Recommendation 2

Help students recognize that fractions are numbers and that they expand the number system beyond whole numbers. Use number lines as a central representational tool in teaching this and other fraction concepts from the early grades onward.

Early fractions instruction generally focuses on the idea that fractions represent parts of a whole (e.g., one-third as the relation of one part to a whole that has three equal parts). Although the part-whole interpretation of fractions is important, too often instruction does not convey another simple but critical idea: fractions are numbers with magnitudes (values) that can be either ordered or considered equivalent.

Many common misconceptions—such as that two fractions should be added by adding the numerators and then adding the denominators—stem from not understanding that fractions are numbers with magnitudes. Not understanding this can even lead to confusion regarding whether fractions are numbers. For example, many students believe that four-thirds is not a number, advancing explanations such as, "You cannot have four parts of an object that is divided into three parts."[49] Further, many students do not understand that fractions provide a unit of measure that allows more precise measurement than whole numbers; these students fail to realize that an infinite range of numbers exists between successive whole numbers or between any two fractions.[50] Reliance on part-whole instruction alone also leaves unclear how fractions are related to whole numbers.

An effective way to develop students' understanding of fractions as numbers with magnitudes is to use number lines. Number lines can clearly illustrate the magnitude of fractions; the relation between whole numbers and fractions; and the relations among fractions, decimals, and percents. They also provide a starting point for building students' number sense with fractions and provide a way to represent negative fractions visually, which can otherwise be a challenging task. All of these types of understanding are crucial for learning algebra and other more advanced areas of mathematics.

Summary of evidence: Moderate Evidence

Evidence for this recommendation primarily comes from studies demonstrating the usefulness of number lines for developing number sense with whole numbers. These studies used number line representations to teach preschool and early elementary students about the magnitudes of whole numbers.[51] An additional study showed how number lines can be used to teach decimals successfully.[52] All of these studies met WWC evidence standards. Moreover, accuracy in locating whole numbers on number lines is related to mathematical achievement among students in kindergarten through 4th grade, and accuracy in locating decimals on number lines is related to classroom mathematics grades among 5th- and 6th-graders.[53] The panel believes that given the applicability of number lines to fractions as well as whole numbers, these findings indicate that number lines can improve learning of fractions in elementary and middle school.

Number lines with whole numbers. Playing a linear board game with whole numbers for about one hour (four 15-minute sessions over a two-week period) improved understanding of numerical magnitudes by preschoolers from low-income backgrounds.[54] The game involved moving a marker one or two spaces at a time across a horizontal board that had the numbers 1 to 10 listed in order from left to right in consecutive squares. Two additional studies showed the value of other number line procedures for improving knowledge of whole number magnitudes. Estimating the locations of 10 numbers on a 0-to-100 number line improved 1st-graders' ability to locate whole numbers on the number line;[55] and showing 1st-grade students the addends and sums of addition problems on a number line increased the likelihood that students correctly answered the problems later.

Number lines with decimals. In another study, number lines were used to teach decimal concepts to 5th- and 6th-grade students.[56] The teaching technique involved providing students with practice locating decimals on a number line divided into tenths and with a prompt to notice the tenths digit for each number. These students were later more accurate in locating decimals on a number line than students whose number lines were not divided into tenths and did not receive prompts. For all students in the study, a before-and-after comparison showed that conceptual understanding of fractions improved after locating decimals on a number line. This last finding is suggestive evidence, because there is no comparison group of students who did not use a number line.

Another study examined a Dutch curriculum that used number lines and measurement contexts to teach fractions.[57] Students in the treatment group located and compared fractions on a number line and measured objects in the classroom using a strip that could be folded to measure fractional parts. Although this study did not meet WWC evidence standards, the authors reported positive effects on middle school students' number sense with fractions.[58] Two additional studies that were not eligible for review found mixed results of using a number line to teach fraction concepts. Both studies noted challenges that students face in understanding fractions on number lines.[59] For example, one study reported that students had difficulty finding equivalent fractions on

a number line partitioned into smaller units (e.g., finding ⅓ on a number line divided into sixths).[60]

Other evidence that is consistent with the recommendation includes a study showing the relation between skill at estimating locations of decimals on a number line and math grades for 5th- and 6th-grade students,[61] and a mathematician's analysis indicating that learning to represent the full range of numbers on number lines is fundamental to understanding numbers.[62]

How to carry out the recommendation

1. Use measurement activities and number lines to help students understand that fractions are numbers, with all the properties that numbers share.

When students view fractions as numbers, they understand that fractions, like whole numbers, can be used to measure quantities. Measurement activities provide a natural context in this regard.[63] Through such activities, teachers can develop the idea that fractions allow for more precise measurement of quantities than do whole numbers.

Teachers can present situations in which fractions are used to solve problems that cannot be solved with whole numbers. For example, they can ask students how to describe the amount of sugar in a cookie recipe that needs more than 1 cup but less than 2 cups.

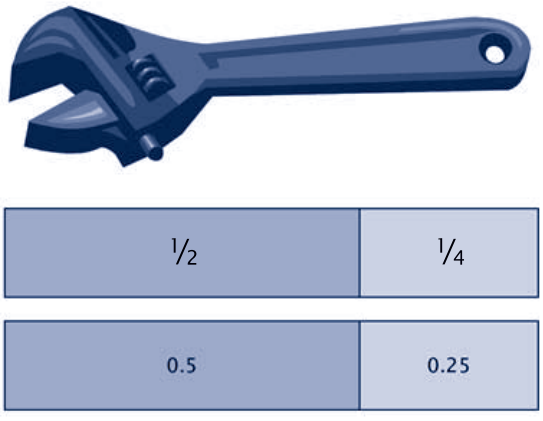
Teachers can then show students the various measurement lines on a measuring cup and convey the importance of fractions in describing quantities. Teachers should emphasize that fractions provide a more precise unit of measure than whole numbers and allow students to describe quantities that whole numbers cannot represent. Fraction strips (also known as fraction strip drawings, strip diagrams, bar strip diagrams, and tape diagrams) are length models that allow students to measure objects using fractional parts and reinforce the idea that fractions can be used to represent quantities (see Example 1).

Example 1. Measurement activities with fraction strips

Teachers can use fraction strips as the basis for measurement activities to reinforce the concept that fractions are numbers that represent quantities.[64]

To start, students can take a strip of card stock or construction paper that represents the initial unit of measure (i.e., a whole) and use that strip to measure objects in the classroom (desk, chalkboard, book, etc.). When the length of an object is not equal to a whole number of strips, teachers can provide students with strips that represent fractional amounts of the original strip. For example, a student might use three whole strips and a half strip to measure a desk.

Using fraction strips to measure an object



Teachers should emphasize that fraction strips represent different units of measure and should have students measure the same object first using only whole strips and then using a fractional strip. Teachers should discuss how the length of the object remains the same but how different units of measure allow for better precision in describing it. Students should realize that the size of the subsequently presented fraction strips is defined by the size of the original strip (i.e., a half strip is equal to one-half the length of the original strip).

2. Provide opportunities for students to locate and compare fractions on number lines.

Teachers should provide opportunities for students to locate and compare fractions on number lines. These activities should include fractions in a variety of forms, including proper fractions (⅔), improper fractions (5/3), mixed numbers (1⅔), whole numbers (4/2), decimals (0.40), and percents (70%).

Teachers can initially have students locate and compare fractions on number lines with the fractions already marked (e.g., a number line with marks indicating tenths). Pre-segmented number lines avoid the difficulty students have in accurately partitioning the number line. These number lines also are useful for locating and comparing fractions whose locations are indicated (e.g., ⅜ and ⅝ on a number line with eighths marked) and fractions whose denominator is a factor of the unit fractions shown on the number line (e.g., ¼ and ¾ on a line with eighths marked), as well as fractions with other denominators (e.g., 1/7, ⅗). For example, students might compare the locations of ⅞ and ¾ on a number line marked with eighths. These activities should include opportunities for students to locate whole numbers on the number line and compare their locations to those of fractions, including ones equivalent to whole numbers (e.g., locating 1 and 8/8).

Number lines also can be used to compare fractions of varying sizes to whole numbers greater than one (locating 10/3 on a number line with 0 at the left end, 5 at the right end, and 1, 2, 3, and 4 marked in between). Example 2 provides a strategy that can be used to introduce students to the idea of locating fractions on a number line.

Comparing fractions with different denominators on a pre-segmented number line can be complicated for young students—for example, comparing ⅜ and ⅓ on a number line divided into eighths. To help students understand such problems, teachers can label number lines with one fractional-unit sequence above the number line and a different fractional-unit sequence below the number line. For example, when asking students to compare ⅓ and ⅜, teachers might label eighths above the number line and thirds below it. Such number lines allow students who are relatively early in the process of learning about fractions to locate and compare fractions with different denominators and to think about the relative size of the fractions.[66]

Teachers also should provide students with opportunities to locate and compare fractions on number lines that are minimally labeled—for example, ones with the labels 0, ½, 1, 1½, and 2. This approach is almost a necessity for fractions with large denominators (e.g., dividing a number line into 28ths is difficult) and encourages students to think about the location of fractions relative to the labeled landmarks.[67] For example, teachers can have students locate 6/7 on a number line marked with 0, ½, and 1.

For a whole-class activity, teachers can draw a number line on the board and have students mark estimates of where different fractions

Example 2. Introducing fractions on a number line

The following example describes one way to introduce the idea of locating fractions on a number line, emphasizing that fractions are numbers with quantities.

To illustrate the location of ⅗ on a 0-to-5 number line, the teacher might first mark and label the location of 1 and then divide the space between each whole number into five equal-size parts. After this, the teacher might add the labels 0/5, 1/5, 2/5, ⅗, 4/5, and 5/5 in the 0–1 part of the number line and highlight the location of ⅗.[65] Displaying whole numbers as fractions (e.g., 5/5) allows teachers to discuss what it means to describe whole numbers in terms of fractions and to clarify that whole numbers are fractions too.

fall. As the number line fills up, teachers can guide a discussion about fractions yet to be placed, highlighting the need to preserve the correct order. Inserting decimals and percentages on that same number line can teach additional valuable lessons.

Finally, teachers should encourage students to think about the distance between two fractions: For example, students could compare 1/12 and 1/4 and consider whether 1/12 is closer to 1/4 or 0. Similarly, 0.3 or 0.45 could be compared to locations marked 0, 1/2, and 1, or 0, 0.5, and 1.

3. Use number lines to improve students' understanding of fraction equivalence, fraction density (the concept that there are an infinite number of fractions between any two fractions), and negative fractions.

In addition to being useful for comparing positive fraction magnitudes, number lines also can be valuable for teaching equivalent fractions, negative fractions, and fraction density. Number lines are, of course, not the only way to teach these concepts, but the panel believes they are helpful for improving students' understanding.

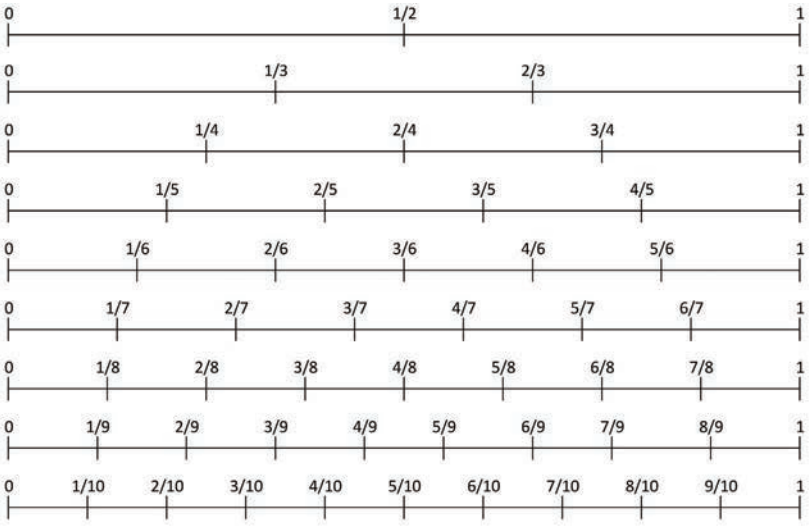
Number lines can be used to illustrate that equivalent fractions describe the same magnitude. For example, asking students to locate 2/5 and 4/10 on a single number line can help them understand the equivalence of these numbers. Teachers can mark fifths above the line and tenths below it (or vice versa) to help students with this task. Although viewing equivalent fractions as the same point on a number line can be challenging for students,[68] the panel believes that the ability to do so is critical for thorough understanding of fractions.

A discussion of equivalent fractions should build on points made in Step 1 about fractions on the number line. For example, teachers can divide a 0-to-1 number line into halves and quarters and show that 1/2 and 2/4 occupy the same, or equivalent, point on the number line (see Figure 4). Students can use a ruler to identify equivalent fractions on the stacked number lines shown in Figure 4, identifying fractions that occupy the same location on each number line. Fraction strips also can be used to reinforce the concept of equivalent fractions by allowing students to measure the distance between two points using different-sized fraction strips (see Figure 5).

Number lines also can be used to help students understand that an infinite number of fractions exist between any two other fractions. This is one way in which fractions differ

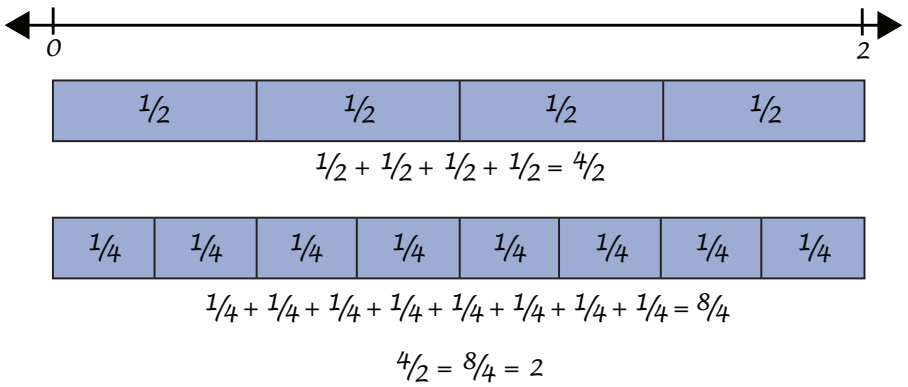
Figure 4. Finding equivalent fractions on a number line

Use of number lines to teach equivalence of fractions in a Japanese curriculum



Source: Adapted from Shoseki (2010).

Figure 5. Using fraction strips to demonstrate equivalent fractions



from whole numbers and can be a difficult concept for students to grasp.[69] Teachers can help students understand this concept by asking them to make successive partitions on the number line, creating smaller and smaller unit fractions.[70] For example, students can divide whole number segments in half to create halves, and then divide each half into halves to create fourths, then divide each fourth into halves to create eighths, and so on (this activity also can be done with thirds, ninths, twenty-sevenths, etc.). Such divisions show students that they always can partition a number line using smaller unit fractions.[71] The same can be done with decimals and percents—such as by showing that 0.13, 0.15, and 0.17 are among the infinite numbers that fall between 0.1 and 0.2, and that 2% falls between 0% and 10%.

The panel further recommends that teachers use number lines when introducing negative fractions. Teaching negative fractions in a part-whole context can be difficult, because the idea of a negative part of a whole is non-intuitive. But the number line provides a straightforward visual representation of fractions less than zero, as well as fractions greater than zero.

