



Improving Numeracy (Quantitative Literacy) in Rural Communities in Karamoja  
(INIK)

# Field Numeracy - Uno How's Farm Visits™

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## Module 5



## Farming as a Business

Numeracy linked Farm Visits 17-20



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**Improving Numeracy (Quantitative Literacy) in Rural Communities in Karamoja  
(INIK)**

Cost Reimbursement Grant – Award Number 999001173

**Field Numeracy - Uno How's Farm  
Visits™**

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Module 5  
**Field Visits 17-20**

William Ian Robinson  
Lisa Osborne (Graphics)  
Heather Pitcher

**April 2017**

ISBN: 978-0-9954773-3-9

## Introduction



**Uno How's Farm Visits** is a custom-built series of farm numeracy classes, based on farm visits undertaken by a virtual extension agent called "*Uno How*".

### Module 5 – Farming as a Business

This module continues the series of 16 farm visits from "Uno How", following on from Modules 1, 2, 3 and 4 (outlined below and available as separate files or booklets).

- Visit 17 – Rural businesses (1)
- Visit 18 – Record keeping
- Visit 19 – Rural businesses (2)
- Visit 20 – Accounts and planning

The visits are represented by a series of visual graphics which introduce the topic. Each topic is then followed by an explanation with illustrations, examples and exercises (the answers to which are given at the end of this booklet).

### Module 1 – Calculating Area

- Visit 1 – Measuring your fields
- Visit 2 – Calculating the area of your fields
- Visit 3 – Calculating the area of irregular fields
- Visit 4 – Estimating the area of your farm

### Module 2 - Estimating Seed Inputs, Fertiliser and Spray requirements

- Visit 5 – Amount of seed required
- Visit 6 – Cost of seed required
- Visit 7 – Estimating the amount of fertiliser
- Visit 8 – Amount of spray required

### Module 3 - Estimating Crop Production and Storage Requirements

- Visit 9 – Estimating the number of cobs or heads in the field
- Visit 10 – Estimating the amount of crop in store
- Visit 11 – Estimating grain production in the field
- Visit 12 – Estimating storage requirements – revision

## Module 4 – Using Farm Products

**Visit 13 – What do we do with the harvest?**

**Visit 14 – Estimating losses**

**Visit 15 – Selling the product**

**Visit 16 – Decision making**

Modules 1, 2, 3 and 4 can be accessed and downloaded at:

[http://www.agritechtalk.org/Uno How Introduction.html](http://www.agritechtalk.org/Uno%20How%20Introduction.html)

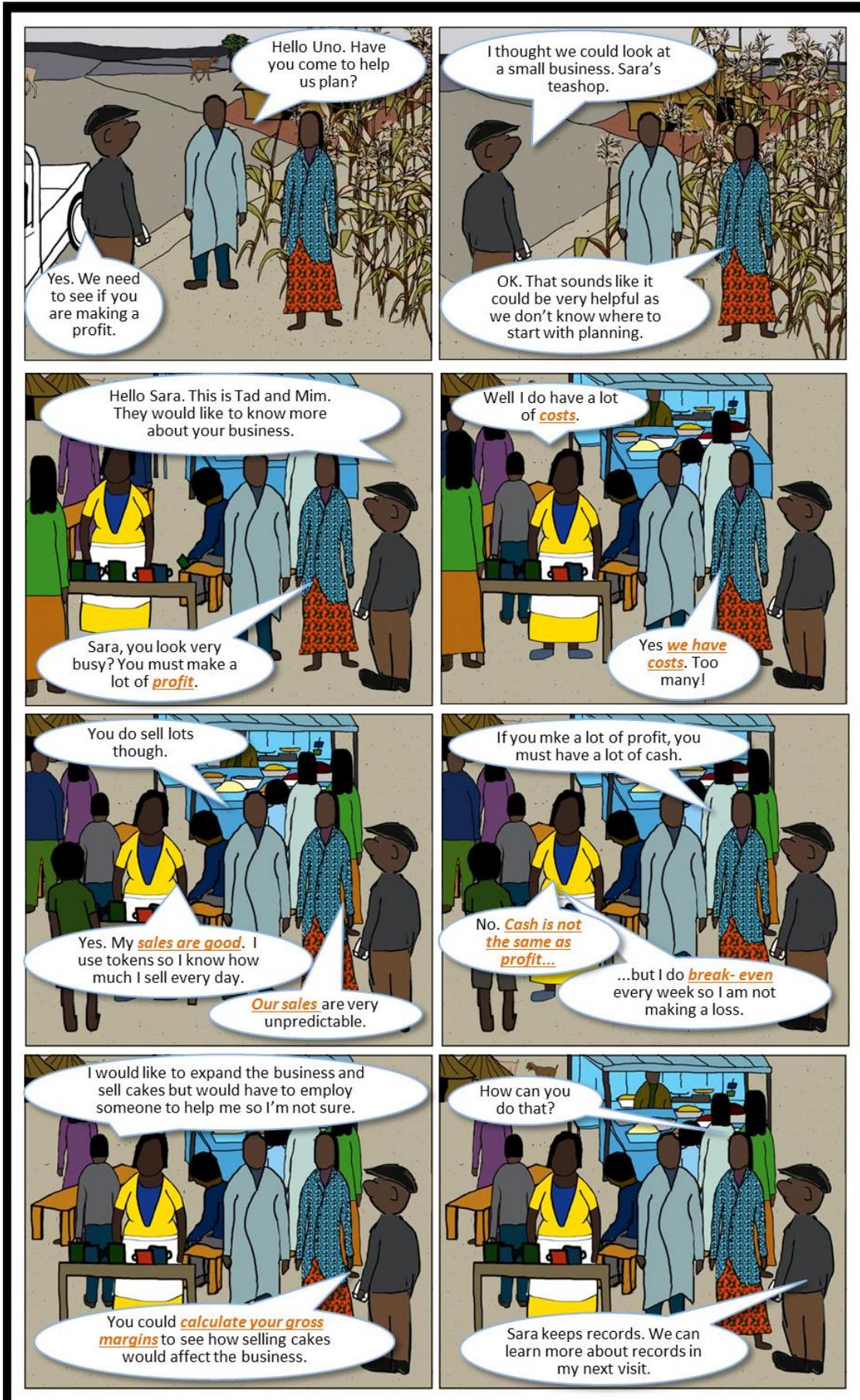
*This module is made possible by a grant from The Technical and Operational Performance Support (TOPS) Program. The TOPS Small Grants Program Improvement Award (PIA) is made possible by the generous support and contribution of the American people through the United States Agency for International Development (USAID). The contents of the materials produced through the PIA do not necessarily reflect the views of TOPS, USAID, or the United States Government.*

# Uno How's Farm Visits...

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# Uno How's Farm Visit 17... Rural businesses (1)



Completed Uno How Visit 17 – Go to Visit 18

## Uno How's Farm Visit 17

### Rural businesses

#### Profits



All businesses should plan to make a net profit. If they don't they will fail!

Businesses generally want to make a profit.

Profit is made when a business sells goods for more than the cost of producing the goods.

If the business sells goods for less than the cost of producing them, then they make a loss.

They will break-even if they sell them for the same cost of producing them, meaning they neither make a profit or loss.

Operating profit (profit before taxes are deducted) can be calculated using the equation:

$$\text{Operating Profit} = \text{Revenue} - (\text{Fixed Costs} + \text{Variable Costs})$$

or

$$\text{Profit or loss} = \text{Income} - \text{Expenses}$$

So a profit is made when income is more than expenses over a given time. This length of time is called the accounting period (the time from when the accounts start, to when they stop).

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## Uno How's Farm Visit 17

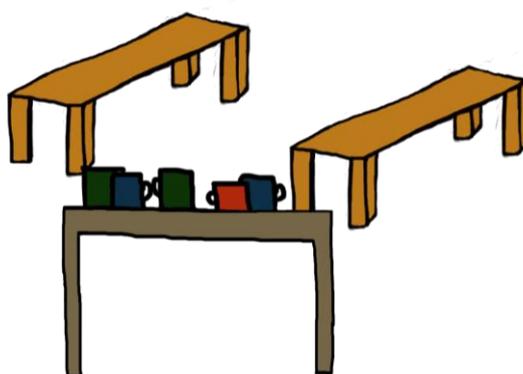
### Rural businesses

#### Calculating costs



**Businesses need to know their expenses or costs before profit can be calculated.**

Sara runs a tea shop that has been serving tea in the market for a long time. Her business is larger than Sheba's (who we looked at in Module 4). Sheba had a very simple business washing clothes and her only cost to the business was soap. Sara has many more costs in her tea shop.



She owns 20 chairs and 5 tables, a stove, a kettle, 20 cups and teaspoons and 1 pot for milk.

She pays rent once a year for her shop to the municipality.

She took out a loan when she opened the shop to buy tables and chairs

Sara currently charges \$0.20 for a cup of tea. She sells on average 100 cups of tea a day and is open for 312 days a year.

Sara, knows she has **two types** of costs. These are:

- **Fixed costs**  
*costs that do not change with the volume of work done.*
- **Variable costs**  
*costs that change* with the number of customers and the number of cups of tea they drink.

