Name: _____ Date: _____

Counting the Jelly Beans by Layers

Circle group

At the school fair, Priya saw a clear box of jelly beans. A sign said, "Guess how many and win the box." You could not count every bean. The box was too full, and the line was long.

Priya knew a math trick. When you cannot count it all, you estimate. An estimate is a smart guess that is close. She started with one layer. From the front, she counted 5 beans across. From the side, she counted 4 beans deep. So one layer had about 5 times 4, which is 20 beans.

Next she counted the layers. There were 6. Twenty beans in a layer times 6 layers is about 120 beans.

Her answer might not be exact. Beans are not square, and some fill the gaps. But 120 was a better guess than 1,000 or 30. She wrote 120.

The winner guessed 118. He had used the same trick. Priya was not upset. She learned that a big job is easier in small parts.

Questions

1. What could Priya do with the jelly beans?

_____

_____

2. What is an estimate?

_____

_____

3. How many beans did Priya count across the front and deep along the side?

_____

_____

4. How did Priya get about 120 beans?

_____

_____

5. Why might her answer not be exact?

_____

6. What did Priya learn?

Words to know

estimate: a careful guess that is close to the real amount
layer: one flat level of something that is stacked up
exact: perfectly correct, with nothing off at all

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Counting the Jelly Beans by Layers

Triangle group

At the school fair, Priya found a clear box packed with jelly beans, and a sign said, "Guess how many and win the box." Counting every bean was not allowed because the box was too full and the line behind her was growing.

Priya remembered a trick from math class, which is that when you cannot count everything, you estimate. An estimate is a smart guess that is close to the real answer. She began with one layer, and when she looked through the front she counted 5 beans across, and when she looked through the side she counted 4 beans deep. So one layer held about 5 times 4, which is 20 beans.

Next she counted the layers from the bottom to the top. There were 6. Now she multiplied again. Twenty beans in each layer times 6 layers is about 120 beans.

Priya knew her answer might not be exact because beans are not perfect squares and some of them bend into the gaps, but a guess of 120 was far better than a wild guess of 1,000 or 30. She wrote 120 on her slip.

When the fair ended, the winner was a boy who guessed 118. He had used the same layer trick. Priya was not upset. She had learned that a good estimate comes from breaking a big job into small, easy parts.

Questions

1. What was Priya allowed to do with the jelly beans?

_____

_____

2. What is an estimate?

_____

_____

3. How many beans did Priya count across the front and deep along the side?

_____

_____

4. How did Priya get about 120 beans?

_____

_____

5. Why might Priya's answer not be exact?

_____

_____

6. What did Priya learn from the fair?

_____

_____

Words to know

estimate: a careful guess that is close to the real amount
layer: one flat level of something that is stacked up
multiplied: found the total of equal groups added together
exact: perfectly correct, with nothing off at all

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Counting the Jelly Beans by Layers

Square group

At the school fair, Priya discovered a clear box crammed full of jelly beans. A cheerful sign invited everyone to guess how many beans were inside and win the whole box. Counting each bean individually was not permitted, because the box was too full and the line behind her was steadily growing.

Priya remembered a clever strategy from her math class. When it is impossible to count everything, you estimate. An estimate is a thoughtful guess that lands close to the real answer. She began with a single layer. Looking through the front, she counted 5 beans across, and looking through the side, she counted 4 beans deep. One layer therefore held about 5 times 4, which is 20 beans.

Next she counted the layers stacked from the bottom to the top, and there were 6 of them. She multiplied once more. Twenty beans in each layer times 6 layers comes to about 120 beans.

Priya understood that her answer might not be exact, since beans are not perfect squares and some of them tuck into the gaps. Even so, a guess of 120 was far wiser than a wild guess of 1,000 or 30. She wrote 120 on her slip of paper.

When the fair ended, the winner turned out to be a boy who had guessed 118, using the very same layer strategy. Priya was not disappointed. She had learned that a good estimate comes from breaking a large job into small, manageable parts.

Questions

1. What was Priya permitted to do with the jelly beans?

_____

_____

2. What is an estimate?

_____

_____

3. How many beans did Priya count across the front and deep along the side?

_____

_____

4. How did Priya arrive at about 120 beans?

_____

_____

5. Why might Priya's answer not be exactly right?

_____

_____

6. What lesson did Priya take away from the fair?

_____

_____

Words to know

estimate: a careful guess that is close to the real amount
layer: one flat level of something that is stacked up
multiplied: found the total of equal groups added together
exact: perfectly correct, with nothing off at all

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

For the teacher: Counting the Jelly Beans by Layers

Each student sheet carries a shape, not a level. The same topic and facts, written three ways.

Circle: Counting the Jelly Beans by Layers

Easier · 153 words · Flesch-Kincaid grade 0.8

1. She could only guess, because she could not count every bean.
2. A smart guess that is close.
3. 5 across and 4 deep.
4. She did 20 beans times 6 layers.
5. Beans are not square, and some fill the gaps.
6. A big job is easier when you do it in small parts.

Triangle: Counting the Jelly Beans by Layers

This passage · 215 words · Flesch-Kincaid grade 4

1. She could only guess, because counting every bean was not allowed.
2. A smart guess that is close to the real answer.
3. 5 across and 4 deep.
4. She multiplied 20 beans in a layer by 6 layers.
5. Beans are not perfect squares, and some bend into the gaps.
6. A good estimate comes from breaking a big job into small, easy parts.

Square: Counting the Jelly Beans by Layers

Harder · 233 words · Flesch-Kincaid grade 5.5

1. She could only guess, because counting each bean was not permitted.
2. A thoughtful guess that lands close to the real answer.
3. 5 across and 4 deep.
4. She multiplied 20 beans in each layer by 6 layers.
5. Beans are not perfect squares, and some tuck into the gaps.
6. A good estimate comes from breaking a large job into small, manageable parts.