



**Mathematics
Grade 4
Scoring Guide for
Released Item #58
Allison is Buying Fish
Fall 2006**



58 Allison is buying pet fish for her brothers and sister. Allison has 3 brothers and 1 sister. She wants to buy 3 fish for each.

Part A Explain how Allison can determine the number of fish she needs to buy.

Part B Write a number sentence that can be used to determine the number of fish Allison needs to buy.

Part C How many fish does Allison need to buy?

**ANSWER THIS ITEM IN YOUR ANSWER DOCUMENT.
SHOW ALL YOUR WORK IN YOUR ANSWER DOCUMENT.**

Mathematics Rubric for Allison is Buying Fish

Scoring Rubric

- The student uses correct math word(s) (e.g., add, count, combine, double, plus, sum) or drawings. **(1 point)**
- The student writes a complete and correct number sentence (e.g., $4 \times 3 = \underline{\quad}$) in a horizontal or vertical presentation. **(2 points)**
- The student states that Allison needs to buy 12 fish. **(1 point)**

Note 1: If the number sentence attempted in a response is given as an expression (4×3 or equivalent), it will score 1 point for the number sentence.

Note 2: The student may receive credit for the correct answer if it is part of an equation (i.e., $3 \times 4 = 12$).

Note 3: If the student's explanation is incorrect but the student's number sentence and answer are correct for the explanation, the response receives 1 point.

4-point response earns all four of the above points

3-point response earns three of the four points

2-point response earns two of the four points

1-point response earns one of the four points

0-point response shows little or no understanding of the item.

Anchor Paper 1 – Score Point 4

A Allison can find the number of fish by adding her brothers and sister then times it by 3.

B $(3+1) \times 3 = 12$

C Allison needs to buy 12 fish.

Anchor Paper 1

Score Point 4

The response demonstrates complete understanding of the task by providing all 3 correct and complete parts.

- The student uses correct math words, *adding her brothers and sisters then times it by 3*, to explain how Allison can find the number of fish she needs to buy. **(1 point)**
- The student writes a correct and complete number sentence, $(3 + 1) \times 3 = 12$. **(2 points)**
- The student states that *Allison needs to buy 12 fish*. **(1 point)**

The response earns **4 points**.