Sara separates these costs out in a table so she can see exactly how she spends her money.

**Table 1: Sara's tea shop – her current fixed and variable costs.**

Fixed costs	Variable costs (tea only)
Rent – this is paid for the year regardless of how many days a year Sara opens the shop.	Fuel for stove
Cost of buying the equipment: stove, kettle, cups, spoons, pot for milk, safe box for money	Tea, sugar and milk
Repayments on the loan she took out to buy the tables and chairs	Water for tea and washing up

### Variable costs

Fuel, ingredients and water are all **variable costs** because she needs more of them as more customers come in to drink more tea.

### Fixed costs

These costs are the same, no matter how many customers she has.

She bought the kitchen equipment with her own savings, and wants to gradually pay herself back for these items. This cost is the same, regardless of how much tea she sells, so is classed as a fixed cost.

She also borrowed money from a relative to buy the furniture, so has to make repayments on this loan (but has no interest to pay).

She also has rent and taxes to pay each month. She has not yet included a wage for herself.

Sara calculates her annual fixed and variable costs. These are shown in the table below:

**Table 2: Current fixed and variable costs (she is open 312 days a year), based on her current average sales of 100 cups of tea a day.**

Fixed cost	Amount per year	Variable cost	Amount per year	Total fixed and variable costs per year
Rent	\$300 per year	Fuel	\$624	
Equipment	\$50	Ingredients	\$936	
Repayments	\$150 to be paid over 1 year	Water	\$749	
<b>TOTAL</b>	<b>\$500</b>		<b>\$2309</b>	<b>\$2809</b>

**Her total costs are fixed costs + variable costs = \$2809.**

**Quick Test 1 – Calculating fixed and variable costs**

**1** A stall on the market makes and sells rugs. The costs are: \$2 a day for materials; \$1 a day for electricity; \$50 a year for tools/equipment; \$300 a year for rent of the stall.

The stallholder works 300 days a year. He estimates that he sells 2 small rugs at \$5 each and 1 large rug at \$8 each a day. This is the only outlet for the rugs.

Draw up a table of the stall's variable and fixed costs. What are these yearly? If profit equals income minus expenses, what is its profit for the year (*note: this is the profit before wages or taxes are taken off*)?

**2** A stallholder makes and sells tools. The costs are: \$4 a day for wages; \$45 a year for equipment and tools; \$1.50 a day for electricity; \$350 a year for rent of the stall; \$5 a day for materials.

The costs are based on the stallholder working 285 days a year. He estimates he sells 5 tools at \$4.50 each and 6 at \$2 each a day at the market.

Draw up a table of the stall's variable and fixed costs. What are these yearly? If profit equals income minus expenses, what is its profit for the year (*note: this is the profit before its wages or taxes are taken off*)?

**3** A stallholder makes and sells clothes. The costs are as follows: \$3000 a year for wages; \$75 a year for equipment; \$1 a day for electricity; \$400 a year for rent; \$3 a day for materials.

The costs are based on the stallholder working 300 days a year. She estimates that each day she sells 4 pieces of clothing at \$4 each and 8 pieces of clothing at \$1.50.

Draw up a table of the stall's variable and fixed costs. What are these yearly? If profit equals income minus expenses, what is the profit for the year (*note: this is the profit before wages or taxes are taken off*)?

**4** A stallholder sells tea and cakes. The costs are as follows: \$140 a year for equipment; \$1 a day for electricity; \$350 a year for rent; \$10 a day for ingredients and tea.

The costs are based on the stallholder working 300 days a year. She estimates that she sells 50 cups of tea at \$0.10 each and 25 cakes at \$0.30.

Draw up a table of the stall's variable and fixed costs. What are these yearly? If profit equals income minus expenses, what is the profit for the year (*note: this is the profit before wages or taxes are taken off*)?

*Note down the answers and check them with the answers at the end of this booklet*

## Uno How's Farm Visit 17

### Rural businesses

#### Tad and Mim's fixed and variable costs



Tad and Mim look at the activities that make up the fixed and variable parts of their farm business.

Tad and Mim need to think about the different costs of the farm, both fixed and variable, if they are to calculate their profit.

Farmers will only know if they have made a profit if they can:

- Calculate what they have spent producing the crops and rearing livestock i.e the value of their costs.
- Calculate a) how much they made if they sold any products; b) the value of products they have used themselves; given away i.e. the total value of their products.

Before you calculate the value you must know what you used to grow the crops or rear the livestock... and what you produced at the end of the season.

**For crops these may include:**

- **Land:** crop specific area rent and preparation (ploughing and secondary cultivations – i.e. harrowing, discing, levelling).
- **Planting material:** seeds or plants; plus associated labour/machinery hire for planting and post planting land forming.
- **Inputs:** organic or inorganic plant supplements (fertilisers).
- **Pest control:** chemical plus labour/machinery hire to apply the products.
- **Weed control:** hand labour or mechanical or chemical removal of weeds.
- **Harvesting:** all hand and mechanical operations and materials used.
- **After harvesting:** there will still be other operations for off-field operations such as transport to storage; storage; transport to market. In some cases these may include primary processing – sorting/grading/bagging. The costs of such actions are usually calculated separately so that farming gross margins connect solely to production.

**For livestock these may include:**

- **Rent of land:** this may be combined with that for the crops (*agistment* or payments in kind for grazing over farmland with straw/stover still standing).
- **Inputs:** feed, water, vaccinations, vets bills.
- **Labour:** herding and specialist labour at critical times.
- **Transport:** for taking livestock to market.

This information needs to be thought about and collected.

Uno suggests Tad and Mim make a table to show what their fixed and variable costs might be. They can add values to them later.

**Table 3: Tad and Mim's farm production costs.**

Fixed costs	Variable costs - crop specific	Variable costs - livestock
Rent (cash/kind)	Cultivation (hired)	Feed Stuffs
General all-purpose labour (usually farm family)	Labour – Crop specific	Labour – specialised (herder, shearing)
Machinery	Seeds	Vet and Medicines
Vehicles	Chemicals (fertiliser/sprays)	Water
	Selling/marketing	Selling/Marketing

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## Uno How's Farm Visit 17

### Rural businesses

#### Calculating revenue



It is important to know how much revenue or sales a business has generated. Sara uses tokens so she knows how much she has sold.

#### Calculating revenue using tokens

In Sara's tea shop they use tokens to show what they have produced and to calculate revenue by keeping track of her sales.

Sara uses tokens in the following way:

One green token represents a cup of black tea.

One red token represents a cup of tea with milk and herbs.

One blue token represents is a cup of tea with milk, herbs and sugar.

One gold token represents a cake.

A token representing each item ordered and sold is placed in a cardboard box.

At the end of each day she counts up all the different tokens in the box and enters the numbers into a table.

- As she knows the value of each item she can calculate her probable income for the day.
- Sara can check the real income against what she expected to earn.
- As she knows how much tea, sugar, herbs and milk she has put into each cup she can now check her actual use of materials against how much her stocks have been reduced.

So recording for Sara is useful because:

- a) She can check that the materials have been used correctly.
- b) Recording helps her calculate the cost of each item correctly.
- c) It enables her to see if she is charging too much or too little for her items.

Sara sells 100 cups of tea a day, for \$0.20 each.

**Sara's average daily revenue** is therefore  $100 \times \$0.20 = \$20.00$ .

**She is open for 312 days a year, so her average yearly revenue** =  $\$20.00 \times 312 = \$6240$ .

## Uno How's Farm Visit 17

### Rural businesses

#### Tad and Mim's revenue

As Tad and Mim's business is very different to Sara's, Uno suggests they write down all the sales they have made over the year.

**Table 4: Tad and Mim's sales.**

Sales	
20 sacks of maize	\$800
3 goats	\$180
Surplus fertiliser	\$23
Surplus pesticide	\$20

They have also had many other small sales.  
They have also given some grain and eggs away.  
They have also eaten lots of their produce.

These **ALL** need to be recorded as if they had not been eaten, given away or stored they could have been sold.

So their revenue should include:

- Sales
- Value of produce given away or eaten

They need to keep more detailed records to remember all their revenue! They could use tokens like Sara.

#### Using tokens for farm recording

Tad and Mim could use tokens for recording both sales and expenses.

**Recording sales:** Select the colours and types of token that you wish to use to represent the items sold and in what sort of containers you want to keep them.

You will also have to decide how frequently you need to collect the information, such as daily, weekly or by other forms of units like by area – after a hectare has been ploughed or sowed or weeded; or a sack of fertiliser used.

The table below shows some examples of the type of tokens that could be used for specific items that have been sold, eaten or given away.