By providing number lines that include marks and labels for zero, for several positive fractions, and for several negative fractions with the same absolute values as the positive fractions, teachers can help convey the symmetry about zero of positive and negative fractions. And by placing positive and negative fractions into stories—possibly about locations above and below sea level or about money gained or lost—teachers can illustrate addition and subtraction of both types of fractions.

4. Help students understand that fractions can be represented as common fractions, decimals, and percentages, and develop students' ability to translate among these forms.

Students need a broad view of fractions as numbers. That includes understanding that fractions can be represented as decimals and percents as well as common fractions. Teachers should clearly convey that common fractions, decimals, and percents are just different ways of representing the same number.

Number lines provide a useful tool for helping students understand that fractions, decimals, and percents are different ways of describing the same number. By using a number line with common fractions listed above it and decimals or percentages below it, teachers can help students locate and compare fractions, decimals, and percents on the same number line. For example, teachers can provide students with a number line marked with 0 and 1, and students can be asked to locate ¾, 0.75, and 75% on it. In addition, when students use division to translate a fraction into a decimal, they can plot both the fraction and the decimal on the same number line.

Potential roadblocks and solutions

Roadblock 2.1. *Students try to partition the number line into fourths by drawing four hash marks rather than three, or they treat the whole number line as the unit.*[72]

Suggested Approach. When using a number line with fractions, students must be taught to represent fourths as four equal-size segments between two whole numbers. Teachers should demonstrate that inserting three equally spaced hash marks between, say, 0 and 1 divides the space into four equal segments, or fourths. This rule can be generalized so that students know that dividing the number line into $\frac{1}{n}$ units requires drawing $n - 1$ hash marks between two whole numbers.

Roadblock 2.2. *When students locate fractions on the number line, they treat the numbers in the fraction as whole numbers (e.g., placing ¾ between 3 and 4).*

Suggested Approach. This mistake reflects a common misconception in which students apply their whole number knowledge to fractions—viewing the numbers that make up a fraction as separate whole numbers. The misconception can be addressed by presenting students with contrasting cases: for example, having them locate 3 and 4 on a 0-to-4 number line, then identifying ¾ as a fraction between 0 and 1, and finally discussing why each fraction goes where it is placed.

Roadblock 2.3. *Students have difficulty understanding that two equivalent fractions are the same point on a number line.*

Suggested Approach. Students often have trouble internalizing how partitions that locate one fraction (e.g., eighths partitions for locating ⅜) also can help locate an equivalent fraction (e.g., ½). One way to address this lack of understanding is to show students one set of numerical labels above the number line and another set of labels below it. Thus, halves could be marked just above the line and eighths just below it, and teachers could point out the equivalent positions of ½ and ⅜, of 1 and ⅞, of 1½ and 1⅜, and so on. Another approach is for students to create a number line showing ½ and another number line showing ⅜ and then compare the two. Teachers can line up the two number lines and lead a discussion about equivalent fractions.

Roadblock 2.4. *The curriculum materials used by my school district focus on part-whole representations and do not use the number line as a key representational tool for fraction concepts and operations.*

Suggested Approach. Although it is important for students to understand that fractions represent parts of a whole, the panel notes that this is only one use of fractions and therefore recommends the use of number lines and measurement contexts to develop a comprehensive understanding of fractions. Manipulatives that often are used to represent part-whole interpretations, such as fraction circles and fraction strips, also can be used to convey measurement interpretations, but considerable care needs to be taken to avoid students simply counting parts of the fraction strip or circle that correspond to the numerator and to the denominator without understanding how the numerator and denominator together indicate a single quantity. Using number lines that are unmarked between the endpoints can avoid such counting without understanding. Some textbooks use number lines extensively for teaching fractions; teachers should examine those books for ideas about how to use number lines to convey the idea that fractions are measures of quantity.

Are Fractions Numbers?

Sample task from achievethecore.org
By Student Achievement Partners

GRADE LEVEL Third

IN THE STANDARDS 3.NF.A

WHAT WE LIKE ABOUT THIS TASK

Mathematically:

- Requires students to construct a viable argument and use examples to justify their reasoning (MP3).
- Focuses on the cluster-level expectations for grade 3: "Develop understanding of fractions as numbers."
- Asks students to think about fractions as numbers without requiring that they have been taught operations with fractions.
- Addresses major misconceptions students often have with fractions.

In the classroom:

- Encourages students to talk about each other's thinking in order to improve their mathematical understanding.
- Allows teacher to gather data on student understanding and use it to plan future instruction.
- Provides opportunity for students to choose and use concrete objects or pictures to help them conceptualize and solve problems.
- Allows students to work independently or collaboratively.

This task was designed to include specific features that support access for all students and align to best practice for English Language Learner (ELL) instruction. Go here to learn more about the research behind these supports. This lesson aligns to ELL best practice in the following ways:

- Provides opportunities for students to practice and refine their use of mathematical language.
- Allows for whole class, small group, and paired discussion for the purpose of practicing with mathematical concepts and language.
- Elicits evidence of student thinking both verbally and in written form.
- Includes a mathematical routine that reflects best practices to supporting ELLs in accessing mathematical concepts.
- Provides opportunities to support students in connecting mathematical language with mathematical representations.

MAKING THE SHIFTS[1]

Focus	Belongs to the Major Work[2] of third grade
Coherence	Extends students' understanding of the number system; lays foundation for grades 4 and 5 work with fraction operations.
Rigor[3]	Conceptual Understanding: primary in this task Procedural Skill and Fluency: not targeted in this task Application: not targeted in this task

[1] For more information read Shifts for Mathematics.
[2] For more information see Focus in Grade Three.
[3] Tasks will often target only one aspect of Rigor.

For a direct link, go to: http://achievethecore.org/page/929/are-fractions-numbers

INSTRUCTIONAL ROUTINE

The steps in this routine are adapted from the Principles for the Design of Mathematics Curricula: Promoting Language and Content Development.

Engage students in the Stronger and Clearer Each Time Mathematical Language Routine to introduce this task. This will provide students with a structured, interactive opportunity to reflect on and refine their current understanding of fractions. While this task can be used at many points of the third grade year, this routine was developed as if the task was part of an introductory fraction lesson.

Part A

Begin the activity by sharing the dialog between Artie and Kay:

Artie said: "Choose a number between 1 and 10."
Kay said: "3/2."
Artie: "That's not a number! It's a fraction."
Kay: "But fractions are numbers!"

Ask students to reflect on the following questions:
Are fractions numbers? How do you know?

Begin by explaining and showing the 5 steps and sharing the title to this routine. Ensure that all students understand the purpose of this routine: listening to other students and incorporating the ideas they hear into their own thinking during the re-write. The goal is Stronger and Clearer Each Time they share and listen to a partner.

Pre-write: Have students record their initial answers to these questions, writing as a mathematician would write and using sentences and drawings as needed.

Think Time: Give students a few minutes to think about what they wrote so they will be ready to explain their thinking to other students. Given the importance of this foundational concept, the students should take their notes with them as they share.

Pair Share: Remind the students that precision is important when sharing. Pair up students and allow time for each partner to share as well as time for them to ask clarifying questions or to discuss similarities/differences.

New Partner and Repeat: Ask students to pair up with another partner and use the same routine.

Revise Pre-write: Students revise their initial answers. They may add details, examples, incorporate new language, or add any new ideas. These should show evidence of refinement in precision, communication, expression, and/or reasoning about the questions.

Part B

Hand out or show the entire task paper. Use this same routine to work on the other questions asked. The questions could be grouped and shared a few at a time.

Questions 1 & 2
Question 3
Question 4 & 5

Finally, ask students to individually write whether they agree with Artie or Kay. They should use their previous writings to write full and complete mathematical explanations.

Alternate Option: Parts A and B can be reversed using "Are fractions numbers?" as a summary of their learning after thinking about questions 1–5. This could also be used as a formative assessment.

LANGUAGE DEVELOPMENT

Ensure students have ample opportunities in instruction to read, write, speak, listen, and understand the mathematical concepts that are represented by the following terms and concepts:

- Fraction
- Whole Number
- Sum
- Equal
- Number
- Add
- Equal

Students should engage with these terms and concepts in the context of mathematical learning, not as a separate vocabulary study. Students should have access to multi-modal representations of these terms and concepts, including: pictures, diagrams, written explanations, gestures, and sharing of non-examples. These representations will encourage precise language, while prioritizing students' articulation of concepts. These terms and concepts should be reinforced in teacher instruction, classroom discussion, and student work.

TASK

TASK: ACTIONS

The teacher should prepare students to engage with this task by asking them what a number is. This dialogue will set the stage for students to begin thinking about fractions and whether or not they are numbers, based on the information they share or hear.

Students work to answer each question in the task. While the students work, the teacher should circulate and ask students about their mathematical thinking. The teacher may take anecdotal notes as a formative assessment of students' understanding of fractions as numbers. Questions the teacher may ask students while working include, but are not limited to:

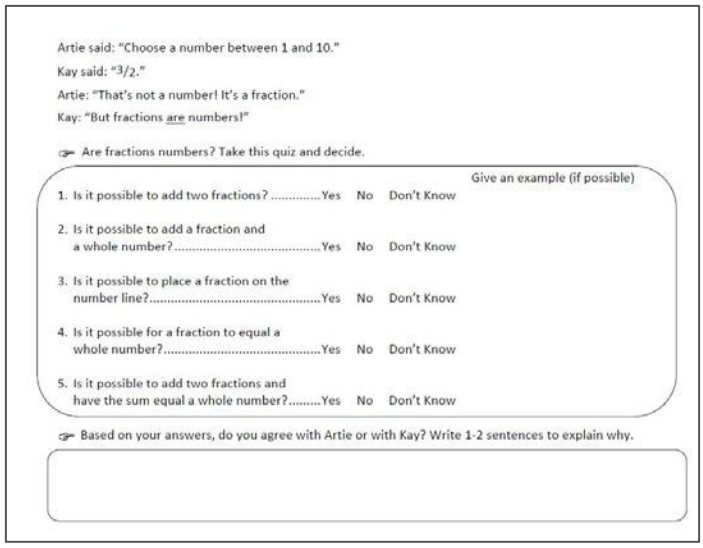
- How do you know? Tell me more.
- What do you have questions about?
- What in the classroom could you use to help you solve the problem?
- Can you explain how that drawing/model supports your answer?
- Tell me why that is a good model/example for this question.

After students have had time to work, the teacher leads a whole-class discussion, focused on highlighting specific reasoning or examples students have used to justify their answers. If possible, the teacher should call on a few students so a variety of solution methods are shared with the class. Some questions the teacher may ask during this discussion could include, but are not limited to:

- Can someone explain that in another way?
- Who can show us a different way to support that same answer?
- Can you show an example of that?
- How do you know that answer makes sense?
- What models convinced you that fractions are or are not numbers?
- Why do you agree/disagree with what your classmate said?

The teacher summarizes the mathematics of the task by highlighting student work and the class discussion with the conclusion that fractions are indeed numbers.

TASK: MATERIALS



Artie said: "Choose a number between 1 and 10."
Kay said: "3/2."
Artie: "That's not a number! It's a fraction."
Kay: "But fractions are numbers!"

☞ Are fractions numbers? Take this quiz and decide.

				Give an example (if possible)
1. Is it possible to add two fractions?	Yes	No	Don't Know	
2. Is it possible to add a fraction and a whole number?	Yes	No	Don't Know	
3. Is it possible to place a fraction on the number line?	Yes	No	Don't Know	
4. Is it possible for a fraction to equal a whole number?	Yes	No	Don't Know	
5. Is it possible to add two fractions and have the sum equal a whole number?	Yes	No	Don't Know	

☞ Based on your answers, do you agree with Artie or with Kay? Write 1-2 sentences to explain why.

Are Fractions Numbers? Handout

COMMENTARY

There are a number of ways this task could be used in a grade 3 or 4 classroom. This task could be used in third grade in the beginning of a unit of study on fractions. It gives teachers an idea of their students' number sense as it relates to fractions. While teachers would not expect their students to have a deep understanding of fractions (yet), some students may apply their knowledge of whole numbers or their experience from real life situations, in order to correctly answer some or all of the questions on the task.

This task may also be used as a pre-assessment in fourth grade to determine what level of understanding students have about fractions from third grade. Alternatively, instructors may choose to use this task towards the end of a study of fractions – either in third or fourth grade – as a mini-assessment of the work students have done with fractions. Once teachers are able to pinpoint the strengths and weaknesses in their students' understanding of fractions, they can plan focused lessons for future instruction.

This task may be used as an activity that starts with independent work and then transitions into partners or small groups. This allows students to create their own ideas and generate examples to support their thinking, without being influenced by the ideas of others. Once students have had time to think about and work with the questions on their own, encourage them to work together. Some of the most profound learning comes from discussions around students' developing thinking, sharing various student solution methods, and asking students to justify their reasoning.

ADDITIONAL THOUGHTS

As part of the Major Work of third grade, this task can enhance classroom discussion about the concept of fractions as numbers (3.NF.A). Number line diagrams are important representations for students as they make the connection between fractions and whole numbers. Understanding fractions as numbers means, first and foremost, seeing fractions as useful for describing quantities. This is the focus of fraction work in grade 3. Then, in grades 4 through 6, students learn how to compute with fractions and solve problems involving arithmetic with fractional quantities.

The work students do with fractions in third grade is predominantly conceptual, as can be seen at the cluster and standard level. The word "understand" is used in the standards to set explicit expectations for conceptual

understanding. Similarly, when standards call for students to "explain" a concept, there needs to be a deep level of understanding in order to arrive at a meaningful explanation. It is important for teachers to carve out sufficient time for students to be able to develop a deep conceptual understanding of fractions in third grade, so they have a strong foundation on which they can build their skills using fractions.

Understanding a fraction (and whole numbers) as a point on the number line and understanding the properties of operations on fractions (and whole numbers) are two key concepts students develop in K–5 in order to understand the rational numbers as a number system (6–8, NS). For more information on the specific expectations for students working with fractions in grade 3, read pages 3–5 in the progression document, *Number and Operations–Fractions*, available at www.achievethecore.org/progressions.

Artie said: “Choose a number between 1 and 10.” Kay said: “3/2.” Artie: “That’s not a number! It’s a fraction.” Kay: “But fractions <u>are</u> numbers!”

☞ Are fractions numbers? Take this quiz and decide.

				Give an example (if possible)
1. Is it possible to add two fractions?	Yes	No	Don’t Know	
2. Is it possible to add a fraction and a whole number?	Yes	No	Don’t Know	
3. Is it possible to place a fraction on the number line?	Yes	No	Don’t Know	
4. Is it possible for a fraction to equal a whole number?	Yes	No	Don’t Know	
5. Is it possible to add two fractions and have the sum equal a whole number?	Yes	No	Don’t Know	

☞ Based on your answers, do you agree with Artie or with Kay? Write 1-2 sentences to explain why.

