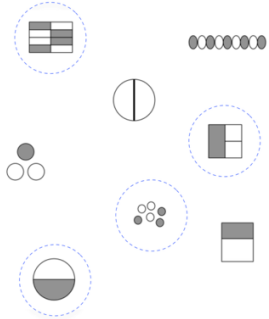

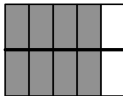
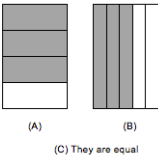
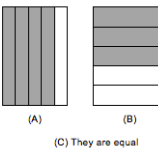



## Scoring Guide for Atypical Fraction Understanding Assessment

This assessment is scored both for correctness and for evidence of atypicality (see column labeled “atypicality points” for the criteria that count as an atypical answer). For the atypicality score to be meaningful, this assessment should only be used for students who have had at least 2 years of fraction instruction. Students scoring above 3 atypicality points would be those students you may want to assess further.

#	Problem	Correctness	Atypical Points	Not Atypical
1	Draw a picture of $1/2$	1 point a conventional drawing or representation of $1/2$ (i.e., area model, number line, decimal, percent, or semicircle)	<b>1 atypical point</b> for a drawing where the shape is partitioned in two, but is not shaded or labeled. (If student labels BOTH of the halves as $1/2$ , they get problem correct, but they do get an atypical point, because they are focusing on balance.)	A drawing of a shape partitioned into two parts with one labeled $1/2$ (or if student draws semi-circle)
2	Draw another way to show $1/2$	(same as above)	(same as above)	(same as above)
3	Draw a picture of $3/5$	1 point for a conventional representation of $3/5$ (area model, number line, or discrete set) (note: the area model must be between $1/2$ and $3/4$ to get credit for answer)	<b>1 atypical point</b> if the student represents $3/5$ as $2/5$ , or if student represents both 3 and 5 in answer.	A drawing where the shape is not equally partitioned, because students often have difficulty partitioning in 5ths.
4	Draw a picture of $1\ 5/8$	1 point for a conventional representation of $1\ 5/8$ .	<b>1 atypical point</b> if the whole is not shaded or labeled	A drawing where the wholes for the 1 and $3/8$ are different sizes.
5	Circle all the pictures that you think show $1/2$ ?  <i>(adapted from Ni, 2001)</i>	<b>1 point for each</b> correctly circled answer of $1/2$ (see circled answers on left) <b>-1 point for each</b> incorrectly circled answers <i>(total possible +4 and -3)</i>	<b>1 atypical point</b> if the student circles the non-shaded area model (even if erased later)	
6	Which is more $1/6$ or $1/8$ ? (you can draw pictures to help you)  Explain your answer:	1 point for correct answer ( $1/6$ ) (Student explanations are used to disambiguate student answer. Not required to get point)	<b>1 atypical point</b> for an incorrect answer ( $1/8$ ) <i>with</i> an explanation and/or drawing that focuses on the unshaded amount (e.g., more left in the $1/8$ drawing)	An answer that $1/8$ is bigger than $1/6$ because 8 is bigger than 6.

7	<p>Which is more <math>\frac{2}{8}</math> or <math>\frac{5}{8}</math>?</p> <p>Explain your answer:</p>	1 point for correct answer ( $\frac{5}{8}$ ) (Student explanations are used to disambiguate student answer. Not required to get point)	<b>1 atypical point</b> for an incorrect answer ( $\frac{2}{8}$ ) <i>with</i> an explanation and/or drawing that focuses on the fractional complement.	Answer of $\frac{2}{8}$ with no drawing or explanation.
8	<p>Lisa drew this picture.</p>  <p>What fraction does this drawing show?</p>	1 point for correct answer ( $\frac{4}{5}$ )	<b>1 atypical point</b> for answers where the numerator was determined by number <i>not</i> shaded ( $\frac{1}{5}$ or $\frac{1}{4}$ )	Answer where student miscounts pieces (e.g., $\frac{5}{6}$ )
9	<p>She then cut it like this</p>  <p>What fraction does this drawing show now?</p>	1 point for correct this answer ( $\frac{8}{10}$ ) (Note: if student interprets both fractions as $\frac{4}{5}$ , they get credit for both)	<b>1 atypical point</b> for answers where the numerator was determined by number <i>not</i> shaded ( $\frac{1}{5}$ or $\frac{1}{4}$ , $\frac{2}{10}$ or $\frac{2}{8}$ )	Answer where student miscounts pieces (e.g., $\frac{10}{12}$ )
10	<p>Which is bigger? (circle your answer)</p>  <p>Explain your answer:</p> <p>_____</p> <p>_____</p> <p>_____</p>	1 point for correct answer A ( $\frac{3}{4} > \frac{3}{5}$ ) (Explanations are used to disambiguate student answer. Not required to get point)	<b>1 atypical point</b> for selecting B and focusing on the number “left” or non-shaded amount, or any interpretations of the area models in terms of the fractional complement (e.g., interpreting $\frac{3}{4}$ as $\frac{1}{4}$ or $\frac{1}{3}$ ; interpreting $\frac{3}{5}$ as $\frac{2}{5}$ or $\frac{2}{3}$ ).	Selecting incorrect answer with no explanation (or explanation that suggests miscounting, like C because $\frac{3}{5} = \frac{3}{5}$ )
11	 <p>Explain your answer:</p> <p>_____</p> <p>_____</p> <p>_____</p>	1 point for correct answer A ( $\frac{4}{5} > \frac{3}{5}$ ) (Explanations are used to disambiguate student answer. Not required to get point)	<b>1 atypical point</b> for selecting B and focusing on the number “left” or non-shaded amount, or any interpretations of the area models in terms of the fractional complement (e.g., interpreting $\frac{4}{5}$ as $\frac{1}{5}$ or $\frac{1}{4}$ ; interpreting $\frac{3}{5}$ as $\frac{2}{5}$ or $\frac{2}{3}$ ).	Selecting incorrect answer with no explanation (or explanation that suggests miscounting, like C because $\frac{3}{5} = \frac{3}{5}$ )
12	Solve the problem $\frac{1}{2} + \frac{1}{4} =$ using pictures.	1 point for correct answer ( $\frac{3}{4}$ ). Student not penalized if they do not draw pictures.	<b>1 atypical point</b> for answers that include (1) a representation of $\frac{1}{2}$ without shading. (halving) of (2) an answer which involves counting shaded and unshaded separately ( $\frac{2}{4}$ ) (fractional complement)	Incorrect answers like $\frac{1}{6}$ or $\frac{2}{6}$ are not considered atypical, by themselves.
13	What fraction does this picture show?	1 point for correct answer $\frac{8}{10}$ or $\frac{4}{5}$ .	<b>1 atypical point</b> for answers that determine the numerator based on the missing pieces ( $\frac{2}{10}$ , $\frac{2}{8}$ , or $\frac{1}{5}$ ).	An incorrect answer where the student has miscounted the number of pieces ( $\frac{7}{10}$ or $\frac{9}{10}$ )

				
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