**Table 5: Tad and Mim's farm production.**

Token	Produce
Large red	10 kg sorghum
Small red	1 kg sorghum
Large yellow	10 kg maize
Small yellow	1 kg maize
Large blue	1 cob fresh maize
Small blue	1 cup maize
Large green	1 goat
Small green	1 chicken

**Recording expenses**

The table below shows some examples of the type of tokens that could be used for recording specific expenses. These would be put into a pot labelled **CROPS**:

**Table 6: Tad and Mim's expenses for crops.**

Token	Area or Time	Token	Weight
Large purple	1 hectare	Large grey	1 kg fertiliser or spray
Small purple	1 local land measure	Small grey	1 local weight or volume measure of fertiliser or spray
Large brown	1 day	Large white	1 litre of fertiliser or spray
Small brown	½ day	Small white	½ litre of fertiliser or spray
Large black	1 adult-day		
Small black	1 child- day		

The same sort of data collection could be used for the livestock section of the farm using tokens and pots for activities, births, deaths, services (matings), repeat services, treatments etc. These would be put into a pot labelled **LIVESTOCK**.

Some examples are given below:

**Table 7: Tad and Mim's expenses for livestock.**

Token	Animals	Token	Feed weight
Large red	1 female breeding stock	Large blue	100 kg
Medium red	1 heifer/ gimmer	Medium blue	1 Local cup
Small red	1 female offspring	Small blue	1 local weight or volume measure (hay / straw)
Large yellow	1 male - adult		<b>Medicines and vets</b>
Medium yellow	1 steer/ hogget	small orange	1 dose
Small yellow	1 male offspring	large orange	1 vet visit
	<b>Labour days</b>		
Large green	1 adult day		
Medium green	½ adult day		
Small green	1 child day		

Tad and Mim could also use tokens to record losses that have occurred.

**At the end of the day or week totals of all the tokens are entered into recording sheets in a book. Each token is given a value and so the total expenses and total revenue can be calculated. From the weekly figures the monthly and yearly totals can then be calculated.**

**REMEMBER YOU DON'T HAVE TO USE TOKENS - IF YOU can keep your daily records by writing the amounts directly in an exercise book or notebook on a separate page for each day - then do so. We will look at keeping simple records in books in the next visit.**

**Quick Test 2 – Using tokens**

**1** A farmer uses tokens to record his livestock sales:

- Large green - 1 female sheep
- Large blue - 1 male goat
- Large yellow - 1 chicken

In his container at the end of the week he has:

- 5 large green tokens
- 10 large blue tokens
- 20 large yellow tokens

The value of each of the tokens is:

- 1 large green token = \$30
- 1 large blue token = \$40
- 1 large yellow token = \$5

Calculate the total of the farmer's livestock sales for the week.

**2** A farmer records his expenses for his crop production using tokens:

- Large red – 10 kg maize seed
- Small yellow – 1 litre of pesticide
- Small blue – 1 kg of fertiliser
- Large brown – 1 adult day labour
- Large black – 1 cost of transport to market

In the container at the end of the month he has:

- 1 large red token
- 2 small yellow tokens
- 1 small blue token
- 2 large brown tokens
- 3 large black tokens

The value of each token is:

- 1 large red token = \$20
- 1 small yellow token = \$10
- 1 small blue token = \$15
- 1 large brown token = \$5
- 1 large black token = \$10

Calculate the total of the farmer's expenses for the month.

*Note down the answers and check them with the answers at the end of this booklet*

## Uno How's Farm Visit 17

### Rural businesses

#### Profit and cash generation



Tad and Mim want to know if they are making a profit, and how much they have made, as they want some cash to spend... but profit and cash are not the same things.

#### Profit

**Operating Profit = Revenue – (Fixed Costs + Variable Costs)**

or

**Profit or Loss = Income – Expenses**

This profit is NOT the same as cash generated, as it also includes income earned by credit (where buyers have not yet paid) and the income equivalent of produce eaten or given away.

#### Cash

Tad and Mim are thinking about their silo.

They are interested in knowing how much cash they will generate. Cash is not only money that they have in their hand or house, but also money that they have in their bank account.

For them to generate cash they would need to earn more cash as income through sales than they pay out as expenses (or costs).

To work out how much cash they will generate they can use the following formula, where dates are the start and end of the time in which they are looking at their costs and sales:

**Cash generated = Cash at end date – Cash at the start date**

**So although Tad and Mim may make a profit, they may not necessarily generate cash.**

Uno shows them the following example of a business at the market to illustrate profit and cash.

Miriam and Gladys have each recently started clothes businesses. They buy and sell second hand clothes from a market stall. They each have \$1500 to start their business. Miriam bought the clothes for her stall for \$1150 in cash. Gladys paid only \$600 cash for her clothes. They each had \$50 of other expenses for the week.

**Table 8: Miriam and Gladys's cash at the beginning of their business.**

	Cash at the start	Expenses
Miriam	\$1500	\$1150 + \$50 = \$1200 (cash)
Gladys	\$1500	\$600 + \$50 = \$650 (cash)

Both stalls were set up on the same day, on the 10<sup>th</sup> June 2015.

Miriam sold her clothes for cash only.

Gladys decided to sell hers on credit, in the hope of attracting more customers who had no cash-in-hand.

Miriam and Gladys calculate their cash generated using the formula below:

**Cash generated = Cash at end date – Cash at the start date**

The table below shows Miriam and Gladys's cash generated at the end of the first week.

**Table 9: Miriam and Gladys's cash generated.**

	Cash at the start	Expenses for week 1	Income for week 1	Cash at end of week 1	Cash generated
Miriam	\$1500	\$1200	\$1600 (all cash)	\$1500 - \$1200 + \$1600 = \$1900	\$1900 - \$1500 = \$400
Gladys	\$1500	\$650	\$1500 (all credit)	\$1500 - \$650 = \$850	\$850 - \$1500 = \$-650

We can see that Gladys has not generated any cash (shown by the negative cash total). Miriam has generated \$400 of cash.

Is this the same as their profit?

**Profit or Loss = Income - Expenses**

The table below shows Miriam and Gladys's profit for the first week – they have not included their wages or taxes in this profit calculation.

**Table 10: Miriam and Gladys's Profit.**

	Profit = Income - Expenses
Miriam	\$1600 - \$1200 = \$400
Gladys	\$1500 - \$650 = \$850

From this table we can see that Gladys has made more profit than Miriam, but because she sold her clothes on credit she has not generated any cash.

Miriam on the other hand did not sell anything on credit. Her profit is the same as her cash.

Different transactions affect profit and the generation of cash. Gladys sold her clothes on credit. This increased her profit but did not have an effect on cash generation.

The figure below shows how different transactions affect profit and cash.

**Figure 1: Effect of transactions on profit and cash.**

	Effect on profit	Effect on cash
Making a cash sale (presuming at break-even point or above).		
Making a credit sale (presuming at break-even point or above).		NONE
Receipt of a loan	NONE	
Repayment of a loan	NONE	
Receiving cash from a debtor	NONE	

**Quick Test 3 – Cash generation and profit**

**1** Two stallholders sell tools.

Stallholder 1: had \$300 cash to set up a business. He had \$200 of expenses. In the first week he sells 20 tools for \$20 each, all for cash.

Stallholder 2: had \$200 cash to set up a business. He had \$100 of expenses. In the first week he sells 75 tools for \$10 each. 25 of the tools were paid for in cash, while 50 of the tools were sold on credit.

How much profit do the businesses make in the first week? How much cash have the businesses generated at the end of the week?

**2** Two stallholders sell cakes.

Stallholder 1: had \$100 cash of her own money to set up a business. She spends \$30 on expenses. In the first month she sells 100 cakes for \$0.50 each, all for cash.

Stallholder 2: had \$150 cash to set up a business. She spends \$75 on expenses. In the first week she sells 300 cakes for \$0.30 each, 100 of these are sold on credit.

How much profit do the businesses make in the first week? How much cash have the businesses generated at the end of the week?

*Note down the answers and check them with the answers at the end of this booklet*

## Uno How's Farm Visit 17

### Rural businesses

#### Break-even point



She will know she is making a profit if she sells more than her break-even point each week.

**Break-even point is the point when total costs equal total revenue.**

There is no net gain or net loss. If the business breaks-even it will not have made a profit, but will not have made a loss either.

Sara knows that if she can break-even every day, she will not be making a loss.

Her total costs for the year = **\$2809**.

**She works for 312 days a year.**

**This means her costs are \$9 for each day she is open (\$2809/312).**

**So Sara's break-even point is \$9/day.**

If she sells more than \$9/day of tea she knows she will be making a profit.

Sara can calculate her operating profit (profit before tax is deducted) for the year:

**Operating Profit = Revenue – (Fixed Costs + Variable Costs)**

Sara's average daily revenue is  $100 \times \$0.20 = \mathbf{\$20.00}$ .

She is open for 312 days a year, so her yearly revenue =  $\$20.00 \times 312 = \mathbf{\$6240}$ .

**Operating Profit = \$6240 – \$2809 = \$3431 per year.**

**Sara is making an operating profit of \$3431 a year.**

Her **net profit** will be her operating profit minus **the wage for herself (because she has not included this yet), and any taxes** that she may have to pay.

**Quick Test 4 – Calculating break-even points**

**1** A farmer sells 50 kg bags of sorghum grain at the market. He sells the bags for \$25 each. He estimates his total costs for producing the grain were \$500. How many bags of grain would he need to sell to break-even?

