

PISA 2018 released financial literacy items

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Overview

Fourteen items are released as sample items from those excluded during the PISA 2018 field trial. One unit (ZCYCLE) was developed for the 2018 field trial and was never used previously; one item (CHARITABLE GIVING) was used in the 2015 assessment but not in 2012; all other items have been used to assess students in both the PISA 2012 and 2015 financial literacy assessments.

Items presented in this document complement items already released from the 2012 field trial and main study, available in the *PISA 2012 Assessment and Analytical Framework* (OECD, 2013^[1]), in the volumes of results of the PISA 2012 and 2015 financial literacy assessments (OECD, 2014^[2]; OECD, 2017^[3]), as well as on line (<http://www.oecd.org/pisa/test/>).

A summary of framework dimensions and described proficiency scales is provided below for reference.

Framework dimensions

The financial literacy framework is organised into content, processes and contexts (OECD, 2013^[1]).

Content

The content of financial literacy comprises the areas of knowledge and understanding that must be drawn upon in order to perform a particular task. The four content areas for PISA financial literacy are: *money and transactions, planning and managing finances, risk and reward, and financial landscape*.

Processes

The process categories relate to cognitive processes. They are used to describe students' ability to recognise and apply concepts relevant to the domain, and to understand, analyse, reason about, evaluate and suggest solutions. In PISA financial literacy, four process categories have been defined: *identify financial information, analyse information in a financial context, evaluate financial issues and apply financial knowledge and understanding*.

Contexts

Decisions about financial issues often depend on the contexts or situations in which they are presented. By situating tasks in a variety of contexts the assessment offers the possibility of connecting with the broadest possible range of individual interests across a variety of situations in which individuals need to function in the 21st century. The contexts identified for the PISA financial literacy assessment are, then, *education and work, home and family, individual and societal*.

Proficiency levels in financial literacy

Table 1. Summary description of the financial literacy five proficiency levels

Level	Score range	Percentage of students able to perform tasks at each level (OECD average-10 – PISA 2015)	What students can typically do
1	326 to less than 400 points	21.1%	Students can identify common financial products and terms and interpret information relating to basic financial concepts. They can recognise the difference between needs and wants and can make simple decisions on everyday spending. They can recognise the purpose of everyday financial documents such as an invoice and apply single and basic numerical operations (addition, subtraction or multiplication) in financial contexts that they are likely to have experienced personally.
2 Baseline	400 to less than 475 points	22.6%	Students begin to apply their knowledge of common financial products and commonly used financial terms and concepts. They can use given information to make financial decisions in contexts that are immediately relevant to them. They can recognise the value of a simple budget and can interpret prominent features of everyday financial documents. They can apply single basic numerical operations, including division, to answer financial questions. They show an understanding of the relationships between different financial elements, such as the amount of use and the costs incurred.
3	475 to less than 550 points	26.0%	Students can apply their understanding of commonly used financial concepts, terms and products to situations that are relevant to them. They begin to consider the consequences of financial decisions and they can make simple financial plans in familiar contexts. They can make straightforward interpretations of a range of financial documents and can apply a range of basic numerical operations, including calculating percentages. They can choose the numerical operations needed to solve routine problems in relatively common financial literacy contexts, such as budget calculations.
4	550 to less than 625 points	19.6%	Students can apply their understanding of less common financial concepts and terms to contexts that will be relevant to them as they move towards adulthood, such as bank account management and compound interest in saving products. They can interpret and evaluate a range of detailed financial documents, such as bank statements, and explain the functions of less commonly used financial products. They can make financial decisions taking into account longer-term consequences, such as understanding the overall cost implication of paying back a loan over a longer period, and they can solve routine problems in less common financial contexts.
5	Equal to or higher than 625 points	10.7%	Students can apply their understanding of a wide range of financial terms and concepts to contexts that may only become relevant to their lives in the long term. They can analyse complex financial products and can take into account features of financial documents that are significant but unstated or not immediately evident, such as transaction costs. They can work with a high level of accuracy and solve non-routine financial problems, and they can describe the potential outcomes of financial decisions, showing an understanding of the wider financial landscape, such as income tax.

Source: (OECD, 2017^[3]).

COSTS OF RUNNING A CAR

Mr Davies takes out a loan to buy a car for his family. The interest rate on the loan is fixed.

