Fruit Snacks

Working with Averages

"When am I ever going to use this?"

Using the concepts in this worksheet, you will be able to find the average number of items in a group.

Many people enjoy eating fruit snacks. Kirkland Signature Fruit Snacks are made from seven different fruit juices (Source: package labeling). A father opened five bags of the Fruit Snacks, counted the number of pieces in each bag, and recorded the results in the table.

Bag #1	14 pieces	4 red, 5 green, 4 orange, 1 yellow
Bag #2	13 pieces	4 red, 3 green, 4 orange, 2 yellow
Bag #3	12 pieces	5 red, 3 green, 4 orange, 0 yellow
Bag #4	14 pieces	2 red, 6 green, 4 orange, 2 yellow
Bag #5	13 pieces	2 red, 6 green, 4 orange, 1 yellow

1. What was the average number of pieces in each bag?

2. Which is greater: the average number of green pieces in each bag or the average number of orange pieces in each bag?

3. The number of yellow pieces in each bag was less than the number of pieces of every other color. What was the average number of yellow pieces in each bag?

4. Is it likely that there is exactly 1 red piece in a bag of Fruit Snacks?

5. Using the results from Exercises 1 through 4, predict the number of pieces of each color in an unopened bag of Fruit Snacks.

6. After predicting the number of Fruit Snacks in an unopened bag, the father opened up a sixth bag of Fruit Snacks. It contained 1 yellow piece, 5 green pieces, 4 orange pieces, and 4 red pieces. How accurate was the prediction in Exercise 5?

7. When the sixth bag is included with the first five bags, what is the average number of pieces in each bag?

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1. What was the average number of pieces in each bag?

$$\frac{14+13+12+14+13}{5} = \frac{66}{5}$$
$$= 13.2 \textit{ pieces}$$

The average number of pieces in each bag is 13.2 pieces.

2. Which is greater: the average number of green pieces in each bag or the average number of orange pieces in each bag?

$$\frac{5+3+3+6+6}{5} = \frac{23}{5}$$
$$= 4.6 \textit{ green pieces}$$

$$\frac{4+4+4+4+4}{5} = \frac{20}{5}$$
$$= 4 \textit{ orange pieces}$$

The average number of green pieces in each bag is greater than the average number of orange pieces?

3. The number of yellow pieces in each bag was less than the number of pieces of every other color. What was the average number of yellow pieces in each bag?

$$\frac{1+2+0+2+1}{5} = \frac{6}{5}$$
$$= 1.2 \textit{ yellow pieces}$$

4. Is it likely that there is exactly 1 red piece in a bag of Fruit Snacks?

To answer the question we first find the average number of red pieces in each bag.

$$\frac{4+4+5+2+2}{5} = \frac{17}{5}$$
$$= 3.4 \text{ red pieces}$$

Since the average number of red pieces is 3.4 pieces, it is unlikely that there is exactly 1 red piece in a bag of Fruit Snacks.

5. Using the results from Exercises 1 through 4, predict the number of pieces of each color in an unopened bag of Fruit Snacks.

On average there were 1.2 yellow pieces, 4.6 green pieces, 4 orange pieces, and 3.4 red pieces. Since it doesn't make sense to talk about less than a whole piece, we round each of the amounts. We predict that there is 1 yellow piece, 5 green pieces, 4 orange pieces, and 3 red pieces in an unopened bag. This adds up to 13 pieces in the bag which is close to the average of 13.2 pieces.

6. After predicting the number of Fruit Snacks in an unopened bag, the father opened up a sixth bag of Fruit Snacks. It contained 1 yellow piece, 5 green pieces, 4 orange pieces, and 4 red pieces. How accurate was the prediction in Exercise 5?

The sixth bag contained the exact number of yellow, green and orange pieces predicted and contained one red piece more than predicted. There were 14 pieces in the bag.

7. When the sixth bag is included with the first five bags, what is the average number of pieces in each bag?

$$\frac{14+13+12+14+13+14}{6} = \frac{80}{6}$$
$$= 13\tfrac{1}{3} \text{ pieces}$$

The average number of pieces is $13\frac{1}{3}$ *pieces*.

Worksheet Title	Fruit Snacks: Working with Averages					*Filename:*	m1010
Keywords	Fruit snacks, averages, Kirkland Signature						
NCTM Standard		Content Standards			Process Standards		
	X	Number and Operations		X	Problem Solving		
		Algebra			Reasoning and Proof		
		Geometry		X	Communication		
		Measurement		X	Connections		
	X	Data Analysis and Probability			Representations		
Grade Band		PreK – 2					
		3 – 5					
	X	6 – 8					
		9 – 12					
Data Type	Table						

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