

# NWEA Assessment Item Illustrating 7.RP.A.2.d

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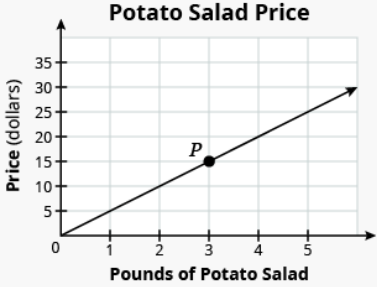
**Domain:** Ratios and Proportional Relationships

**7.RP.A:** Analyze proportional relationships and use them to solve real-world and mathematical problems.

**Calculator Availability:** No

This question has two parts. Use the information to answer Part A and Part B.

The graph shows the relationship between the amount of potato salad and the price.



**Part A**  
What does point  $P$  on the graph represent?

A. 1 pound of potato salad costs \$3.

B. 1 pound of potato salad costs \$15.

C. 3 pounds of potato salad costs \$15.

D. 15 pounds of potato salad costs \$3.

**Part B**  
At another point on the graph, the second coordinate represents the unit price of potato salad in dollars per pound.

What are the coordinates of this point? Enter a number in each box to create an ordered pair.

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**Alignment:** 7.RP.A.2d Explain what a point  $(x, y)$  on the graph of a proportional relationship means in terms of the situation, with special attention to the points  $(0, 0)$  and  $(1, r)$  where  $r$  is the unit rate.

Using proportional relationships to solve problems and modeling with mathematics are both foundational for future study in mathematics and science, and both are used frequently in everyday life. This two-part item requires students to interpret the meaning of a point  $(x, y)$  on the graph of a proportional relationship and to recognize that  $r$  in the point  $(1, r)$  is the unit rate.

**Coherence:** In grade 6, students were introduced to the concept of ratios and began calculating unit rates with whole numbers. Also in grade 6, students solved problems involving unit rate, and the equivalent terms *for every*, *for each*, *for each 1*, and *per* were established and used.<sup>6.RP.A</sup> Parts c and d of this grade 7 standard<sup>7.RP.A.2.c/d</sup> help to lay the foundation for translation between different representations of linear relationships in grade 8<sup>8.F.A/B</sup> and develop an understanding of slope.<sup>8.EE.B</sup>

**Rigor:** This item attends to conceptual understanding and application. Students must understand what the point  $(3, 15)$  on the graph means in terms of the scenario and then use the definition of unit rate to determine the location of the point that represents the unit rate in the same scenario. In this item, the mathematics is not directly indicated and requires students to interpret the real-world scenario and use the information in the problem to decide how to solve.

**Answer Key:**

This question has two parts. Use the information to answer Part A and Part B.

The graph shows the relationship between the amount of potato salad and the price.

**Potato Salad Price**

Pounds of Potato Salad	Price (dollars)
0	0
1	5
2	10
3	15
4	20
5	25

**Part A**  
What does point *P* on the graph represent?

- A. 1 pound of potato salad costs \$3.
- B. 1 pound of potato salad costs \$15.
- C. 3 pounds of potato salad costs \$15.
- D. 15 pounds of potato salad costs \$3.

**Part B**  
At another point on the graph, the second coordinate represents the unit price of potato salad in dollars per pound.

What are the coordinates of this point? Enter a number in each box to create an ordered pair.

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