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LEVEL 3 CERTIFICATE

Topic Exploration Pack

H866/H867

QUANTITATIVE PROBLEM SOLVING (MEI)

QUANTITATIVE REASONING (MEI)

Foreign Exchange

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Introduction

The ability to convert between different currencies is an important life skill. Foreign holidays are now very common, and even within the United Kingdom, it may be necessary to convert between foreign currencies and pounds, for instance when buying online from a supplier outside the UK. Students will almost certainly have met currency conversion at GCSE, but questions at GCSE often only have a single rate for buying and selling, rather than two slightly different rates, and they rarely include commission.

Students are very likely to be familiar with United States dollars and with Euros, but questions can be asked on any foreign currency, and could include conversion from one foreign currency to another.

There are various ways of describing the buying and selling rates, including 'buy at', 'we buy', 'buy rate', and 'sell at', 'we sell', 'sell rate' and students need to be familiar with all of these. Students may think that if they buy some foreign currency at a particular rate, and then have some left over after their holiday, they will get the same rate if they return it to the foreign currency dealer as they got when they bought it. Of course this is not usually the case, although some providers of foreign exchange do offer to buy back any excess at the same rate at which the currency was bought if the traveler pays an extra fee at the time of purchasing the currency.

Many providers of foreign currency offer their service 'commission free'. Students should be aware that in this case, the providers usually offer a lower selling rate and so a 'commission free deal' may not be as good as a deal with commission.

An alternative to buying foreign currency from a provider in the UK is to use an ATM (a cash point machine) in the country to which the traveller is going. The conversion rate may not be as good as buying foreign currency before leaving the UK, and the bank normally adds a fixed transaction fee to the cost of withdrawing the local currency.



Suggested Activities

Activity 1 is a straightforward currency conversion exercise to get students used to converting between various currencies. If students experience any difficulties in finding exchange rates, there are many websites where they are available such as

<https://www.travelex.co.uk/currency/exchange-rates> and

<http://www.rbs.co.uk/personal/travel/q1/money/exchange-rates.ashx>

Activity 2 is slightly more difficult as it involves postage and credit charge fees. However, students do not need any extra information to complete this.

Activity 3 is more complex again, requiring students to choose between various options for converting from pounds sterling to euros.

Activity 1

Jenny lives in the United Kingdom and is going on a trip round the world. She will travel to France, the United States, Japan, Australia, Thailand and Egypt before she returns to the UK. As she will not spend more than a week in any country, she decides that she will buy all of her foreign currency in advance from her bank. She wishes to convert £200 into each of these currencies.

Task 1

Find out which currency is used by each of these countries.

Task 2

Use the internet to find the exchange rates for each of these currencies. Draw up a table showing each of these rates. In your table, you should show both the buying rate and the selling rate for each currency which Jenny needs.

Task 3

Assuming that the bank does not charge any commission for exchanging currency, calculate how much of each foreign currency Jenny receives.



Answers to Activity 1

Task 1 and Task 2

Country	Currency	Bank buys	Bank sells
France	EURO	1.38	1.21
USA	US DOLLARS	1.75	1.54
Australia	AUSTRALIAN DOLLARS	1.99	1.73
Egypt	EGYPTIAN POUNDS	12.65	10.07
Japan	JAPANESE YEN	186.2	161.26
Thailand	THAI BAHTS	57.1	47.43

Although students should find the current exchange rates using the internet, this table give the rates in October 2014 and could be given to students if they do not have internet access.

Task 3

The answers to task 3 depend of course on the exchange rates used. The answers below relate to the exchange rates given above.

France	EURO	242
USA	US DOLLARS	308
Australia	AUSTRALIAN DOLLARS	346
Egypt	EGYPTIAN POUNDS	2014
Japan	JAPANESE YEN	32252
Thailand	THAI BAHTS	9486



Activity 2

Andy is planning to buy a bicycle. She wants to buy a particular model of road bicycle on the internet. After checking prices in the United Kingdom where she lives, she decides to check prices in other countries. The lowest prices and delivery charges are shown below. She plans to pay by credit card. If she buys from abroad, she will have to pay an additional charge of 3% of the cost of the transaction (including the delivery charge) to the credit card company.

UK

Price: £899.99

Delivery: free

Germany

Price: 1079.99euros

Delivery: free

Exchange rate: 1 euro = £0.8146

United States of America

Price: 1090.00 US dollars

Delivery: 35 US dollars

In addition VAT at 20% of the total cost will be charged.

Exchange rate: 1 US dollar = £0.6473

Australia

Price: 1280.00 Australian dollars

Delivery: 165 Australian dollars

In addition VAT at 20% of the total cost will be charged

Exchange rate: 1 Australian dollar = £0.5613

Task 1

Work out the total cost in pounds if Andy buys the bicycle from Germany.

Task 2

Work out the total cost if Andy buys the bicycle from the USA and the total cost if she buys it from Australia. Advise Andy on which option is best.



