

<b>Main task</b>	Foundation/Higher GCSE and Level 2 Functional Skills students Adapt for Level 1 Functional Skills students by writing formula in words
<b>Suggested uses</b>	1 Independent starter 2 Whole lesson on using a formula
<b>Must previously cover</b>	Using a formula
<b>Extension</b>	Foundation/Higher GCSE and Level 2 Functional Skills students Adapt for Level 1 Functional Skills students by writing formula in words

**Starter** (Worksheet)

At Mike's bikes you use this formula to work out the cost of hiring a bike.

$$C = 12d + 8$$

$C$  is the cost in pounds and  $d$  is the number of days the bike is hired.

At Neil's wheels you work out the cost of hiring a bike using this table.

First day hire costs £30
Add £10 for each extra day

- (a) Chris wants to hire a bike for 3 days.  
Should he hire it from Mike's bikes or Neil's wheels?
- (b) Chen wants to hire a bike for 14 days.  
Should he hire it from Mike's bikes or Neil's wheels?

**Answers**

- (a) Mike's bikes =  $12 \times 3 + 8 = £44$   
Neil's wheels =  $30 + 10 \times 2 = £50$  He should hire from Mike's bikes.
- (b) Mike's bikes =  $12 \times 14 + 8 = £176$   
Neil's wheels =  $30 + 10 \times 13 = £160$  He should hire from Neil's wheels.

**Links to Level 2 Skills Standards**

		Skills standard	Evidence
a / b	Ra	Understands problem and starts to access it	Substitutes appropriate numbers into formulas
	Aa	Uses mathematics to find a solution	Calculates costs
	Ib	Draws conclusions and gives justifications	Chooses appropriate shop and gives reason

**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 / b	✓				N5.6	N5.6	N5.6	A8	A3		

**Extension** (Worksheet)

Sam and Nat are planning a bike trip.

Sam says

'I think we need to hire bikes for 5 or 6 days.'

Nat says

'I think the trip will take longer. We need to hire bikes for 7 or 8 days.'

Should they hire their bikes from Mike's bikes or Neil's wheels?

Show how you decide.

**Answers**

Mike's bikes is cheaper for 5 days ( $£68 < £70$ )

They both cost £80 for 6 days

Neil's wheels is cheaper for 7 days ( $£92 > £90$ ) and 8 days ( $£104 > £100$ )

Choose Neil's wheels because out of the four possible lengths of trip, it is cheaper for two and costs the same for one. There is only a 25% chance that Mile's bikes will be cheaper.

**Note** You could extend this further by asking pupils to plot graphs to represent the hire charges at both shops. Ask them to relate the graphs to their decision.

**Links to Level 2 Skills Standards**

Extension	Ra	Understands problem and starts to access it	Calculates costs for at least one length of trip
	Rc	Chooses the mathematics needed to find a solution	Works out both costs for each length of trip
	Ib	Draws conclusions and gives justifications	Chooses Neil's wheels and gives reason

**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		✓			N5.6	N5.6	N5.6	A8	A3		