

## Major Learning Targets for This Course

### Ratios and Proportional Relationships

Students will understand and analyze proportional relationships and use them to solve problems.

"I can recognize a situation that describes a proportional relationship."

"I can use proportional reasoning to solve problems."

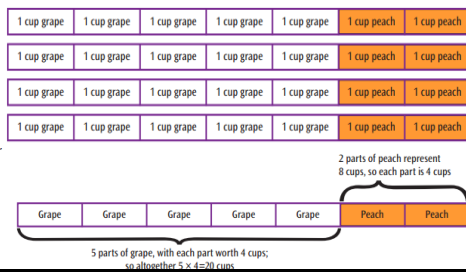
"I can use different visual representations to solve problems about proportions."

#### Example Task:

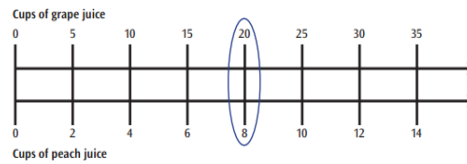
A juice mixture calls for 5 cups of grape juice for every 2 cups of peach juice. How much peach juice would you need to add to 20 cups of grape juice?

Does your answer make sense? How do you know?

#### Use a Tape Diagram



#### Use a Double Number Line



#### Use a Table

Additive Structure Table

Cups of Grape	Cups of Peach
5	2
10	4
15	6
20	8
25	10

Multiplicative Structure Table

Cups of Grape	Cups of Peach
5	2
10	4
15	6
20	8
100	40

### Expressions and Equations

Students will write expressions and equations in one variable and use these equations to solve problems.

"I can use variables to represent quantities in a real-world or mathematical problem."

"I can write equations and inequalities to solve problems."

"I can use different visual representations to solve equations."

\$52.50			
$P$	$P$	$P$	\$11.25

#### Example Task:

The youth group is going on a trip to the state fair. The trip costs \$52.50 per student. Included in that price is \$11.25 for a concert ticket and the cost of 3 passes, 2 for rides and 1 for game booths. Each of the passes costs the same price.

Write an equation representing the cost of the trip, and determine the price of 1 pass.

### Statistics

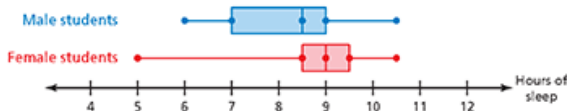
Students will make inferences about populations based on samples and develop, use, and evaluate probability models.

"I understand that we can use data from a representative sample of a population to make predictions."

"I can use median, mean, interquartile range, and mean absolute deviation to infer about comparisons of two populations."

"I can use organized lists, tables, tree diagrams, and simulations to find probabilities of compound events."

#### Example Task:



Given the distributions shown, what inferences can be made about the amount of sleep that students are getting each night? Use measures of center and variability to support your conclusions.

## Expected Behaviors in Math Class

Students will...

- Make predictions and estimations
- Decide if their answer is reasonable
- Use examples and counterexamples to justify a conclusion
- Explain their thinking and their process to solving a problem
- Apply mathematics to solve problems in everyday life
- Consider available tools to help them solve problems (including hands-on tools and technology)
- Use technology to explore and deepen their understanding
- Communicate ideas clearly verbally and in writing, using math vocabulary when appropriate
- Look for patterns and shortcuts

## How Can I Support My Student in This Course?

### 1. Ask Questions

- When your student is stuck, ask him/her questions like:
  - “How do you know?”
  - “Have you seen a similar problem like this before?”
  - “Does your answer make sense?”
  - “What is the problem asking you?”
  - “What information do you need to solve this question?”

### 2. Encourage Your Student to Ask Questions

- You don’t need to be able to answer every question that students may come up with; encourage your student to write down his/her question to bring to a teacher or peer the next day

### 3. Ask Your Student to Draw the Math Problem

- All mathematics can be represented visually; visual representations help students understand the concepts
- Encourage color coding

### 4. Encourage Multiple Representations of the Problem

- Ask your student to solve the problem in a different way, and to make connections between the different representations

### 5. Value Mistakes

- Students are learning when they are making mistakes; create an environment where your student feels comfortable making a mistake and learning from it

### 6. Don’t Simply Tell Them the Right Answer

- Once students are aware that their answer is right, they are more likely to stop thinking about the math
- Instead of telling them the right answer, ask them a question (see #1) or have them draw a picture

### 7. Praise Effort

- When your student gets a right answer, acknowledge how hard they must have worked and practiced
- When your student is stuck, acknowledge that sometimes math is challenging and that if they continue to practice and work hard, they will improve

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For more information, visit [scusd.edu/math](https://scusd.edu/math) or contact [Mikila-Fetzer@scusd.edu](mailto:Mikila-Fetzer@scusd.edu), Math Coordinator

SCUSD’s Vision for Instruction and Assessment: *As a community of learners, we strive to create positive and engaging environments where a rigorous, student-centered curriculum is central. Teachers use inquiry-based instruction and formative assessment practices to support ALL learners in maturing socially and in becoming disciplinary thinkers.*