One cost Mr Davies will have is monthly loan repayments. There are also other costs of running a car such as petrol costs and repair and maintenance costs.

Question

Some costs will increase if the family uses the car more, but other costs will stay the same.

For each cost in the table, put a circle around “Increases” or “Stays the same” to show what is likely to happen if the family uses the car more.

Cost	What is likely to happen to the cost if the family uses the car more?
Monthly loan repayments	Increases / Stays the same
Petrol costs	Increases / Stays the same
Repair and maintenance costs	Increases / Stays the same

This question asks students to distinguish between the fixed and variable costs associated with running a car. Understanding fixed and variable costs is an important component of planning finances for an individual or a family. The question belongs to the process category of analysing information in a financial context because students should recognise something that is not explicit and understand the implications that using the car more has on different types of costs. The correct answers are Stays the same, Increases, Increases, in that order.

Unit Name	Costs of Running a Car
Item Code	F001Q01
Content	Planning and Managing Finances
Process	Analyse information in a financial context
Context	Home and family
Item Format	Complex Multiple Choice - Computer Scored
Level estimated from 2018 Field Trial	3

MUSIC SYSTEM

Kelly asks her bank to lend her 2000 zeds to buy a music system.

Kelly has the choice to repay the loan over two years or over three years. The annual interest rate on the loan is the same in each case.

The table shows the repayment conditions for borrowing 2000 zeds over **two** years.

repayment period	monthly repayment (zeds)	total repayment (zeds)	total interest paid (zeds)
two years	91.67	2200.08	200.08

Question

How will the repayment conditions for borrowing 2000 zeds over **three** years be different to the repayment conditions over two years?

Circle "True" or "False" for each statement.

Statement	Is the statement true or false?
The monthly repayments will be larger for a loan over three years.	True / False
The total interest paid will be larger for a loan over three years.	True / False

This question asks students to determine the effects of extending the loan repayment period from two to three years on the monthly interest payments and on the total interest paid when the annual interest rate does not change. As credit is widely available to young people and may be offered as an option when making a purchase in some countries, it is important that they understand how loans work so that they can make an informed decision about whether it is the best option for them. Students may be confronted with such a decision in the near future, for example, if they look to buy equipment to start a business or durable goods to furnish a home. The question requires planning ahead and anticipating the future consequences of choosing loans with different durations, without having to do any calculation. Full credit for this question is gained by replying False and True in this order.

Unit Name	Music System
Item Code	F006Q02
Content	Planning and Managing Finances
Process	Analyse information in a financial context

Context	Individual
Item Format	Complex Multiple Choice - Computer Scored
Level estimated from 2018 Field Trial	4

BANK STATEMENT

Each week, Mrs Citizen transfers 130 zeds into her son's bank account.

In Zedland, banks charge a fee for each transfer.

Mrs Citizen received this statement from her bank in November 2011.

ZEDBANK				
Statement for: <i>Mrs Citizen</i>		Account type: <i>Current</i>		
Month: <i>November 2011</i>		Account number: <i>Z0005689</i>		
Date	Transaction details	Credit	Debit	Balance
1-Nov	Opening balance			1780.25
5-Nov	Wages	575.00		2355.25
5-Nov	Transfer		130.00	2225.25
5-Nov	Transfer fee		1.50	2223.75
12-Nov	Wages	575.00		2798.75
12-Nov	Transfer		130.00	2668.75
12-Nov	Transfer fee		1.50	2667.25
13-Nov	Withdrawal		165.00	2502.25
19-Nov	Wages	575.00		3077.25
19-Nov	Transfer		130.00	2947.25
19-Nov	Transfer fee		1.50	2945.75
26-Nov	Wages	575.00		3520.75
26-Nov	Transfer		130.00	3390.75
26-Nov	Transfer fee		1.50	3389.25
27-Nov	Withdrawal		180.00	3209.25
27-Nov	Withdrawal (Rent)		1200.00	2009.25
30-Nov	Interest	6.10		2015.35

Question 1

What were the total fees charged by the bank in November?

Total bank fees in zeds:

This question asks students to interpret a financial document, in this case a bank statement. Students are required to identify bank fees from the statement and to perform a basic calculation (addition or multiplication). The purpose of the question is to test whether students can find the information on the statement and notice that it is not presented as a total, but as individual transactions. Such skills are fundamental to properly understanding the information received from financial service providers. The correct answer is 6.00.