Lesson Plan

Teacher:	**Class/Group:**	**Date:**
KNPIG ID #: F 7704.0 (Where on the line? (Whole number))	**Task Group Name:** Fraction Number Lines	
AVMR Strand:	**AVMR Construct Level/Color:**	
Fluency Benchmark for RTI: 2.FFF Fluency with Fraction Foundations		
KAS(s): **1)** 2.MD.6 Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.	**KAS Domain and Cluster:** Measurement and Data **1)** Relate addition and subtraction to length.	
Learning Target: I can estimate where a whole number is located on a number line.		
Setting/Materials: Level 0 Number Lines with matching number cards, paper clips or binder clips		
Activity: See teacher notes for directions on materials prep. Students can work individually or in pairs. A student (or pair of students) will choose one envelope containing a number line and number cards. Number cards are shuffled and placed face down. The student draws one card and, looking at the number line with the smiley face, the student places the paper clip in the approximate location of the number shown on the card. The student flips the number line over to see if the paper clip has been placed correctly. The student repeats the process for all cards in the envelope, then repeats the activity with the other sets of lines and cards.		
Evidence of Learning (Diagnostic Assessment of Progress): Show student a number line with 0 and 20 labeled and an unlabeled tick mark located in the middle (at 10). The number line should have no other tick marks or support. Say "Point to where 10 should be located on this line?" Continue with "Show me the location of 8." and "Show me the location of 15." Optionally, direct student to mark 10, 8 & 15 on a number line.		

Teacher Notes:
Print pages on color paper or cardstock. This set makes 6 two-sided number lines and has a black line for making up your own lines. Each page makes two number lines. Cut on the dark lines, then fold on the light lines. Optionally, use a glue stick to seal lines. If preferred, laminate the cut & folded number lines, leaving at least 1/4 in trim around edges. For each line, make the corresponding set of number cards using the suggested numbers shown on the star side of the line. Place one number line, corresponding cards and paper clips or binder clips in a legal sized envelope. Label the envelope with the Task or Level Number (7704.0 or "Level 0") and Number line label (e.g. “Line A”, “Line B”, etc.). If lines are laminated, students may use dry-erase markers to add extra tick marks to the line to improve accuracy.
Note that the larger the paper clip or binder clip used, the less accurately students will need to place clips.
At this level, students are working on number line foundations by locating whole number on a number line.

Printables Link:
http://knp.kentuckymathematics.org/knp/uploads/printables_7704.0F.pdf

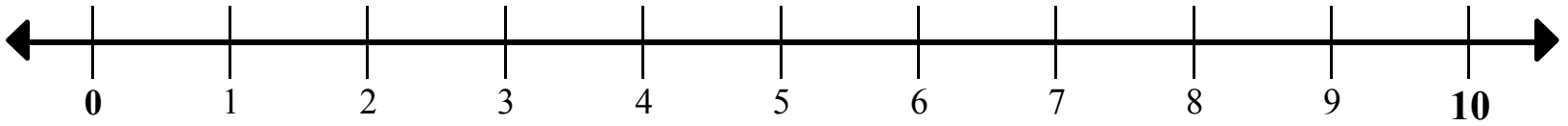
Student Instructions Link:

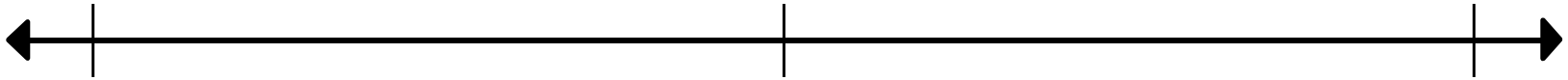
7704 Number Lines

Preparing materials: This master will create two double number lines. Cut along the heavy black lines. Fold each along the light line so that both number lines face outward. Place a large paper clip on the folded edge.

Line A, 7704.0

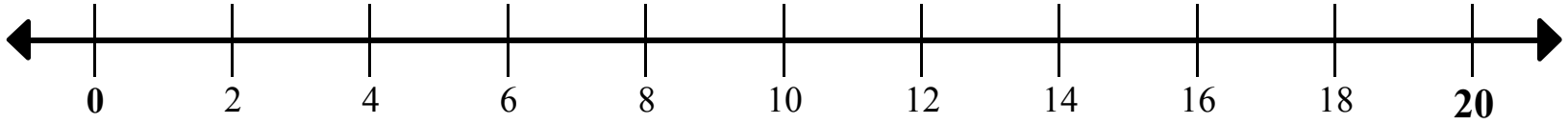
Suggested number cards: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

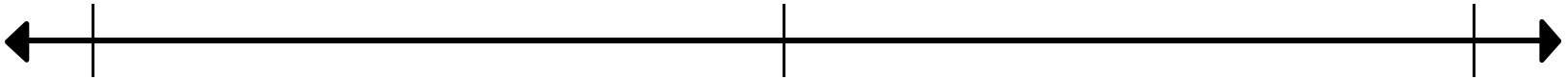




Line B, 7704.0

Suggested number cards: 2, 4, 6, 8, 10, 12, 14, 16, 18. Also 1, 5, 11, 15, 19.



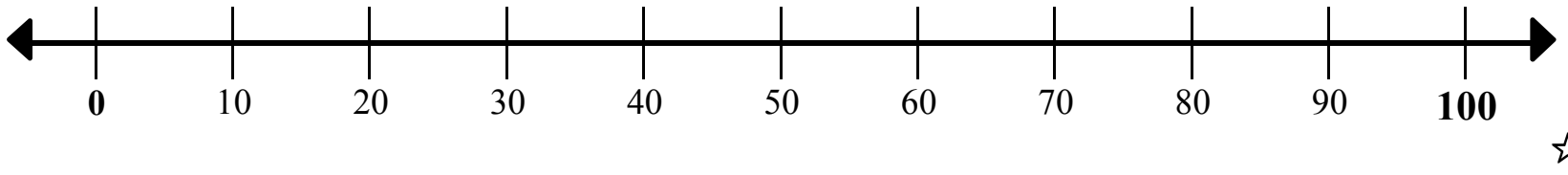


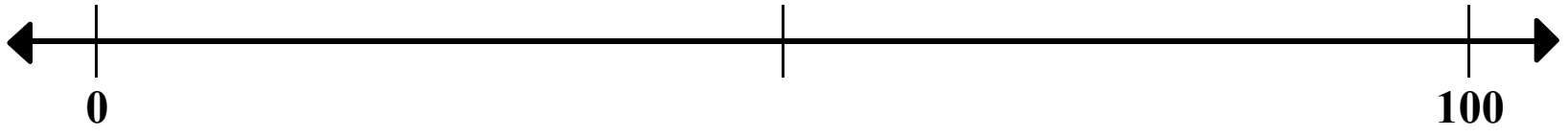
7704 Number Lines

Preparing materials: This master will create two double number lines. Cut along the heavy black lines. Fold each along the light line so that both number lines face outward. Place a large paper clip on the folded edge.

Line C, 7704.0

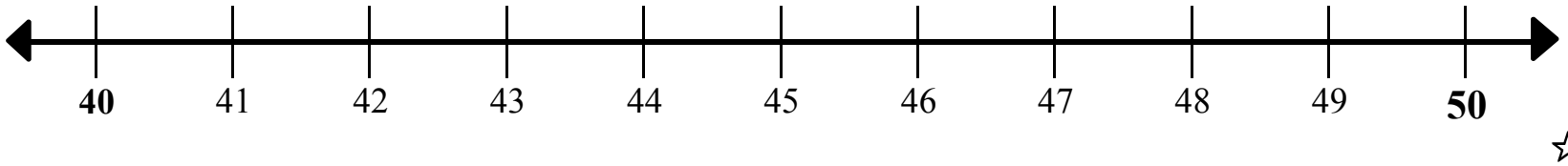
Suggested number cards: 10, 20, 30, 40, 50, 60, 70, 80, 90. Also 25, 75, 5, 95.

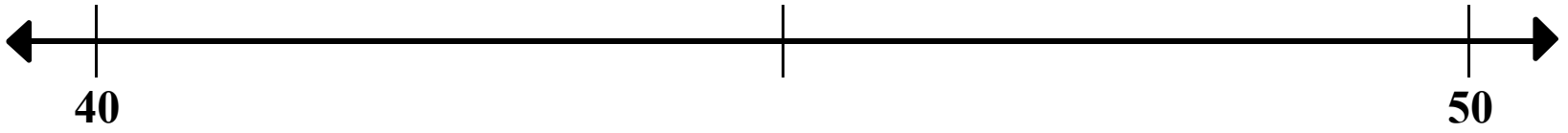




Line D, 7704.0

Suggested number cards: 41, 42, 43, 44, 45, 46, 47, 48, 49.



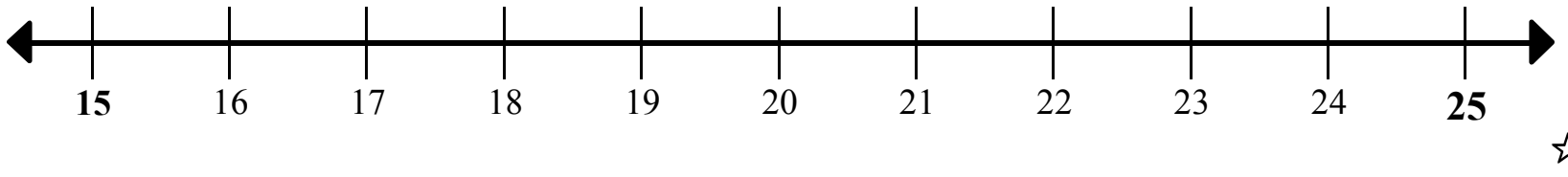


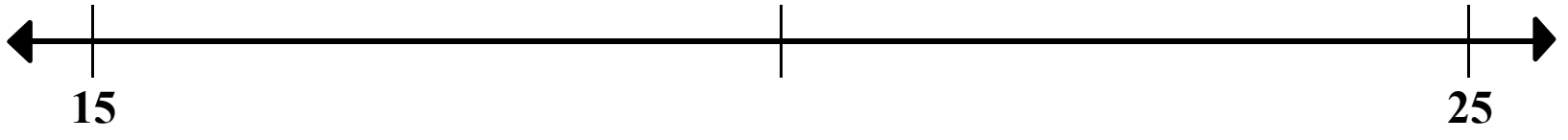
7704 Number Lines

Preparing materials: This master will create two double number lines. Cut along the heavy black lines. Fold each along the light line so that both number lines face outward. Place a large paper clip on the folded edge.

Line E, 7704.0

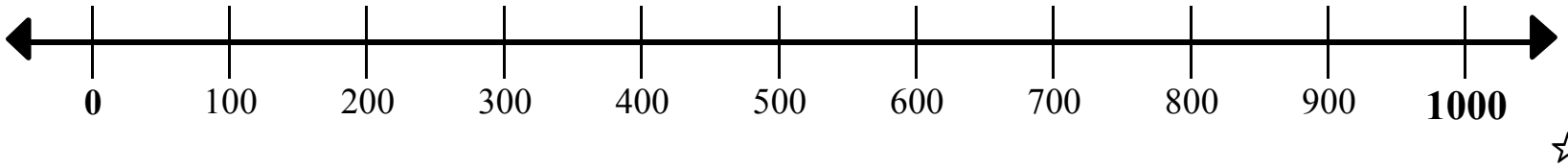
Suggested number cards: 16, 17, 18, 19, 20, 21, 22, 23, 24

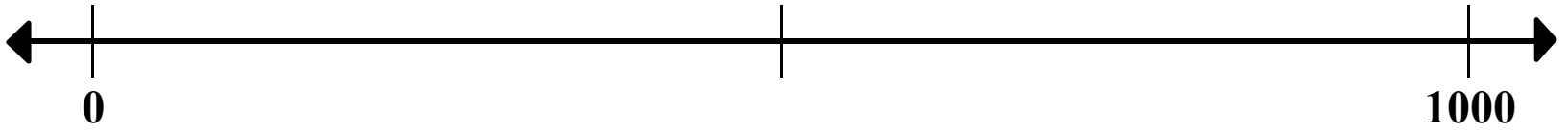




Line F, 7704.0

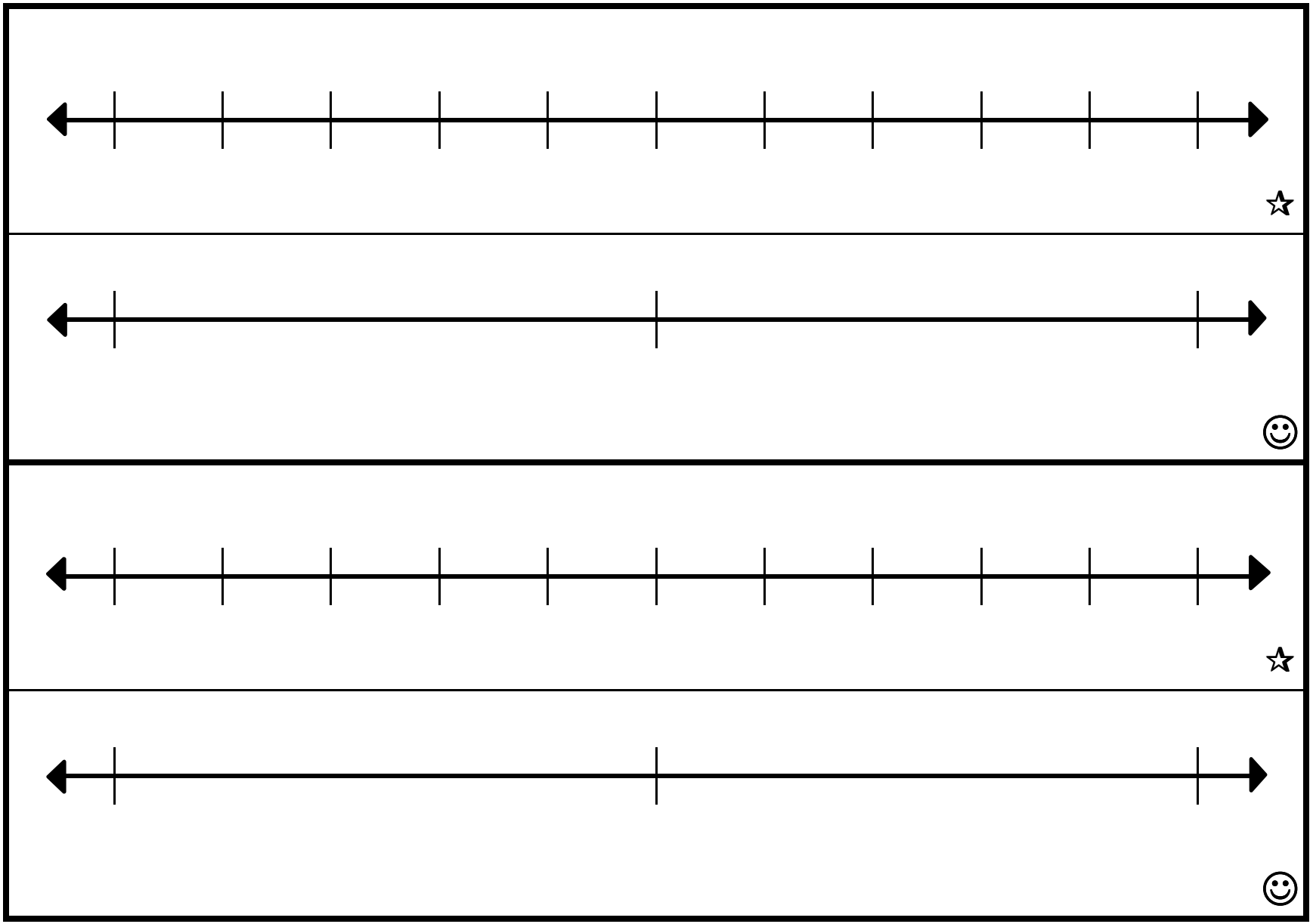
Suggested number cards: 100, 200, 300, 400, 500, 600, 700, 800, 900. Also 250, 750, 50, 990.





