Teaching Ratios with Global Currencies

Subjects: Math, Social Studies
Suggested Grade Levels: 5–8
Time Frame: 1 class

Danielle Heeney,
Penn Treaty School

Overview
In this lesson, students explore foreign currencies while learning about the mathematics skill of manipulating ratios.

Connection to Philadelphia World Heritage Tool Kit's Goal
Teachers of all disciplines and content area can engage students in learning about global cultures and heritage in this mathematics focused lesson. Students are engaged in learning about world cultures through the commonalities of money and shopping.

Core Curriculum Standards
- 2.1.6.D.1: Understand ratio concepts and use ratio reasoning to solve problems.

Objectives
Students will be able to convert between US Dollars and Moroccan Dirham by using ratios.

Essential Question
How are ratios used to compare different currencies?

Materials Needed
Local store advertisements, Moroccan department store advertisement (link available in procedure section)

Procedure
Step 1: Activate students' prior knowledge in how they use ratios in everyday situations. Place students in small groups or pairs. Give each group a set of items with a price for each. For example, a group could receive 4 pencils with the price $.35 each. Students work in their group to figure out what the total price for all their items would be. Students share the process they used to solve the problem with the class.

Step 2: Introduce ratio. Set up similar problems to their group work and solve it using ratio and cross multiplication as a whole class.

For example: $.35 / 1 pencil = x / 4 pencils.

Step 3: Introduce students to the Moroccan Dirham. Show pictures or, if possible, pass around the actual currency. Students discuss what they notice and similarities and differences to US dollars. Explain the current exchange rate (See "additional resources" below for exchange rate and photos of the currency). Currently (as of 2015) exchange rate is 1 US dollar = 9.84 Moroccan dirhams. Do several examples as a class, using ratio to convert between dollars and dirham.

Step 4: Students are split into pairs. Distribute a local store's advertisement to each group. Students chose 10 items and write a ratio to determine how much the item would cost in Moroccan dirham.

Step 5: Students then convert dirham to dollars. Students access the following advertisements from Moroccan department stores:

- Aswak Assalam http://www.aswakassalam.com/catalogue.asp
- Marjane http://promotionaumaroc.com/category/marjane/

In groups, students make a shopping list and choose 10 items from the advertisement, converting the prices from Moroccan dirham to their US dollar equivalent. Students share a few of their price conversions and ratios with the entire class.

Outcome/Assessment
Students will have produced shopping lists with currency conversions.

Special Education and English Language Learners Accommodations
Color code the units when writing ratios so students can see that the same unit must correspond with each fraction. This will help when they need to set up their own ratios.

For example:
$.35 / 1 pencil = x / 4 pencils

Additional Resources
Web:

Currency Converter: http://www.xe.com/currencyconverter/convert/?Amount=1&From=USD&To=MAD

Wikipedia page: https://en.wikipedia.org/wiki/Moroccan_dirham
Includes a chart with a description of each banknote and its symbols (opportunity for extension and enrichment!)