

Eggs Come in Three Colors!!!

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Sophie was looking for her rubber garden boots. She was going with her parents to visit Amara and Ben, their good friends at the farm. They had been visiting frequently because Amara and Ben were growing many new things on their organic farm and needed extra help. The farm was not far from Irma and Ezra's farm stand and grew many of the vegetables that Ezra and Irma sold.

It was early in the morning when Sophie and her parents climbed into the car. On the way, they stopped to pick up Norman. Amara and Ben said that Norman was always welcome. Norman was glad. He really liked to visit the farm AND Sophie is a very good friend. Norman was waiting outside when they got to his house. His rubber garden boots were tucked under his arm. He climbed into the back seat with Sophie.

When they got to the top of the big hill they saw Irma and Ezra's farm stand just on the other side. It was not much farther to the farm. Ezra and Irma were just setting up the stand and waved as they drove by. The sun had not been up long and it was going to be a beautiful fall day.

"Do you know what Amara and Ben are doing today and how we can help?" asked Norman.

"Amara & Ben are working hard at their egg business," said Sophie's mom. "People love fresh eggs and both Amara and Ben love having chickens around."

“They have chickens that lay brown eggs, chickens that lay white eggs, and now they have chickens that lay speckled eggs!” announced Sophie’s dad. “Believe it or not, white chickens lay white eggs and brown chickens lay brown eggs.”

“Speckled eggs??” blurted Norman with a bit of doubt. “Do you color them yourself? Do they taste different?”

“You should ask Amara. She is the chicken expert,” replied Sophie’s dad.

When they got to the farm, Sophie and Norman said hello to Ben, put on their boots, and walked to the chicken coop. Amara was behind the fence feeding the chickens. “Can I see a chicken that lays speckled eggs?” asked Norman. “In fact, can I see a speckled egg?”

“Yes,” says Amara who soon emerged from the chicken coop holding a brownish egg with speckles on it, “Maran is the name of the chicken breed that lays speckled eggs. They taste like the other eggs but they are almost always large.”

“Chicken breeds have the most curious names,” continued Amara excitedly, “There are Rhode Island Reds, Orpingtons, Leghorns, Black Stars, and more.”

“I love chickens and I love taking care of them. They have such different personalities and I get to know them. But since we have the new Maran chickens that lay speckled eggs, the orders that come in are for 3 different kinds of eggs. I get really mixed up when I have to work with more than two numbers,” Amara said.

Amara looked at Sophie and Norman and explained that when an order came in she had to decide whether to push the big cart that holds **24 eggs** or take the basket that holds **13 eggs**.

“I’d rather take the basket. Hardly any eggs break that way. And that’s not the only reason. The cart bumps against the roosts and disturbs the chickens. But when I have to get more than **13 eggs**, I really need the cart,” declared Amara.

Ben brought an order in and handed it to Amara.

Egg Order	
For <u> </u> Megan	
Brown	3
White	5
Speckled	3
Total	<u> </u>

Sophie, Norman, and Ben looked at the order.

Sophie thought about the order and said, “Hmm, I want to pick two numbers that are good to add first. Then I’ll add the third number.” Sophie picks up a piece of paper and a pencil and said to herself as she wrote, “**3 plus 3 equals 6 and then add 5 more, that’s 11.**”

Norman looked puzzled. “Don’t you have to add the numbers in the same exact way they are written?”

Before they had a chance to talk about adding the numbers two new egg orders arrived.

Egg Order	Egg Order
For ZOE	For FINN
Brown 2	Brown 4
White 5	White 5
Speckled 1	Speckled 3
Total	Total

1. Two orders come in. One for Zoe and one for Finn. Amara is going to fill each order separately. Can you help Amara figure out whether she needs the cart or the basket to get the eggs for Zoe? Will she need the cart or the basket for Finn? What numbers do you think Sophie would add first?

Egg Order	
For	CHASE
Brown	4
White	3
Speckled	6
Total	<u> </u>

Another order came in from Chase. Sophie looked at it and whispered to herself, “**6 + 4 is 10** and then add **3** more.”

Norman was looking at the order form too. He heard Sophie adding and said, “Sophie, you have to add $4 + 3$ first because that’s how they are on the order.”

Sophie had a different idea. She said, “When I add three numbers I look for the two I want to add first. I can do that because it doesn’t matter what order you add the numbers as long as you add all of them.”

Norman thought picking the first two numbers to add was a good strategy but he still thought you HAD to add in the order the numbers are written down. Sophie wanted to show Norman that the order the numbers are added does not matter.

Egg Order	
For	CHASE
Brown	4
White	3
Speckled	6
Total	<u> </u>

2. The order says 3 white, 6 speckled, and 4 brown eggs. Help Sophie show Norman that it doesn't matter what order you add the numbers, the total will be the same.

Amara was watching Sophie do the math and after a while said to herself, “I think I can do that. I will pick two numbers I want to add first and then add the remaining number. Like Sophie I will write down what I’m doing.”

For the next hour Amara, with a little help from Sophie and Norman, added the eggs on the orders and knew whether she needed the basket or the cart to collect them.

Just then Ben walked in with a whole handful of order slips. “Sorry, I’ve been so busy I haven’t had a chance to bring you these orders. I was hurrying writing them down, so there might be a few things you’ll need to figure out,” Ben said as he hurried back to the vegetable patch.

