TGC Fellow Unit Template *

Prepared by: Lisa Caswell | School/Location: Perrysburg Junior High/Perrysburg, OH

Subject: Math | Grade: 6 | Unit Title: Currency Around the World | Time Needed: 5-42 minute periods

Unit Summary: Students will participate in a simulated foreign exchange market. They will learn about the difference between domestic and international values of a currency and how factors of supply and demand work to set international exchange rates. Students will convert monetary values based on exchange rates and communicate with peers in a foreign nation to discover similarities and differences in regards to how they earn and spend pocket money.

Stage 1 Desired Results

ESTABLISHED GOALS:

CCSS.MATH.CONTENT.6.NS.B.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

CCSS.MATH.CONTENT.6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.

CCSS.MATH.CONTENT.6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problem.

CCSS.MATH.CONTENT.6.RP.3c Find a percent of a quantity as a rate per 100; solve problems involving finding the whole, given a part and the percent.

CCSS.MATH.CONTENT.6.NS.7c Write, interpret, and explain statements of order for rational numbers in real-world contexts.

ISTE NETS 1: Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.

ISTE NETS 3. Students apply digital tools to gather, evaluate, and use information.

Transfer

Students will be able to independently use their learning to…
1. Use exchange rates to convert monetary values of currency.
2. Respect and value diversity among various cultures.

Meaning

UNDERSTANDINGS

Students will understand that…
1.Interaction between buyers and sellers determines market prices and allocates scarce goods and services.
2.An exchange rate is the price of one nation's currency in terms of another nation's currency.
3. Exchange rates are determined by supply and demand.
4. Money is anything widely accepted as final payment for goods and services.
5. The gross domestic product (GDP) is one the primary indicators used to gauge the health of a country's economy.
6.When foreign exchange rates between countries change, the relative prices of goods and services between those countries also change.

ESSENTIAL QUESTIONS

1. How does wealth distribution effect a country's GDP?
2. What is the best way to represent changes in daily exchange rates?
3. What factors can influence either the supply of,or the demand for, a given currency and how will this affect the international exchange rate of the currency?
3.How are we similar and different to peers in another country in regards to how we earn and spend pocket money?

Acquisition

ESTABLISHED GOALS:	Students will know how to… (Content)	Students will be able to… (Skills)
CCSS.MATH.CONTENT.6.NS.B.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. CCSS.MATH.CONTENT.6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. CCSS.MATH.CONTENT.6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problem. CCSS.MATH.CONTENT.6.RP.3c Find a percent of a quantity as a rate per 100; solve problems involving finding the whole, given a part and the percent. CCSS.MATH.CONTENT.6.NS.7c Write, interpret, and explain statements of order for rational numbers in real-world contexts. ISTE NETS 1: Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. ISTE NETS 3. Students apply digital tools to gather, evaluate, and use information. ISTE NETS 2.Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. OHIO SOCIAL STUDIES STANDARD: Explain how supply, demand and competition interact to determine price.	1. Convert monetary values with current exchange rates. 2. Use percentages to calculate number of individuals in a population within each category in a country's wealth distribution. 3. Use ratios to determine cost of items in another currency. 4. Determine best graph to display data. 5. Research for valid and reliable sources of information.	1. Multiply decimals 2. Add decimals 3. Set up and solve proportions 4. Find percentage of a number 5. Express units as a ratio 6. Create line graphs to display results 7. Email peers in a foreign nation 8. Create a "WeVideo" to present researched information to the class

GLOBAL COMPETENCY:

-Develop global competency by investigating the world beyond their immediate environment.

-Understand that culture and communication are closely connected.

-Engage in exchanges with another culture in a foreign nation.

-Understand that members of different cultures view the world in different ways.

RESOURCES:
http://databank.worldbank.org/data/home.aspx
http://www.xe.com/
https://www.wevideo.com/
http://nces.ed.gov/nceskids/createagraph/
http://money.cnn.com/data/currencies/
http://www.epals.com/
http://lms.perrysburgschools.net/login?destination=home&school=6347816
http://www.economist.com/content/big-mac-index
http://www.economist.com/node/21542808

