

Urban Courier and Sustainable Services

Opportunity cost, entrepreneurship, services and environmental impact

SL2

Worksheet

Suggested time	55 minutes	Total marks	50
Assessment use	Trimester school assessment / teacher-created practice	Focus	services, opportunity cost, start-up decisions, sustainability
Student	Name: _____ Class: _____ Date: _____	Calculator	Allowed for calculations where needed

- Original teacher-created IB-style practice worksheet. Not an official IB assessment document.
- Answer in context where possible. Show working for calculations and support evaluations with clear judgment.
- This PDF includes the full answer key and marking guidance at the end for teacher use.

Section A - Multiple choice (6 marks)

Choose one answer for each question.

1. Opportunity cost is best defined as: **[1]**
 - A. the total revenue earned from a decision
 - B. the value of the next best alternative given up
 - C. the money spent on wages
 - D. the amount of profit after tax

2. For a bicycle courier firm, GPS-enabled bikes and routing software are examples of: **[1]**
 - A. land
 - B. labour
 - C. capital
 - D. enterprise

3. A business that mainly delivers parcels for customers operates mainly in which sector? **[1]**
 - A. primary
 - B. secondary
 - C. tertiary
 - D. quaternary

4. Turning used packaging into compost is best described as: **[1]**
 - A. ignoring by-products
 - B. reducing negative impacts and reusing waste
 - C. moving into the primary sector
 - D. eliminating enterprise

5. The main role of enterprise in a new business is to: **[1]**

- A. identify opportunities, organize resources, and take risks
- B. replace all labour with machines
- C. guarantee profit from the start
- D. turn services into goods

6. If demand for a delivery service rises suddenly but capacity does not, the most likely result is: **[1]**

- A. the service can be stored for later sale
- B. waiting times or delays increase
- C. all fixed costs disappear
- D. the business moves into the primary sector

Section B - Short answer (14 marks)

Answer in full sentences and apply the case or examples where appropriate.

7. Explain one reason why services cannot be stored and one implication for a courier business. **[4]**

8. Explain one challenge faced by many start-ups when they try to raise capital. **[3]**

9. Distinguish between an objective focused on profit and an objective focused on social impact. **[4]**

10. Explain one opportunity cost faced by SwiftPedal if it uses its savings to buy e-bikes instead of hiring more riders. **[3]**

Section C - Data response / case study (20 marks)

Read the stimulus below and answer all parts of Question 11.

SwiftPedal

SwiftPedal is a bicycle-based courier business serving restaurants, pharmacies, and small online stores in a busy city. The founder chose bicycles because they are cheap to operate and avoid traffic delays. Customers like the low-emission image of the business and the ability to track deliveries in real time through the app. However, bad weather and rider shortages can reduce service quality.

SwiftPedal currently employs 12 riders and completes an average of 220 deliveries per day. It charges customers \$5.50 per delivery. Riders are paid \$2.00 per delivery and the routing app costs \$0.40 per delivery. Fixed daily costs, including rent and administration, are \$190. The founder has \$12,000 available and must choose between Option A: buying six e-bikes for \$2,000 each, which is expected to increase deliveries by 18%, or Option B: hiring four additional riders and spending \$4,000 on recruitment and training, which is expected to increase deliveries by 22%.

Current daily data and growth options

Item	Value
Average deliveries per day	220
Charge per delivery	\$5.50
Rider pay per delivery	\$2.00
Routing app cost per delivery	\$0.40
Fixed daily costs	\$190
Option A expected increase in deliveries	18%
Option B expected increase in deliveries	22%

11(a) Identify one way SwiftPedal adds value for customers and one way it reduces negative environmental impact. **[2]**

11(b) Calculate SwiftPedal's current daily contribution before fixed costs. **[4]**

11(c) Explain how Option A would change the balance of labour and capital in SwiftPedal. **[4]**

11(d) Evaluate which option SwiftPedal should choose. **[10]**

Teacher answer key and marking guidance

- Award credit for any other valid response that is accurately applied to the stimulus or business context.
- For calculation questions, award method marks where setup and workings are correct even if there is an arithmetic slip.
- For evaluation questions, reserve the top marks for balanced analysis and a clearly supported final judgment.

Section A answers

Q	Ans	Reason
1	B	Opportunity cost measures what is sacrificed when one option is chosen over another.
2	C	Capital refers to man-made resources such as equipment and technology used in production.
3	C	Transport and delivery services belong mainly to the tertiary sector.
4	B	Reusing waste is a way to reduce negative by-products and improve sustainability.
5	A	Enterprise is the coordinating and risk-taking factor that drives innovation and change.
6	B	Services cannot be stored, so excess demand usually causes delays or waiting lists.

Section B marking guidance

Q7 [4]

Explain one reason why services cannot be stored and one implication for a courier business.

