

<b>Main task</b>	Foundation GCSE and Level 1 Functional Skills students
<b>Suggested uses</b>	1 Independent starter 2 Whole lesson on extracting data from tables, systematic strategies and/or simple percentages
<b>Must previously cover</b>	Simple percentages for Extended task 2
<b>Extension</b>	1 Foundation GCSE and Level 1 Functional Skills students 2 Foundation/Higher GCSE and Level 1/2 Functional Skills students

**Starter** (Worksheet 1)

This is the price list at Hana's beach bar.

Drinks	
Cola	80p
Lemonade	60p
Fruit juice	£1.50
Smoothie	£1.99

Snacks	
Ice cream	£1.20
Ice lolly	70p
Muffin	£1.30
Cookie	55p

- (a) Jacob has these coins.



He wants a drink and a snack.

What can Jacob buy?

- (b) Ben has these coins.



He buys a smoothie and an ice lolly.

Hana has no 1p coins in the till.

She gives Ben the correct change.

Which **four** coins does Ben use?

**Answers**

- (a) Cola and ice lolly (£1.50)  
 Cola and cookie (£1.35)  
 Lemonade and ice cream (£1.80)  
 Lemonade and ice lolly (£1.30)  
 Lemonade and cookie (£1.15)
- (b) £2 + 50p + 20p + 5p (£2.75 - £2.69 = 2p + 2p + 2p)

**Links to Level 1 Skills Standards**

		Skills standard	Evidence
(a)	Ra	Understands problem and starts to access it	Attempts to add the coins or attempts to find the price of a drink and snack
	Aa	Uses mathematics to find a solution	Adds coins or drink and snack correctly
	Ab	Checking	Checks total from their choice comes to less than coins
(b)	Ra	Understands problem and starts to access it	Finds total of given snack and drink
	Aa	Uses mathematics to find a solution	Works out change needed for at least one set of four coins
	Aa	Uses mathematics to find a solution	Selects set that uses no 1p coins

**Links to GCSE**

	Assessment Objectives			GCSE 4360			GCSE 4365	Linked Pair Pilot Methods and Applications			
	AO1	AO2	AO3	Unit 1	Unit 2	Unit 3	Linear	M1	A1	M2	A2
(a)		✓		S2.5 N1.3			S2.5 N1.3		S7 N1		
(b)			✓	N1.3			N1.3		N1		

**Extension**

- 1 (Worksheet 1)  
Ask students to find other combinations of coins Ben could use so that he gets the correct change.

**Answers**

- 1  $£2 + 50p + 20p + 20p + 10p + 5p$  ( $£3.05 - £2.69 = 36p$ )  
 $£2 + 50p + 20p + 20p + 5p$  ( $£2.95 - £2.69 = 26p$ )  
 $£2 + 50p + 20p + 10p + 5p$  ( $£2.85 - £2.69 = 16p$ )  
 (He has to use the 5p to get an even amount of change)

- 2 (Worksheet 2)  
Set students these problems about Hana's profits.

- (a) In summer, Hana's best-sellers are ice creams and ice lollies.  
 Hana makes a profit of 30p on each ice cream she sells.  
 She makes a profit of 65p on each ice lolly she sells.  
 She reduces the price of ice lollies by 50% to increase her profits.

	Before price change	After price change
<b>Average number buying ice creams</b>	84	75
<b>Average number buying lollies</b>	53	126

Do you think the price reduction is a good idea?

- (b) Hana also decides to increase the ice cream price by 10p.  
 She estimates that
- 10% of ice cream customers will go somewhere else to buy ice cream
  - 5% of ice cream customers will buy an ice lolly instead.

What is likely to happen to Hana's profits?

**Answers**

- 2 (a) Yes, the profits increase.  
 Before the price change she made  $84 \times 30p + 53 \times 65p = £59.65$   
 New ice lolly price is  $0.5 \times 70p = 35p$   
 After the change the profit on ice lollies is  $65 - 35 = 30p$   
 so she made  $75 \times 30p + 126 \times 30p = £60.30$
- (b) She expects to sell  $75 - 15\%$  of  $75 = 64$  (or 63) ice creams.  
 She expects to sell  $126 + 5\%$  of  $75 = 130$  (or 129) ice lollies.  
 She will make  $10p + 30p = 40p$  profit on each ice cream and 30p on each lolly.  
 Her estimated profit will be  $64 \times 40p + 130 \times 30p = £64.60$  which is an increase.

**Links to Level 1 Skills Standards**

	<b>Skills standard</b>		<b>Evidence</b>
Extension 1	Rc	Chooses mathematics to find a solution	Checks change from other combinations of coins
	Aa	Uses mathematics to find a solution	Finds at least one other correct solution
	Ab	Checking	Checks has all correct solutions

**Links to Level 2 Skills Standards**

Extension 2a	Ra	Understands problem and starts to access it	Works out total made before price change
	Aa	Uses mathematics to find a solution	States new price of ice lolly
	Rb	Identifies the problem and decides on methods to use	Calculates new profit on ice lolly
	Rc	Chooses the mathematics needed to find a solution	Works out new total profit
	lb	Draws conclusions and gives justifications	Makes conclusion based on their figures
Extension 2b	Rb	Identifies the problem and decides on methods to use	Works out new ice cream sales and Works out new ice lolly sales
	Rc	Chooses the mathematics needed to find a solution	States new price of ice cream
	Aa	Uses mathematics to find a solution	Works out new total profit
	lb	Draws conclusions and gives justifications	Makes conclusion about change in profit

**Links to GCSE**

	Assessment Objectives			GCSE 4360			GCSE 4365	Linked Pair Pilot Methods and Applications			
	AO1	AO2	AO3	Unit 1	Unit 2	Unit 3	Linear	M1	A1	M2	A2
Extension 1			✓	N1.3			N1.3		N1		
Extension 2a		✓		N1.3 S3.1 N2.7			N1.3 S3.1 N2.7		N1 S8 N6		
Extension 2b		✓		N1.3 N2.7			N1.3 N2.7		N1 N6		