7704 Number Lines

Preparing materials: This master will create two double number lines. Cut along the heavy black lines. Fold each along the light line so that both number lines face outward. Write labels on the "star" side. Label endpoints only on the "smilely face" side. Place a large paper clip on the folded edge.



Number Lines - Partitioning!

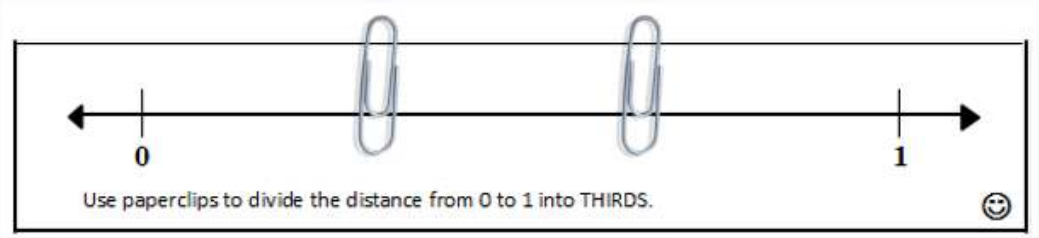
I can partition the distance from 0 to 1 into equal parts.

KNP # F 7704.1 – Number Lines, RED
Fluency Standard: 3.FFP
Standards: 3.NF.2

Materials: Level 1 Number Lines, paper clips

Directions:

1. Choose a Number Line.
2. Read directions on the side with the ☺. Looking only that side, use paper clips to divide the line segment as directed.
   For example, if asked to make THIRDS, your Number Line might look similar to this:

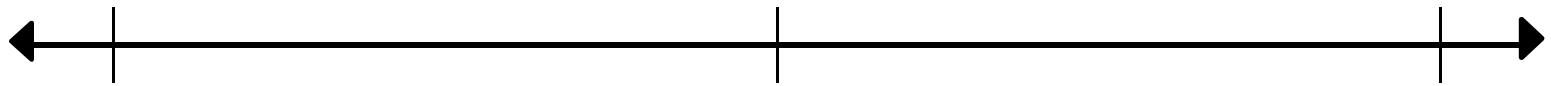


3. Flip the Number Line over. Are your clips touching or near the marks on the side with the ☆?
4. Get a new Number Line and repeat.

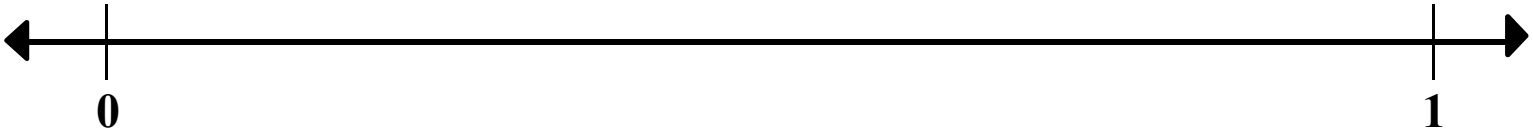
7704 Number Lines

Preparing materials: This master will create two double number lines. Cut along the heavy black lines. Fold each along the light line so that both number lines face outward. Place paperclips on the folded edge.

7704.1



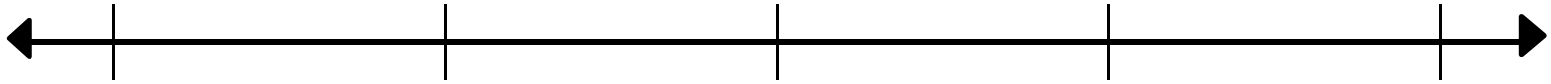
☆



Use a paperclip to partition the distance from 0 to 1 into HALVES.

☺

7704.1



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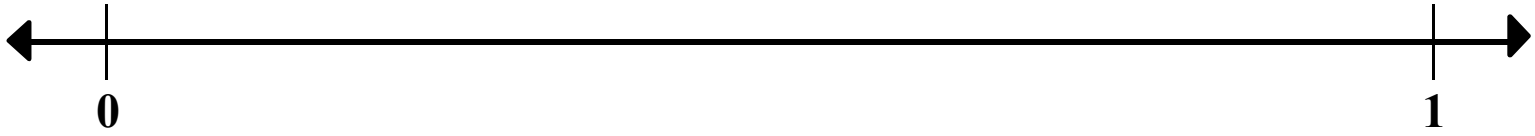


Use paperclips to partition the distance from 0 to 1 into FOURTHS

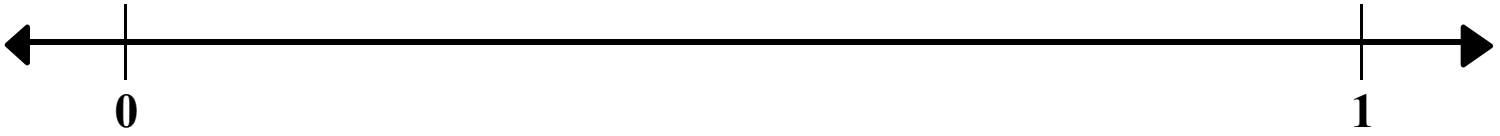
☺

7704 Number Lines

Preparing materials: This master will create two double number lines. Cut along the heavy black lines. Fold each along the light line so that both number lines face outward. Place paperclips on the folded edge.

7704.1

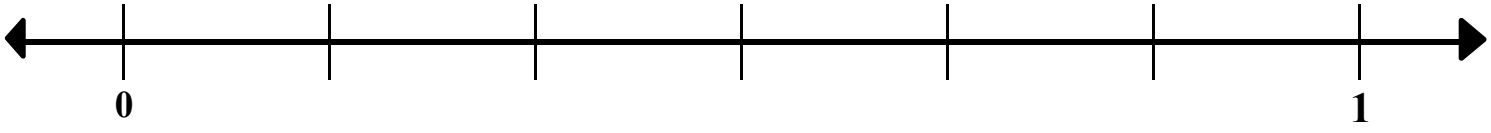
☆



Use paperclips to partition the distance from 0 to 1 into THIRDS.

☺

7704.1



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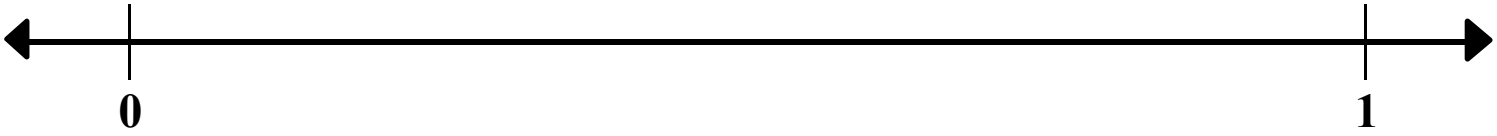


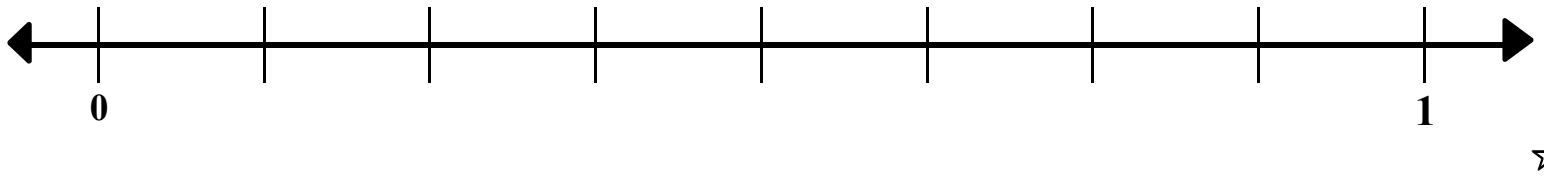
Use paperclips to partition the distance from 0 to 1 into SIXTHS.

☺

7704 Number Lines

Preparing materials: This master will create two double number lines. Cut along the heavy black lines. Fold each along the light line so that both number lines face outward. Place paperclips on the folded edge.

7704.1



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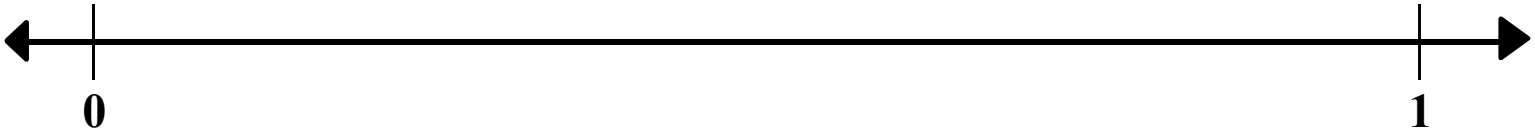
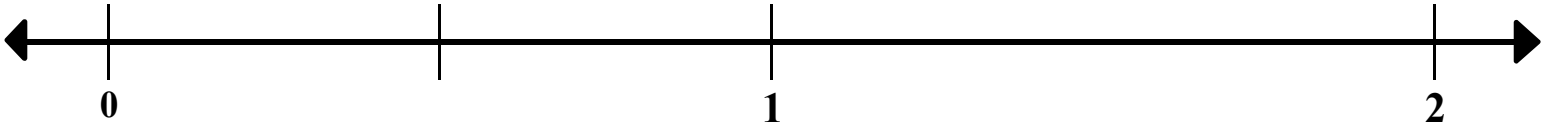


Use a paperclip to partition the distance from 0 to 1 into EIGHTHS.

☺

7704.1



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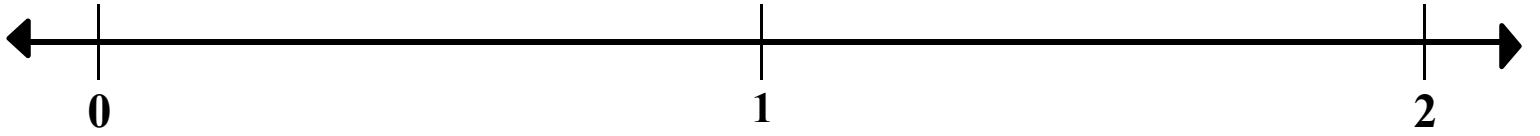


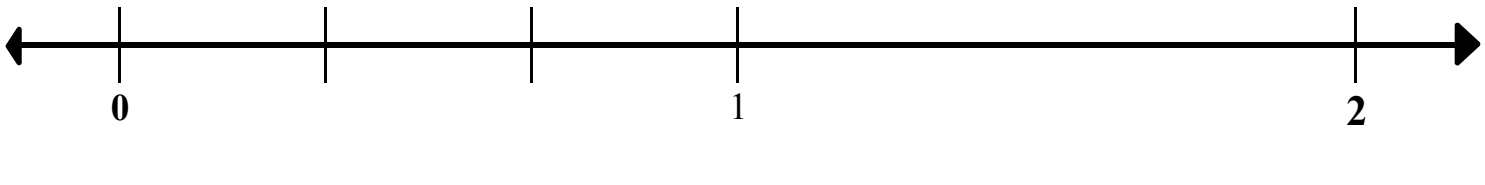
Use a paperclip to partition the distance from 0 to 1 into HALVES

☺

7704 Number Lines

Preparing materials: This master will create two double number lines. Cut along the heavy black lines. Fold each along the light line so that both number lines face outward. Place paperclips on the folded edge.

7704.1



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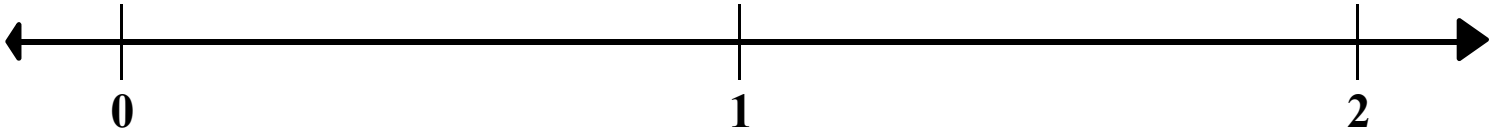
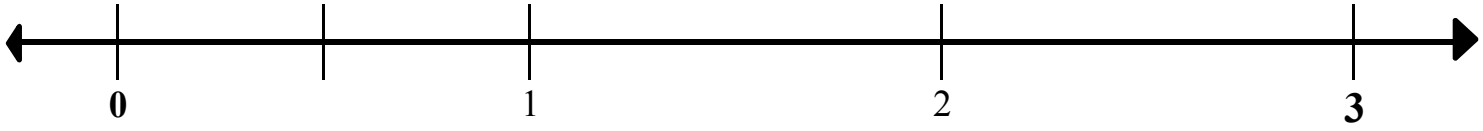


Use paperclips to partition the distance from 0 to 1 into THIRDS.

☺

7704.1



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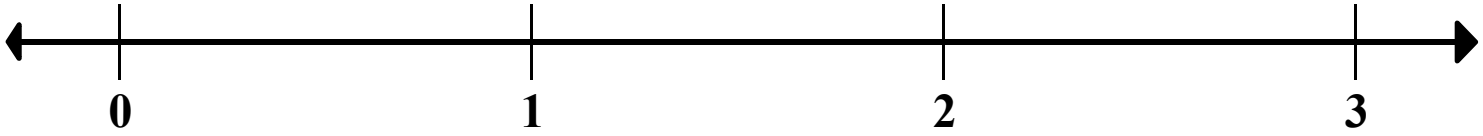


Use a paperclip to partition the distance from 0 to 1 into HALVES.

☺

Number Lines –Where on the line?

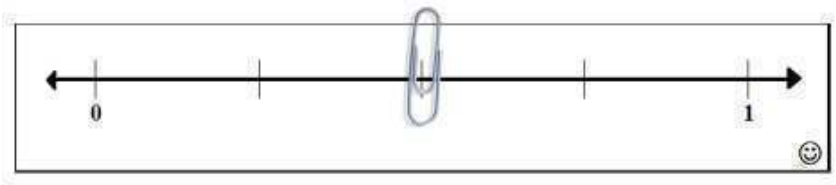
I can determine the location of a fraction on a number line when tick marks are shown.

KNP # F 7704.2 – Number Lines, BLUE
Fluency Standard: 3.FFP
Standards: 3.NF.2

Materials: Level 2 Number Lines with matching number cards, paper clips or binder clips

Directions:

1. Get an envelope with one Number Line and matching number cards.
2. Draw a card. Looking only at the side with the ☺**,** move the paper clip to the location of that number.
   Example : If your card says "2-fourths", your clip should be placed like this:



3. Flip the Number Line over. Looking at the side with the ☆, is your paper clip on or near the number you wanted?
4. Repeat steps 2 & 3 until all number cards have been used.
5. After all cards have been used, get a new envelope and play again!

Extension: For 2 players. Player 1 - Looking at the side with the ☆, move the clip to any number on the line. Player 2 - Looking only at the side with the ☺, guess where the clip is positioned. Players check the side with the ☆ to verify answer.

