

Math
Released Item 2021
Grade 5

Flowerpots
M500012

Prompt

M500012

There are 12 pounds of dirt to be shared equally among 8 flowerpots.

- How many pounds of dirt should go in each flowerpot?
- Explain your answer.
- Explain how to use a multiplication equation to check your answer.

Enter your answer and your explanations in the space provided.

Rubric

M500012 Rubric	
Score	Description
3	<p>Student response includes each of the following three elements:</p> <ul style="list-style-type: none"> • Computation = 1 point: Correct number of pounds of dirt in each flowerpot: $\frac{12}{8}$ or equivalent • Reasoning = 1 point: Valid explanation or work to determine how the pounds of dirt to go in each flowerpot • Reasoning = 1 point: Valid explanation of how to use multiplication to check the answer <p>Sample Student Response:</p> <p>Each flowerpot has $\frac{12}{8}$ pounds of dirt.</p> <p>Since the 12 pounds of dirt is divided into 8 groups, use $12 \div 8$ to find the number of pounds of dirt in each flowerpot.</p> <p>The equation $12 \div 8 = \frac{12}{8}$ can be written as the multiplication equation $\frac{12}{8} \times 8 = 12$. This can be used to solve the equation because there is a total of 12 pounds of dirt, and there are 8 flowerpots, each with the same amount of dirt. If 8 flowerpots each have $\frac{12}{8}$ pounds of dirt, then there are 8 groups of $\frac{12}{8}$, which equals 12.</p> <p>Or other valid response.</p>
2	Student response includes 2 of the above elements.
1	Student response includes 1 of the above elements.
0	The response is incorrect or irrelevant.

Anchor Set

A1 – A12

With Annotations

Anchor papers are labeled using a capital “A” followed by the sequence number (e.g., A1, A2).

Anchor papers include

- The prompt.
- The student response.
- A score in the top right corner.

The annotation follows the anchor paper, and

- Is aligned to the rubric.
- Contains parts of the student response(s) that, based on the rubric, support the scoring of each element.
- Reflects the original spelling and grammar of student response(s).
 - Example of scoring element within an annotation, with student response language (in parentheses):
The correct fraction to represent the location of point G is given (the fraction equals $\frac{2}{6}$).
- May contain Scoring Decisions or clarifying notes.

The Anchor Set section is followed by a practice set with a scoring matrix. Annotations are not included in the Practice Set section.

There are 12 pounds of dirt to be shared equally among 8 flowerpots.

- How many pounds of dirt should go in each flowerpot?
- Explain your answer.
- Explain how to use a multiplication equation to check your answer.

Enter your answer and your explanations in the space provided.

Answer: $1\frac{1}{2}$ pounds of dirt

Answer Explanation: To find the number of pounds, you have to divide 12 by 8, because 12 pounds have to go in 8 pots. Then the answer you get is one and one-half.

Multiplication Explanation: Because you divided, to check your work, you need to use the inverse operation- multiplication. The answer I got is one and one-half and to check that, all we need to do is multiply the quotient by 8 and you get 12!

Annotation

Anchor Paper 1

Score Point 3

This response receives full credit. It includes each of the three required elements:

- Correct number of pounds of dirt in each flowerpot is determined ($1\frac{1}{2}$ pounds).
- Valid explanation or work that shows how many pounds of dirt go into each flowerpot provided (you have to divide 12 by 8, because 12 pounds have to go in 8 pots).
- Valid explanation of how to use multiplication to check the answer is provided (Because you divided, to check your work, you need to use the inverse operation- multiplication. The answer I got is one and one-half and to check that, all we need to do is multiply the quotient by 8 and you get 12).

There are 12 pounds of dirt to be shared equally among 8 flowerpots.

- How many pounds of dirt should go in each flowerpot?
- Explain your answer.
- Explain how to use a multiplication equation to check your answer.

Enter your answer and your explanations in the space provided.

1.5 pounds of dirt should go in each flowerpot.

