Fractional Reasoning Assessment

Student _____ Date _____ Grade: _____

Assessor _____ Classroom Teacher: _____

Domain 1: Understanding a Fraction within the Context of One Whole

Naming Fractions with Different Models and Counting by Fractional Parts

Skill 1	Skill 1.1	Skill 2	Skill 3	Skill 3.1
Identifies Basic Fractions Part of Whole / Set	Identifies Fractions on a Number Line	Counts by Fractional Parts	Identifies Improper Fractions or Mixed Numbers	Improper Fractions / Mixed Numbers on a Number Line

Fractions as Part of a Whole / Whole and Some Parts

Skill 4	Skill 5	Skill 6	Skill 6
Fraction is Less Than One	Completes a Whole with Unit and Non-Unit Fractions	Mixed Numbers are Greater than One	Improper Fractions are Greater than One

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Domain 2: Comparing Fractions with Defined Characteristics

Comparing Fractions

Skill 7	Skill 8	Skill 9	Skill 10
Same Denominator	Unit Fractions and Same Numerator	One Unit Away from a Whole	Benchmark of 1/2

Domain 3: Manipulates Equivalent Change to a Fraction

Equivalent Fractions and Common Denominators

Skill 12	Skill 13	Skill 14	Skill 15
Identifies Equivalents on a Number Line	Identifies Equivalents for 1/2 with Automaticity	Generates Equivalent Fractions / Convert fractions to Simplest From	Generates a Common Denominator for Two Fractions

Mixed Numbers and Improper Fractions

Skill 16	Skill 17
Converts a Mixed Number to an Improper Fraction	Converts an Improper Fraction to a Mixed Number

Domain 4: Arithmetic with Fractions

Procedures for Addition / Subtraction and Estimation

Skill 18	Skill 19	Skill 20	Skill 21	Skill 22
Add & Subtract with Like Denominators	Add & Subtract Unlike Denominators	Add & Subtract Mixed Numbers Like Denominators	Add & Subtract Mixed Numbers Unlike Denominators Regrouping/ Ungrouping	Estimation of Addition of Fractions

Understanding Multiplication and Division

Skill 23	Skill 24	Skill 25	Skill 26	Skill 27
Multiply a Whole Number by a Fraction	Multiply a Fraction by a Fraction	Divide a Whole number by a Fraction	Divide a Fraction by a Fraction	Understanding Multiplication of Fractions

Domain 1: Progress Monitoring

Date	Skill 1	Skill 1.1	Skill 2	Skill 3	Skill 3.1	Skill 4	Skill 5	Skill 6	Skill 6	%

Domain 2: Progress Monitoring

Date	Skill 7	Skill 8	Skill 9	Skill 10	%

Domain 3: Progress Monitoring

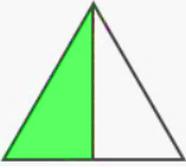| Date	Skill 12	Skill 13	Skill 14	Skill 15	Skill 16	Skill 17	%

Domain 4: Progress Monitoring

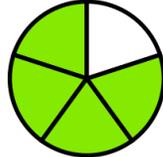| Date	Skill 18	Skill 19	Skill 20	Skill 21	Skill 22	Skill 23	Skill 24	Skill 25	Skill 26	Skill 27	%

Domain 1: Understanding One Whole: Naming Fractions with Different Models and Counting
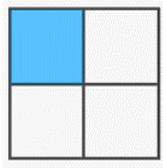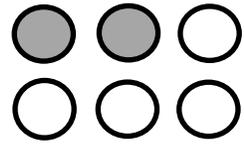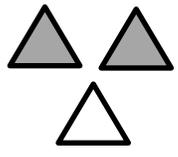
Say to the Student: "**Name each Fraction.**"
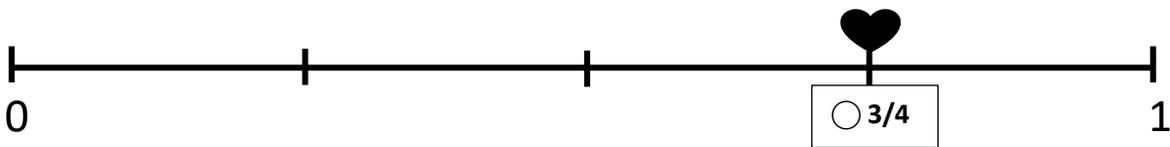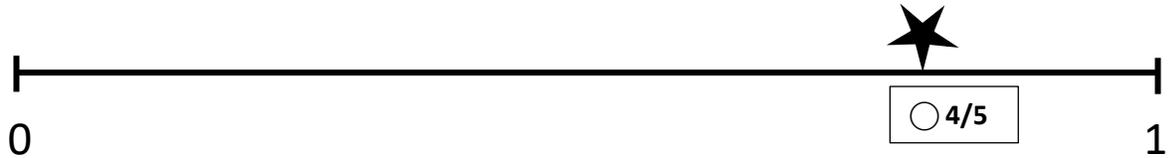
Skill 1