Stage 2 - Evidence	
Assessment	**Evaluation Criteria (Learning Target or Student Will Be Able To)**
Assessments **FOR** Learning: (ex: kwl chart, exit ticket, observation, draft, rehearsal) 1.Barter Activity (Students will be given Mexican Pesos and will try to purchase candy that cost $1USD.) 2. Observation on dry erase boards 3. Currency Envelope Activity (Groups solve and bring envelope to teacher for verification.) 4. WeVideo (Share researched information with class) 5. Screen capture of completed graph 6. Peer emails	Student will be able to… 1. Understand that exchange rates are determined by the forces of supply and demand. 2. Convert monetary values using exchange rates. 3. Identify country of origin of currency and determine value in USD. 4. Research country's: population, wealth distribution, GDP, currency, exchange rate, and who or what is on the bill and why. 5. Graph daily exchange rates for their currency for the duration of the unit. 6. Communicate with peers from a foreign nation and discover similarities and differences in regards to how they earn and spend money.
Assessment **OF** Learning: (ex: performance task, project, final paper) 1. Discussion Post in Schoology 2. Discussion Post in Schoology 3. Quiz 4. Quiz 5. WeVideo Presentation	Student will be able to… 1. Explain in their own words what exchange rate is and when they would need to use it. 2. Explain why items cost different amounts in different countries. 3. Convert different types of currency given current exchange rate. 4. Solve story problems using ratios, proportions and percents. 5. Explain impacts of wealth distribution and GDP on the country researched.

Stage 3 - Learning Plan

Summary of Key Learning Events and Instruction (Make this a useful outline or summary of your unit, your daily lesson plans will be separate)

Day One:

Objective: Students will understand how exchange rates are determined and be able to use ratios to convert monetary values with current exchange rates.

1. Class will begin with an auction for a bag of candy. The cost is 1 Classroom Buck. Students will then buy Classroom Bucks with the Pesos they were given upon entering the classroom.
2. Sale prices for the bag of candy are recorded on the board.
3. Two additional rounds of the auction are performed after more Pesos are distributed. All sale prices are recorded for each round.
4. Discussion on the activity includes questions such as: What was a Classroom Buck worth in this activity? What was a Peso worth? How can we represent this relationship of currencies? What happened to the value of the Peso in each round? Which form of currency had the most value? Why?
5. Research actual value of Peso using http://www.xe.com/
6. Students will be divided into groups and given a country to research. (Locate country on map, values of currency, exchange rate, who or what is on the bills and why?, list % of country's wealth distribution, additional questions regarding exchange rates will also be given based on their ability level.)
7. All information will be collected in a Google Doc shared with all team members. This Google Doc will be used during a future lesson to create a WeVideo.
8. Students will complete an exit slip at the end of class answering the question, "How are exchange rates determined?"

Day Two:

Objective: To set up and solve proportions using the exchange rates for different currency.

1. *Teacher presents a m*ini lesson on setting up proportions. Students solve practice problems on individual white boards and hold up the answer when completed.
2. Each group will receive an envelope of bank notes. Students in the team must look up the exchange rate for each different type of currency http://www.xe.com/ and then set up a proportion to convert each bank note into US currency. The team will then calculate the total value of the currency in their envelope.
3. Remaining class time should be devoted to continuing research assigned yesterday.
4. Students are given an exit slip with the following story problem on it: If you are on a vacation in Mexico and have $5 USD would you be able to buy a tshirt that costs 65 Pesos? Why or why not?

**adapted from Understanding by Design Model*

Day Three:

Objective: To calculate the percent of a number to determine the extent to which currencies are over- or under-valued.

1. Teacher presents a mini lesson on finding percent of a number.
2. How many have eaten a McDonald's Big Mac? Did you know that they are sold at over 25,000 McDonald's restaurants in 116 countries around the world? It is truly a global consumer product. The price of a Big Mac has been tracked around the world since 1986. In today's lesson we will look closer at the current dollar price of Big Macs in countries around the world to determine the extent to which currencies are over-or under-valued.
3. Using Big Mac Index http://www.economist.com/node/21542808 complete the table with the following information:

-The country
-The Big Mac price in local currency
-The Big Mac price in dollars (this is the Big Mac price in local currency, column 2, divided by the actual dollar exchange rate, column 5)
-The implied purchasing power parity (PPP) of the dollar (this is the Big Mac price in local currency, column 2, divided by $2.43, the -United States price of the Big Mac)
-The actual exchange rate
-The percentage under or over valuation of the currency against the dollar (this is the percentage difference between the implied PPP in column 4 and the actual dollar exchange rate in column 5)

4. A currency is said to depreciate when it purchases less foreign currency. In the last column of the table, you can see that the Big Mac index suggests that some currencies are under-valued while others are over-valued.
5. Discuss: What is the most over-valued of the above currencies?, By how much does your Big Mac index indicate that this currency is over-valued?, What is the most under-valued of the above currencies?, By how much does your Big Mac index indicate that this currency is under-valued?, Which currency is closest to PPP?

Day Four:

Objective: Use proportion method to solve percent problems.