Amara, Norman, and Sophie looked at the egg orders. They were different. Now all the orders said how many eggs altogether, but they left something out. Amara looked worried and said, “I was just getting the hang of adding three numbers. This is confusing.”

Egg Order	
For CHANTA	
Brown	12
White	5
Speckled	
Total	24

They all looked at the first order from Chanta.

“This is hard,” said Amara, “I walk past the speckled hens first. But the order does not say how many I should put in the cart.

Scratching his head Norman said, “There’s no way to figure this out. Ben will have to find out from Chanta how many speckled eggs she wants.

3. Can you help Sophie and Norman figure out how many speckled eggs Chanta wants?

Norman, Amara, and Sophie looked at the next two egg orders. They also had a total but were missing one of the kinds of eggs.

Egg Order		Egg Order	
For	WILL	For	EMMA
Brown		Brown	3
White	8	White	10
Speckled	8	Speckled	
Total	24	Total	24

4. Can you help Sophie and Norman figure out how many of the missing eggs to get?

They were almost finished with all the new orders when Ben came rushing in and gave Amara three new orders. “Amara, please hurry and fill these new orders. The people said they are on their way and will be here any minute.”

Sophie thought and said, “Amara you should take the big cart that holds **24** eggs, you’ll be able to get the eggs for all the orders at the same time!”

Amara grabbed the cart, smiled, and said, “Yes! Give me the order slips!”

Norman was wondering about whether Sophie had really figured this out and said – kind of to himself, “There could be more than 24 eggs on all the orders. They won’t all fit on the cart.”

Amara stopped and said, “Oh my, that’s right. But it would be faster, if I can do more than one order at a time.”

Sophie looked at Norman and said, “I think we can figure this out.”

“Right,” said Norman with a grin, “Amara can still get eggs for more than one order, if all together there are less than 24 eggs.”

Egg Order		Egg Order	
For	MARTHA	For	LIAM
Brown	8	Brown	4
White	7	White	4
Speckled	1	Speckled	3
Total	_____	Total	_____

Egg Order	
For	ABBY
Brown	6
White	3
Speckled	4
Total	_____

5. Can you help Sophie and Norman figure out which egg orders Amara can fill at the same time and use the cart?



Almost all the egg orders had been filled. Amara was smiling and said to Sophie and Norman, “I think we can handle any egg orders that come in.” She had hardly finished saying that when Ben walked in. He was not smiling.

“I found a bunch of egg orders that I must have left on the table. The wind must have blown them off and they landed in a muddy puddle. I picked them out and tried to wipe them off.” he said.

“No problem,” exclaimed Norman, “We were just talking about how good we are at figuring out egg orders.”

“Well,” sighed Ben, “These are going to be a bit harder. When I tried to dry them some of the numbers got so smudged you cannot read them.”

Ben held up one of the wet order forms to show everyone what he meant.

Egg Order	
For	JAYLIN
Brown	6
White	
Speckle	
Total	<u> 22 </u>

Everyone looked at the order. It was impossible to tell what the smudged numbers were. Norman made his scrunchy thinking face.

Amara sat down and put her chin in her hand. Sophie headed over to the table to get paper and a pencil. Ben asked, “Can we figure out how many of the different eggs people ordered?”

6. What is the answer to Ben’s question? Can Sophie, Norman, and Amara figure out how many eggs were ordered?

“Maybe we cannot be sure we know how many people ordered,” suggested Norman.

“Maybe, but I have an idea,” said Sophie, “What if we guess that people wanted the same number of the kinds of eggs that are missing? Can we figure that out?”





Egg Order	Egg Order
For JAYLIN	For TIEGAN
Brown 6	Brown 
White 	White 
Speckled 	Speckled 7
Total <u>22</u>	Total <u>24</u>

7. Can you figure out how many eggs should be in these orders, if people get the same number of the kinds of eggs that are missing?

“Hmmm,” mumbled Norman, “Sometimes you can have the same number of eggs that are missing and sometimes you cannot.”

Amara said, “We don’t know whether people wanted the same number of the missing eggs.”





Ben and Sophie both said, “Right. So let us figure out what the different numbers MIGHT be?”

Egg Order	Egg Order
For THEONA	For DEVON
Brown 8	Brown 
White 	White 
Speckled 	Speckled 5
Total __20__	Total __23__

8. Can you help Sophie, Norman, and Amara figure out how many missing eggs **MIGHT** be in these orders?

Ben called the customers by telephone, and returned smiling.
“Everyone was very understanding about their egg orders,” he said.
“They all said it would be fine, if the missing eggs were the same or as close to each other as they could be.”

“Well, we know how to do that!” declared Norman.

Egg Order	Egg Order
For STEVEN	For MARIA
Brown 10	Brown 
White 	White 
Speckled 	Speckled 9
Total <u>20</u>	Total <u>22</u>

9. Can you help Sophie and Norman figure out how to give Steven and Maria the same or close to same number of missing eggs?

Later as Norman and Sophie were walking back to the car to head home, Norman said, “I didn’t realize that there could be many answers to math problems and sometimes there are problems that don’t have just one answer. My brain has made a lot of math connections.”

“Mine too,” said Sophie who had been quiet for a little while. “I was wondering. What if, when the order slips had gotten smudged, we didn’t know the total number of eggs?”

Norman stopped walking. He realized how lucky he was to have a friend who asked so many good questions. He also started wondering about orders with the total unknown.

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