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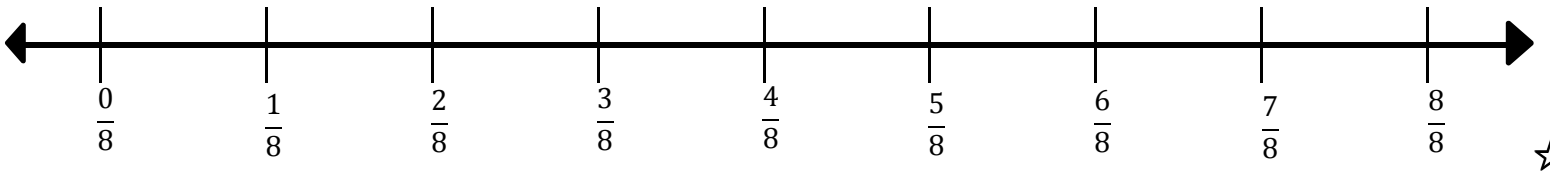
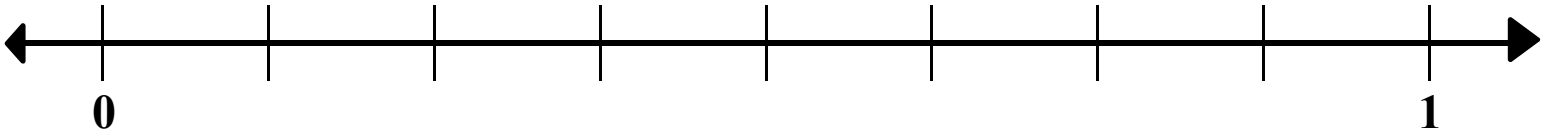
7704 Number Lines - Level 2

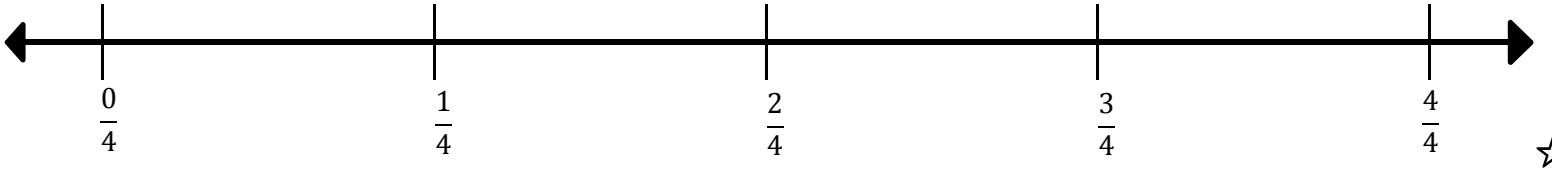
Preparing materials: This master will create two double number lines. Cut along the heavy black lines. Fold each along the light line so that both number lines face outward. Place paperclips on the folded edge.

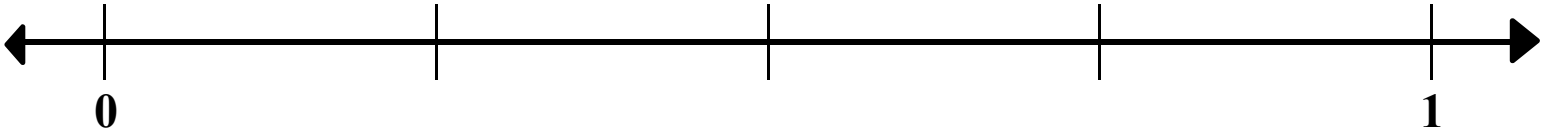
Line B, 7704.2





Line A, 7704.2





Level 2, set A, 2 sets

0-fourths $\frac{0}{4}$ Line **A** 7704.2	1-fourth $\frac{1}{4}$ Line **A** 7704.2	2-fourths $\frac{2}{4}$ Line **A** 7704.2	3-fourths $\frac{3}{4}$ Line **A** 7704.2
4-fourths $\frac{4}{4}$ Line **A** 7704.2			4-fourths $\frac{4}{4}$ Line **A** 7704.2
0-fourths $\frac{0}{4}$ Line **A** 7704.2	1-fourth $\frac{1}{4}$ Line **A** 7704.2	2-fourths $\frac{2}{4}$ Line **A** 7704.2	3-fourths $\frac{3}{4}$ Line **A** 7704.2

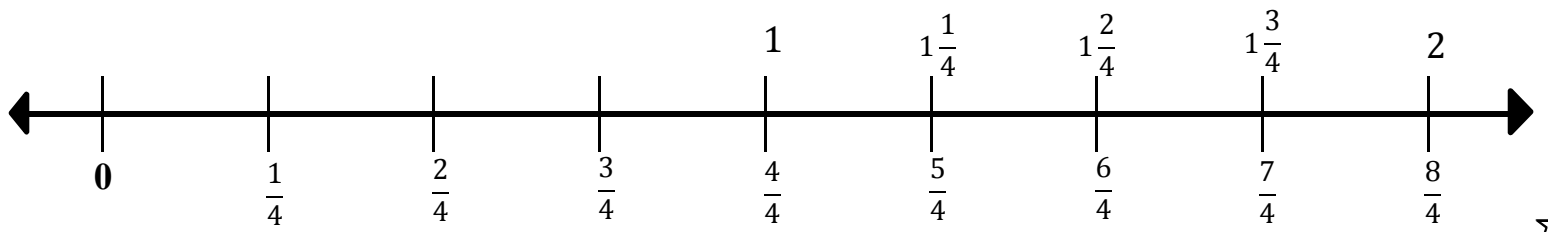
Level 2, Set B

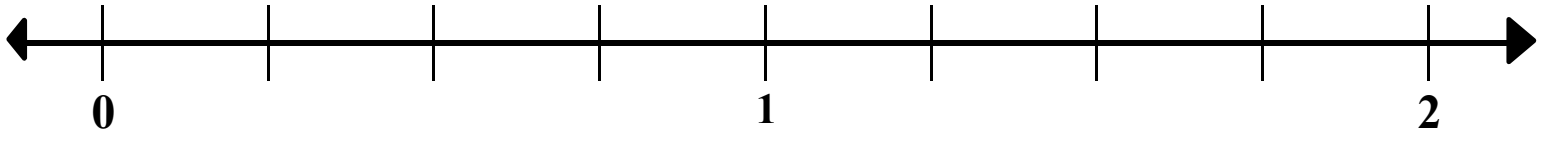
0-eighths Line B 7704.2 $\frac{0}{8}$	1-eighth Line B 7704.2 $\frac{1}{8}$	2-eighths Line B 7704.2 $\frac{2}{8}$	3-eighths Line B 7704.2 $\frac{3}{8}$
4-eighths Line B 7704.2 $\frac{4}{8}$	5-eighths Line B 7704.2 $\frac{5}{8}$	6-eighths Line B 7704.2 $\frac{6}{8}$	7-eighths Line B 7704.2 $\frac{7}{8}$
8-eighths Line B 7704.2 $\frac{8}{8}$			

7704 Number Lines - Level 2

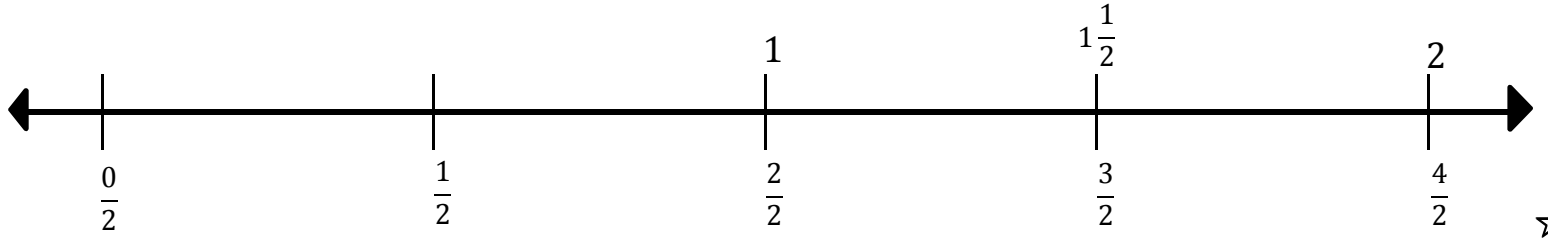
Preparing materials: This master will create two double number lines. Cut along the heavy black lines. Fold each along the light line so that both number lines face outward. Place paperclips on the folded edge.

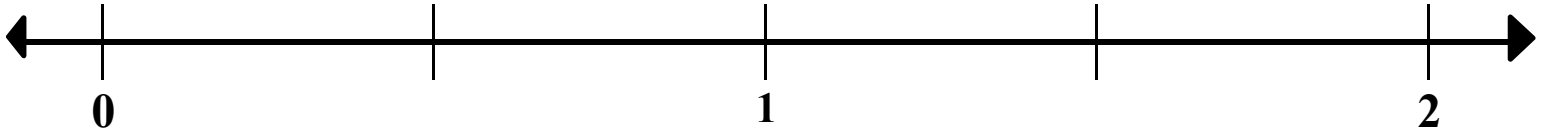
Line D, 7704.2





Line C, 7704.2





Level 2, Set C, 2 sets

0-halves Line C 7704.2 $\frac{0}{2}$	1-half Line C 7704.2 $\frac{1}{2}$
2-halves Line C 7704.2 $\frac{2}{2}$	3-halves Line C 7704.2 $\frac{3}{2}$
4-halves Line C 7704.2 $\frac{4}{2}$	One and 1-half Line C 7704.2 $1\frac{1}{2}$

0-halves Line C 7704.2 $\frac{0}{2}$	1-half Line C 7704.2 $\frac{1}{2}$
2-halves Line C 7704.2 $\frac{2}{2}$	3-halves Line C 7704.2 $\frac{3}{2}$
4-halves Line C 7704.2 $\frac{4}{2}$	One and 1-half Line C 7704.2 $1\frac{1}{2}$

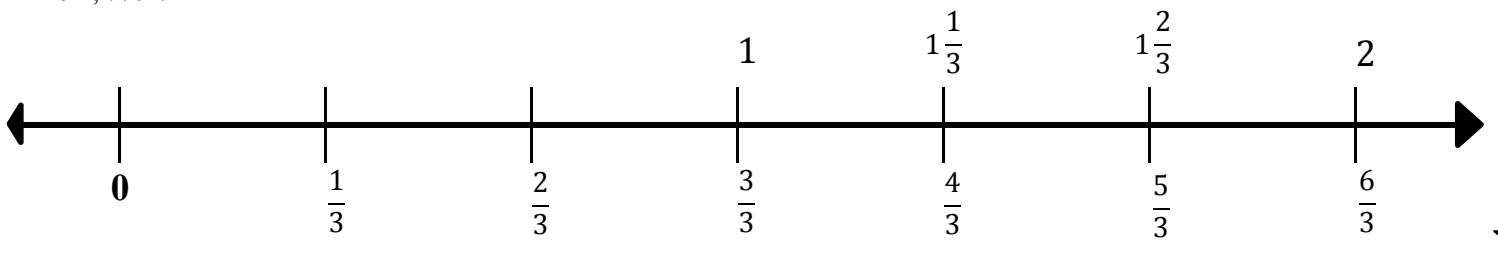
Level 2, Set D

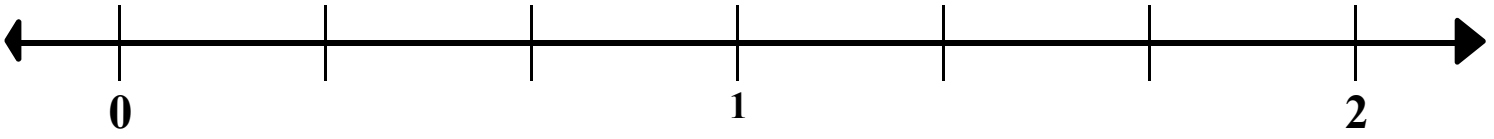
0-fourths $\frac{0}{4}$ Line D 7704.2	1-fourth $\frac{1}{4}$ Line D 7704.2	2-fourths $\frac{2}{4}$ Line D 7704.2	3-fourths $\frac{3}{4}$ Line D 7704.2
4-fourths $\frac{4}{4}$ Line D 7704.2	5-fourths $\frac{5}{4}$ Line D 7704.2	6-fourths $\frac{6}{4}$ Line D 7704.2	7-fourths $\frac{7}{4}$ Line D 7704.2
8-fourths $\frac{8}{4}$ Line D 7704.2	One and 1-fourth $1\frac{1}{4}$ Line D 7704.2	One and 2-fourths $1\frac{2}{4}$ Line D 7704.2	One and 3-fourths $1\frac{3}{4}$ Line D 7704.2

7704 Number Lines - Level 2

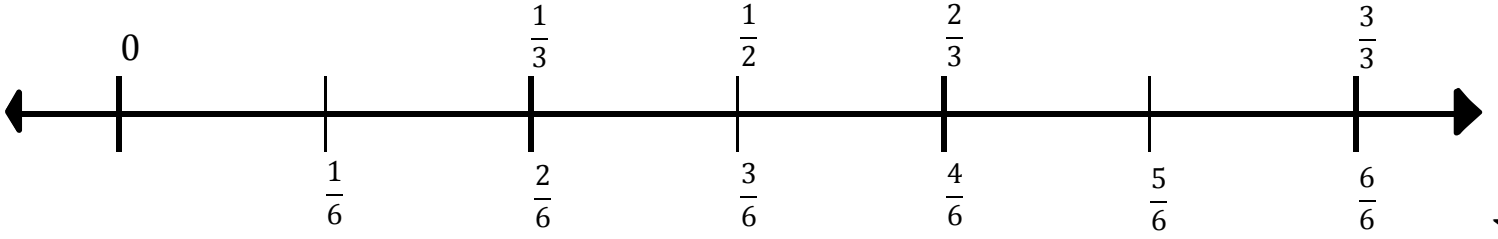
Preparing materials: This master will create two double number lines. Cut along the heavy black lines. Fold each along the light line so that both number lines face outward. Place paperclips on the folded edge.

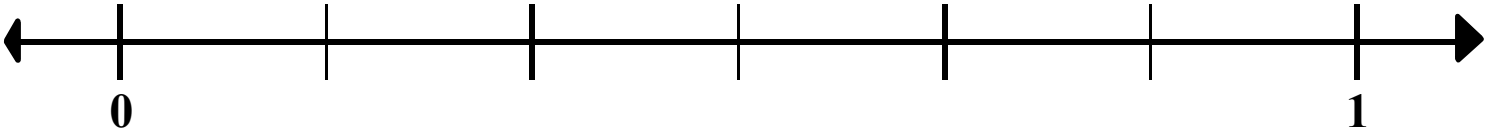
Line E, 7704.2





Line F, 7704.2





Level 2, Set E

Line **E** 7704.2 0-thirds $\frac{0}{3}$	Line **E** 7704.2 1-third $\frac{1}{3}$	Line **E** 7704.2 2-thirds $\frac{2}{3}$	Line **E** 7704.2 3-thirds $\frac{3}{3}$
Line **E** 7704.2 4-thirds $\frac{4}{3}$	Line **E** 7704.2 5-thirds $\frac{5}{3}$	Line **E** 7704.2 6-thirds $\frac{6}{3}$	Line **E** 7704.2 One and 1-third $1\frac{1}{3}$
Line **E** 7704.2 One and 2-thirds $1\frac{2}{3}$			

Level 2, Set F

Line **F** 7704.2 0-thirds $\frac{0}{3}$	Line **F** 7704.2 1-third $\frac{1}{3}$	Line **F** 7704.2 2-thirds $\frac{2}{3}$	Line **F** 7704.2 3-thirds $\frac{3}{3}$
Line **F** 7704.2 1-sixth $\frac{1}{6}$	Line **F** 7704.2 2-sixths $\frac{2}{6}$	Line **F** 7704.2 3-sixths $\frac{3}{6}$	Line **F** 7704.2 4-sixths $\frac{4}{6}$
Line **F** 7704.2 5-sixths $\frac{5}{6}$	Line **F** 7704.2 6-sixths $\frac{6}{6}$		

Number Lines –Where on the line?