Unit Name	Bank Statement
Item Code	F010Q01
Content	Money and Transactions
Process	Identify financial information
Context	Home and family
Item Format	Open Response - Computer Scored
Level estimated from 2018 Field Trial	4

Question 2

The next transactions occurred on 3 December:

- Wages of 575 zeds were deposited into Mrs Citizen's account.
- Mrs Citizen transferred 130 zeds into her son's account.

Mrs Citizen made no other transactions on 3 December.

What was her new bank balance at the close of business on 3 December?

Balance in zeds:

The second question of the item *BANK STATEMENT* requires students to calculate the bank balance at a given point in time given the initial balance and the transactions that occurred. Full credit is given to students who can not only add and subtract the relevant amounts deposited to and paid from the account, but also take into account transaction fees. The correct answer to gain full credit is 2458.85, that is $2015.35 + 575 - 130 - 1.50$. Partial credit is given to students who give values in the range 2458 to 2459 inclusive (value rounded or truncated to whole number of zeds, or minor calculation error, or transcription error) or to students who do not take into account the transfer fee (2460.35 or 2460).

Unit Name	Bank Statement
Item Code	F010Q02
Content	Money and Transactions
Process	Analyse information in a financial context
Context	Home and family

Item Format	Open Response - Computer Scored
Level estimated from 2018 Field Trial	5 – full & partial credit

PHONE PLANS

Ben lives in Zedland and has a mobile phone. In Zedland there are two different kinds of phone plan available.

Plan 1

- You pay the phone bill at the end of the month.
- The bill is the cost of the calls you make **plus** a monthly fee.

Plan 2

- You buy credit for the phone in advance.
- The credit lasts for a maximum of one month or until all credit has been used.

Question 1

What is one possible **financial** advantage of using phone plans like **Plan 2**?

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.....

.....

The unit *PHONE PLANS* asks students to analyse information in the context of mobile phone plans, a situation that many 15-year-old students may have already encountered or will soon encounter. The first question asks students to explain a possible financial advantage of a pre-paid phone plan. Students should recognise that the pre-paid plan does not entail a monthly fee or that it may help the user not go beyond a certain spending limit.

Unit Name	Phone Plans
Item Code	F028Q02
Content	Planning and Managing Finances
Process	Analyse information in a financial context
Context	Individual
Item Format	Open Response - Human Coded
Level estimated from 2018 Field Trial	3

Full Credit

Code 11: Refers to ease of planning OR keeping to a specified budget.

- You know exactly how much it will cost.
- You can choose how much you can afford to spend in advance.

- It helps you plan your finances better.
- It means you will not go over your limit.
- You will not be surprised by big bills at the end of the month.
- You only buy the amount of credit you need.

Code 12: Refers to no monthly fee (like Plan 1).

- You don't have to pay a monthly fee.

Stimulus update

Ben decides to use Plan 1. He must now choose which phone company to use.

The table below shows the details of the four different phone companies that offer Plan 1. All costs are shown in zeds.

	Company 1	Company 2	Company 3	Company 4
Monthly fee (zeds)	20	20	30	30
Cost of call per minute (zeds)	0.27	0.25	0.30	0.25
Number of free minutes per month	90	90	60	60
Cost of text message (zeds)	0.02	0.02	free	0.01
Number of free text messages per month	200	100	unlimited	200

Question 2



Ben

I speak on the phone for about an hour each day, but I very rarely send text messages.

Which phone company offers the best financial deal for Ben?

- A Company 1
- B Company 2
- C Company 3
- D Company 4

The second question in the unit *PHONE PLANS* looks at students' ability to select the most suitable telephone plan for a particular individual. Students are required to compare the conditions offered by different mobile phone companies by looking at multiple dimensions, such as flat fees, the cost of calls and the cost of messages, select the ones that are most relevant, and find the best offer for a given need. To get full credit students should indicate that Company 2 offers the best deal for Ben's needs.


Unit Name	Phone Plans
Item Code	F028Q03
Content	Planning and Managing Finances
Process	Analyse information in a financial context
Context	Individual
Item Format	Simple Multiple Choice - Computer Scored
Level estimated from 2018 Field Trial	3

RINGTONES

Colin sees this advertisement in a magazine for teenagers.

