**Reasoning Talk Planning Examples**

**Heavy Packs**

7.SP.B.3

Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. *For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable*.

Compare the weight of the backpacks for the students in these three grades.



Prompt

If you wanted to compare the means of these three dot plots, what do you need to pay attention to?

Anticipating

Finding the total of each graph (thinking procedurally about Sum X1—Xn/n)

Spread or distribution for 9th and 11th is similar and thus the mean will be similar

7th data is grouped together on low side of the scale and thus has a lower mean weight

Key maths ideas

Spread/distribution

Variability

Mean as sharing and/or balancing

**The Mover**

7.EE.B.4.b

Solve word problems leading to inequalities of the form *px* + *q* > *r* or *px* + *q* < *r*, where *p*, *q*, and *r* are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. *For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions*

**Prompt**

A mover is loading an elevator with boxes that all weigh the same. The mover weighs 185 pounds. The elevator can carry at most 2000 pounds. If the mover asked, “How many boxes can I load on this elevator at a time?”

1. What information are you going to use first to solve this problem?

2. How do you plan to use this information?

3. Why does this information matter?

4. What mathematical questions do you want to ask the mover?

5. What is the most important information needed to answer the mover?

**Anticipating/Misconceptions**

Box weight is unknown

Disregard the weight of the mover

Think a maximum number of boxes must be found

**Key Mathematics**

This scenario represents an inequality and not a linear relationship

Sum of the weight of the boxes and the mover cannot exceed 2000 pounds

Box weight is needed to determine the number of boxes

**Shaded Shapes**

7.G.B.4 Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.

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**First image shown Second image shown

*\*modified from Big Ideas*

**Prompt**

1. What mathematical questions can you ask based on this image?

2. What information do you need to answer your question?

**Anticipating/Misconceptions**

What is the ratio/percent of the blue/white?

What is the area of the blue/white region?

What is the area of the square?

How do the blue and the white compare?

How big is the perimeter?

How many circles are in the shape?

**Key Maths Ideas**

The radius is needed to determine the area of a circle

Area of square

Ratio of blue to white regions

Difference between square and circles to find area of blue region

**Other Possibilities**

What information would be helpful in finding the area of the shaded region?

How does the shaded region compare to the non-shaded region?

What information can you get from this picture?

How? Show me where you see that.