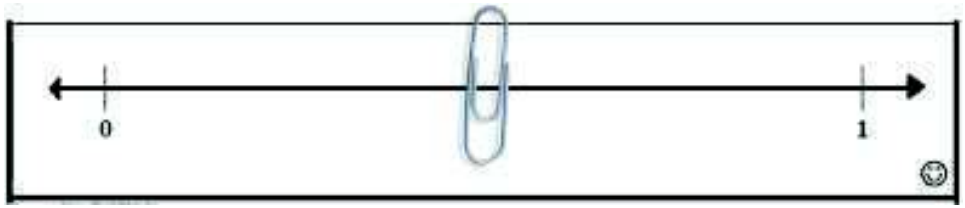
I can estimate the location of a fraction on a number line.

KNP # F 7704.3 – Number Lines, GREEN
Fluency Standard: 3.FFP
Standards: 3.NF.2, 3.NF.3c

Materials: Level 3 Number Lines with matching number cards, paper clips or binder clips

Directions:

1. Get an envelope with one Number Line and matching number cards.
2. Draw a card. Looking only at the side with the ☺**,** move the paper clip to the approximate location of that number.
   Example : If your card says "2-fourths", your Number Line should look something like this:



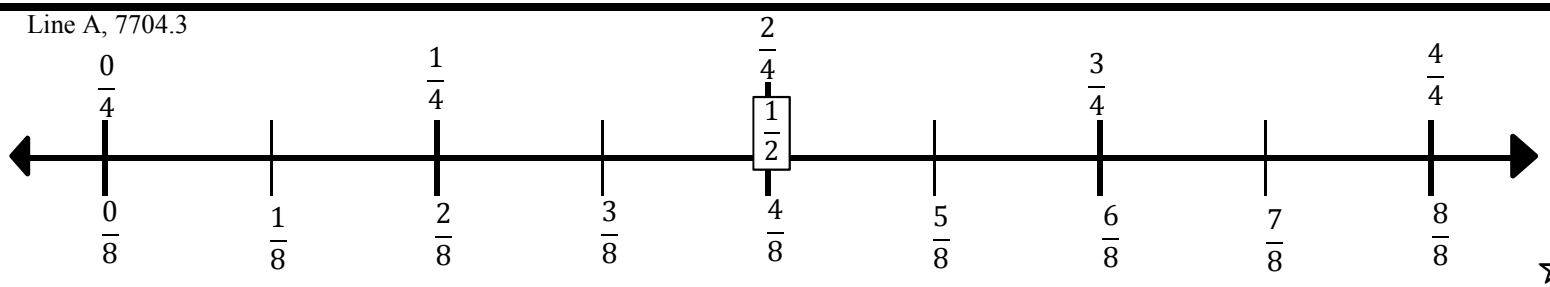
3. Flip the Number Line over. Looking at the side with the ☆, is your paper clip on or near the number you wanted?
4. Repeat steps 2 & 3 until all number cards have been used.
5. After all cards have been used, get a new envelope and play again!

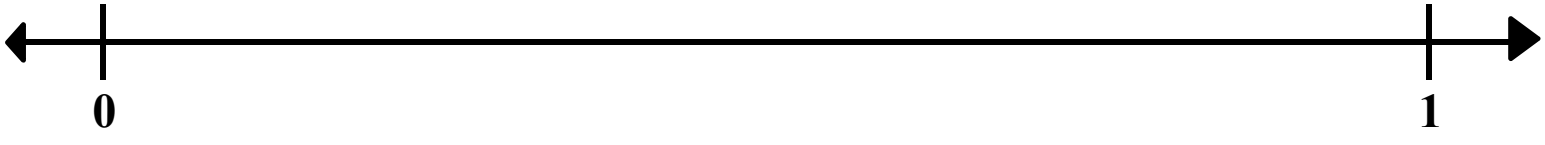
Extension: For 2 players. Player 1 - Looking at the side with the ☆, move the clip to any number on the line. Player 2 - Looking only at the side with the ☺, guess where the clip is positioned. Players check the side with the ☆ to verify answer.

7704 Number Lines - level 3

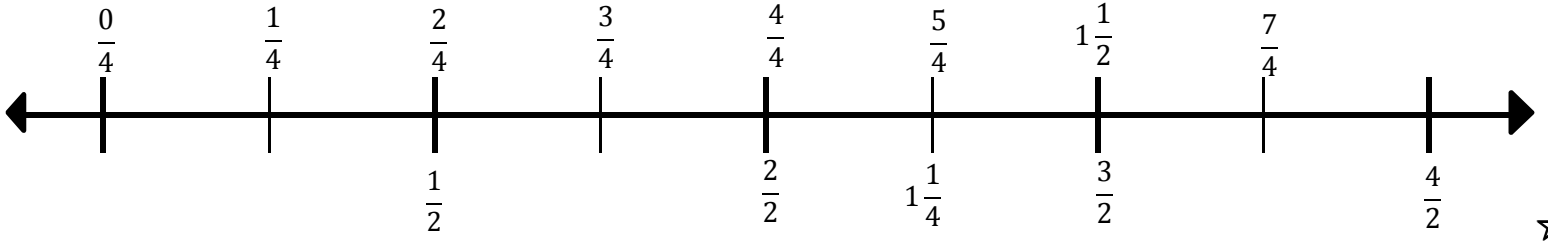
Preparing materials: This master will create two double number lines. Cut along the heavy black lines. Fold each along the light line so that both number lines face outward. Place paperclips on the folded edge.

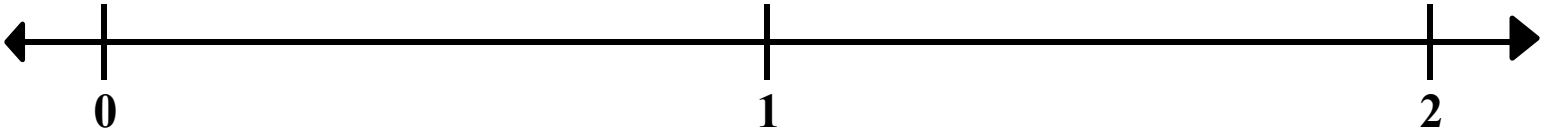
Line A, 7704.3





Line B, 7704.3





Level 3, set A

0-fourths $\frac{0}{4}$ Line A 7704.3	1-fourth $\frac{1}{4}$ Line A 7704.3	2-fourths $\frac{2}{4}$ Line A 7704.3	3-fourths $\frac{3}{4}$ Line A 7704.3
4-fourths $\frac{4}{4}$ Line A 7704.3	1-eighth $\frac{1}{8}$ Line A 7704.3	2-eighths $\frac{2}{8}$ Line A 7704.3	3-eighths $\frac{3}{8}$ Line A 7704.3
4-eighths $\frac{4}{8}$ Line A 7704.3	7-eighths $\frac{7}{8}$ Line A 7704.3	8-eighths $\frac{8}{8}$ Line A 7704.3	1-half $\frac{1}{2}$ Line A 7704.3

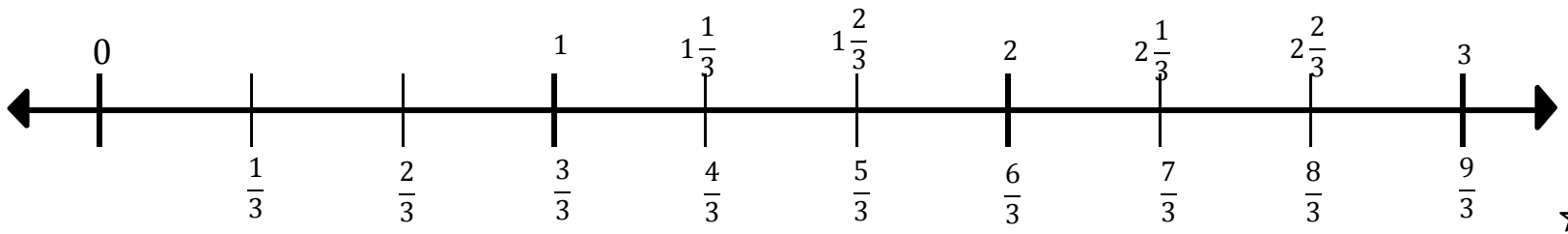
Level 3, Set B

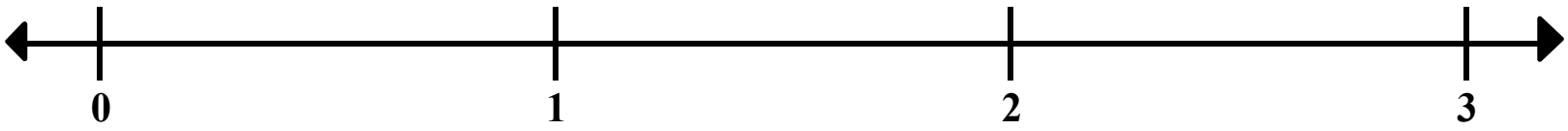
0-fourths Line B 7704.3 $\frac{0}{4}$	1-fourth Line B 7704.3 $\frac{1}{4}$	3-fourths Line B 7704.3 $\frac{3}{4}$	4-fourths Line B 7704.3 $\frac{4}{4}$
5-fourths Line B 7704.3 $\frac{5}{4}$	7-fourths Line B 7704.3 $\frac{7}{8}$	1-half Line B 7704.3 $\frac{1}{2}$	2-halves Line B 7704.3 $\frac{2}{2}$
3-halves Line B 7704.3 $\frac{3}{2}$	4-halves Line B 7704.3 $\frac{4}{2}$	One and 1-half Line B 7704.3 $1\frac{1}{2}$	One and 1-fourth Line B 7704.3 $1\frac{1}{4}$

7704 Number Lines - level 3

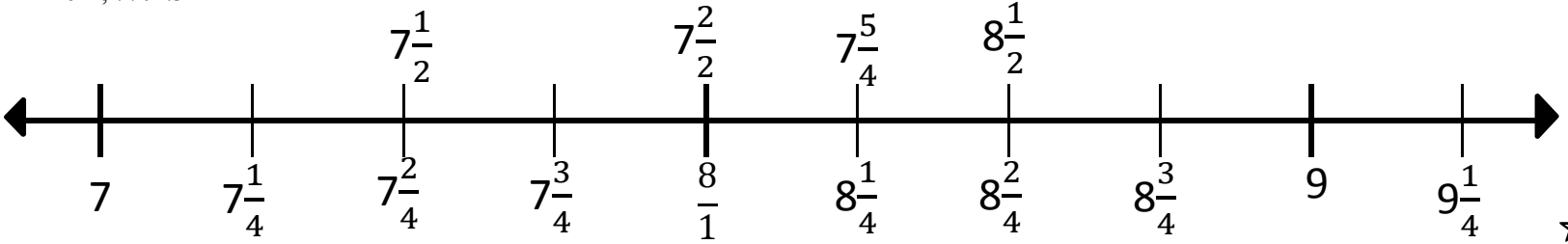
Preparing materials: This master will create two double number lines. Cut along the heavy black lines. Fold each along the light line so that both number lines face outward. Place paperclips on the folded edge.

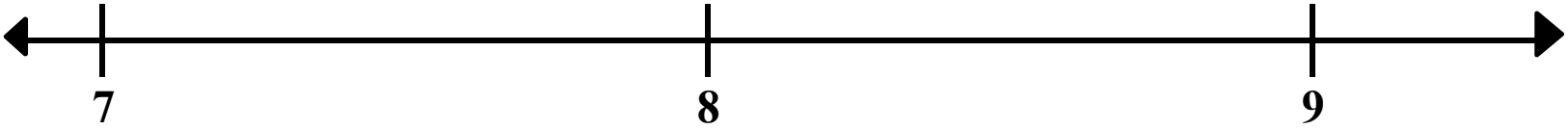
Line C, 7704.3





Line D, 7704.3





Level 3, Set C

Line C 7704.3 0-thirds $\frac{0}{3}$	Line C 7704.3 1-third $\frac{1}{3}$	Line C 7704.3 2-thirds $\frac{2}{3}$	Line C 7704.3 3-thirds $\frac{3}{3}$
Line C 7704.3 6-thirds $\frac{6}{3}$	Line C 7704.3 7-thirds $\frac{7}{3}$	Line C 7704.3 9-thirds $\frac{9}{3}$	Line C 7704.3 One and 1-third $1\frac{1}{3}$
Line C 7704.3 One and 2-thirds $1\frac{2}{3}$	Line C 7704.3 Two and 1-third $2\frac{1}{3}$	Line C 7704.3 Two and 2-thirds $2\frac{2}{3}$	Line C 7704.3 One and 4-thirds $1\frac{4}{3}$

Level 3, Set D

Seven and 1-fourth $7\frac{1}{4}$ Line D 7704.3	Seven and 2-fourths $7\frac{2}{4}$ Line D 7704.3	Seven and 3-fourths $7\frac{3}{4}$ Line D 7704.3	Eight and 1-fourth $8\frac{1}{4}$ Line D 7704.3
Eight and 2-fourths $8\frac{2}{4}$ Line D 7704.3	Eight and 2-fourths $8\frac{3}{4}$ Line D 7704.3	Seven and 1-half $7\frac{1}{2}$ Line D 7704.3	Seven and 2-halves $7\frac{2}{2}$ Line D 7704.3
Eight $\frac{8}{1}$ Line D 7704.3	Seven and 5-fourths $7\frac{5}{4}$ Line D 7704.3	Eight and 1-half $8\frac{1}{2}$ Line D 7704.3	Nine and 1-fourth $9\frac{1}{4}$ Line D 7704.3

Number Lines –Where on the line?

I can estimate the location of a fraction on a number line.

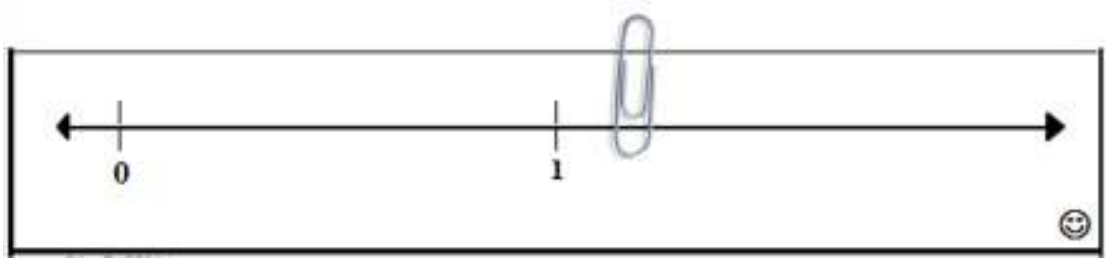
KNP # F 7704.4 – Number Lines, PURPLE
Fluency Standard: 3.FFP
Standards: 3.NF.2, 3.NF.3B, 3.NF.3C

Materials: Level 4 Number Lines with matching number cards, paper clips or binder clips

Directions:

1. Get a Number Line envelope with one Number Line and matching number cards.
2. Draw a card. Looking only at the side with the ☺**,** move the paper clip to the approximate location of that number. You may use extra paper clips to help you place your number.

   Example : If on Line A, your card has the number $\frac{5}{4}$, your Number Line should look something like this.