Get **Cheeky Monkey™** ringtones for your phone.
Your phone will make a monkey noise when your friends call you.

Get one **NOW** for only **3 zeds***



Text the word MONK to 13 45 67

* Each ring-tone costs 3 zeds. By texting MONK to 13 45 67 customer agrees to receive a different Cheeky Monkey™ ring-tone every day. Customer can cancel contract at any time by texting STOP to 13 45 67. Cancellation fee is 5 zeds.

Question

Colin has 30 zeds credit on his phone.

He texts the word MONK to 13 45 67.

Colin does **not** use his phone again to make calls or send texts. He does **not** add any more credit.

How much credit will Colin have on his phone exactly one week later?

Credit in zeds:

This question asks students to pay attention and interpret the small-print to understand the terms and conditions of buying a service, and then to calculate the implications for the true cost. When developed as a test item for the 2012 assessment, this question presented a widely relevant situation; while ads for ringtones may have changed in the meantime in some countries, students continue to receive adverts in a similar format, including for purchases through digital games and apps. The question falls in the category Apply financial knowledge and understanding because it asks students to perform basic calculations (multiplication and subtraction) taking into account multiple elements that are not immediately evident (by buying one ringtone the user agrees to receiving - and pays for - a ringtone every day). This item also highlights a wider issue that young people face when starting to make financial decision and budget their own money. An impulse decision to make a purchase of 3 zeds without first reading the small-print would cost the student a minimum of 8 zeds even if they recognised their error immediately. The correct response is 9 or 6, recognising the potential ambiguity as to when the first or last download occurs.

Unit Name	Ring-Tones
Item Code	F035Q01
Content	Financial Landscape
Process	Apply financial knowledge and understanding
Context	Individual
Item Format	Open Response - Computer Scored
Level estimated from 2018 Field Trial	4

ONLINE SHOPPING

Question

Kevin is using a computer at an Internet café. He visits an online shopping website that sells sports equipment. He enters his bank card details to pay for a football.

The security of financial information is important when buying goods on line.

What is one thing Kevin could have done to increase security when he paid for the football on line?

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.....

The question *ONLINE SHOPPING* asks students to reflect on the potential risks of conducting financial transactions online using computers in public places and to evaluate those risks. Internet cafés are less widespread in developed countries than they were when the item was designed, but young people may still be sharing computers with friends, may have occasion to make payments online in public places, or use public wi-fi to access personal data. In the case of *ONLINE SHOPPING*, all of the necessary information is provided in the question, but to gain credit students need to identify what is relevant and reflect on the consequences of taking a particular action. Various responses are awarded full credit, such as referring to using a secure computer rather than one in a public place, using a more secure or safer method of online payment, or using a trusted website.

Unit Name	Online Shopping
Item Code	F036Q01
Content	Financial Landscape
Process	Evaluate financial issues
Context	Societal
Item Format	Open Response - Human Coded
Level estimated from 2018 Field Trial	4

Full Credit

Code 11: Refers to using a secure computer rather than one in a public place.

- Use a personal (or private) computer.
- Do it at home.
- Use a computer where the cookies are disabled.
- Make sure no one is looking. [*Identifies a behaviour in public to improve security.*]
- Delete browser history after the purchase.

-
- Not do it in a public place on a public computer.

Code 12: Refers to using a more secure or safer method of online payment.

- Use PayPal.
- Use a trusted online method of third-party payment. *[This may be specific to your country.]*
- *Buy a pre-paid bank card so his bank details won't be exposed.*

Code 13: Refers to using a trusted/genuine/credible website.

- Check that the website has a security certificate before making a purchase.
- Check reviews online to see whether the website can be trusted.
- Make sure it is a https site.
- Make sure it is a safe website.

MOBILE PHONE CONTRACT

Alan wants a mobile phone but he is not old enough to sign the contract.

His mother buys the phone for Alan and signs a one-year contract.

Alan agrees to pay the monthly bill for the phone.

After 6 weeks, Alan's mother discovers that the bill has **not** been paid.

Question

Is each statement about the mobile phone bill true or false?

Circle "True" or "False" for each statement.