1. *Line up ten chairs across the front of the room facing the students, prior to the start of the activity, and set up music.*
2. Ask for 10 volunteers. Identify one person who will represent the "Wealthiest 10% of the US Population" and give that person a badge to wear.
3. Student volunteers stand behind each of the chairs. Explain that each chair represents 10% of all the private wealth in the US and that each volunteer represents 10% of the population. This is what wealth would look like if it were evenly distributed in the US—one person, one chair. However life in the US, or other countries, is not like that.
4. Different statistical groupings of people in US own different percentages of wealth. Guess how much of the total wealth the wealthiest 10% of the population owned in 2013? Write guess on white boards to refer to later.
5. Start music and explain that when it stops it will be 2013. The wealthiest 10% student should lay across eight chairs to represent 84%. The remaining 9 students need to squeeze on the last 2 chairs.
6. As a class discuss this representation. How do the feel at the top? What about the bottom 90%? How's life at the bottom? Would you want to push someone off the chair? Are there any students on the floor? Who do they represent? What conclusions can we draw about our economic policy?
7. Teacher will present mini lesson on using the proportion method to solve percent problems.
8. Students will research their assigned country's wealth distribution and record it on their Google Doc.
9. Students will then find the population of their country and find the number of people in each of the different wealth distributions.
10. Groups should draw possible conclusions as to why the country's distribution may look as it does.
11. Students will compose their first email correspondence to their foreign pen-pal. Students should include information about themselves, and about how they earn and spend their "pocket money". Students should also include the cost in USD for bread, milk and toilet paper.

Days Five-Seven:

Objective:
1. Compile all researched information and create a WeVideo. https://www.wevideo.com/ Video should include:
-Location of country on a map
-Pictures of banknotes with description of who is on the bills and why
-Values of currency
-Current exchange rate
-Cost of Big Mac
-% of country's wealth distribution
2. Groups will present projects to the class.
3. During presentations, students will identify locations of each country on a world map, and keep a list of each country's exchange rate.
4. After each presentation, students will post feedback in Schoology to the presenting group. Feedback with include both specific positive comments along with constructive criticism.

TGC FELLOWS UBD Lesson Template

Lesson Title: Foreign Exchange Market Subject: Math Prepared by: Lisa Caswell

Materials Needed: Bags of candy, Copies of Mexican Peso, Copies of Classroom Buck, Laptops, Internet Connection, Group research questions

Global Competency: -Develop global competency by investigating the world beyond their immediate environment.

Where is the lesson going? (Learning Target or SWBAT)	Students will understand how exchange rates are determined and be able to use ratios to convert monetary values with current exchange rates.

Hook:

As students walk into the classroom, the teacher will distribute copies of the Mexican Peso to each student. Students will receive different amounts (between 1-3 Pesos). Students will be told that an auction, for bags of candy, will be held in class today.

Equip:

1. Class will begin with an auction for a bag of candy. The cost is 1 Classroom Buck. Students will then buy Classroom Bucks with the Pesos they were given upon entering the classroom.
2. Sale prices for the bag of candy are recorded on the board.
3. Two additional rounds of the auction are performed after more Pesos are distributed. All sale prices are recorded for each round.
4. Discussion on the activity includes questions such as: What was a Classroom Buck worth in this activity? What was a Peso worth? How can we represent this relationship of currencies? What happened to the value of the Peso in each round? Which form of currency had the most value? Why?
5. Research actual value of Peso using http://www.xe.com/
6. Students will be divided into groups and given a country to research. (Locate country on map, Values of currency, Exchange rate, Who or what is on the bills and Why?, List % of country's wealth distribution, Additional questions regarding exchange rates will also be given based on their ability level.)
7. All information will be collected in a Google Doc shared with all team members. This Google Doc will be used during a future lesson to create a WeVideo.
8. Students will complete an exit slip at the end of class answering the question, "How are exchange rates determined?"

Tailored Differentiation:

-Different research questions, with varying ability ranges, will be used for the group assignment.

-A calculator will be given to students struggling with computation.

-Guided notes will be provided for additional guidance setting up the problems.

Rethink and revise:	Organization:
Students will take a closer look at US currency. Who is on each of the bills? Why were they selected? What other objects are on each of the bills? What is their significance?	-Groups will be predetermined and organized by the worksheets they receive. -All links will be posted in a folder on Schoology for easy accessibility.
Evaluate:	
-Students will complete an exit slip answering the question, "How are exchange rates determined?" The teacher will be evaluating for understanding of buying and selling of currencies. -Students will also be evaluated on their completed WeVido project in a lesson later in this unit.	
Notes: The student groups will be predetermined however they will be able to select the country, from a list, they would like to research. The worksheets will be of varying levels of difficulty depending on the students' level.	