Grade 6 – Coding Unit Rates

Grade 6: Number Sense and Numeration - Proportional Relationships
Curriculum Expectation
By the end of grade 6, students will:
– represent relationships using unit rates (Sample problem: If 5 batteries cost $4.75, what is the cost of 1 battery?).

PART A $ Basic Understanding of Unit Rate Calculations

Complete the following practice questions. The first one has been done for you.

1) If 5 apples cost $5.00, how much does one apple cost?

```
Divide the dollar amount by the number of apples:

$5.00/5 = $1.00

One apple will cost $1.00
```

2) If 6 large yogurt tubes cost $12.00, how much does one large yogurt tube cost?

3) If 4 rulers cost $16.00, how much does one ruler cost?

4) If 5 batteries cost $4.75. What is the cost of 1 battery?

PART B   The Basic Program

Create a program that does the following:

✓ Asks the user for the cost
✓ Asks the user for the number of items they get for that amount of money
✓ Calculates and outputs the unit rate

Here is a video tutorial link that shows you how to create this program. You may adjust the sprites, colours, etc. to your liking:

The Basic Program Link (https://www.youtube.com/watch?v=uU9slffoF38&feature=youtu.be)

PART C   The Challenge Program

You will create a program that asks the user for prices and number of items of products at two different stores. The program will then determine the unit rate for the products at both stores and tell the user which is the better deal.

The program will…
- Ask the user for the cost of the item from store #1
- Ask the user for the number of items included for that price
- Ask the user for the cost of the item from store #2
- Ask the user for the number of items included for that price
- Calculate the unit price for each store
- Output the unit prices for each store
- Determine which is the better deal (the smaller unit price)
- Output to the user which item is a better deal

Possible Answer (link to video tutorial):

The Challenge Program Link (https://www.youtube.com/watch?v=9OPSS-xIlic)

PART D   **Further Extensions**

    a)   Ask user for dollar amount they would like to pay with, determine change.
    b)   Add a third store for price comparison.
    c)   Round the answer to two decimal places.
    d)   Create a receipt button for the user's purchase that includes change given.

Lisa Floyd

@lisaannefloyd (on Twitter)