represented all the data they collected as a chart or graph with few errors. Creatively represented information as a graph.	Student accurately represented <i>some</i> the data they collected as a chart or graph with few errors. Demonstrated some creativity in the graph.	Student attempted to accurately represent some of the data they collected as a chart or graph but many errors were present and little creativity was evident.	Student did not represent the data they collected as a chart or graph.
Expression	Student expresses any whole numbers as fractions with accuracy.	Student expresses some whole numbers as fractions accurately.	Students express a few whole numbers from data as fractions.	Student only expresses/converts one whole number to a fraction	Student does not meet this objective.

Student Name _____ Date _____

Comments: _____

Self Reflection on Unit

1. What areas do you think you need to improve upon to meet your goals in math and problem solving?
2. In what areas do you think your goals were met for learning about fractions?
3. What do you think needs to be done to reach the goals you have not met in math in general?
4. How can I as your teacher help you meet your goals?
5. Has your performance improved throughout the rest of the year?