Anchor Paper 2 – Score Point 4

A. Get four bags of water and put three fish in each and tie the bags up.



B.
$$\begin{array}{r} 12 \\ \div 4 \\ \hline 3 \end{array} =$$

C. 12, so each of her brothers can have three and her sister can have three.

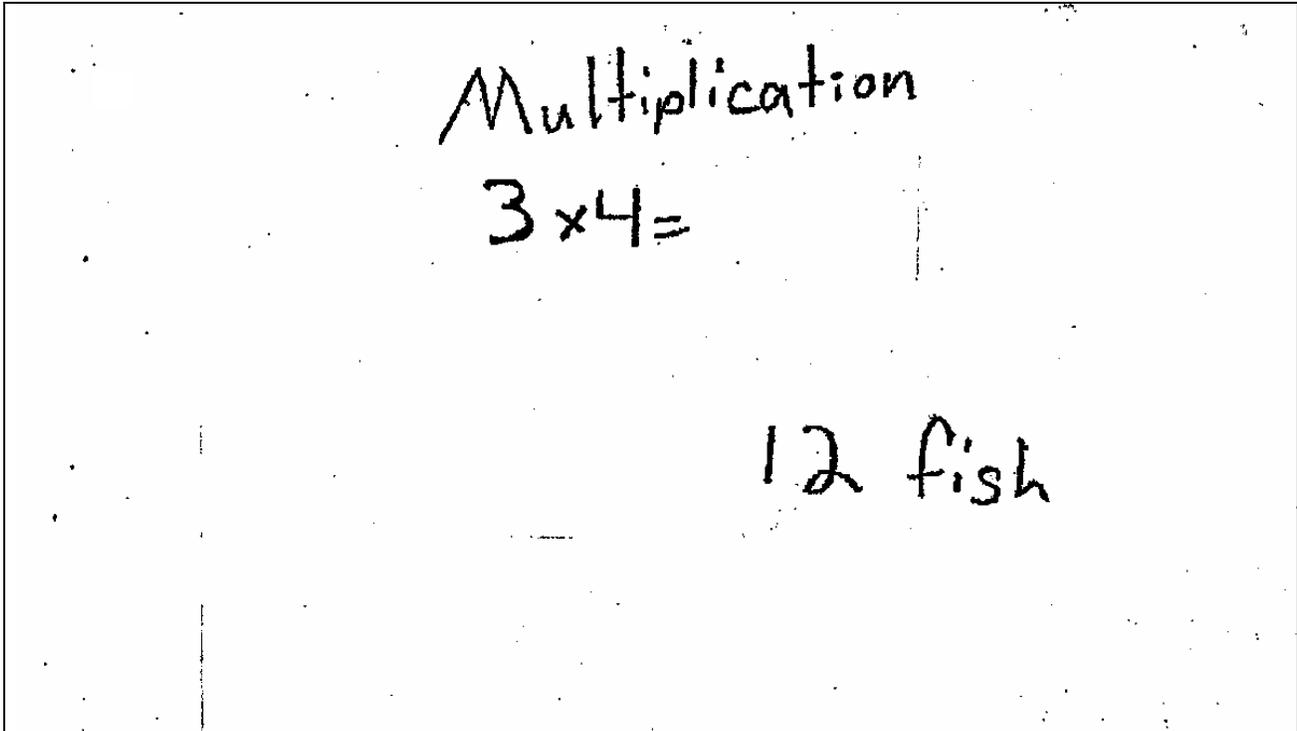
Anchor Paper 2
Score Point 4

The response demonstrates complete understanding of the task by providing all 3 correct and complete parts.

- The student uses a correct drawing showing 4 bags with 3 fish each to demonstrate how Allison can find the number of fish she needs to buy. **(1 point)**
- The student writes a correct and complete vertical number sentence $12 \div 4 = 3$. In this number sentence, the number of fish each brother and sister get (3) is the result. Note that it is unnecessary for the number sentence to be written to solve for the total number of fish. **(2 points)**
- The student answers 12. Note that it is unnecessary to include the “fish” label or the fact that Allison is buying the fish. The prompt reads: *How many fish does Allison need to buy?* “12” alone is an appropriate answer. **(1 point)**

The response earns **4 points**.

Anchor Paper 3 – Score Point 4



Anchor Paper 3

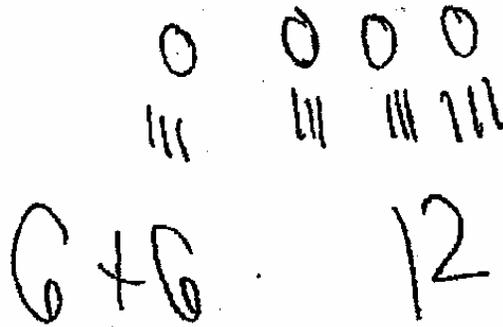
Score Point 4

The response demonstrates complete understanding of the task by providing all 3 correct and complete parts.

- The student uses a correct math word, *multiplication*, to explain how Allison can find the number of fish she needs to buy. **(1 point)**
- The student writes a correct number sentence, $3 \times 4 =$. Note that at the 4th grade level, it is unnecessary to complete the right side of the equation with the answer (12) or a letter variable. Blank answer lines, boxes, or empty spaces are sufficient. **(2 points)**
- The student answers *12 fish*. **(1 point)**

The response earns **4 points**.

Anchor Paper 4 – Score Point 3

**Anchor Paper 4**
Score Point 3

The response demonstrates understanding of the task by providing 2 correct and complete parts and one partially correct part.

- The student uses a correct drawing showing 4 circles with 3 lines each to demonstrate how Allison can find the number of fish she needs to buy. Note that any drawing that shows 4 groups of 3 is sufficient for Part A. **(1 point)**
- The student writes a correct expression, $6 + 6$. To be considered a number sentence, an equal sign must be included (see **Note 1** on the rubric). Also note that using sixes in the expression or number sentence is considered appropriate because 6 is a multiple of 3, and using multiples (6 or 9) is a reasonable way to group the pet fish. **(1 point)**
- The student answers 12. Note that it is unnecessary to include the “fish” label or the fact that Allison is buying the fish. The prompt reads: *How many fish does Allison need to buy?* “12” alone is an appropriate answer. **(1 point)**

The response earns **3 points**.