Statement	Is the statement about the mobile phone bill true or false?
Alan's mother is legally responsible for paying the bill.	True / False
The mobile phone shop must pay the bill if Alan and his mother do not.	True / False
The bill does not have to be paid if Alan returns the mobile phone to the shop.	True / False

To answer this question correctly, students should understand the legal implications of financial contracts and recognise the potential financial consequences on others (Alan's mother) if a contract is not honoured (if Alan does not pay the phone bill). Even if they cannot sign contracts at 15, students will soon be confronted with legal obligations and their financial consequences. In order to get full credit, students should answer True, False and False, in this order.

Unit Name	Mobile Phone Contract
Item Code	F062Q01
Content	Financial Landscape
Process	Evaluate financial issues
Context	Home and family
Item Format	Complex Multiple Choice - Computer Scored
Level estimated from 2018 Field Trial	2

CHARITABLE GIVING

PISA 2018

Charitable Giving
Question 1 / 1

Refer to "Charitable Giving" on the right. Type your answer to the question.

Explain why Lisa has taken a financial risk by making this donation.

CHARITABLE GIVING

Lisa, did you decide what to do with your birthday money?

Oh really? I've never heard of WellBabies.

Actually, I donated most of it to the WellBabies charity yesterday.

No, I hadn't either, but they called me and asked for money, so I gave them a donation with my bank card.

Edward

Lisa

In this question, students should demonstrate an understanding of why Lisa has taken a risk in giving her card details to an unsolicited caller. As students may receive unsolicited requests for donations in the street or over the phone, they should be aware of the risks. Correct responses to this question should indicate awareness that the caller may not be genuine (it may not be a charity) and/or that giving card details to unknown people may expose the card holder to unauthorised use of the card later on.

Unit Name	Charitable Giving
Item Code	F200Q01
Content	Financial Landscape
Process	Evaluate financial issues
Context	Societal
Item Format	Open Response - Human Coded
Level estimated from 2018 Field Trial	2

Full Credit

Code 1: Indicates awareness of risk associated with giving card details to an unknown caller.

- She does not know if the caller is genuine
- Anyone could call and pretend to be a charity.
- The caller could take more money than she agreed to donate since they have her bank card information.
- Bank card information should not be shared with someone you don't know.

ZCYCLE

PISA 2018

ZCycle

Introduction

A new bike-sharing program called ZCycle was just introduced in Zedtown. Riders can pick up bikes at one bike station and then drop them off at another when they are finished riding.

In order to use ZCycle you must become a member and pay a membership fee.


Membership for ZCycle is handled through a smartphone app, as shown on the right.

To see the different prices for each plan:

- Click on "Annual" to see the annual membership fee.
- Click on "Monthly" to see the monthly membership fee.
- Select "1" ride at 61-120 minutes and "1" at 121 minutes or more to see those fees.
- Click on "Calculate Total" to see the total charge.
- Click on new selections and "Calculate Total" to see different options.

ZCycle

Bike-Sharing



Membership Fee		Zeds
<input type="radio"/>	Annual	
<input type="radio"/>	Monthly	
	<input type="text" value="Number of Months"/>	
Number of Rides	Length of Rides (minutes)	Zeds
Unlimited	Up to 60	FREE
<input type="text"/>	61 - 120	
<input type="text"/>	121 or more	
TOTAL		

In this unit, students are first introduced to a text explaining how the bike sharing scheme works, and how the membership fee in the scheme is managed through a hypothetical smartphone application. Prospective bike users should understand that there is an annual or monthly membership fee, and that they may be asked to pay additional costs for each ride, depending on the ride duration. This is an example of a relatively common fee structure, combining fixed and variables costs, that students may encounter not only in bike sharing schemes but also in some mobile phone plans. Students have an opportunity to try the app to see how different uses of the bike scheme would affect the final cost.

Question 1

PISA 2018

ZCycle
Question 1 / 4

How to Use the ZCycle App

Refer to the ZCycle app on the right. Using the number keys, type your answer to the question.

Julie would like to use ZCycle to commute to and from work during the week. It will take her 45 minutes to ride to work and the same to ride home.

She would also like to use the bike twice a month on the weekends for bike rides that will be more than three hours long.