1.5 pounds should go in each pot because 12 is greater than 8. So you can put more than 1 pound in each pot, and $12 - 8 = 4$. 4 is half 8 so you can half a pound in each pot to go with the already 1 pound in each pot.

You can use a multiplication equation to check your answer by multiplying $8 \times 1.5 = 12$.

Anchor Paper 2**Score Point 3**

This response receives full credit. It includes each of the three required elements:

- Correct number of pounds of dirt in each flowerpot is determined (1.5 pounds).
- Valid explanation or work for how that shows how many pounds of dirt go into each flowerpot is provided (1.5 pounds should go in each pot because 12 is greater than 8 ... $12 - 8 = 4$. 4 is half 8 so you can half a pound in each pot to go with the already 1 pound in each pot).
- Valid explanation of how to use multiplication to check the answer is provided ($8 \times 1.5 = 12$).

There are 12 pounds of dirt to be shared equally among 8 flowerpots.

- How many pounds of dirt should go in each flowerpot?
- Explain your answer.
- Explain how to use a multiplication equation to check your answer.

Enter your answer and your explanations in the space provided.

$12 \div 8 = 1\frac{1}{2}$ for each flower pod

i can check by multiplying $1\frac{1}{2} \times 8 = 12$

Anchor Paper 3

Score Point 3

This response receives full credit. It includes each of the three required elements:

- Correct number of pounds of dirt in each flowerpot is determined ($1\frac{1}{2}$).

Note: Label (pounds) not needed.

- Valid explanation or work that shows how many pounds of dirt go into each flowerpot is provided ($12 \div 8$).
- Valid explanation of how to use multiplication to check the answer is provided ($1\frac{1}{2} \times 8 = 12$).

There are 12 pounds of dirt to be shared equally among 8 flowerpots.

- How many pounds of dirt should go in each flowerpot?
- Explain your answer.
- Explain how to use a multiplication equation to check your answer.

Enter your answer and your explanations in the space provided.

$$12 \div 8 = 1\frac{4}{8} = 1\frac{1}{2}$$

$1\frac{1}{2}$ pounds of dirt should go in each flowerpot.

I know my answer is right because the total amount of soil is 12 pounds. Since it says that those 12 pounds had to be distributed or shared among 8 flowerpots, I divided. $12 \div 8 = \frac{12}{8}$. $\frac{12}{8} = 1\frac{1}{2}$. $1\frac{1}{2}$ pounds of dirt should go in each flowerpot.

Anchor Paper 4**Score Point 2**

This response receives partial credit. It includes two of the three required elements:

- Correct number of pounds of dirt in each flowerpot is determined ($1\frac{1}{2}$ pounds).
- Valid explanation or work that shows how many pounds of dirt go into each pot is provided (Since it says that those 12 pounds had to be distributed or shared among 8 flowerpots, I divided. $12 \div 8 = \frac{12}{8}$. $\frac{12}{8} = 1\frac{1}{2}$).

An explanation of how to use multiplication to check the answer is not provided.

There are 12 pounds of dirt to be shared equally among 8 flowerpots.

- How many pounds of dirt should go in each flowerpot?
- Explain your answer.
- Explain how to use a multiplication equation to check your answer.

Enter your answer and your explanations in the space provided.

$1\frac{1}{2}$ pounds of dirt goes in each pot.

I multiplied $1\frac{1}{2} \times 8 = 12$ pounds of dirt.

Anchor Paper 5

Score Point 2

This response receives partial credit. It includes two of the three required elements:

- Correct number of pounds of dirt in each flowerpot is determined ($1\frac{1}{2}$ pounds).
- Valid explanation of how to use multiplication to check the answer is provided ($1\frac{1}{2} \times 8 = 12$).

A valid explanation or work that shows how many pounds of dirt go into each pot was found is not provided.

There are 12 pounds of dirt to be shared equally among 8 flowerpots.

- How many pounds of dirt should go in each flowerpot?
- Explain your answer.
- Explain how to use a multiplication equation to check your answer.