○ 1/2 ○ 4/5 ○ 1/4 ○ 2/6 ○ 2/3

Say to the Student: **What fraction is the heart placed at on the number line?**

Where would 4/5 go on the number line?

Skill 1.1

0 _____ 1
○ 3/4

0 _____ 1
○ 4/5

Say to the Student:

Skill 2

"**Count by eighths starting at 0 and stop at 1.**"   Correct ○   Incorrect ○
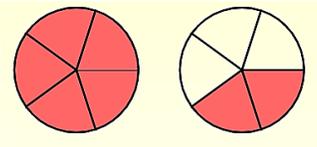
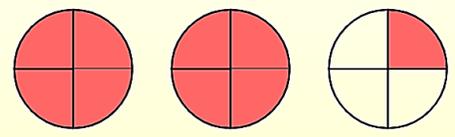"**Count backwards by sixths starting at 1 or 6/6 and stop at zero.**"   Correct ○   Incorrect ○

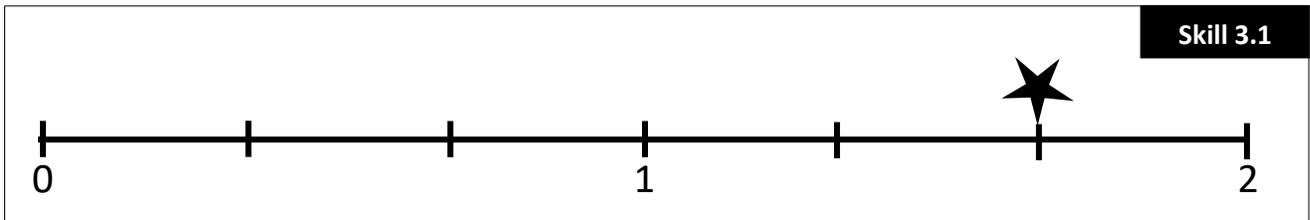*Say to the Student:* "**Name as a mixed number or an improper fraction.**"

Skill 3

○ 7/5 or ○ 1 and 2/5   ○ 9/4 or ○ 2 and 1/4

Say to the Student: **"Where would 5/3rds or 1 and 2/3 go on this number line?"**

$$0 \qquad\qquad\qquad\qquad 1 \qquad\qquad\qquad\qquad 2$$

Domain 1: Understanding One Whole: Fractions as Part of a Whole

Say to the Student: "I am going to show you some fractions and numbers. I want you to tell me which is greater." Student must explain each answer, if no explanation is given then the question will be marked as unable to explain.

Skill 4

or

○ *Evidence of understanding*
○ *Evidence of misconception*
○ *Unable to explain*

$$\frac{3}{4} \text{ or } 1$$

○ *Evidence of understanding*
○ *Evidence of misconception*
○ *Unable to explain*

$$\frac{3}{3} \text{ or } \frac{4}{5}$$

○ *Evidence of understanding*
○ *Evidence of misconception*
○ *Unable to explain*

Say to the Student: *"I am going to show you a fraction. Tell me how much more I would need to make one whole.*

Skill 5

○ *Correct answer of 2/5*
○ *Incorrect Answer*

$$\frac{1}{3}$$

○ *Correct answer of 2/3*
○ *Incorrect Answer*

$$\frac{4}{7}$$

○ *Correct answer of 3/7*
○ *Incorrect Answer*

Say to the Student: *"Compare and tell me which is greater."*

Skill 6

$$1 \text{ or } 2\frac{1}{4}$$

○ *Evidence of understanding*
○ *Evidence of misconception*
○ *Unable to explain*

$$\frac{3}{3} \text{ or } 1\frac{1}{2}$$

○ *Evidence of understanding*
○ *Evidence of misconception*
○ *Unable to explain*

