 **$ Is this a Money Maker? $**

***Intro:*** *In this Lesson, students are using a real world example of candy cane sales (presently happening in my school), but could be adopted to be used at other times of the year, with many other specific real world examples that work for your particular situation)*

**Prerequisite Skills and Concepts:** Students should have a basic understanding of ratios and how to write them. Students should have knowledge of dividing, and multiplication to complete this task. Student will expand their knowledge of ratios and rates and use them to solve for a unit rate.

**Curriculum Outcomes: Min of Ed Ontario -Grade 6 – Proportional Relationships**

 **-** represent ratios found in real-life contexts, using concrete materials, drawings, and standard fractional notation

- represent relationships using unit rates

**Materials Required:** I am a big believed in hands on math. Having money, counting chips to represent candy canes, would be helpful for concrete learners to use. Encourage students to draw their answer out, and show their work! Calculators are up to you, dependent on where your students are with their mental math strategies.

This problem is appropriate for students have *already completed basic rate questions*, but it is worth review the terms of ratio and rate at this point to confirm their understanding.

If students are stuck, a great resource to refresh or further support their learning is a video from Kahn Academy (open education resource). Follow the link - <https://youtu.be/qGTYSAeLTOE>

***Teacher Review:*** Who can tell me what a ratio is?

**Student Answer:** When you are looking to compare two numbers or measurements, you use a **ratio** to this. A ratio is made up of the **terms** (25:1). The **terms** of this **ratio** are the 2 numbers/measurements being compared.

 ***Teacher* Review:** *Ask students-* What is a rate?

**Student Answer:** A rate is a ratio where the two numbers/measurements being compared are in different units. Example: 25km/hour

***Moving On…..***

Today we are going to move one step further and help the Student Council determine how much money they will make selling Candy Canes for their fundraiser. Selling Candy Canes at every nutrition break is a lot of work, if the students do not make any money (profit) from the sales, their missed recess will be for nothing!

So, Let’s begin …show the problem to students (handout included – Appendix A - which can be modified to suit your needs, including number values to allow students who are not yet comfortable with decimal numbers to be included in this activity – Appendix B)

***Problem Solving involving Rates and Ratios –***

***Problem:*** *Student Council has been desperately searching for boxes of Candy Canes at local stores that they can purchase to sell to students at Lightning River Academy. There are two varieties of candy canes; box A contains 12 candy canes for $2.99 and box B contains 16 candy canes for $3.25. Which box should student council buy, to make the most profit from their sales?*

**Step # 1** – Determine how much each Candy Cane in Box 1 costs. Determine how much each Candy Cane in Box B costs.

**Step # 2** – Compare the two unit rates. Which is a better value?

**Problem Extension**: If student council decided to charge students $0.50 per candy cane, how much money would they make is they sold 500 candy canes from Box A, and 500 candy Canes from Box B?

***Additional Resources to help with this topic:***

[***Math Steps***](http://www.eduplace.com/math/mathsteps/6/e/6.rates.ideas.html)***: A Website with math content and explanation for teachers and students to use.***

[***Kahn Academy***](https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-rates/v/introduction-to-rates) ***– An Open Education Resource containing lessons and practical tasks for students, parents, and teachers to use in a variety of learning outcomes.***

[***EduGains***](http://www.edugains.ca/newsite/math/digital_games.html) ***– A resource of many educational links,tools and lessons designed for, and by, Ontario teachers***

[***Ministry of Education***](http://www.edu.gov.on.ca/eng/curriculum/elementary/math18curr.pdf) ***– Math Curriculum***

***Note: Images displayed on this lesson were sourced from:*** [***https://www.google.com/advanced\_image\_search?hl=en&fg=1***](https://www.google.com/advanced_image_search?hl=en&fg=1)

***Appendix A – Student Hand Out***

***Candy Cane Dilemma***

***Problem:*** *Student Council has been desperately searching for boxes of Candy Canes at local stores that they can purchase to sell to students at Lightning River Academy. There are two varieties of candy canes; box A contains 12 candy canes for $2.99, and box B contains 16 candy canes for $3.25. Which box should student council buy, to make the most profit from their sales?*

**Step # 1** – Determine how much **each** Candy Cane in Box A costs. Determine how much each Candy Cane in Box B costs.

**Step # 2** – Compare the two unit rates. Which is a better value?

The best value is to buy Candy Canes from Box \_\_\_\_, each Candy Cane in that box is $\_\_\_\_\_\_\_\_.

**Problem Extension**: If student council decided to charge students $0.50 per candy cane, how much money would they make is they sold 500 candy canes from Box A, and 500 candy Canes from Box B?

***Appendix B – Student Hand Out- entry level***

***Candy Cane Dilemma***

***Problem:*** *Student Council has been desperately searching for boxes of Candy Canes at local stores that they can purchase to sell to students at Lightning River Academy. There are two varieties of candy canes; box A contains 6 candy canes for $3.00 and box B contains 15 candy canes for $5.00. Which box should student council buy, to make the most profit from their sales?*

**Step # 1** – Determine how much **each** Candy Cane in Box A costs. Determine how much each Candy Cane in Box B costs.

**Step # 2** – Compare the two unit rates. Which is a better value?

The best value is to buy Candy Canes from Box \_\_\_\_, each Candy Cane in that box is $\_\_\_\_\_\_\_\_.

**Problem Extension**: If student council decided to charge students $0.50 per candy cane, how much money would they make is they sold 50 candy canes from Box A, and 500 candy Canes from Box B?