What would be Julie's total cost for a one-month membership?

zeds

Membership Fee		Zeds
<input type="radio"/>	Annual	
<input type="radio"/>	Monthly	
	<input type="text"/> Number of Months	
Number of Rides	Length of Rides (minutes)	Zeds
<input type="radio"/>	Unlimited	Up to 60
<input type="radio"/>	<input type="text"/>	61 - 120
<input type="radio"/>	<input type="text"/>	121 or more
TOTAL		

Calculate Total

The first question of the unit *ZCYCLE* asks students to use the application to figure out how much membership in the bike-sharing scheme would cost given that Julie would like to use the bike for relatively short rides during the week and two longer rides during the weekend. This question falls into the *planning and managing finances* area because students need to demonstrate an ability to put together different pieces of information on the relevant fees to choose from different options and plan expenses. The correct response is 32 (the monthly fee costs 20 zeds and each ride of at least 121 minutes costs 6 zeds).

Unit Name	ZCycle
Item Code	F306Q01
Content	Planning and managing finances
Process	Apply financial knowledge and understanding
Context	Individual
Item Format	Open Response - Computer Scored
Level estimated from 2018 Field Trial	4

Question 2

PISA 2018

ZCycle
Question 2 / 4

How to Use the ZCycle App

Refer to the ZCycle app on the right. Click on a choice and then use the number keys to type your answer to the question.

Julie wants to know if it would be cheaper for her to purchase six monthly memberships or one annual membership if she is only going to use ZCycle for six months.

Remember that Julie wants to ride a bike to and from work every day (45 minutes each way) and twice a month for more than three hours.

Which membership is less expensive?

Annual Membership

6 Monthly Memberships

How much would the less expensive membership save Julie in six months?

zeds

Membership Fee		Zeds
<input type="radio"/>	Annual	
<input type="radio"/>	Monthly	
	Number of Months	
Number of Rides	Length of Rides (minutes)	Zeds
<input type="radio"/>	Up to 60	FREE
<input type="radio"/>	61 - 120	
<input type="radio"/>	121 or more	
TOTAL		

Calculate Total

The second question asks students to use the app to compare the cost of using the bike sharing scheme for six months or one year given the use that Julie would like to make of the bikes (the same as in the first question, relatively short rides during the week and for two longer rides during the weekend). Annual membership costs 180 zeds, including short and long rides. Students should recognise that this is cheaper than a six-month membership (120 zeds for the membership fee plus 12×6 zeds for the three-hour rides during the weekend). In order to get full credit, students should indicate both that the one-year membership is less expensive and that the cost difference for Julie is 12 zeds. Students indicating only one of these two elements obtain partial credit.

Unit Name	ZCycle
Item Code	F306Q02
Content	Money and transactions
Process	Analyse information in a financial context
Context	Individual
Item Format	Open Response - Computer Scored
Level estimated from 2018 Field Trial	5 – full & partial credit

Question 3

PISA 2018

ZCycle
Question 3 / 4

Refer to Julie's bill on the right. Click on a choice and then use the number keys to type your answer to the question.

Julie decides to try the ZCycle bike-sharing program for one month. At the end of the month she receives the bill shown on the right from ZCycle on her smartphone.

She has kept careful records of the number of rides she has taken and how long each lasted. Therefore, she's sure that there is a mistake in the fees that she has been charged.

Which fee is incorrect?