Skill 6

$$\frac{5}{4} \text{ or } 1$$

○ *Evidence of understanding*
○ *Evidence of misconception*
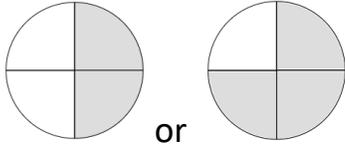○ *Unable to explain*

$$\frac{7}{4} \text{ or } \frac{9}{9}$$

○ *Evidence of understanding*
○ *Evidence of misconception*
○ *Unable to explain*

Domain 2: Comparing Fractions with Defined Characteristics

Say to the Student: *"I am going to show you two fractions and I want you to compare and tell me which fraction is greater and explain why"*
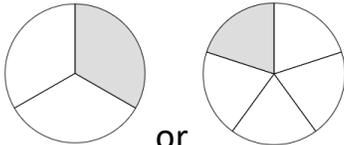
Skill 7

or

○ *Evidence of understanding*
○ *Use of Procedure*
○ *Evidence of misconception*

$$\frac{2}{8} \text{ or } \frac{6}{8}$$

○ *Evidence of understanding*
○ *Use of Procedure*
○ *Evidence of misconception*

NOTES:

Skill 8

or

○ *Evidence of understanding*
○ *Use of Procedure*
○ *Evidence of misconception*

$$\frac{1}{4} \text{ or } \frac{1}{8}$$

○ *Evidence of understanding*
○ *Use of Procedure*
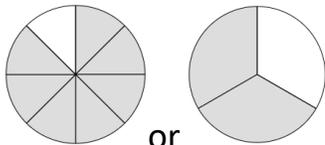○ *Evidence of misconception*

$$\frac{3}{7} \text{ or } \frac{3}{9}$$

○ *Evidence of understanding*
○ *Use of Procedure*
○ *Evidence of misconception*

NOTES:

Skill 9

Question 2 *both fractions are one piece away from being one whole, use that piece to explain which fraction is greater.

or

○ *Evidence of understanding*
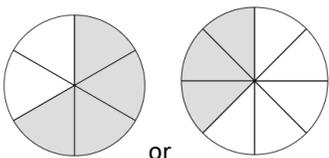○ *Use of Procedure*
○ *Evidence of misconception*

$$\frac{5}{6} \text{ or } \frac{3}{4}$$

○ *Evidence of understanding*
○ *Use of Procedure*
○ *Evidence of misconception*

NOTES:

Skill 10

Question 1 and 2: *use the benchmark of ½ to explain to me which fraction is greater.

or

○ *Evidence of understanding*
○ *Use of Procedure*
○ *Evidence of misconception*

$$\frac{6}{10} \text{ or } \frac{4}{9}$$

○ *Evidence of understanding*
○ *Use of Procedure*
○ *Evidence of misconception*

NOTES:

Domain 3: Manipulates Change to a Fraction: Equivalent Fractions and Common Denominators

Say to the Student:

"What are all the fractions that are equivalent to K?   Correct ◯   Incorrect◯

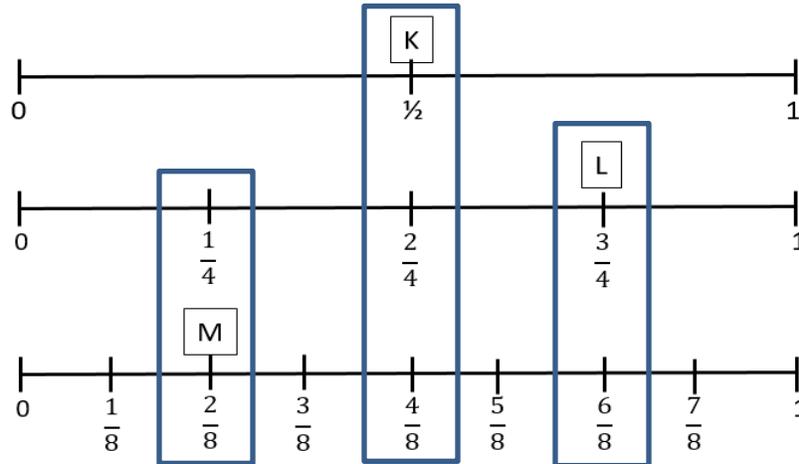*"What are all the fractions that are equivalent to L?*   Correct ◯   Incorrect◯