Enter your answer and your explanations in the space provided.

$$12 \div 8 = 1 \text{ r}4. 8 \times 1 = 8 + 4 = 12$$

Anchor Paper 6

Score Point 2

This response receives partial credit. It includes two of the three required elements:

- Valid explanation or work for how the pounds of dirt to each pot was found ($12 \div 8$).
- Valid explanation of how to use multiplication to check the answer is provided ($8 \times 1 = 8 + 4 = 12$). The student response shows multiplication and addition equations that result in the original value. This is the valid explanation of the check.

Notes: Valid work is provided for using multiplication to check the answer ($8 \times 1 = 8 + 4 = 12$), but the work is in the form of a run-on equation ($8 \times 1 = 8 + 4$).

An existing Scoring Decision is applied when a run-on equation occurs in a response and the response would have received the top score [score point 3 for this item] without the run-on equation, a precision score point will be deducted. This is a top score point response and a precision point is deducted for the run-on equation and the response scores a 2.

The number of pounds of dirt in each flowerpot is incorrect (1 r4). Remainder 4 is not converted into pounds.

There are 12 pounds of dirt to be shared equally among 8 flowerpots.

- How many pounds of dirt should go in each flowerpot?
- Explain your answer.
- Explain how to use a multiplication equation to check your answer.

Enter your answer and your explanations in the space provided.

$$1\frac{1}{2}$$

Anchor Paper 7

Score Point 1

This response receives partial credit. It includes one of the three required elements:

- Correct number of pounds of dirt in each flowerpot is determined ($1\frac{1}{2}$).

The explanation or work for how the pounds of dirt to each pot was found is not provided.

The explanation of how to use multiplication to check the answer is not provided.

There are 12 pounds of dirt to be shared equally among 8 flowerpots.

- How many pounds of dirt should go in each flowerpot?
- Explain your answer.
- Explain how to use a multiplication equation to check your answer.

Enter your answer and your explanations in the space provided.

$$12 \div 8 = 1 \text{ R}4$$

Anchor Paper 8

Score Point 1

This response receives partial credit. It includes one of the three required elements:

- Valid explanation or work for how the pounds of dirt to each pot was found ($12 \div 8$).

The number of pounds of dirt in each flowerpot is incorrect (1 R4). Remainder 4 is not converted into pounds.

The explanation of how to use multiplication to check the answer is not provided.

There are 12 pounds of dirt to be shared equally among 8 flowerpots.

- How many pounds of dirt should go in each flowerpot?
- Explain your answer.
- Explain how to use a multiplication equation to check your answer.

Enter your answer and your explanations in the space provided.

2 pounds of dirt should be in each flower pot because you will need more than 12 ponds . so than
 $8 \times 2 = 16$ and $16 \div 8 = 2$

Anchor Paper 9

Score Point 1

This response receives partial credit. It includes one of the three required elements:

- The explanation of how to use multiplication to check the answer is valid for the incorrect answer ($8 \times 2 = 16$). The multiplication is set up correctly; quotient times divisor equals dividend.

Note: An existing Scoring Decision is applied when elements in the rubric are independent of each other. If a response makes an error in a previous element and uses the incorrect answer in the next element, the response can receive full credit for correctly using the incorrect answer from the previous element. This response uses an incorrect process to find the pounds of dirt in each pot, but correctly uses this incorrect process to use multiplication to check the answer.

The number of pounds of dirt in each flowerpot is incorrect (2 pounds).

The explanation or work for how the pounds of dirt to each pot is incorrect. Although the work includes division ($16 \div 8$), an incorrect total number of pounds of dirt is used: 16 instead of 12. The explanation shows the same misunderstanding (2 pounds of dirt should be in each flowerpot because you will need more than 12 pounds).

There are 12 pounds of dirt to be shared equally among 8 flowerpots.

- How many pounds of dirt should go in each flowerpot?
- Explain your answer.
- Explain how to use a multiplication equation to check your answer.

Enter your answer and your explanations in the space provided.

Each flower pot should have 1 pound of dirt inside each because if you take 8 divided by 12 you get 1 remainder of four, so it is better to have a equal amount of dirt in each and have a little left over than having the flowerpots not be equal.