**2** A baker sells loaves of bread for \$0.50 each. He opens his stall for 300 days a year. He sells on average 20 loaves a day.

His fixed costs for the year are \$1000. His variable costs are \$2250 per year.

How many loaves of bread would he need to sell each day to break-even?

Does he make a profit if he sells 20 loaves a day?

**3** A stallholder sells rugs for \$1 each. She opens her stall for 250 days a year. She sells on average 17 rugs a day.

Her fixed costs for the year are \$750. Her variable costs are \$3000 per year.

How many rugs would she need to sell each day to break-even?

How much profit does she make if she sells 17 rugs a day?

**4** A blacksmith sells hoes for \$5 each. He is open for 320 days a year and sells on average 5 tools a day.

His fixed costs for the year are \$2250. His variable costs are \$2000 per year.

How many tools would he need to sell each day to break-even?

If he sells 5 tools a day does he make a profit?

*Note down the answers and check them with the answers at the end of this booklet*

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## Uno How's Farm Visit 17

### Rural businesses

#### Sara's gross margins



Sara knows that her **revenue** must be higher than her **costs** if she is to make enough money to live. She would like to employ someone to help her in the shop. Can she afford it?

Gross margins allow you to:

- Compare performance of enterprises within the same business.
- Compare performance of similar businesses with different fixed costs.

Sara would like to take on someone to help her in the shop. She is not sure if she can afford to, but thinks she could start to sell cakes to help cover the extra cost.

Uno suggests that Sara works out her gross margins **to see if employing someone to help would result in increased profit.**

She can work out gross margins using the following calculation:

$$\text{Gross Margin} = \text{Revenue (Gross Income)} - \text{Variable Costs}$$

Sara's average yearly **revenue** is currently \$6240.

Her **variable costs** per year are \$2309.

So her yearly **gross margin** is  $\$6240 - \$2309 = \$3931$

This can also be expressed as a % using the following calculation:

$$\text{Gross Margin (\%)} = \frac{\text{Revenue (Gross Income)} - \text{Variable Costs}}{\text{Revenue (Gross Income)}} \times 100$$

$$\text{Gross Margin (\%)} = \frac{3931}{6240} = 0.63 \times 100 = 63\%$$

If she started selling cakes as well, she would still have the same fixed costs, because a friend has offered her some baking equipment and plates, and her stove has an oven, **BUT** she would have an additional set of variable costs. The table below shows her additional variable costs:

**Table 11: Sara's tea shop – her extra variable costs if she produced cakes and hires some help.**

<b>Variable costs (cakes only)</b>
Fuel for stove (extra)
Flour, sugar, milk for cakes
Water for washing up (extra)
Waitress labour

Sara adds these variable costs into her business plan: She expects to sell 25 cakes a day and will still open for 312 days a year.

**Table 12: Anticipated fixed and variable costs (if open 312 days a year), based on her current average sales of 100 cups of tea a day, and expected sales of 25 cakes a day.**

Fixed cost	Amount per year	Variable cost	Amount per year	Total and variable fixed costs per year
Rent	\$300 per year	Fuel	\$1248	
Equipment	\$50	Ingredients	\$1560	
Repayments	\$150 to be paid over the years	Water	\$998	
		Waitress	\$1560	
<b>TOTAL</b>	<b>\$500</b>		<b>\$5366</b>	<b>\$5866</b>

If Sara continued to charge \$0.20 for a cup of tea and charged \$0.40 for a cake:

Her anticipated average daily revenue would be  $(100 \times \$0.20) + (25 \times \$0.40) = \$30$

**Her yearly revenue would be  $\$30 \times 312 = \$9360$**

She can now work out her expected gross margin:

**Gross margin = Revenue (value of output) – Variable Costs**

**Gross margin =  $\$9360 - \$5366 = \$3994$**

**Her gross margin per year would be  $\$3994$ .**

**Her gross margin % would be  $3994/9360 \times 100 = 0.43 \times 100 = 43\%$**

Her gross margin from just selling tea was \$3931, so she can expect to make an extra \$63 a year (\$3994 – \$3931) if she hired a waitress and sold cakes.

Her gross margin % for just selling tea was 0.63%. This decreases to 0.43% when she begins to sell cakes as well.

In the longer term, if she is to stay in business, her sales must also cover her **fixed costs**, as well as **her variable costs** and leave her with something left over. She will need to ensure she is still making a net profit.

**Net Profit (net income) = Revenue – (Fixed Costs + Variable Costs) – taxes**

**Net income = \$9360 – \$5866 – taxes = \$3494 – taxes**

Sara will make a net profit of \$3494 a year (minus taxes) providing she sells 100 cups of tea and 25 cakes a day.

Uno tells Sara that net margins can also be used to compare businesses.

### Net margins

**Net margin as a % of gross income** is used to compare the efficiency of similar types of business with each other (this is known as "**margin analysis**"). It is a measure of how much of a business's revenue is profit. Unlike gross margins, net margins take account of all the business's expenses.

**Net Margin (%) = Net Profit / Revenue x 100**

**Net margin %** can be useful in showing which businesses are most effective at converting sales into profits. The higher the net margin % is, the more effective the company is at converting revenue into profit.

In Sara's case, based on her current profits and sales from just selling tea, her net margin % is:

$$\$3431 / \$6240 \times 100\% = 55\%$$

If she began selling cakes and employed someone her net margin % would be:

$$\$3494 / \$9360 \times 100\% = 37\%$$

This shows that Sara's *margin* would decrease if she employed a waitress and sells cakes. This means her business would be less efficient, but she would still be making a profit, so it is something she could consider.

*Note: The margin that Sara has calculated has not accounted for any taxes that she may have to pay.*

**Quick Test 5 – Calculating gross margins and net margins**

**1** Ann has a business washing clothes. She buys her soap from a friend and estimates this costs \$3 a day. She has no other expenses. She washes clothes for 300 days a year.

She charges \$1 per item for washing. Last year she washed approximately 10 items a day.

What was her net profit (income)?

Calculate her yearly gross margins.

If she employed someone for \$2 a day, for 200 days, and increases the amount of items that are washed by 40%, keeping the price the same, how would her costs and revenue change?

What would be her new yearly gross margin? What would her new net profit be?

Calculate the net margins for both before and after Ann takes on an employee. How do they compare?

**2** A baker sells loaves for \$0.50. He estimates he sells 75 loaves a day. His expenses per year are: electricity \$300; rent \$200; wages for himself \$400; ingredients \$1000; fuel for oven as needed \$300.

What is his net profit (income) if he works 320 days a year?

Calculate his yearly gross margin.

If he employed someone for \$2 a day, and increased the amount of loaves he sells to 120 a day (still at \$0.50 per loaf), what would his new costs and revenue be?

Calculate his new yearly gross margin and new net profit.

Calculate the net margins for both before and after the baker takes on an employee. How do they compare?

Would it be wise for the baker to take on somebody to help?

*Note down the answers and check them with the answers at the end of this booklet*



## Uno How's Farm Visit 18

### Basic record keeping

#### Introduction to recording



Tad and Mim will need to keep records for several aspects of their business. It is important to note down all changes to the business.

Having a **record of farm finances, or transactions** will enable you to calculate what it has cost to produce your products, and how much revenue has been generated from those products. This allows you to make informed decisions about what to do with your harvested crops or livestock – most especially the price for which you should be selling it.

You should keep the records in an exercise book – kept in a safe place in the house. You must decide:

- a. **What things you need to record?**
- b. **How often you need to record them?**

Begin at the start of the season and end after the harvest is over.

*Note: If you are going to calculate gross margins, it is important to record costs for each crop separately, so that the gross margin can be calculated for a particular crop or livestock type. We will look at more complex recording in Visit 20 and in-depth gross margins for larger enterprises in Annex 2.*

#### What to record:

1. **Revenue** from the sale of produce.
2. **Costs and the Outputs for each farm activity.** **Outputs** are the products that are produced and that can be sold, eaten, given away. It is better to record costs and outputs for crops and livestock separately.
3. **Loans.** You need to record any loans you have taken out, or any loan payments you have made, as well as any money that is owed to the business.
4. **Capital.** Record any money that is invested in your farm during the recording period.

**When keeping records, make sure that you update the information whenever one of the above changes.**

When recording farm finances it is common to record each transaction in a table, with the type of transaction and the **date**. Transactions may be recorded daily, or if it is a very small business and there are not very many transactions, they may be recorded weekly.

A calendar is useful as a reference when recording, so that dates can be checked. It is important to record the date as the records may be used the following year when planning, or cross-checking prices.

A simple calendar is shown below. The calendar may vary depending on region and a calendar for your specific region and for the correct year should be obtained from your field officer.

JANUARY 2017						
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

FEBRUARY 2017						
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28					

MARCH 2017						
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

APRIL 2017						
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

MAY 2017						
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

JUNE 2017						
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

JULY 2017						
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

AUGUST 2017						
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

SEPTEMBER 2017						
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

OCTOBER 2017						
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

NOVEMBER 2017						
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

DECEMBER 2017						
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

# Uno How's Farm Visit 18

## Basic record keeping

### Recording revenue

Sara has used coloured tokens to keep a record of the number of cups of tea and cakes she sells. She adds up the tokens at the end of the day and enters the figures into her record book.