Anchor Paper 5 – Score Point 3

$$4 \times 3 = 12$$

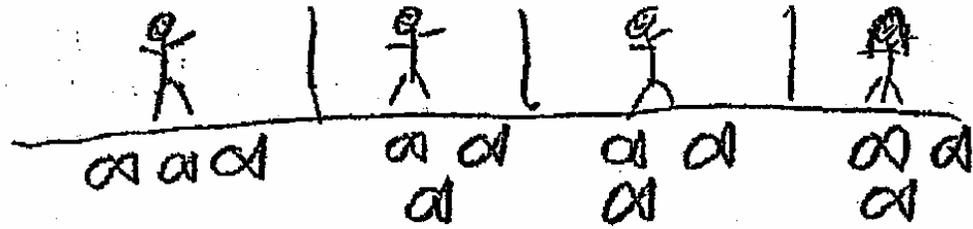
Anchor Paper 5**Score Point 3**

The response demonstrates understanding of the task by providing 2 correct and complete parts.

- The student does not use any correct math words or drawings to explain how Allison can find the number of fish she needs to buy. **(0 points)**
- The student writes a correct and complete number sentence, $4 \times 3 = 12$. **(2 points)**
- The student answers 12. Note that when “12” is included in the number sentence in Part B it may also count as the correct answer for Part C (see **Note 2** on the rubric). **(1 point)**

The response earns **3 points**.

Anchor Paper 6 – Score Point 2



Allison needs to buy 12 fish.

Anchor Paper 6

Score Point 2

The response demonstrates understanding of the task by providing 2 correct and complete parts.

- The student uses a correct drawing showing 4 people with 3 fish each, to demonstrate how Allison can find the number of fish she needs to buy. **(1 point)**
- The student does not write a number sentence or an expression. **(0 points)**
- The student states that *Allison needs to buy 12 fish*. **(1 point)**

The response earns **2 points**.

Anchor Paper 7 – Score Point 2

Alison needs to times 3x4 so I timesed
 3x4 and my answer was 16 fish. So
 she needs to get 16 fish.

Anchor Paper 7

Score Point 2

The response demonstrates understanding of the task by providing 1 correct and complete part and 1 partially correct part.

- The student uses a correct math word (*times*), *Allison needs to times...*, to explain how Allison can find the number of fish she needs to buy. **(1 point)**
- The student writes a correct expression only, 3×4 . To be considered a number sentence, an equal sign must be included (see **Note 1**). **(1 point)**
- The student incorrectly states that *she needs to get 16 fish*. **(0 points)**

The response earns **2 points**.

Anchor Paper 8 – Score Point 1

$$3 + 1 = 4 \times 3 = \boxed{7} \text{ Fish}$$

add the number of brothers and sisters then get the total, then times it by 3 and there is the number of fish

Anchor Paper 8

Score Point 1

The response demonstrates partial understanding of the task by providing 1 correct and complete part.

- The student uses correct math words; *add the number of brothers and sisters then get the total... then times it by 3...*, to explain how Allison can find the number of fish she needs to buy. **(1 point)**
- The student writes an incorrect number sentence, $3 + 1 = 4 \times 3 = 7$. “7” is incorrect and the number sentence is a run-on equation. When 2 equal signs are used in a number sentence, all 3 parts must be equal to be valid. Expressions $3 + 1$ and 4×3 are not equal to each other or to 7. **(0 points)**
- The student incorrectly answers *7 fish*. **(0 points)**

The response earns **1 point**.

Anchor Paper 9 – Score Point 1

Allison needs to buy 12 fish
for 3 brothers and 1 sister.

Anchor Paper 9

Score Point 1

The response demonstrates partial understanding of the task by providing 1 correct and complete part.

- The student does not use any correct math words or drawings to explain how Allison can find the number of fish she needs to buy. **(0 points)**
- The student does not write a number sentence or an expression. **(0 points)**
- The student states that *Allison needs to buy 12 fish*. **(1 point)**

The response earns **1 point**.

