

## Supplemental File 2

### *Lesson Outlines*

#### UNIT 1: RATIO

##### *Ratio Introduction Day 1*

Component	Description
Concept Introduction	Define ratio; model, lead, and test ratio rule; model solving for ratio with a visual example; model writing and reading the ratio three ways; use a 2 <sup>nd</sup> visual example to model solving for a ratio, writing a ratio three ways, and reading the ratio three ways.
Concept Development	Use guided practice to solve two ratio problems, write the ratio three ways, and read the ratios; give students an opportunity to solve a ratio problem independently.
Closure	Ask students what concept they learned today; review definitions.

##### *Ratio Introduction Day 2*

Component	Description
Review	Review ratio definition; review ratio rule and hand motion; use a visual example for guided practice where students write and read a ratio three ways.
Concept Development	Introduce ratio schematic diagram; model using the schematic diagram to write a ratio from a visual example.
Known Quantity Examples	Ask students what type of problems they will be solving; model solving heuristic steps 1—7.
Closure	Ask students what concept they learned today; review definitions.

*Ratio Intervention Lessons*

Component	Description
Self-reflection Folder	Have students review their progress and goal set from the previous day; provide student with opportunity to set their goal for today's lesson. Allow student to choose a theme to solve and discuss prior experience with the theme.
Model	Review the ratio rule and hand motion; using think aloud, model solving a problem using problem solving routine for steps 1—7. Provide behavior specific praise and corrective feedback when appropriate.
Guided Practice	Using think aloud, provide guided practice to solve a problem together to answer steps 1—7. Provide behavior specific praise and corrective feedback when appropriate.
Independent Practice and Check Your Work	Have students independently solve a problem by completing steps 1—7 without any corrective feedback or behavior specific praise; implement self-monitoring routine with student evaluating their work for accuracy and counting up their total steps completed independently correct; have students record their score on their graph in their self-reflection folder, answer social validity Likert-scale questions, and set a goal for tomorrow.

## UNIT 2: PROPORTION

### *Proportion Introduction Day 1*

Component	Description
Concept Introduction	Define proportion; model, lead, and test proportion rule; model solving for proportion with a visual example; model writing and reading the proportion three ways; use a 2 <sup>nd</sup> visual example to model solving for a proportion, writing a proportion three ways, and reading the proportion three ways.
Concept Development	Use guided practice to solve two proportion problems, write the proportion three ways, and read the proportion; give students an opportunity to solve a proportion problem independently.
Closure	Ask students what concept they learned today; review definitions.

### *Proportion Introduction Day 2*

Component	Description
Review	Review proportion definition; review proportion rule and hand motion; use a visual example for guided practice where students write and read a proportion three ways.
Concept Development	Introduce proportion schematic diagram; model using the schematic diagram to write a proportion from a visual example.
Known Quantity Examples	Ask students what type of problems they will be solving; model solving heuristic steps 1—7.
Closure	Ask students what concept they learned today; review definitions.

### *Unit 2: Proportion Intervention Lessons*

Component	Description
Self-reflection Folder	Have students review their progress and goal set from the previous day; provide student with opportunity to set their goal for today's lesson. Allow student to choose a theme to solve and discuss prior experience with the theme.
Model	Review the proportion rule and hand motion; using think aloud, model solving a problem using problem solving routine for steps 1—7. Provide behavior specific praise and corrective feedback when appropriate.

Guided Practice	Using think aloud, provide guided practice to solve a problem together to answer steps 1—7. Provide behavior specific praise and corrective feedback when appropriate.
Independent Practice and Check Your Work	Have students independently solve a problem by completing steps 1—7 without any corrective feedback or behavior specific praise; implement self-monitoring routine with student evaluating their work for accuracy and counting up their total steps completed independently correct; have students record their score on their graph in their self-reflection folder, answer social validity Likert-scale questions, and set a goal for tomorrow.

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### *UNIT 3: DISCRIMINATION*

#### *Discrimination Lessons (Day 1 and Day 2)*

Component	Description
Review key features of problem types	Use a t-chart to review ratio and proportions verbal rules, hand motions, and schematic diagrams; sort word problems by ratio and proportions on the t-chart.
Review solving	Model solving one ratio problem and one proportions problem with the interventionist (reverse the order on Day 2). Solve one ratio and one proportion problem independently with feedback from the interventionist (reverse the order on Day 2).
Closure	Review the difference between ratio and proportion problems.

#### *Discrimination Intervention Lessons*

Component	Description
Independent Practice	Have students independently complete a ratio and proportion problem without feedback or behavior specific praise; utilize self-monitoring routine for student to check their work for accuracy.