As she only sells tea and cakes, the record sheet she draws in her book is quite simple. She can enter her daily totals and then add these up at the end of each week. At the end of the month she can then just add up the weekly totals.

**Table 13: Sara's sales of tea and cakes for January 2017.**

Month: January 2017			
Date:	Product sold		Total sales
	Number of teas sold	Number of cakes sold	
1 st			
2 nd			
3 rd			
4 th			
5 th			
6 th			
7 th			
Total for the week			
8 th			
9 th			
10 th			
11 th			
12 th			
13 th			
14 th			
Total for the week			
15 th			
16 th			
17 th			
18 th			
19 th			
20 th			
21 st			
Total for the week			
22 nd			
23 rd			
24 th			
25 th			
26 th			
27 th			
28 th			
Total for the week			
29 th			
30 th			
31 st			
Total for part week			
Total for month			

Sara keeps a record for each month and then at the end of the year she puts the monthly figures into another table so she can calculate totals for the year.

**Table 14: Sara's sales of tea and cakes for the year 2017.**

Year: Sales for 2017	
Month	Monthly total
January	
February	
March	
April	
May	
June	
July	
August	
September	
October	
November	
December	
<b>Total for the year</b>	

Tad and Mim's book will be slightly different, as they have sold different produce.

**Table 15: Part of Tad and Mim's recording sheet, showing the sale of produce for week 1 in January 2017.**

Month: January 2017			
Date:	Product sold/eaten/given away		Total sales
	Sorghum	Maize	
1 st			
2 nd			
3 rd			
4 th			
5 th			
6 th			
7 th			
<b>Total for the week</b>			

Like Sara, Tad and Mim will fill in the record sheet. At the end of each week they will work out their total sales. At the end of the month they will add the weeks to get monthly totals, and finally add the monthly totals to get the yearly totals.

*As noted earlier, if the records are going to be used later for calculating complex gross margins then they would need to be very detailed. Tad and Mim however do not wish to calculate gross margins at the moment. If they wish to do so later they could use a very basic gross margin calculator.*

Uno shows Tad and Mim an example for sales in June 2016 for a farmer who lives in Tad and Mim's village.

In June, in week 1 he has sold 50 kg of sorghum for \$30; 1 goat for \$40; 3 chickens for a total of \$9; and 20 kg of millet for \$25. He gave 10 kg of maize to a neighbour. He must include this 10 kg of maize at its estimated worth, which is \$6, because if he had not given it away he could have sold it.

The table below shows his record sheet for the first week of June 2016.

**Table 16: The farmer's recording sheet, showing week 1 for produce sold and given away for June 2016.**

Month: June 2016						
Date:	Product sold/eaten/given away					Total sales
	Sorghum 50 kg bag	Millet 20 kg bag	Maize 10 kg bag	Goat	Chicken	
1 st	\$30 (sold)					\$30
2 nd						
3 rd		\$25 (sold)				\$25
4 th			\$6 (g/away)			\$6
5 th				\$40 (sold)	\$3 x 3 = \$9 (sold)	\$49
6 th						
7 th						
<b>Total for the week</b>						<b>\$110</b>

The farmer will keep his records each week, then calculate his monthly totals and then his total for the year.

### Quick Test 6 – Recording revenue

**1** A farmer records the following for April 2016:

- 3<sup>rd</sup> April: Sold 20 kg maize for \$10
- 5<sup>th</sup> April: Sold 10 chickens for £30
- 10<sup>th</sup> April: Sold 50 kg millet for \$60
- 12<sup>th</sup> April: Took 5 kg of maize and 5 kg of millet from store for eating
- 20<sup>th</sup> April: Sold 3 goats for \$90
- 29<sup>th</sup> April: Sold 5 chickens for \$10

Put these into a record sheet for the month of April, 2016.

**2** A farmer records the following for July 2016:

- 2<sup>nd</sup> July: Sold 30 kg sorghum for \$30
- 7<sup>th</sup> July: Sold 10 kg ground nuts for £15
- 12<sup>th</sup> July: Gave away 30 kg millet.
- 14<sup>th</sup> July: Sold 30 kg millet for \$40
- 18<sup>th</sup> July: Sold 2 goats for \$70
- 26<sup>th</sup> July: Sold 10 chickens for \$20, and 10 kg of maize for \$15

Put these into a record sheet for the month of July, 2016.

*Note down the answers and check them with the answers at the end of this booklet*

# Uno How's Farm Visit 18

## Basic record keeping

### Recording costs

Expenses can be recorded in a table similar to the one below. This example shows one week of the recording sheet. Weekly totals are added up and transferred to a monthly sheet, shown in Table 18.

**Table 17: Expenses for January 2017, week 1.**

Month: January 2017				
Date:	Fixed costs		Variable costs	
	Item	Cost	Item	Cost
1 st				
2 nd				
3 rd				
4 th				
5 th				
6 th				
7 th				
Weekly total			Weekly total	

**Table 18: Expenses for January 2017**

Year: Expenses for 2017			
Month	Fixed costs	Variable costs	Total costs
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			
Total for the year			

Previously, Sara recorded her fixed and variable costs in a in a simple table.

**Table 19: Sara's fixed and variable costs.**

Fixed cost	Amount per year	Variable cost	Amount per year	Total fixed & variable costs per year
Rent	\$300 per year	Fuel	\$624	
Equipment	\$50	Ingredients	\$936	
Repayments	\$150 to be paid over 1 year	Water	\$749	
<b>TOTAL</b>	<b>\$500</b>		<b>\$2309</b>	<b>\$2809</b>

Tad and Mim can use a similar table. They can remember most of their costs, and with Uno's help they draw up a table of their estimated fixed and variable costs.

**Table 20: Tad and Mim's fixed and variable costs.**

Fixed cost	Amount per year	Variable cost	Amount per year	Total fixed & variable costs
Rent	Tad and Mim do not pay any rent for their farm.	Seed	\$45	
Equipment	\$20	Empty sacks	\$23	
Loan repayments	Tad and Mim do not have a loan	Water	\$0	
Salary	Tad and Mim do not pay themselves a salary.	Fertiliser	\$135	
		Pesticide	\$20	
		Casual labour for people helping on the farm	\$0	
		Transporting to market for crops & livestock	\$40	
		Maintenance costs for materials for cribs	\$10	
		Feed for livestock	\$200	
		Vets bills and medication for livestock	\$20	
<b>TOTAL</b>	<b>\$20</b>		<b>\$493</b>	<b>\$513</b>

### Quick Test 7 – Recording expenses

**1** Put the following into an expenses sheet for March 2016, separating items into Fixed and Variable Costs:

- 1<sup>st</sup> March: Used 10 kg of own maize seed, valued at \$10
- 3<sup>rd</sup> March: Bought 5 goats for £50. Paid \$50 for trailer
- 5<sup>th</sup> March: Paid \$5 to neighbour for ½ days labour
- 10<sup>th</sup> March: Bought one hoe and one mattock for a total of \$10
- 15<sup>th</sup> March: Bought 5 kg of wheat for chicken food for \$5
- 20<sup>th</sup> March: Bought 5 kg fertiliser for \$10

**2** Put the following into an expenses sheet for September 2016, separating items into Fixed and Variable Costs:

- 3<sup>rd</sup> September: Bought a silo for \$100
- 5<sup>th</sup> September: Paid \$10 for 2 days labour to neighbour
- 10<sup>th</sup> September: Bought 20 empty sacks for \$5
- 20<sup>th</sup> September: Bought 5 kg of maize for chicken food for \$5
- 22<sup>nd</sup> September: Bought 1 goat for \$20
- 23<sup>rd</sup> September: Paid \$10 for transport to market

*Note down the answers and check them with the answers at the end of this booklet*

## Uno How's Farm Visit 18

### Basic record keeping

#### Recording capital and liabilities

##### Liabilities

These can be listed in a simple table.

Sara has a loan, so this can go under her liabilities.

**Table 21: Sara's liabilities.**

Liabilities	Amount
Loan	\$150
Interest	\$0
<b>TOTAL</b>	<b>\$150</b>

Tad and Mim do not have a loan but they do often borrow seed from neighbours, which they then pay back at a later date, so these would be recorded.

##### Capital

Sara has not put any capital into her firm recently. When she started the business several years ago she took out a loan to buy the tables and benches. She also put in money to buy the equipment: stove, kettle, cups, spoons, pot for milk and safe box for money bought. These have been recorded under fixed costs. If a business puts money into a firm initially they can record this as a loan from themselves.

Tad and Mim own their farm. They would put the value of the farm down as capital as it could potentially be sold and so they could get cash.

They have not been able to afford to put any financial investment into the farm, therefore they would only record the value of the farm as capital.

## Uno How's Farm Visit 18

### Basic record keeping

#### Tad and Mim's estimated profit from the farm



Tad and Mim have calculated their fixed and variable costs and their expenses.

They can now work out an estimate of their profit for the year.

