



Best buys – Teacher notes

Activity description

Students work out which are the best buys in a range of items sold in different-sized packs at different prices. They also consider why people may choose not to purchase the best buy.

Suitability

Level 1 (Foundation)

Time

1–2 hours

Resources

Student sheets

Optional: slideshow

Equipment

Calculators

Optional: spreadsheet

Key mathematical language

Best buy, litres, millilitres

Notes on the activity

The student information sheet contains three examples of varying difficulty. These can all be used for class discussion. More able students may be able to complete the last two examples independently by working through the questions on the 'Try these' worksheets. The 'More to try' questions give further practice.

During the activity

Students can work individually or in pairs using either calculators or spreadsheets.

Points for discussion

There are 'Think about' questions at the end of each example on the information sheet and 'At the end of the activity' reflection questions after the 'More to try' section. With less able students you could discuss these questions rather than expecting them to give written answers.

Extensions

Students could use the internet to find the prices of items that come in different pack sizes, then use a spreadsheet to work out the best buy.

Answers

Students may round to a different number of figures. There will also be many other reasons why someone does not choose the best buy.

Files

Special offer is equivalent to 80 pence per file. This is the best buy.

Someone may choose to buy a single file if this is all they need and they have no use for extra files.

Rewritable CDs

The total time for the first pack is 450 minutes. Possible approximations for the number of minutes per £ are 90 (from $450 \div 5$) or 75 (from $450 \div 6$).

Pack	Number of discs	Length of each disc in mins	Total length of disc in minutes	Price in £	How many mins of disc per £?	Cost in pence of 1 min of disc
1	5	90	450	£5.50	81.8	1.22
2	10	80	800	£7.95	100.6	0.99
3	12	90	1080	£9.99	108.1	0.93

The third pack (12 discs for £9.99) is the best buy.

You may not have enough money or not want so many discs.

Also when buying discs for recording music you may also consider the time needed for the music you want to record, and find that 80 minutes gives a better fit.

Cola

Pack	Total volume of cola in litres	Price in £	How many litres of cola per £? (litres/£)	Cost in £ of 1 litre of cola (£/litre)
Large	3.00	2.80	1.07	0.93
Regular	1.50	1.50	1.00	1.00
6-pack	1.98	1.99	0.99	1.01
Can	0.33	0.50	0.66	1.52

The 3-litre bottle gives the most cola for your money. Marginal difference in the second/third packs.

A can may be more convenient, for example to take in a packed lunch.

Cola may go flat in a larger bottle if it is not drunk quickly.

Answers to 'More to try' questions

1 Driving lessons

Choice	Price per lesson
Single lesson	£25
Special offer	£22.50

Special offer is best buy.

Someone may not have enough to pay for the special offer (£270 is a lot to pay at once) or may only need extra single lessons after a course of 12.

2 File paper

Pad	No of pages	Price in pence	No of pages per pence	Cost in pence of 1 page
1	80	99	0.808	1.238
2	160	169	0.947	1.056
3	200	199	1.005	0.995

200-page pad is the best buy.

Someone may choose the smaller pad because it is less heavy or cheaper.

3 Top-up phone card

Pack	No of texts	Price in pence	Cost in pence of 1 text	No of text/pence
1	300	500	1.67	0.60
2	750	800	1.07	0.94
3	1000	1250	1.25	0.80

£8 top-up card is best buy.

Someone may only be able to afford £5.

4 Shampoo

Bottle	Total volume in ml	Price in pence	No of ml per pence (ml/p)	Cost in pence of 1 ml (p/ml)
1	200	219	0.913	1.095
2	300	299	1.003	0.997
3	400	359	1.114	0.898

400 ml bottle is the best buy.

Someone may prefer the convenience of a smaller bottle (for instance to fit in a bathroom cabinet).

5 Chocolate bars

Choice	Price per bar
Single bar	35.0 pence
Pack of 5 bars	24.0 pence
Special offer	23.3 pence

Special offer is best buy.

Someone may only want 1 bar or 5 bars (rather than 3 or 6).

6 Energy drink

Bottle	Total volume in ml	Price in pence	No of ml per pence (ml/p)	Cost in pence of 1 ml (p/ml)
1	75	89	0.843	1.187
2	200	199	1.005	0.995
3	400	399	1.003	0.998

200 ml bottle is the best buy.

Someone may prefer the convenience of a smaller bottle (for instance to take on holiday).

7 Fruit juice

Pack	Total volume of juice in litres	Price in £	How many litres of juice per £? (l/£)	Cost in £ of 1 litre of juice (£/l)
1	4.00	2.35	1.702	0.588
2	1.00	0.73	1.370	0.730
3	0.66	0.75	0.880	1.136

The 4-litre pack is the best buy.

Someone may prefer small bottles (for instance for packed lunches).

They may not have enough money for a 4-litre pack, or not want so much juice.

8 Toothpaste

Tube	Total volume in ml	Price in pence	No of ml per pence (ml/p)	Cost in pence of 1 ml (p/ml)
Small	50	84	0.595	1.68
Large	75	119	0.630	1.59
Special offer	100	126	0.794	1.26

Special offer is the best buy.

Someone may only want one tube or wish to spend as little as possible.

9 Crisps

Packet	Total amount in grams	Price in pence	No of grams per pence (g/p)	Cost in pence of 1 gram (p/g)
1	34.50	40	0.86	1.159
1	150.00	110	1.36	0.733
6	186.00	150	1.24	0.806
10	250.00	199	1.26	0.796
12	288.00	225	1.28	0.781

The 150-gram packet is the best buy.

Someone may not want to eat so many crisps at once – they do not keep well in an open packet.