Indicative answer:

- A service is produced and consumed when the customer demands it, so unused delivery capacity today cannot be stored for tomorrow.
- For a courier business, this means demand peaks can create delays, missed slots, or lower customer satisfaction if capacity is insufficient.

Marking guidance: 1-2 marks for a simple relevant explanation; 3-4 marks for a clearly developed answer that is applied to the context.

Q8 [3]

Explain one challenge faced by many start-ups when they try to raise capital.

Indicative answer:

- New businesses often have limited trading history, little collateral, and uncertain demand forecasts.
- As a result, lenders and investors may see them as high risk and refuse finance or charge higher rates.

Marking guidance: 1 mark for a relevant point, plus up to 2 further marks for a clear explanation developed in business context.

Q9 [4]

Distinguish between an objective focused on profit and an objective focused on social impact.

Indicative answer:

- A profit-focused objective emphasizes earning financial return for owners or investors.
- A social-impact objective emphasizes benefits such as lower emissions, better access, or community support.
- A business can pursue both, but the primary success measure will differ.

Marking guidance: Award up to 2 marks per clear difference. Full marks require accurate terminology and an applied example or business context.

Q10 [3]

Explain one opportunity cost faced by SwiftPedal if it uses its savings to buy e-bikes instead of hiring more riders.

Indicative answer:

- If SwiftPedal buys e-bikes, it gives up the next best alternative of hiring additional riders and the capacity or flexibility that those riders might provide.
- The value of that forgone alternative is the opportunity cost.

Marking guidance: 1 mark for a relevant point, plus up to 2 further marks for a clear explanation developed in business context.

Section C marking guidance

Q11(a) [2]

Identify one way SwiftPedal adds value for customers and one way it reduces negative environmental impact.

Indicative answer:

- Adds value through fast city delivery, real-time tracking, or convenience.
- Reduces environmental impact through bicycle deliveries that create lower emissions and less congestion.

Marking guidance: 1 mark per correct, relevant point. No development is required.

Q11(b) [4]

Calculate SwiftPedal's current daily contribution before fixed costs.

Indicative answer:

- Contribution per delivery = $\$5.50 - \$2.00 - \$0.40 = \3.10 .
- Daily contribution = $220 \times \$3.10 = \682 .
- Answer: \$682 per day before fixed costs.

Marking guidance: Award method marks for correct setup and workings. A typical split is 1 mark for setup, 2 marks for workings, and 1 mark for the correct final answer.

Q11(c) [4]

Explain how Option A would change the balance of labour and capital in SwiftPedal.

Indicative answer:

- Option A increases capital intensity because the business invests more in equipment.
- Each rider may become more productive, so the business relies relatively less on adding more labour hours.
- The firm may achieve faster delivery speeds, but it becomes more dependent on maintenance and charging systems.

Marking guidance: 1-2 marks for a simple relevant explanation; 3-4 marks for a clearly developed answer that is applied to the context.

Q11(d) [10]

Evaluate which option SwiftPedal should choose.

Indicative answer:

- Option B gives a larger expected increase in deliveries and uses less of the available cash, leaving funds for working capital or unexpected costs.
- Option A may improve speed, rider productivity, and the low-emission brand image, which could support long-term differentiation.
- Hiring more riders increases management complexity and may be harder if labour shortages continue.
- E-bikes may require maintenance and battery management, but they may help riders cover longer distances more reliably.
- A balanced answer may recommend Option B for greater capacity and lower immediate financial risk, unless SwiftPedal's strategy depends on faster premium delivery.

Marking guidance: 1-3 marks for limited comments, 4-6 for some analysis, 7-8 for balanced evaluation, and 9-10 for a well-supported final judgment.

Section D marking guidance

Q12 [10]

Discuss whether sustainability is mainly a source of competitive advantage or mainly a cost for small service businesses.

Indicative content:

- Sustainability can be a source of competitive advantage because it differentiates the business, attracts customers, strengthens reputation, and may reduce long-term operating costs.
- It can also create short-term costs such as training, new equipment, certification, or marketing expenditure.
- For small service businesses, the effect depends on whether sustainability is closely linked to the customer value proposition and whether customers are willing to reward it.
- A strong response will weigh both the branding benefits and the financial constraints faced by smaller firms.
- A balanced conclusion might argue that sustainability is most powerful when it both reduces harm and supports efficiency or brand identity.

Marking guidance: Use the markband below. Reserve the top band for balanced, contextualized evaluation and a clear final judgment.

Marks	Descriptor
0	No relevant business knowledge or application.
1-3	Limited knowledge; response is mostly descriptive and weakly applied.
4-6	Some understanding and some analysis; application is partial.
7-8	Good analysis and application; some balance and a supported judgment.
9-10	Well-structured, well-applied evaluation with balanced reasoning and a clear final judgment.