Understanding and Connecting

Fractions

Ratio

Analytic Rubric for Thinking about Ratio

This analytic rubric provides a framework for evaluating a student's understanding of the concept of ratio.

Category	Criteria	Observations
What does the term "ratio" mean to you? *Infers two distinct variables* *Comparison & Relationship*	I. Gave examples rather than conceptual definition. II. Knew ratio when it was encountered but couldn't articulate it e.g. It is like when you get three oranges and two apples, well that three is to two. III. Gave part-whole definitions (fractions) rather than comparison or a relationship between two distinct variables. IV. Secure mathematically correct. Identified a relationship between two variables or a comparison between two variables in some sense.	
When do you use ratios?	I. Confined to school context e.g. In the mathematics classroom	.

Looking at application as a desired element of understanding. *Learners relate ratio to something in their own lives*	II. One everyday example e.g. I use it when I was baking a cake. III. Gives everyday example and expands on it e.g. I use it when I am baking a cake, I use one cup of flour to …. IV. Combines everyday example with mathematical contexts. Rate, Scale, Odds, Proportion, Division / splitting, Percent	
Who else uses ratios?	I. School context e.g. teacher II. One person e.g. scientist III. More than one person and beyond the school e.g. scientist, doctor IV. Detailed examples of who uses ratio and how	
How do you represent a ratio using mathematical symbols?	I. Use of colon : II. Write fractional notation e.g. x/y III. Two correct representations IV. More than two representations	
What representations – drawings, charts, graphs, words, and so forth – might you provide to show how ratio is used?	I. One representation II. Two or more representations from the same category III. Two or more representations from two different categories IV. Representations from three or more different categories	

Element	j The learner	k The learner
Reasoning	Relates ratios to compare two quantities.	Uses ratios to compare three quantities. Finds equivalent ratios and simplify ratios.

National Council for Curriculum and Assessment (2022, p. 56)

Student' solutions

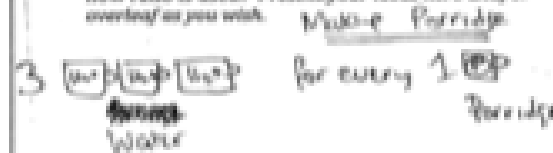*Pictorial representations indicating two variables: charts and graphs, and drawings*

Pictorial representations <u>not</u> clearly indicating two variables: chart and drawing

4. What representations – drawings, charts, graphs, words, and so forth – might you provide to illustrate how ratio is used? Present your ideas here and/or overleaf as you wish.

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