Answers to Activity 2

Task 1

Germany

$$1079.99 \times 0.8146 = \text{£}879.76$$

$$\text{Total cost with 3\% fee} = \text{£}906.15$$

Task 2

In reality the VAT will probably be charged only on the cost of the bicycle, not on the delivery. Also there will probably not be an additional 3% credit card fee on the VAT. This is something that you could discuss with your students. However, for simplicity, we will assume VAT will also be charged on delivery and there will be a 3% fee on the VAT.

USA

$$1090.00 + 35.00 = \$1125.00$$

$$1125.00 \times 0.6473 = \text{£}728.21$$

$$\text{Cost with VAT} = \text{£}873.86$$

$$\text{Total cost with 3\% fee} = \text{£}900.07$$

Australia

$$1280.00 + 165.00 = \$1445.00$$

$$1445.00 \times 0.5613 = \text{£}811.08$$

$$\text{Cost with VAT} = \text{£}973.29$$

$$\text{Total cost with 3\% fee} = \text{£}1002.49$$

So buying from Australia is much more expensive than the other three options. The other prices are very similar but it is probably best to buy from the UK as it will probably be easier to return the bike if there are problems with it.



Activity 3

Omar lives in Scotland and is going on holiday to Rome. He wants to convert £500 into euros before he leaves and wants to receive as many euros as possible for his £500. He considers getting the euros from a bank, a supermarket and an internet company which offers foreign currency exchange. As an alternative he also considers waiting until he gets to Rome and getting his money from an ATM (a cash machine). Omar may not use all of the euros which he purchases. If he does not use all of them, he will want to change them back into pounds sterling.

Bank

- This is part of a table from the bank.

Currency	Sell rate	Buy rate
EURO	1.2289	1.3844
US DOLLARS	1.5475	1.7633

- The bank also charges 1% commission on any foreign exchange transaction.
- The bank will buy back any unused currency at the 'Buy rate'.

Supermarket

- The supermarket offers a selling rate of 1.2243 and does not charge commission.
- The supermarket will buy back any unused currency at the same rate at which it is sold. However, it will only do this if the buyer pays a fee of £4.99 when the currency is bought.

Internet Company

- The internet company offers a selling rate of 1.2309.
- It does not charge commission.
- There is a fee of £5 to deliver foreign currency to your home unless the cost of the foreign currency is at least £600.
- The internet company will buy back any unused currency at the same rate at which it is sold. However, it will only do this if the buyer pays a fee of £3.99 when the currency is bought.

Using an ATM in Italy

- The ATM will provide euros at a selling rate of 1.2491.
- There is a 'foreign currency fee' of 2% of the value of the withdrawal, but there is a minimum charge of £2.50 and a maximum charge of £5.
- There is a £2.49 fee for each withdrawal.



Task 1

Work out how many euros Omar will receive from the bank, the supermarket and the internet company, assuming that he does not pay the buyback fee to the supermarket or the internet company.

Task 2

Work out how many euros Omar will receive if he uses an ATM in Italy, taking out £200 twice and then £100 once.

Task 3

In fact Omar only spends 400 euros in Italy. Work out which of these 3 options would have been best:

1. Use an ATM in Rome and convert any remaining euros back into pounds at the rate offered in the bank when he returns.
2. Get his euros from the supermarket and pay the buyback fee.
3. Get his euros from the supermarket without paying the buyback fee, if he can return his unused euros to the supermarket at the buy rate for the supermarket which is 1.3612.

Answers to Activity 3

Task 1

Bank

$$£500 \times 1.2289 = 614.45$$

$$\text{Commission} = 6.14$$

$$\text{Euros received} = €608.31$$

Supermarket

$$\text{Euros received} = £500 \times 1.2243 = €612.15$$

Internet Company

$$£500 \text{ less } £5 \text{ fee} = £495$$

$$\text{Euros received} = £495 \times 1.2309 = €609.30$$



Task 2

Converting £200

2% of £200 = £4 so total fees £6.49

£200 less £6.49 fee = £193.51

Euros received = $£193.51 \times 1.2491 = €241.71$

Converting £100

2% of £100 = £2, but min charge £2.50 so total fees £4.99

£100 less £4.99 fee = £95.01

Euros received = $£95.01 \times 1.2491 = €118.68$

So total euros received = $2 \times 241.71 + 118.68 = €602.10$

Task 3

Using ATM

He would have not had to make the final £100 withdrawal so when he came home he would have £100 left plus $2 \times 241.71 - 400 = €83.42$

He could convert these euros into £ at a buy rate of 1.3844.

$€83.42 / 1.3844 = £60.26$

So total in pounds left is £160.26

Using supermarket with buyback fee

He would have had to pay £4.99 at the start, so he would have only got $£495.01 \times 1.2243 = €606.04$

He spends €400 so has €206.04 left.

So total in pounds left is $€206.04 / 1.2243 = £168.29$

Using supermarket without buyback fee

He started with €612.15 so has €212.15 left.

So total in pounds left is $€212.15 / 1.3612 = £155.86$

So using the supermarket with buyback fee is best, but of course you do not know whether or not you will have any euros left before you leave, so it's hard to know whether you should pay the buyback fee.



OCR customer contact centre

General qualifications

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