Uno has helped Tad and Mim put together records for their expenses and their gross income from sales over the past year. From these they can **calculate an estimate of their profit** for the past year.

Tad and Mim have already calculated their fixed and variable costs (*page 32 – Table 20*)

**Fixed costs = \$20. Variable costs = \$493**

Tad and Mim have had to estimate some of their revenue, as they did not record their sales.

**Their sales are estimated at \$1023.**

**They have estimated they have had an additional \$1165 in revenue for seed, food for chickens, gifts and home consumption.**

**Their total revenue is therefore \$2188.**

Tad and Mim can now calculate their operating profit (profit before tax is deducted) for the year:

**Operating Profit = Revenue – (Fixed Costs + Variable Costs)**

Remember:

If **total sales are greater than the cost of production** then a profit is made.

If **total sales are less than the cost of production** then a loss is made.

If **total sales are the same as the cost of production** then the business is at break-even point.

Their **net profit** will be their operating profit minus any taxes that they may have to pay.

*Note:* Normally the cost of the business owners own time is not put into the accounts as any profit left at the end is theirs. The profit is the money that they get for the work they have done and what they can use to re-invest or save.

**Tad and Mim's operating profit = \$2188 – \$513 = \$1675**



**Tad and Mim have made a profit.  
Remember this is not the same as cash.  
Should they buy the silo?**

They do not have any loans and do not owe anyone any grain, so do not have any liabilities.

They therefore decide to buy a silo, as they now have enough money in their bank account to buy a silo.

### Quick Test 8 – Calculating profit (or loss) - revision

**1** A farmer sells some maize for \$900. He estimates he has spent \$600 in production costs.

Has he made a profit or loss? How much profit or loss has he made?

**2** A farmer's production costs for his sorghum are \$500. He has sold \$100 worth of sorghum already and is expecting to sell the remainder of his sorghum for \$200.

Will he make a profit or loss? How much profit or loss will he make?

**3** A farmer has broken-even this year with his millet. His production costs for the millet were \$450.

How much were his total sales of millet?

**4** A farmer's total sales from sorghum are \$825. He has made a profit of \$700 on his sorghum.

How much were his production costs?

*Note down the answers and check them with the answers at the end of this booklet*

Back to Uno How Farm Visit 18

## Uno How's Farm Visit 19... Rural businesses (2)

The comic strip consists of six panels arranged in a 3x2 grid. The characters are Uno (a man in a grey shirt and cap), Tad (a man in a white lab coat), Mim (a woman in a blue patterned top and orange skirt), and Jon (a man in a white shirt and blue pants, the blacksmith). The background shows a rural setting with a white car, trees, and a blacksmith's forge.

**Panel 1 (Top Left):** Uno says, "Hello Uno." Tad and Mim respond, "Hello Tad. Hello Mim. I am on my way to see Jon, the blacksmith, to see how his business is doing. Do you want to come?"

**Panel 2 (Top Right):** Uno asks, "Will it help us?" Tad and Mim reply, "Yes. We are going to talk about pricing products." Uno says, "That sounds useful."

**Panel 3 (Middle Left):** Tad and Mim introduce Uno to Jon: "Hello Jon. This is Tad and Mim. They have come with me to learn more about business." Jon says, "Hello." Uno asks, "Jon. How do you price your products?"

**Panel 4 (Middle Right):** Jon explains, "I work out how much each item costs to produce, then I know what to sell them for." Uno asks, "So you look at your variable and fixed costs..."

**Panel 5 (Bottom Left):** Uno continues, "Yes and my assets and liabilities And don't forget depreciation." Jon replies, "Oh, there's lots think about..." Uno asks, "What's depreciation?"

**Panel 6 (Bottom Right):** Uno says, "But your prices are very reasonable Jon." Jon responds, "Our prices change alot. Sometimes they are high, sometimes low." Uno asks, "So you don't have much stock then Jon?" Jon replies, "No not really. I try and sell all of what I make and I buy materials when I need them." Uno asks, "How about your goats. You have had them years." Jon replies, "Yes that's true. And the chickens..." Uno concludes, "You must think about all of your business."

Completed Uno How Visit 19 – Go to Visit 20

## Uno How's Farm Visit 19

### Rural businesses (2)

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#### Jon's business

Jon has opened a new forge to make and mend tools. He has needed to prepare many things:



- A hut for his tools, equipment and materials.
- An anvil made from scrap metal
- Mechanical bellows, locally made from leather and wood.
- Tools, such as hammers, files, vices and so on.

Although he has acquired the larger pieces of equipment locally at little cost, he has had to take out a loan to buy many of his tools and to buy his supply of steel.

Steel in his area is mostly from scrap, but is still expensive and harder to work than the raw material. He decides he will buy his charcoal locally from the village.

Compared with Sara's tea shop, he has additional and higher costs. He also has a longer time-lag between purchasing equipment and materials and earning income from sales.

So, in order to establish the business, Jon has taken a **long term loan** (2 years) with a simple interest rate of 12% per year with monthly repayments.

We will take a closer look at the Jon's business in this visit as Tad and Mim are interested in how Jon prices his products.

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## Uno How's Farm Visit 19

### Rural businesses (2)

#### Introduction to the pricing of products



**Pricing products is an important part of business. If products are priced too high they may not sell. Price products too low and the business may make a loss.**

**Pricing products** can be based on several factors:

- The break-even point of the business
- The price of similar products in the market place
- The price that the business sets based on profits that the business would like to make.

Sara knows her break-even point, so when she sells her cups of tea she knows she is unlikely to make a loss. She could have calculated her costs, decided on the profit she would like to make for the year, and then calculated the price she would need to charge per product to achieve that profit.

The prices of other products on the market need to be taken into account. It may be that the seller's product is unique, i.e, there are no other products like it in the market and so there will not be any **competition**. In this case, the seller could charge more than if there are competitors. The more competitors, the more important it is to take notice of other people's prices.

Prices may also vary over the year. This is particularly the case in agriculture, where demand and supply for crops and livestock will change with the seasons. It is therefore important to check competitors' prices regularly.

It may be that a business does not want to just break-even. It may plan to invest into the business and so need to make more money, so there is money left over to pay for the investment. It will know the profit it needs to make and so will price accordingly. This is likely to be more successful if they have fewer competitors. With careful planning it may be able to sell their products at different times of year, when supply is low and demand is high, meaning that prices will be high.

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## Uno How's Farm Visit 19

### Rural businesses (2)

#### Jon's variable and fixed costs



Before he prices his products Jon looks at all of his costs. Jon's costs are much more complicated than Sara's. He starts with his variable costs.

#### Jon's variable costs

Let's take a closer look at the different types of variable costs that a business like Jon's may have:

**Table 22: Variable cost types for a business similar to Jon's.**

Type of variable cost	Description	Jon's variable cost
<b>Direct materials</b>	The cost of materials used directly in the manufacture of goods	In Jon's case these are the costs of steel. He expects to need 2 tonnes per year.
<b>Utilities</b>	Electricity, gas, phone use etc. may be considered as variable costs if their use goes up with production	Jon expects to buy 20 bags of charcoal a week – because this amount will depend on how much he produces, it is classed as a variable cost.
<b>Other variable costs</b>	Contract/casual work; unskilled labour; stall-fees; commissions; transport etc.	Jon will often employ a skilled blacksmith to help him if he has a big job. He has to pay \$20 per day.

Jon lists his variable costs with the amount they cost per year.

**Table 23: Jon's variable costs per year.**

Variable cost	Calculation	Amount per year
<b>Steel</b>	2 tonnes	\$ 2000.00
<b>Charcoal</b>	\$1 x 20 x 52	\$1040.00
<b>Wood for tool handles</b>	\$1.50 x 300 tools	\$450.00
<b>Contract work</b>	\$20 x 50 days	\$1000.00
<b>Transport</b>	\$20 x 26 trips a year	\$520.00
<b>Stall-fees</b>	\$10 x 26 sales a year	\$260.00
<b>Total variable costs</b>		<b>\$5270.00</b>

### Jon's fixed costs

Once again let's take a closer look at the different types of costs that a business like Jon's may have, this time their fixed costs:

**Table 24: Fixed cost types for a business similar to Jon's.**

Fixed cost	Description	Jon's fixed cost
<b>Rent</b>	The periodic charge for the use of real estate owned by a landlord.	Jon pays no rent for his hut.
<b>Salaries</b>	Salaries are fixed costs when the same amount is paid periodically, regardless of the hours worked.	Jon has two young employees, who he is training in blacksmith skills. He pays them \$150 each per month.
<b>*Loan repayments with interest</b>	This is the cost of funds loaned to a business by a lender. This is only a fixed cost if a fixed interest rate was incorporated into the loan agreement.	Jon's interest rate is fixed at 12% of the loan per year.
<b>Utilities</b>	This is the cost of electricity, gas, phones, and so forth. Utility costs have a variable element but are often fixed.	Jon has no electricity but he has agreed to buy 3 barrels (200 litres) of water a week from a water-supplier.
<b>Insurance</b>	This is a periodic charge under an insurance contract.	Jon has no insurance...but he should consider it in the future.
<b>Property Taxes</b>	This is a tax charged to a business by the local government, which is based on the cost of its assets.	There is no tax on Jon's hut.
<b>Depreciation*</b>	This is the gradual charging to expenses of the cost of a tangible asset (such as production equipment) over the useful life of the asset.	Jon's tools were expensive but should last for 10 years. Therefore, the cost of the equipment is divided over a period of 10 years. But he should also put money aside regularly to replace/ renew them.