"What are all the fractions that are equivalent to M?   Correct ◯   Incorrect◯

Skill 12

Say to the Student: *"Which fractions are equivalent or the same as ½. *no paper pencil.*

Skill 13

$$\frac{1}{3} \qquad \frac{2}{4} \qquad \frac{3}{5} \qquad \frac{4}{8} \qquad \frac{6}{10} \qquad \frac{3}{6} \qquad \frac{5}{7}$$

◯   ◯   ◯

Say to the Student: *"Write an equivalent fraction for 3/5."*

"Write an equivalent fraction for 5/15 that is in simplest form."

Skill 14

$$\frac{3}{5} \qquad \frac{5}{15}$$

Say to the Student: *"Find a common dominator for the fraction sets below."*

Skill 15

$$\frac{2}{3} \quad \frac{1}{6} \qquad \frac{1}{2} \quad \frac{3}{5}$$

Domain 3: Manipulates Change to a Fraction: Mixed Numbers and Improper Fractions

Distribute to the Student the Arithmetical Procedures 16-21 sheet:

Skill 16

$2\frac{1}{5}$ $\frac{11}{5}$

Skill 17

$\frac{7}{4}$ $1\frac{3}{4}$

Domain 4: Arithmetic with Fractions: Addition and Subtraction

Distribute Arithmetical Procedures 16-21 WORKSHEET.

Skill 18

$\frac{1}{8} + \frac{4}{8} = \frac{5}{8}$ $\frac{9}{10} - \frac{3}{10} = \frac{6}{10}$

Skill 19

$\frac{1}{4} + \frac{3}{8} = \frac{5}{8}$ $\frac{4}{5} - \frac{1}{2} = \frac{3}{10}$

Skill 20

$3\frac{3}{5} + 1\frac{1}{5} = 4\frac{4}{5}$ $5\frac{9}{10} - 2\frac{3}{10} = 3\frac{6}{10}$

Skill 21

$3\frac{4}{6} + 1\frac{3}{4} = 5\frac{5}{12}$ $8\frac{1}{3} - 5\frac{4}{5} = 2\frac{8}{15}$

Say to the Student: "Estimate where 1/8 + 1/10 would go on the number line?"   **Skill 22**

Say to the Student: "Estimate where 1 and 11/12 + 9/10 would go on the number line?"   **Skill 22**

Domain 4: Arithmetic with Fractions: Multiplication and Division

Distribute Applying Arithmetical Procedures WORKSHEET (Skill 23-26)

What is ¼ of 24?   **Skill 23**   *Answer: 6*

What is 2/3 of ¾?   **Skill 24**   *Answer: 6/12 or ½*

How many 1/3's will go into 4?   **Skill 25**   *Answer: 12*

How many 1/8's will go into 3/4?   **Skill 26**   *Answer: 6*

If 5 is multiplied by ¾ will the product be larger or smaller than 5? *Explain*   **Skill 27**   *Smaller*

If 5 is multiplied by 2 ½ will the product be larger or smaller than 5? *Explain*   **Skill 27**   *Larger*

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Arithmetical Procedures Worksheet (Skill 16-21) Student Sheet

Skill 16

$2\frac{1}{5}$

Convert to an equivalent improper fraction.

Skill 17

$\frac{7}{4}$

Convert to an equivalent mixed number.

Solve:

Skill 18

$$\frac{1}{8} + \frac{4}{8} =$$

Skill 18

$$\frac{9}{10} - \frac{3}{10} =$$

Skill 19

$$\frac{1}{4} + \frac{3}{8} =$$

Skill 19

$$\frac{4}{5} - \frac{1}{2} =$$

Skill 20

$$3\frac{3}{5} + 1\frac{1}{5} =$$

Skill 20

$$5\frac{9}{10} - 2\frac{3}{10} =$$

Skill 21

$$3\frac{4}{6} + 1\frac{3}{4} =$$

Skill 21

$$8\frac{1}{3} - 5\frac{4}{5} =$$

Skill 23

What is ¼ of 24?

Skill 24

What is $\dfrac{2}{3}$ of $\dfrac{3}{4}$?

Skill 25

How many $\dfrac{1}{3}$'s will go into 4?

Skill 26

How many $\dfrac{1}{8}$'s will go into $\dfrac{3}{4}$?