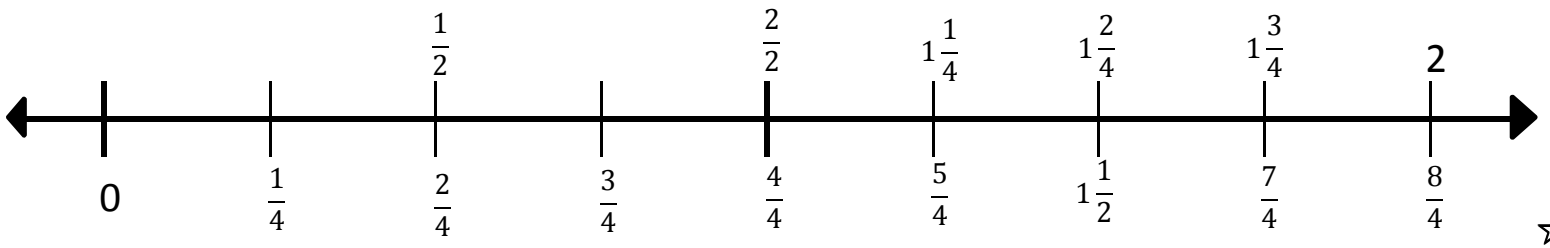
3. Flip the Number Line over. Looking at the side with the ☆, is your paper clip on or near the number you wanted?
4. Repeat steps 2 & 3 until all number cards have been used.
5. After all cards have been used, get a new envelope and play again!

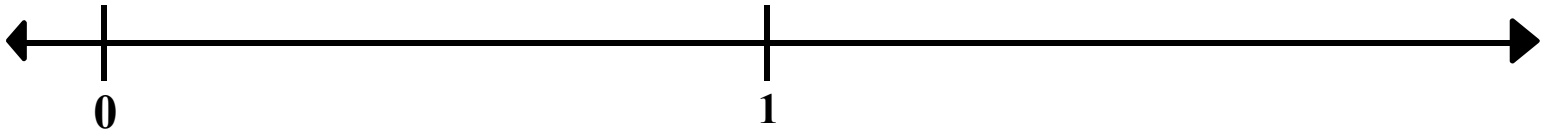
Extension: For 2 players. Player 1 - Looking at the side with the ☆, move the clip to any number on the line. Player 2 - Looking only at the side with the ☺, guess where the clip is positioned. Players check the side with the ☆ to verify answer.

7704 Number Lines - Level 4

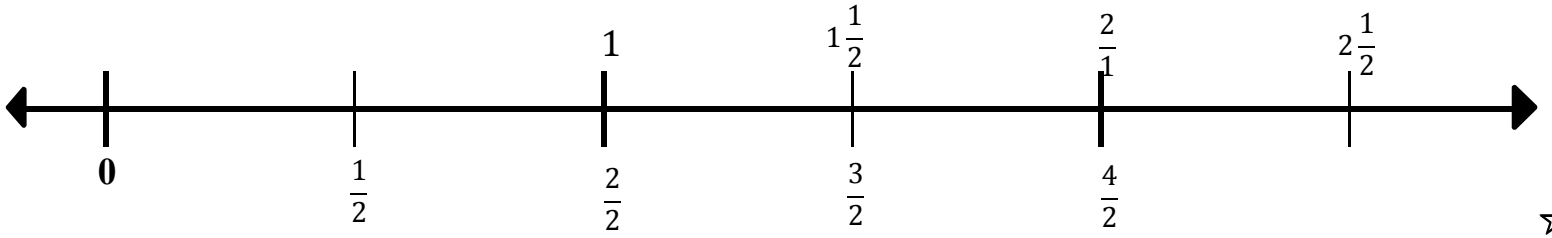
Preparing materials: This master will create two double number lines. Cut along the heavy black lines. Fold each along the light line so that both number lines face outward. Place paperclips on the folded edge. Create number cards using any labels from the number line on the "star" side.

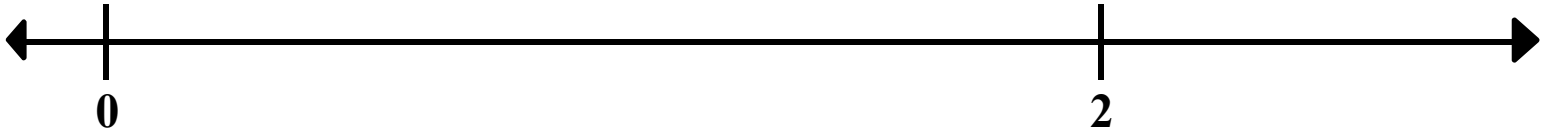
Line A, 7704.4





Line B, 7704.4





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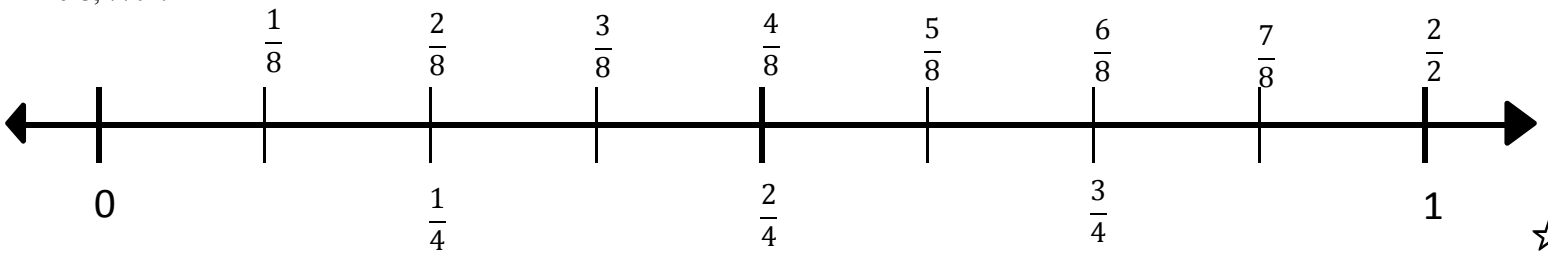
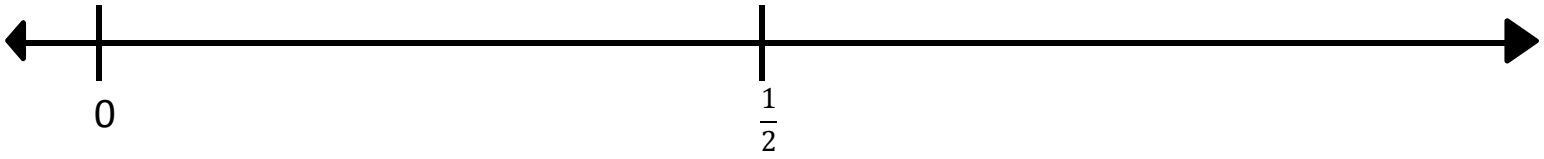
7704 Number Lines - Level 4

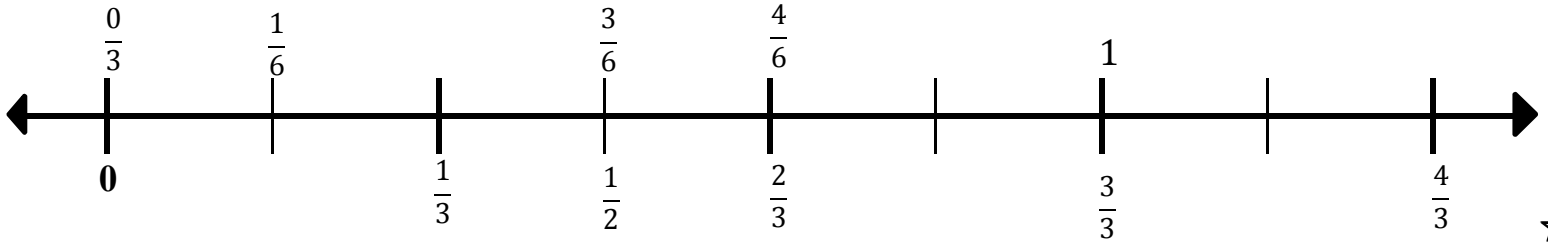
Preparing materials: This master will create two double number lines. Cut along the heavy black lines. Fold each along the light line so that both number lines face outward. Place paperclips on the folded edge. Create number cards using any labels from the number line on the "star" side.

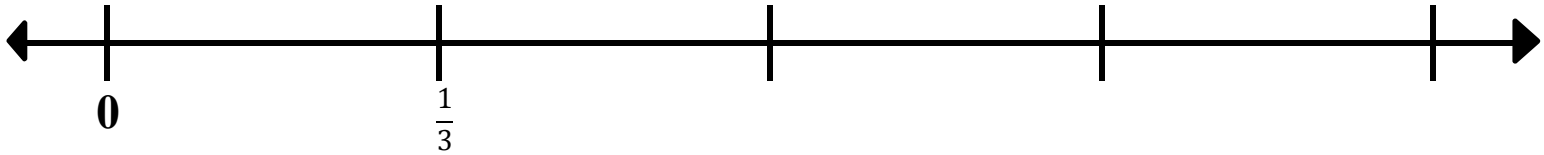
Line C, 7704.4





Line D, 7704.4





KNP # F 7704.4

Last Updated 6/5/2014

Number Lines –Comparisons

I can compare two fractions by thinking about a number line.

KNP # F 7704.5 – Number Lines, PINK

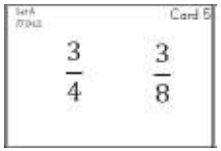
Fluency Standard: 4.FFE

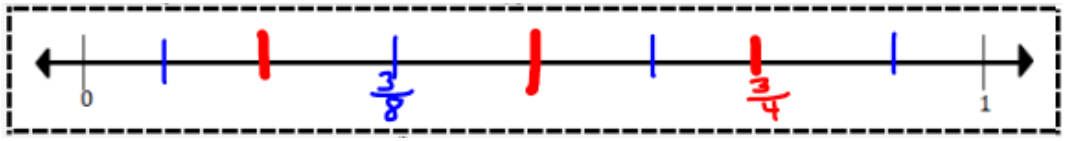
Standards: 3.NF.3 (Set A), 4.NF.2 (Set B)

Materials: Number Line wall, laminated empty Number Lines (1 or 2 per student), dry erase markers and/or paper clips, comparison cards (sets A and B), recording sheet (1 per student), pencil

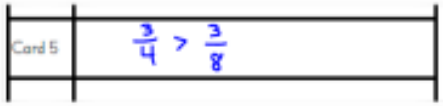
Directions:

1. Get two Number Lines per student and dry-erase markers and/or paper clips. Shuffle card set A then place cards face-down in a stack.
2. Draw a card. Use a marker or place paper clips to show the approximate locations of both numbers. You may put both numbers on the same Number Line or use a Number Line for each number.
   For Example, if you draw this card, your Number Line might look something like this:





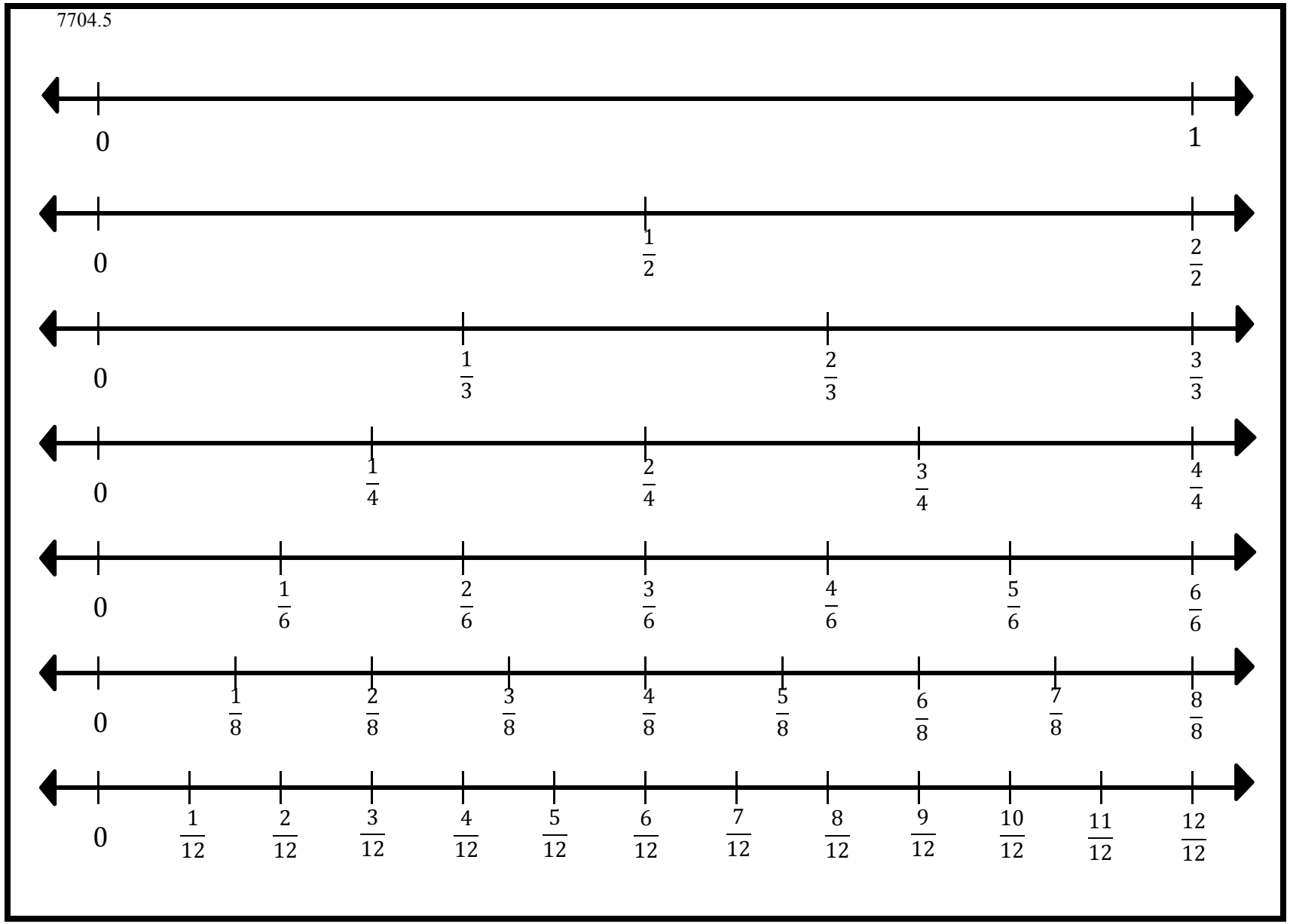
3. Compare your work to the Number Line Fraction Wall to see if you have marked the correct spots.
4. On the recording sheet in the box that matches the card number, write a comparison statement using both numbers and one of these symbols: **<, > or =**. Say the comparison aloud. *For the example above, you would write:*