*\*Interest on loans and depreciation are covered in more detail in later lessons.*

Jon puts his estimated fixed costs into a table so he can use the information when pricing his products.

**Table 25: Jon's fixed costs per year.**

Fixed cost	Calculation	Amount per year
<b>Rent</b>	\$0	\$0.00
<b>Salaries</b>	$2 \times \$150 \times 12$	\$3600.00
<b>Loan repayments</b>	$\$5000 \div 2$	\$2500.00
<b>Interest on loan</b>	$(12\% \times \$5000) \div 2$	\$300.00
<b>Utilities</b>	Water: $\$3 \times 3 \times 52$	\$468.00
<b>Depreciation</b>	10 years depreciation on equipment costing \$4000	\$400.00
<b>TOTAL</b>		<b>\$7268.00</b>

**Quick Test 9 – Fixed and variable costs - revision**

**1** A business has the following costs per year:

Electricity \$200; rent \$200; ingredients \$1500; casual labour \$80; water \$100; oven payments \$300; materials \$150, depreciation on oven \$30; interest on loan \$20.

List the costs under variable and fixed costs and calculate the totals of each.

**2** A farmer has the following costs per year:

Transport \$30; stall rental \$100; tools \$150; casual labour \$50; fertiliser \$40; seeds \$30; depreciation on tools \$1.50; interest on a loan taken out last year \$10.

List the costs under variable and fixed costs and calculate the totals of each.

**3** A stallholder has the following costs per year:

Wood \$500; stall rental \$100; tools \$100; other materials \$150; casual labour \$50; water \$30; depreciation on tools \$1.

List the costs under variable and fixed costs and calculate the totals of each.

**4** A smallholder has the following costs per year:

Rent \$100; spray \$20; tools \$100; livestock \$450; casual labour \$20; transport \$40; empty sacks \$10; seed \$50; fertiliser \$60; depreciation on tools \$5.

List the costs under variable and fixed costs and calculate the totals of each.

*Note down the answers and check them with the answers at the end of this booklet*

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# Uno How's Farm Visit 19

## Rural businesses (2)

### Jon's assets and liabilities



In business, assets and liabilities need to be calculated as they affect the business's capital.

**Assets** and **liabilities** are important because:

#### Capital = Assets - Liabilities

In the accounts of a business two kinds of assets are recorded:

#### Current assets

These are:

- Cash in your hand or in the bank.
- People owing you money.

These assets would only remain in the business for the *current accounting period* (the period which is being analysed, which is usually 1 year).

The value of these assets will change as you use money or debts which are repaid to you within the year. We therefore call these **current assets**.

#### Fixed assets

The second kind of asset is tools, furniture, vehicles etc. They remain in the business for a longer period than current assets and cannot easily be converted to cash. We therefore call them **fixed assets**.

#### Recording Assets

In a business you need to buy fixed assets such as equipment, tools, furniture or vehicles to be able to run your business. These items will be used in the business for several years. You can also at any time decide to sell it and recover some of the money you paid for it.

We would therefore not class these fixed assets as an *expense* to be used in the calculation of the profit. Instead the costs are recorded as fixed assets and will be put later into a *balance sheet* (we look at balance sheets in visit 20) and become part of the fixed assets.

Having bought the furniture, tools and so on, we know that by using them every day they will have some wear and tear. If you were to sell them, they will not be worth as much as you paid for them. This wear and tear is a cost due to the everyday running of the business and therefore needs to be taken account of when calculating the profit. The way this wear and tear is accounted for is called **depreciation**. Depreciation is discussed in the next lesson.

#### Liabilities

Liabilities are the opposite of assets.

### Jon's assets and liabilities

Jon lists his assets and liabilities, shown in the table below:

**Table 26: Jon's assets and liabilities for the year.**

	Amount per year
<b>Current assets</b>	
Cash	\$50
Money in bank	\$500
Money owed to Jon by other people	\$100
<b>Total current assets</b>	<b>\$650</b>
<b>Fixed assets</b>	
Tools	\$2000
Other equipment	\$2000
<b>Total fixed assets</b>	<b>\$4000</b>
<b>Liabilities</b>	
Loan repayments	\$2500
Interest on loan	\$300
<b>Total liabilities</b>	<b>\$2800</b>
<b>TOTAL assets and liabilities</b>	<b>\$7450</b>

### Tad and Mim's assets and liabilities

With the help of Uno, Tad and Mim list their assets and liabilities, shown in the table below:

**Table 27: Tad and Mim's assets and liabilities for the year.**

	Amount per year
<b>Current assets</b>	
Cash	\$20
Money in bank	\$100
Money owed to Tad and Mim by other people	\$5
<b>Total current assets</b>	<b>\$125</b>
<b>Fixed assets</b>	
Tools	\$50
Other equipment	\$50
<b>Total fixed assets</b>	<b>\$100</b>
<b>Liabilities</b>	
Loan repayments	\$0
<b>Total liabilities</b>	<b>\$0</b>
<b>TOTAL assets and liabilities</b>	<b>\$225</b>

**Quick Test 10 – Assets and liabilities**

**1** A farmer has the following:

\$50 in the bank; tools worth \$100; equipment worth \$200; \$20 owed to him from other people; a 1 year loan of \$50, with a 5% interest rate.

List the farmer's assets and liabilities for the year.

Calculate the farmer's assets and liabilities for the year.

**2** A baker has the following:

\$300 in the bank; equipment worth \$2000; \$50 owed to her from other people; a 2 year loan of \$500, with a 5% interest rate; \$100 cash.

List the baker's assets and liabilities for the year.

Calculate the baker's assets and liabilities for the year.

**3** A shopkeeper has the following:

Equipment worth \$1000; \$200 in the bank; \$250 owed to her from other people; a 5 year loan of \$1000, with a 5% interest rate; \$30 that she owes to a friend; \$150 cash.

List the shopkeeper's assets and liabilities for the year.

Calculate the shopkeeper's assets and liabilities for the year.

*Note down the answers and check them with the answers at the end of this booklet*

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**Back to Uno How Farm Visit 19**

# Uno How's Farm Visit 19

## Rural businesses (2)

### Depreciation



Depreciation is important as it allows the cost of fixed assets to be accounted for over their life-span, which may be several years, rather than in one, large, costly amount.

**Depreciation** can be calculated in two different ways depending on the item:

#### 1. Straight line depreciation

When buying an asset you need to decide what its lifespan is. Let's say we buy a trolley to use when taking seed to market. We pay \$100 for the trolley. We know from having had trollies in the past that it will last for 10 years before we need to buy a new. So in 10 years time the trolley will be worthless. We assume that the value will go down equally each year until it is worth nothing.

To show the decrease in value each year we would then divide the \$100 by 10.

Each year we now include an expense of \$10 depreciation when calculating the profit for the business.

At the same time you reduce the value of the fixed asset by \$10 each year.

At the end of the 10 years the asset will be \$0 and all the cost of the wear of the trolley has been shown in the profit over the past 10 years.

**Table 28: Depreciation of trolley over 10 years.**

Year	Depreciation - recorded as a fixed cost	Value of trolley
Start of business		\$100
Year 1	\$10	$\$100 - \$10 = \$90$
Year 2	\$10	$\$90 - \$10 = \$80$
Year 3	\$10	$\$80 - \$10 = \$70$
Year 4	\$10	$\$70 - \$10 = \$60$
Year 5	\$10	$\$60 - \$10 = \$50$
Year 6	\$10	$\$50 - \$10 = \$40$
Year 7	\$10	$\$40 - \$10 = \$30$
Year 8	\$10	$\$30 - \$10 = \$20$
Year 9	\$10	$\$20 - \$10 = \$10$
Year 10	\$10	$\$10 - \$10 = \$0$

## 2. Reducing balance depreciation

Sometimes the fixed asset you are buying has a very long life span, for instance a vehicle, but we also know that the reduction of value is largest at the start of the period and then slower as the item ages. To show this we would use **reducing balance depreciation**.

Lets say we buy a tractor for \$2000.

If in the first year the estimated value of the tractor will reduce by 1/10 or 10% (100%/10), we can set the depretiation rate at 10%. The depreciation for the first year would therefore be:

Year one:  $\$2000 \times 10\% = \$200$  depreciation. New value of tractor carried forward (c/f) \$1800

The second year we would reduce the value of the tractor by 10% on the value of the asset at the end of the year.

Year two: Value brought forward (b/f) \$1800  $\times 10\% = \$180$  depreciation. New value c/f \$1620

And so on for year three: Value b/f \$1620  $\times 10\% = \$162$  depreciation. New value c/f \$1458.

As you calculate this over the years you will notice that the older the item is the lower the depreciation will be. Indicating that even after 20 years the item will have some value and might be sold to turn into cash.