Anchor Paper 10 – Score Point 1

part a she can multiply 3x3

$$\text{part b } 3 \times 3 = 9$$

part c a

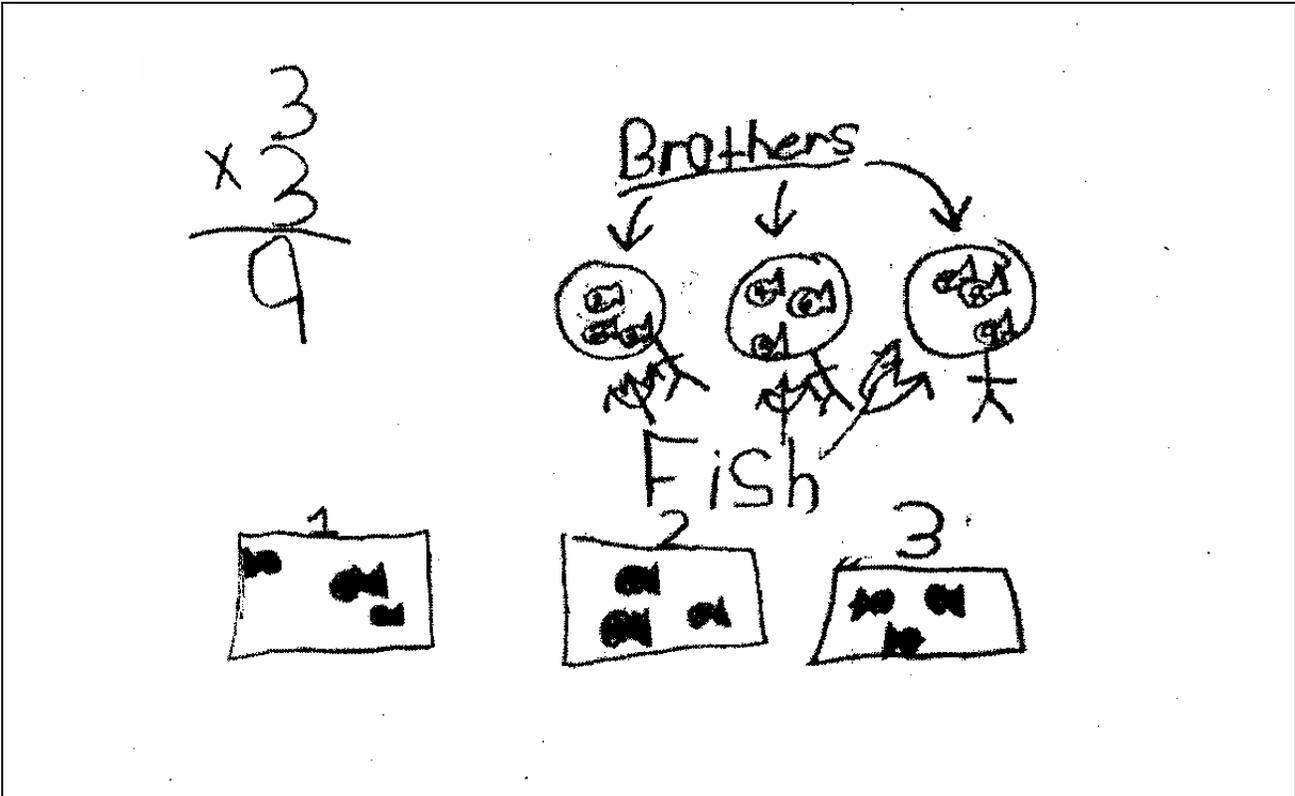
Anchor Paper 10**Score Point 1**

The response demonstrates partial understanding of the task by providing 1 correct and complete part.

- The student uses a correct math word (multiply), *she can multiply 3 x 3*, to explain how Allison can find the number of fish she needs to buy. Note that correct math words used with incorrect numbers may still get credit for Part A. The concept of how to find the number of fish is true (multiply by 3). The error is in the number of siblings (3 instead of 4). **(1 point)**
- The student writes an incorrect number sentence $3 \times 3 = 9$. **(0 points)**
- The student incorrectly answers 9. **(0 points)**

The response earns **1 point**.

Anchor Paper 11 – Score Point 1



Anchor Paper 11
Score Point 1

The response demonstrates partial understanding of the task by providing a true number sentence and answer for an incorrect Part A.

- The student uses a drawing showing 3 groups of 3 (accounting for the brothers only). **(0 points)**
- Given the error in Part A, Part B is correct. The student writes a vertical number sentence $3 \times 3 = 9$ **(see Note 3)**.
- Given the error in Part A, the answer of 9 is correct for Part C **(see Note 3)**.

Note 3 states that if the student's explanation is incorrect but the student's number sentence and answer are correct for the explanation, the response receives **1 point**.

Anchor Paper 12 – Score Point 0

(A) She could go to a
pet store

(B) $3 \times 4 = 16$

(C) 16 fish

Anchor Paper 12

Score Point 0

The response demonstrates little understanding of the task.

- The student does not use any correct math words or drawings to explain how Allison can find the number of fish she needs to buy. **(0 points)**
- The student writes an incorrect number sentence $3 \times 4 = 16$. **(0 points)**
- The student incorrectly answers *16 fish*. **(0 points)**

The response earns **0 points**.