Anchor Paper 10

Score Point 0

This response receives no credit. It includes none of the three required elements.

The number of pounds of dirt in each flowerpot is incorrect (1 remainder of four). The remainder 4 is not converted into pounds.

The explanation or work for how the pounds of dirt in each pot was found is incorrect. The student response explains the distribution of 8 pounds of dirt into 12 flowerpots (8 divided by 12). The response illustrates misunderstanding by reversing the division.

The explanation of how to use multiplication to check the answer is not provided.

There are 12 pounds of dirt to be shared equally among 8 flowerpots.

- How many pounds of dirt should go in each flowerpot?
- Explain your answer.
- Explain how to use a multiplication equation to check your answer.

Enter your answer and your explanations in the space provided.

$$\frac{8 \div 2}{12 \div 2} = \frac{4 \div 2}{6 \div 2} = \frac{2}{3}$$

$\frac{2}{3}$ pounds of dirt in each flower pot.

I divided $\frac{8}{12}$ and simplified it so I could get my final answer.

I can use multiplication to check my answer because I can make sure both of my numbers are divisible by 2. Just like $\frac{8}{12}$ I made sure both numbers were divisible by the same number.

Annotation

Anchor Paper 11

Score Point 0

This response receives no credit. It includes none of the three required elements.

The number of pounds of dirt in each flowerpot is incorrect ($\frac{2}{3}$).

The explanation or work for how the pounds of dirt in each pot was found is incorrect. The student response explains the distribution of 8 pounds of dirt into 12 flowerpots (I divided $\frac{8}{12}$). The response illustrates misunderstanding by reversing the division.

The explanation of how to use multiplication to check the answer is not provided. Instead, the student response explains simplification of the fraction (I can make sure both of my numbers are divisible by 2).

There are 12 pounds of dirt to be shared equally among 8 flowerpots.

- How many pounds of dirt should go in each flowerpot?
- Explain your answer.
- Explain how to use a multiplication equation to check your answer.

Enter your answer and your explanations in the space provided.

96 pounds of dirt should go in the flower pot because $12 \times 8 = 96$ and if u use ur multiplication facts 12×1 is 12 12×2 is 24 and so on u just add 12 each time.

Anchor Paper 12

Score Point 0

This response receives no credit. It includes none of the three required elements.

The number of pounds of dirt in each flowerpot is incorrect (96 pounds).

The explanation or work for how the pounds of dirt to each pot was found is incorrect ($12 \times 8 = 96$).

An insufficient explanation of how to use multiplication to check the answer is provided (12x1 is 12 12x2 is 24 and so on u just add 12 each time). The response does not show understanding that multiplication and division are inverse operations.

Note: The response is incorrect. The incorrect process of multiplication indicates that 12 pounds are put in each of 8 flowerpots. Therefore, total amount of dirt is 96 pounds.

Practice Set 1

P1-1 – P1-10

Annotations Not Included

There are 12 pounds of dirt to be shared equally among 8 flowerpots.

- How many pounds of dirt should go in each flowerpot?
- Explain your answer.
- Explain how to use a multiplication equation to check your answer.

Enter your answer and your explanations in the space provided.

$$16 \times 12 = 192$$

$$192 \div 8 = 24$$

the sixteen came from how many ounces are in a pound and the 12 came from how many pounds of dirt they have. the eight came from how many flower pots. so each pot will get 1 pound and 8 ounces of dirt.

There are 12 pounds of dirt to be shared equally among 8 flowerpots.

- How many pounds of dirt should go in each flowerpot?
- Explain your answer.
- Explain how to use a multiplication equation to check your answer.

Enter your answer and your explanations in the space provided.

1.4 pounds of dirt should go in each flowerpot. 1.4 pounds of dirt should go in each because, $12 \div 8 = 1.4$. So the pounds (which is 12) divided by the amount of flowerpots (which is 8) equals how much you should give each flower pot. You can check this answer too. Because $1.4 \times 8 = 12$ which is the same equation but backwards therefore 1.4 should be put in each flower pot.

