



O gatinho do João: Cartazes elaborados por alunos¹

Observe os cartazes elaborados pelos alunos no âmbito da resolução de uma tarefa que, no essencial, corresponde à intitulada *O gatinho do João*. Analise as estratégias utilizadas identificando semelhanças e diferenças.

Chloe e Josi

The image shows three pieces of handwritten student work:

- Top section:** A calculation for 'Chloe & Josi' showing $\frac{\$15}{12} = \frac{\$5}{4} = \frac{\$1.25}{1}$. Below this, 'BoBs' are listed: '12 cans for \$15 or 12 cans for \$15' and '4 cans for \$5'. A note says '4 goes into 15 4x with 1 left over'. A circled note says 'I break it up 4 times for the 4 cans' and another says '\$1:4 = .25 or 25¢'. A final calculation shows '\$1.25 + BoBs are'.
- Middle section:** 'Marias' calculations: '20 cans for \$23.00', '\$23 = 1.15', '\$20 = 1', '\$20 + \$3 = \$23', '\$20 ÷ 20 = 1.00', '\$3 ÷ 20 = ?', '\$1:20 = 5¢', '\$1:20 = 5¢', '\$1:20 = 5¢', and '\$1:20 = 5¢ because 20¢ goes into \$1 5x'. A circled result shows '\$1.15'.
- Bottom section:** 'Marias' calculations: '\$23 → 460/9, 460/9, 460/9, 460/9, 460/9', '4 cans for \$1.60', '1.60 + left over', '60¢ ÷ 4 cans', '15¢, 10¢, 10¢, 10¢, 10¢, 10¢, 10¢', '5¢, 5¢, 5¢, 5¢', and a circled result of '\$1.15'.

¹ Incluídos em Dolk, M., Fosnot, C., Cameron, A., Jacob, B. & Hersh, S. (2006). *Working with the ratio table: Mathematical models*. Portsmouth: Heinemann.



Dylan e Tristan

Bob's Store	Maria's store	Dylan, Tristan Sol													
12 cans = \$15.00 6 cans = \$7.50 3 cans = \$3.75 1 can = \$1.25	20 cans = \$23.00 10 cans = \$11.50 5 cans = \$5.75 1 can = \$1.15	<table border="1"> <thead> <tr> <th>Bob's Store</th> <th>Maria's store</th> </tr> </thead> <tbody> <tr> <td>20 cans = 15.00</td> <td>20 cans x 3 = 60</td> </tr> <tr> <td>$\times 1.25$</td> <td>$\times 1.15$</td> </tr> <tr> <td>60</td> <td>23.00</td> </tr> <tr> <td></td> <td>$\times 3$</td> </tr> <tr> <td></td> <td>69.00</td> </tr> </tbody> </table>	Bob's Store	Maria's store	20 cans = 15.00	20 cans x 3 = 60	$\times 1.25$	$\times 1.15$	60	23.00		$\times 3$		69.00	
Bob's Store	Maria's store														
20 cans = 15.00	20 cans x 3 = 60														
$\times 1.25$	$\times 1.15$														
60	23.00														
	$\times 3$														
	69.00														
More expensive	Cheaper. 75.¢														
12 cans = \$15.00 12 cans = \$15.00 20 cans = \$25.00	Each can is \$1.15 and Bob's Store sells their cans for \$1.25 So Maria's Store is the place to buy cat food.														
$\begin{array}{r} 1.25 \\ \times 20 \\ \hline 0.00 \\ 25.00 \end{array}$	20 cans = 25.00 at Bob's 20 cans = 23.00 at Maria's														
	<u>2 Dollar Difference!</u>														
Dylan, Tristan Sol	<u>Strategy</u>														
	Part 1. Take the starting # of cans and break it down by cutting the # of cans in half along with the price. Do this until you get to one can and find the price of it. Part 2. For each store take the price of 1 can and multiply it by 20. To find out what store is cheaper.														
Example: 12 cans = 15.00 6 cans = 7.50 3 cans = 3.75 1 can = 1.25 Bob's Store	20 cans = 23.00 10 cans = 11.50 5 cans = 5.75 1 can = 1.15 Maria's Store	Part 2 Example: <table border="1"> <thead> <tr> <th>Bob's</th> <th>Maria's</th> </tr> </thead> <tbody> <tr> <td>20 cans = 25.00</td> <td>20 cans = 23.00</td> </tr> <tr> <td>1.25</td> <td>1.15</td> </tr> <tr> <td>$\times 20$</td> <td>$\times 20$</td> </tr> <tr> <td>60</td> <td>60</td> </tr> <tr> <td>25.00</td> <td>23.00</td> </tr> </tbody> </table>	Bob's	Maria's	20 cans = 25.00	20 cans = 23.00	1.25	1.15	$\times 20$	$\times 20$	60	60	25.00	23.00	
Bob's	Maria's														
20 cans = 25.00	20 cans = 23.00														
1.25	1.15														
$\times 20$	$\times 20$														
60	60														
25.00	23.00														



Zach e Andres

Zach + Andres
601 5/30/01
Math

Bob's 12 cans \$15.00
Maria's 20 cans \$23.00

Bob's 12 cans $\times 5 = 60$ cans ($\$15.00 \times 5 = \75.00)
Maria's 20 cans $\times 3 = 60$ cans ($\$23.00 \times 3 = \69.00)

Joel should buy food from Maria's store because he can buy more cans for a less amount of money.

Helaine

Helaina Solution
5/30/01

Bob and Maria's Cat food

12 cans for \$15.00 at Bob's
Maria's is 20 cans for \$23.00

Go to Maria's because each can is cheaper by 10¢ than Bob's

more cans at a cheaper price

Prices per store

Bobs
 $15 \div 12 = 1.25$ 1/4
\$3.00 extra (if each can is 1.00) $\div 12 = 25¢$
then you add 25¢ to each \$1.00 on each can.
 $\$1.00 + 25¢ =$
\$1.25 for each can at Bob's

Marias
 $23 \div 20 = 1.15$
Extra \$3.00 (if each can is 1.00) $\div 20 = 15¢$
you add 15¢ to each dollar one
\$1.00 + 15¢ at Maria's = \$1.15 per can at Maria's

If each can cost 1 dollar, for each overall price, there would be 3 dollars extra. 3 dollars spread over 20 cans gives each can a lower individual price. 3 dollars spread over 15 cans gives each can a higher individual price.

STRATEGY

0 = can
1 = 1 cent

This is showing 1 dollar extra each can has 5 cents extra, so in total, it all reaches a dollar. 5 cents for each dollar extra, for each can.