

25. Ratio, Proportion and Rates of Change

Identifying good value for money when shopping online.

To save time, your parents repeat the same online food shop each week at the same supermarket. During a recent family discussion about the increases in cost of living, you suggested that they could bulk buy staple items and you could help them to shop around for better value options.

1. HealthyBites has two options for granola bars. Option 1 is a pack of 10 bars for £4.50 and Option 2 is a pack of 15 bars for £6.80. Calculate the unit price for each and comment on which option provides better value for money in terms of cost per granola bar.

Unit price for Option 1: $£4.50 \div 10 \text{ bars} = £0.45 \text{ per bar}$

Unit price for Option 2: $£6.80 \div 15 \text{ bars} = £0.4533 \text{ per bar}$

Option 1 provides better value for money as it has a slightly lower unit price per bar.

2. FreshFruits stocks three orange juice brands. Brand A offers a 1.5-litre bottle for £2.25, Brand B offers a 1.25-litre bottle for £1.95, and Brand C offers a 750ml bottle for £1.30. What is the cost per litre for each brand?

Unit price for Brand A: $£2.25 \div 1500\text{ml} = £1.50 / \text{L}$

Unit price for Brand B: $£1.95 \div 1250\text{ml} = £1.56 / \text{L}$

Unit price for Brand C: $£1.30 \div 750\text{ml} = £1.73 / \text{L}$

3. FreshFruits offers an organic bundle of 6 apples for £3.20 or their regular apples at 28p each. Meanwhile, HealthyBites sells a locally-sourced bundle of 15 apples for £4.75. Comment on the most cost-effective option as well as any other factors to consider.

Unit price for FreshFruits organic: $\text{£}3.20 \div 6 \text{ apples} = \text{£}0.53 \text{ per apple}$

Unit price for FreshFruits regular: $\text{£}0.28 \text{ per apple}$

Unit price for HealthyBites: $\text{£}4.75 \div 15 \text{ apples} = \text{£}0.32 \text{ per apple}$

FreshFruits offers the more cost-effective option with their regular apples as it has a lower unit price per apple. The family might prefer to buy local or organic but that would be at a more expensive price per apple. The family may prefer local products but they would have to buy 15 at a time, which might not be practical.

4. At SuperFood, there are two brands of rice available. Brand X offers a pack of 600g for £2.10 or 200g microwavable pouches for £90p each. Brand Y offers a pack of 900g for £2.60 or a large 5kg bag for £13.50.
- a. Calculate the unit price for each option and determine which brand provides better value for money in terms of cost per gram.

$\text{£}2.10 \div 600\text{g} = \text{£}0.0035 \text{ per gram}$

$\text{£}0.9 \div 200\text{g} = \text{£}0.0045 \text{ per gram}$

$\text{£}2.60 \div 900\text{g} = \text{£}0.0029 \text{ per gram}$

$\text{£}13.50 \div 5,000\text{g} = \text{£}0.0027 \text{ per gram}$

The 5kg bag from Brand Y offers the best value for money.

- b. Comment on any other considerations that would factor into your buying decision.

The best value option is the most expensive in terms of initial outlay, which may not be affordable. Additionally, the largest bag may not be practical in terms of storage. The microwave pouches are the most expensive but they may be preferable for the family if they have little time and are happy to spend more for convenience.

5. EatLocal offers two options for bags of carrots:

Option 1: A 1kg bag of regular carrots for £1.80

Option 2: A 2.5kg bag of locally-sourced carrots for £4.50

The regular carrots have an estimated shelf life of 10 days, while the locally-sourced carrots have a shelf life of 14 days. Additionally, the store offers a loyalty card to promote buying local produce. You collect 10 loyalty points for every £1 spent on local products.

Loyalty card points can be redeemed once you have accumulated over 100 points. 100 points convert into a £1 voucher which can be redeemed on full priced local items in your next shop.

Taking into account the price per kilogram, shelf life, and loyalty card scheme, which option would you select and why?

Price

Regular: $£1.80 \div 1\text{kg} = £1.80 \text{ per kg}$

Local: $£4.50 \div 2.5\text{kg} = £1.80 \text{ per kg}$

Looking at price alone they offer the same value for money.

Loyalty card

You would collect 45 loyalty points - this cannot be redeemed in the current shop as the required 100 points would not yet be met but it translates into a 45p discount in the future if this minimum is met. This would make regularly selecting the local option better value over the longer term.

Shelf life

Particularly when buying in bulk it is important to consider the shelf life of a product. The local carrots have 4 extra days of shelf life, but you would be buying a much larger volume, so this shelf life may still not be sufficient to prevent waste if the family will not use them all.