There are 12 pounds of dirt to be shared equally among 8 flowerpots.

- How many pounds of dirt should go in each flowerpot?
- Explain your answer.
- Explain how to use a multiplication equation to check your answer.

Enter your answer and your explanations in the space provided.

I got an answer of 1.5 pounds of dirt in each flowerpot. I got this answer by first trying one pound in each flowerpot. And because that equals 8 pounds, I subtracted 8 from 12. Then I had 4 pounds left. So I put 0.5 pounds of dirt in each flowerpot, and that worked because I didn't have any dirt left. You can check your answer by multiplying 1.5×12 . That is how I solved this equation.

There are 12 pounds of dirt to be shared equally among 8 flowerpots.

- How many pounds of dirt should go in each flowerpot?
- Explain your answer.
- Explain how to use a multiplication equation to check your answer.

Enter your answer and your explanations in the space provided.

$$12 \div 8 = 1r4$$

$$1 \times 8 + 4 = 12$$

So, $1\frac{1}{2}$ pound goes in each flowerpot. First, you would divide 12 and 8 to see how many pounds go in each pot. Then, if you want to check you would do 1 times 8 plus 4 which equals 12.

There are 12 pounds of dirt to be shared equally among 8 flowerpots.

- How many pounds of dirt should go in each flowerpot?
- Explain your answer.
- Explain how to use a multiplication equation to check your answer.

Enter your answer and your explanations in the space provided.

$$8 \div 12 = 1 \text{ r}4$$

There will be 4 pounds of dirt left over.

There are 12 pounds of dirt to be shared equally among 8 flowerpots.

- How many pounds of dirt should go in each flowerpot?
- Explain your answer.
- Explain how to use a multiplication equation to check your answer.

Enter your answer and your explanations in the space provided.

$$8 \div 12 = 1 \text{ r}4$$

There will be 4 pounds of dirt left over.

There are 12 pounds of dirt to be shared equally among 8 flowerpots.

- How many pounds of dirt should go in each flowerpot?
- Explain your answer.
- Explain how to use a multiplication equation to check your answer.

Enter your answer and your explanations in the space provided.

24pounds of dirt should go into each of the 8 flowerpots.

$$1\text{pound} = 16\text{ounces } (16 \times 12) = 192$$

$$192 \div 8 = 24\text{pounds}$$

There are 12 pounds of dirt to be shared equally among 8 flowerpots.

- How many pounds of dirt should go in each flowerpot?
- Explain your answer.
- Explain how to use a multiplication equation to check your answer.

Enter your answer and your explanations in the space provided.

$\frac{8}{12}$ will go into each flower pot.

$8 \div 12$ will turn into a fraction.

There are 12 pounds of dirt to be shared equally among 8 flowerpots.

- How many pounds of dirt should go in each flowerpot?
- Explain your answer.
- Explain how to use a multiplication equation to check your answer.

Enter your answer and your explanations in the space provided.

If there are 12 lbs of dirt in total and you need to split each lb by 8, which means to divide.

$12\text{lbs} \div 8 = \frac{12}{8}$ or $1\frac{4}{8}$ lbs. You can check your answer by multiplying for using the reciprocal of division and do multiplication

$$\frac{12}{1} \times \frac{1}{8} = 1\frac{4}{8} .$$

There are 12 pounds of dirt to be shared equally among 8 flowerpots.

- How many pounds of dirt should go in each flowerpot?
- Explain your answer.
- Explain how to use a multiplication equation to check your answer.

Enter your answer and your explanations in the space provided.

$\frac{12}{8}$ pounds of dirt should go in each flowerpot because if you have 12 pounds of dirt and you want to split the dirt into 8 flowerpots then you have to split 12 by 8.

Practice Set Paper	Score
P1-1	2
P1-2	2
P1-3	2
P1-4	3
P1-5	1
P1-6	0
P1-7	1
P1-8	0
P1-9	3
P1-10	2