

How Much is That?

Common Core Standard

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

The Task

The Moore siblings have decided to take a family vacation to Austria, China, and India. Mike was going to bring \$125.00, Hannah said she was going to bring \$150.00, Kristin was going to bring \$120.00, and Matt was going to bring \$250.00. The Moore's called Bank of America for some information about the exchange rate and found that:

USA \$1.00 = 0.8078 Euro in Austria	USA \$1.00 = 6.3640 Yuan in China	USA \$1.00 = 55.59 Rupee in India
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The travel plan with the exchange rates is listed below:

USA to Austria Exchange rate: 1 dollar = 0.81 Euro	Austria to India Exchange rate: 1 Euro = 68.68 rupee
India to China Exchange rate: 1 rupee = 0.11 Yuan	China to USA Exchange rate: 1 Yuan = 0.16 dollar

How much money does each sibling have in each country if he or she does not spend anything?

Extensions Activities:

Austria:

- Mike decides in Austria that he would like to buy a burger that costs 15 Euro. How much is that in U.S. dollars?
- At a tourist store in Vienna, Kristin wants to buy a t-shirt. The woman who owns the shop says it will cost her 10 U.S. dollars. How much is that in Euro?
- How many Euro does everyone have after shopping in Austria?

Mike	
Hannah	
Kristin	
Matt	

India:

- Hannah wants to buy a soda in New Delhi. The cashier says, “Two U.S. dollars, please.” How much is the soda in India?
- Matt decides to buy everyone lunch from a local restaurant. The bill at the end of dinner says 2,000 rupee. How many U.S. dollars did Matt spend on lunch?
- How many rupee does everyone have after shopping in India?

Mike	
Hannah	
Kristin	
Matt	

China:

- The siblings decide to split meals evenly on the last leg of their trip, but they want the nicest dining experience for their money. Each has decided not to spend more than \$10 U.S. per person. For lunch they have the option of the local market or a restaurant on the other side of town. At the local market lunch was going to cost 254.56 Yuan, while the restaurant was going to cost 305.47 Yuan. Where should the Moore siblings eat?
- Mike and Matt want to rent a bike to do some sight-seeing. Renting bikes for 5 hours will cost 100.50 Yuan. They strike a deal and reduced the price to 85.75 Yuan. How many U.S. dollars will they spend? How much money are they saving?
- How much money does everyone have after returning to the USA?

Mike	
Hannah	
Kristin	
Matt	

Facilitator Notes

1. Introduce the task to the students. Allow students a few minutes to read the task.
2. Consider having a map set out for each country and items or pictures of things they would want to purchase. Show pictures of the different types of money from each country.
3. Have students work in groups of 3-4 to find how much it costs to buy different items in different countries.
4. Circulate to monitor students’ work. Ask students how they are deciding to find the amount for each item, etc.
5. For Extension activities, create stations and have students circulate the room.

Follow-Up Questions

1. What is an exchange rate?
2. Why are exchange rates important?
3. If the family starts in Austria, then travels to India, and finally back to China, will each sibling have enough money to spend in each place?

Solutions

How much money does each sibling have in each country if he or she does not spend anything?

	USA	AUSTRIA -Euro	INDIA-Rupee	CHINA-Yuan
Mike	\$125.00	100.98	6,936.90	795.29
Hannah	\$150.00	121.17	8,324.28	954.35
Kristin	\$120.00	96.94	6,657.44	763.25
Matt	\$250.00	201.95	13,873.80	1,590.58

Extensions Activities:

Austria:

- Mike decides in Austria that he would like to buy a burger that costs 15 Euro. How much is that in US dollars?

$$15 / .8078 = \$18.57 \text{ U.S. dollars}$$

- At a tourist store in Vienna, Kristin wants to buy a t-shirt. The woman who owns the shop says it will cost her 10 U.S. dollars. How much is that in Euro?

$$10(.8078) = 8.08 \text{ Euro}$$

- How many Euro does everyone have after shopping in Austria?

Answers:

Mike	\$82.41
Hannah	\$121.17
Kristin	\$ 88.86
Matt	\$201.95

India:

- Hannah wants to buy a soda in New Delhi. The cashier says, “2 U.S. dollars, please.” How much is the soda in India?

$$2(55.59) = \$111.18 \text{ Rupee}$$

- Matt decides to buy everyone lunch from a local restaurant. The bill at the end of dinner says 2,000 rupee. How many U.S. dollars did Matt spend on lunch?

$$2000/55.59 = \$35.98 \text{ U.S. dollars}$$

- How many rupee does everyone have after shopping in India?

Answer:

	Euro to Rupee	Total Money
Mike	$82.41(68.68) = 5,659.81$	5,659.81
Hannah	$121.17(68.68) = 8,321.80$	8,210.62
Kristin	$88.86(68.68) = 6,102.90$	6,102.90
Matt	$201.95(68.68) = 13,869.93$	11,869.93

China:

- The siblings decide to split meals evenly on the last leg of their trip, but they want the nicest dining experience for their money. Each has decided not to spend more than 10 U.S. dollars per person. For lunch they have the option of the local market or a restaurant on the other side of town. At the local market, lunch was going to cost 254.56 Yuan, while the restaurant was going to cost 305.47 Yuan. Where should the Moore siblings eat?

Local Market	Restaurant
$254.56/6.36 = \$40.03 \text{ dollars}$	$305.47/6.36 = \$ 48.03 \text{ dollars}$
$\$40.03/4 = \$10.00 \text{ a per person}$	$\$48.03/4 = \12.00 per person
In Yuan 63.64 per person	In Yuan 76.38 per person

The Moore siblings will eat at the local market.

- Mike and Matt want to rent a bike to do some site-seeing. Renting bikes for 5 hours will cost 100.50 Yuan. They strike a deal and reduced the price to 85.75 Yuan. How many U.S. dollars will they spend? How much money are they saving?

$$85.75/6.36 = \$13.48 \text{ dollars}$$

$$100.50/6.36 = 15.80$$

$$\text{The brothers will be saving } 15.80 - 13.48 = \$2.32$$

Mike and Matt will both pay 42.88 Yuan.

- How much money does everyone have after returning to the USA?

HCPSS Worthwhile Math Task

	Rupee to Yuan	Yuan	Yuan to Dollar	Total Money
Mike	$5,659.81(0.12) = \$ 679.18$	572.66	$\$ 572.66 (0.16) = \$$	\$ 91.63
Hannah	$8,210.62(0.12) = \$ 985.27$	921.63	$\$ 921.63 (0.16) = \$$	\$ 147.46
Kristin	$6,102.90(0.12) = \$ 732.35$	668.71	$\$ 668.71 (0.16) = \$$	\$ 106.99
Matt	$11,869.93(0.12) = \$ 1,424.39$	1,317.87	$\$ 1,317.87 (0.16) = \$$	\$ 210.86