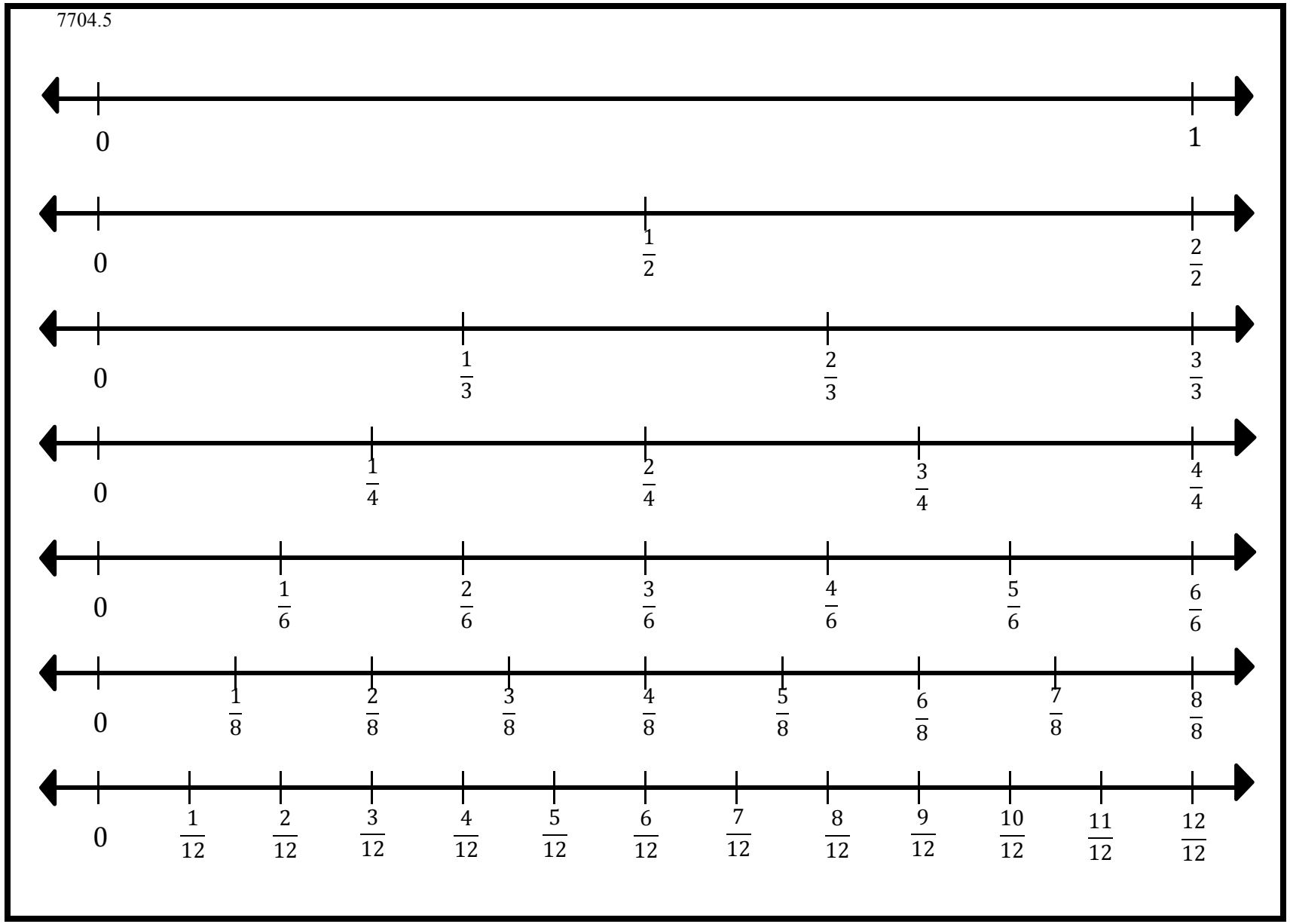
5. Repeat steps 2 through 4 until all blanks have been filled

Extension: Repeat the steps above for Card Set B if targeting standard 4.NF.2

Number Lines -Fraction Wall



Number Lines -Fraction Wall



Number Lines -Fraction Wall

Preparation: Laminate and cut on dotted line to make student number lines. Students can use dry erase markers or paper clips to estimate the location of fractions less than or equal to 1. Students can use the fraction chart to verify placement of fractions.

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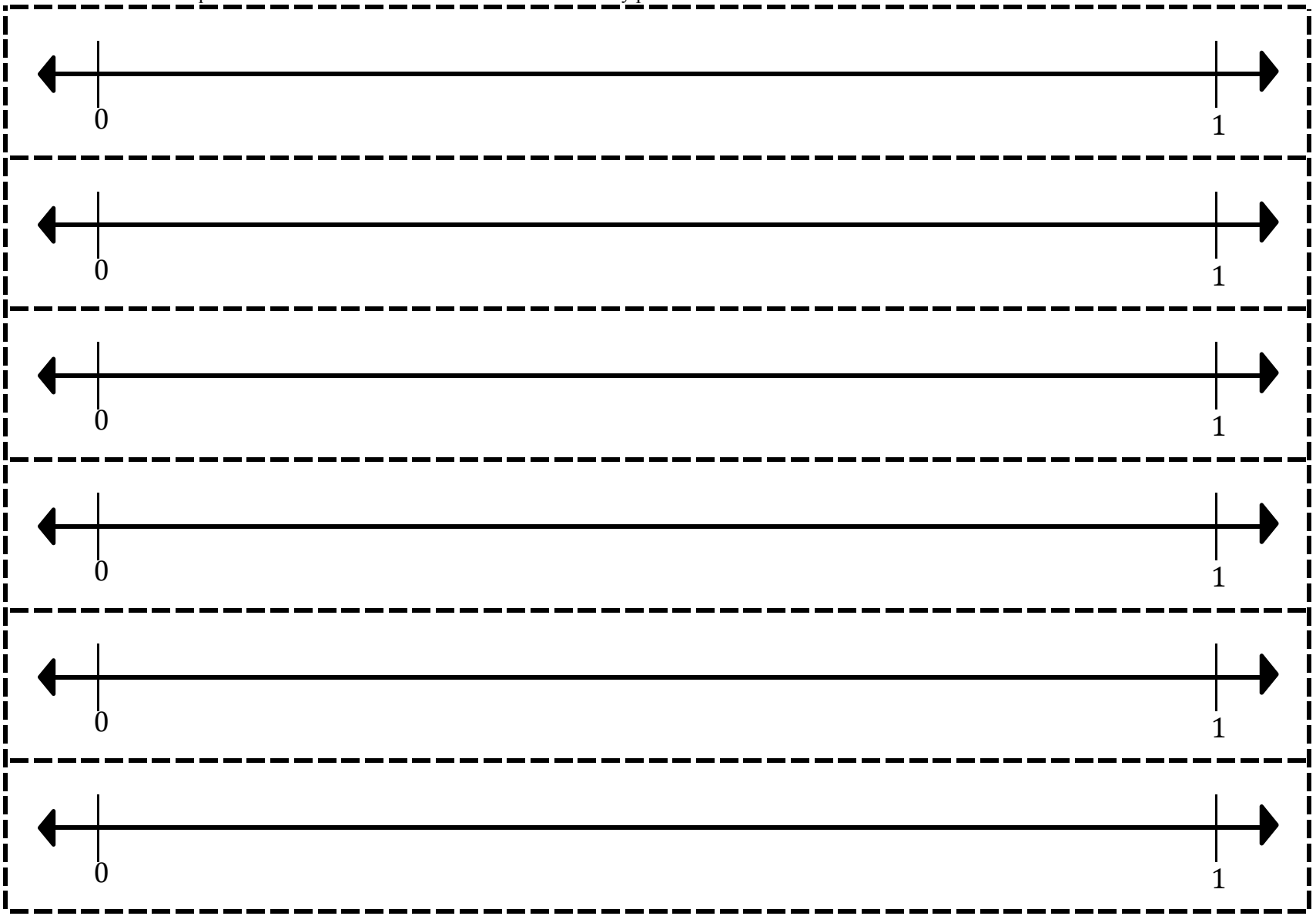

Number Lines -Fraction Wall

Preparation: Laminate and cut on dotted line to make student number lines. Students can use dry erase markers or paper clips to estimate the location of fractions less than or equal to 1. Students can use the fraction chart to verify placement of fractions.

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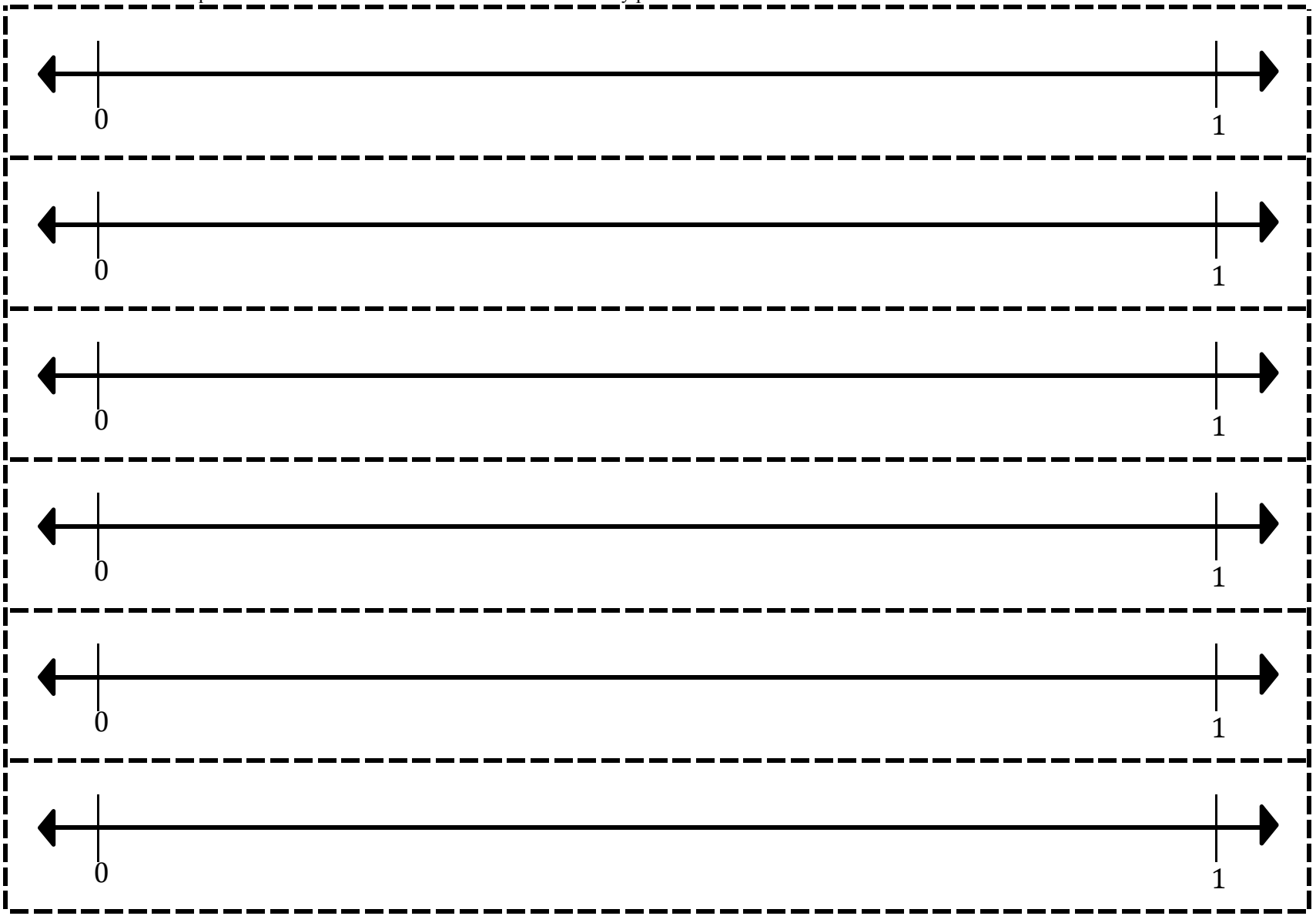

Compare Cards Set A

Set A 7704.5 Card 1 $\frac{1}{2}$ $\frac{1}{4}$	Set A 7704.5 Card 4 $\frac{2}{4}$ $\frac{3}{4}$	Set A 7704.5 Card 7 $\frac{4}{4}$ $\frac{4}{8}$
Set A 7704.5 Card 2 $\frac{2}{3}$ $\frac{2}{4}$	Set A 7704.5 Card 5 $\frac{3}{4}$ $\frac{3}{8}$	Set A 7704.5 Card 8 1 $\frac{3}{4}$
Set A 7704.5 Card 3 $\frac{3}{6}$ $\frac{1}{6}$	Set A 7704.5 Card 6 $\frac{4}{4}$ 1	Set A 7704.5 BONUS $\frac{2}{3}$ $\frac{1}{6}$

Compare Cards Set B

Set B 7704.5 Card 1 $\frac{2}{4}$ $\frac{1}{2}$	Set B 7704.5 Card 4 $\frac{1}{4}$ $\frac{3}{8}$	Set B 7704.5 Card 7 $\frac{1}{12}$ $\frac{7}{8}$
Set B 7704.5 Card 2 $\frac{3}{3}$ $\frac{5}{6}$	Set B 7704.5 Card 5 $\frac{5}{12}$ $\frac{1}{2}$	Set B 7704.5 Card 8 1 $\frac{8}{8}$
Set B 7704.5 Card 3 $\frac{2}{12}$ $\frac{1}{6}$	Set B 7704.5 Card 6 $\frac{11}{12}$ $\frac{2}{3}$	Set B 7704.5 BONUS $\frac{1}{3}$ $\frac{2}{8}$

Name:_____

Comparing Fractions Record Sheet

For each card, record the fractions with the correct comparison symbol: =, <, >

I used Card Set _____

Card 1	
Card 2	
Card 3	
Card 4	
Card 5	
Card 6	
Card 7	
Card 8	
BONUS	

Name:_____

Comparing Fractions Record Sheet

For each card, record the fractions with the correct comparison symbol: =, <, >

I used Card Set _____

Card 1	
Card 2	
Card 3	
Card 4	
Card 5	
Card 6	
Card 7	
Card 8	
BONUS	

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Name:_____

Comparing Fractions Record Sheet

For each card, record the fractions with the correct comparison symbol: =, <, >

I used Card Set _____

Card 1	
Card 2	
Card 3	
Card 4	
Card 5	
Card 6	
Card 7	
Card 8	
BONUS	

Name:_____

Comparing Fractions Record Sheet

For each card, record the fractions with the correct comparison symbol: =, <, >

I used Card Set _____

Card 1	
Card 2	
Card 3	
Card 4	
Card 5	
Card 6	
Card 7	
Card 8	
BONUS	

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Name:_____

Comparing Fractions Record Sheet

For each card, record the fractions with the correct comparison symbol: =, <, >

I used Card Set _____

Card 1	
Card 2	
Card 3	
Card 4	
Card 5	
Card 6	
Card 7	
Card 8	
BONUS	

Name:_____

Comparing Fractions Record Sheet

For each card, record the fractions with the correct comparison symbol: =, <, >

I used Card Set _____

Card 1	
Card 2	
Card 3	
Card 4	
Card 5	
Card 6	
Card 7	
Card 8	
BONUS	

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Name:_____

Comparing Fractions Record Sheet

For each card, record the fractions with the correct comparison symbol: =, <, >

I used Card Set _____

Card 1	
Card 2	
Card 3	
Card 4	
Card 5	
Card 6	
Card 7	
Card 8	
BONUS	

Name:_____

Comparing Fractions Record Sheet

For each card, record the fractions with the correct comparison symbol: =, <, >

I used Card Set _____

Card 1	
Card 2	
Card 3	
Card 4	
Card 5	
Card 6	
Card 7	
Card 8	
BONUS	

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KNP # 7704.5