1 Month Membership - 20 zeds

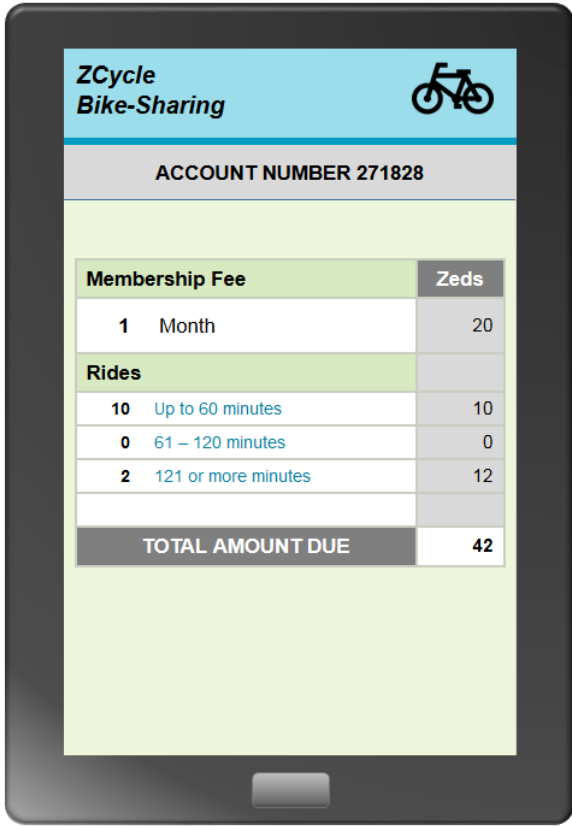
10 Rides Up to 60 Minutes - 10 zeds

0 Rides 61-120 minutes - 0 zeds

2 Rides 121 or more minutes - 12 zeds

What is the correct total amount due?

zeds



ZCycle Bike-Sharing		
ACCOUNT NUMBER 271828		
Membership Fee		Zeds
1 Month		20
Rides		
10 Up to 60 minutes		10
0 61 – 120 minutes		0
2 121 or more minutes		12
TOTAL AMOUNT DUE		42

The third question requires students to find a mistake in an invoice issued by the bike sharing app. Students should recognise that rides up to 60 minutes are free and then compute the correct total amount due (32). Full credit is granted to students who both select B (10 Rides Up to 60 Minutes - 10 zeds) and enter 32. Students who do only one of these things obtain partial credit.

Unit Name	ZCycle
Item Code	F306Q03
Content	Money and transactions
Process	Identify financial information
Context	Individual
Item Format	Open Response - Computer Scored
Level estimated from 2018 Field Trial	3 – partial credit - 4 – full credit

Question 4

PISA 2018

ZCycle
Question 4 / 4

▶ How to Use the ZCycle App

Refer to the ZCycle app on the right. Click on a choice and then type an explanation to answer the question.

Julie's friend Alex is starting a temporary job that will last for 8 months. He has enrolled in ZCycle with an annual membership so he can ride to and from work. The ride takes between 50 to 65 minutes depending on traffic conditions.

Was it a good financial choice for Alex to select the annual membership?

Yes
 No

Explain your answer.

ZCycle
Bike-Sharing

Membership Fee		Zeds
<input type="radio"/>	Annual	
<input type="radio"/>	Monthly	
	<input type="text" value="Number of Months"/>	
Number of Rides	Length of Rides (minutes)	
Unlimited	Up to 60	FREE
<input type="text"/>	61 - 120	
<input type="text"/>	121 or more	
TOTAL		

Calculate Total

In the fourth question of the unit, students are asked to evaluate the financial situation of Alex, who has taken an annual subscription, uses the bike sharing programme for 8 months and whose rides may exceed 60 minutes. Students should evaluate the consequences of taking an annual membership in Alex's situation and explain whether or not this is a good financial choice. There is no right or wrong response based solely on the information provided in the stimulus. Whether the annual subscription is a good or bad choice depends on how many rides exceeding 60 minutes Alex will make. Students should therefore reason and explain why they chose to reply Yes or No. Correct responses should take into account both the membership fee and the possible costs associated with rides over 60 minutes.

Unit Name	ZCycle
Item Code	F306Q04
Content	Planning and managing finances
Process	Evaluate financial issues
Context	Individual
Item Format	Open Response - Human Coded
Level estimated from 2018 Field Trial	5

Full Credit

Code 1: Response indicates that both the membership fee AND the possible costs associated with rides over 60 minutes have been taken into account.

Answers “Yes” and indicates that any time the commute goes over 60 minutes, Alex will have to pay an additional 4 zeds with the monthly membership.

Sample Responses:

- Yes, it would only take a few rides over 60 minutes for the monthly membership to cost more than the annual membership.
- Yes, after 5 longer rides the monthly membership will cost as much.
- Yes, after more than 5 rides over 60 minutes the monthly membership will cost more.
- Yes, he will likely have enough rides over 60 minutes in 8 months for the monthly membership to cost more.
- Yes, he won't have to worry about how many times the ride takes 65 minutes.

Answers “No” and indicates that we can't be sure how many longer rides he will need.

- No, if he only has a few 65 minute rides the monthly membership would be cheaper.
- No, if all of the rides are 50 or 60 minutes long the annual membership would be more expensive.
- No, traffic may be better than he expects so the monthly membership would be cheaper.

References

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