The table below shows the depreciation of the tractor.

**Table 29: Depreciation of tractor over 20 years.**

Year	Depreciation - recorded as a fixed cost	Value of tractor
Start of business		\$2000
Year 1	$\$2000 \times 10\% = \$200$	$\$2000 - \$200 = \$1800$
Year 2	$\$1800 \times 10\% = \$180$	$\$1800 - \$180 = \$1620$
Year 3	$\$1620 \times 10\% = \$162$	$\$1620 - \$162 = \$1458$
Year 4	$\$1458 \times 10\% = \$145.80$	$\$1458 - \$145.80 = \$1309.50$
Year 5	$\$1309.50 \times 10\% = \$130.95$	$\$1309.50 - \$130.95 = \$1178.55$
Year 6	$\$1178.55 \times 10\% = \$117.86$	$\$1178.55 - \$117.86 = \$1060.69$
Year 7	$\$1060.69 \times 10\% = \$106.10$	$\$1060.69 - \$106.10 = \$954.59$
Year 8	$\$954.59 \times 10\% = \$95.46$	$\$954.59 - \$95.46 = \$859.13$
Year 9	$\$859.13 \times 10\% = \$85.91$	$\$859.13 - \$85.91 = \$773.22$
Year 10	$\$773.22 \times 10\% = \$77.32$	$\$773.22 - \$77.32 = \$695.90$
Year 11	$\$695.90 \times 10\% = \$69.59$	$\$695.90 - \$69.59 = \$626.31$
Year 12	$\$626.31 \times 10\% = \$62.63$	$\$626.31 - \$62.63 = \$563.68$
Year 13	$\$563.68 \times 10\% = \$56.37$	$\$563.68 - \$56.37 = \$507.31$
Year 14	$\$507.31 \times 10\% = \$50.73$	$\$507.31 - \$50.73 = \$456.58$
Year 15	$\$456.58 \times 10\% = \$45.66$	$\$456.58 - \$45.66 = \$410.92$
Year 16	$\$410.92 \times 10\% = \$41.10$	$\$410.92 - \$41.10 = \$369.82$

<b>Year 17</b>	$\$369.82 \times 10\% = \$36.98$	$\$369.82 - \$36.98 = \$332.84$
<b>Year 18</b>	$\$332.84 \times 10\% = \$33.29$	$\$332.84 - \$33.29 = \$299.55$
<b>Year 19</b>	$\$299.55 \times 10\% = \$29.96$	$\$299.55 - \$29.96 = \$269.59$
<b>Year 20</b>	$\$269.59 \times 10\% = \$26.96$	$\$269.59 - \$26.96 = \$242.63$

Jon calculates his depreciation for his equipment fixed assets, shown in the table below. Jon uses straight line depreciation to calculate his depreciation as he estimates that after 10 years his equipment will need replacing.

**Table 30: Jon's depreciation over 10 years for his equipment.**

<b>Year</b>	<b>Depreciation - a fixed cost</b>	<b>Value of equipment</b>
<b>Start of business</b>		\$4000
<b>Year 1</b>	$\$4000 \times 10\% = \$400$	$\$4000 - \$400 = \$3600$
<b>Year 2</b>	$\$4000 \times 10\% = \$400$	$\$3600 - \$400 = \$3200$
<b>Year 3</b>	$\$4000 \times 10\% = \$400$	$\$3200 - \$400 = \$2800$
<b>Year 4</b>	$\$4000 \times 10\% = \$400$	$\$2800 - \$400 = \$2400$
<b>Year 5</b>	$\$4000 \times 10\% = \$400$	$\$2400 - \$400 = \$2000$
<b>Year 6</b>	$\$4000 \times 10\% = \$400$	$\$2000 - \$400 = \$1600$
<b>Year 7</b>	$\$4000 \times 10\% = \$400$	$\$1600 - \$400 = \$1200$
<b>Year 8</b>	$\$4000 \times 10\% = \$400$	$\$1200 - \$400 = \$800$
<b>Year 9</b>	$\$4000 \times 10\% = \$400$	$\$800 - \$400 = \$400$
<b>Year 10</b>	$\$4000 \times 10\% = \$400$	$\$4000 - \$400 = \$0$
<b>Total</b>	<b>\$4000</b>	

Tad and Mim can also calculate their depreciation for their fixed assets, shown in the table below. Like Jon, Tad and Mim use straight line depreciation to calculate the depreciation. As they estimate that after 5 years their equipment will need replacing, their depreciation rate is 20%.

**Table 31: Tad and Mim's depreciation over 5 years for their equipment.**

<b>Year</b>	<b>Depreciation - a fixed cost</b>	<b>Value of equipment</b>
<b>Start of business</b>		\$100
<b>Year 1</b>	$\$100 \times 20\% = \$20$	$\$100 - \$20 = \$80$
<b>Year 2</b>	$\$100 \times 20\% = \$20$	$\$80 - \$20 = \$60$
<b>Year 3</b>	$\$100 \times 20\% = \$20$	$\$60 - \$20 = \$40$
<b>Year 4</b>	$\$100 \times 20\% = \$20$	$\$40 - \$20 = \$20$
<b>Year 5</b>	$\$100 \times 20\% = \$20$	$\$20 - \$20 = \$0$
<b>Total</b>	<b>\$100</b>	

**Quick Test 11 – Calculating depreciation**

**1** A baker has \$2000 worth of equipment in his bakery. He estimates the equipment will last 10 years then he will have to replace it. Therefore, he uses straight line depreciation.

Calculate his depreciation each year based on the 10 years (10%) depreciation.

**2** A blacksmith has a truck which he estimates will have a very long life span. The truck is worth \$1500. He estimates the truck will depreciate by 10% in value each year.

As the truck will have a long life he uses reducing balance depreciation. Estimate the value of the truck at the end of each year for 15 years.

**3** A farmer has \$200 worth of tools which he estimates will have a 5 year life span before he has to replace them.

He also has a two-wheeled tractor, worth \$4000. He estimates the two-wheeled tractor will lose more value in its first few years and that it will lose 5% of its value in its first year.

Calculate his depreciation for the tools each year (using straight line depreciation).

Calculate his depreciation each year for the two-wheeled tractor (using reducing balance depreciation). What will the tractor be worth after 15 years?

*Note down the answers and check them with the answers at the end of this booklet*

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## Uno How's Farm Visit 19

### Rural businesses (2)

#### Pricing products based on production costs



**Jon prices his products carefully** so that he does not make a loss. He looks at all his fixed and variable costs and estimates quantities he thinks he can make and sell. Then he calculates his prices.

**Uno, Tad and Mim are interested in the way Jon prices his products.**

Jon produces hoes and cutlasses with an average weight of about 2 kg of steel each.

His efficiency of use of scrap steel is 90%.

Therefore, from 2 tonnes of scrap steel he can use 1800 kg. From this 1800 kg he can make 900 items.

His fixed costs (including depreciation of his equipment) are \$7268

His variable costs are \$5270

Therefore, for this output, his total costs would be \$12 538 per year.

This means he must sell the items at an average price of \$13.93 ( $\$12\,538/900$ ) each in order to break-even.

He rounds this up to **\$14.00 per item.**

**BUT** Jon wants an income too. When he calculated his costs he only included the salaries of two of his workers, and an additional wage for casual labour if he is extra busy.

**He wants to generate a salary for himself of at least \$15 a day.**

$$365 \times \$15 = \$5475$$

Therefore, the total cost per tool (which includes all fixed and variable costs, as well as the cost of a salary for himself), at a production output of 900 tools a year is:

$$\$7268 + \$5270 + \$5475 = \$18\,013 \div 900 = \mathbf{\$20.01 \text{ total cost per tool.}}$$

If Jon is going to charge around \$20 a tool he needs to check market prices. If most other tools are selling for much less than \$20 then people may not pay the higher price for Jon's products, so he may have to reduce the salary he wants for himself.

If, on the other hand, they are selling for much more, Jon's products are likely to sell very well.

**Quick Test 12 – Pricing products based on production costs**

**1** A rug maker estimates she can make 8 rugs from scrap materials she buys for \$20.

Her costs per year are: scrap material \$2000; electricity \$300; stall rent \$300; equipment \$50. She works for 300 days a year.

How much would she need to charge per rug to break-even?

If she wants to earn a wage of \$3 a day how much would she have to sell the rugs for?

**2** A blacksmith makes tools from scrap metal. She estimates that she can make 5 tools from \$30 of scrap metal. She works for 300 days.

Costs in a year are: rent for her shop \$500; equipment \$75; electricity \$200; scrap metal \$2700.

How much would the blacksmith need to charge per tool to break-even?

If she wants to be able to have a wage of \$3.25 a day how much will she have to charge per tool?

**3** In a toyshop the owner carves wood in order to make toys which he then sells. He estimates that he makes 20 toys from wood that he buys for \$25. He works for 325 days a year.

His costs per year are as follows: wood \$1750; equipment \$50; electricity \$200; rent \$100; casual labour \$475.

How much will he have to charge per toy if he wants to break-even?

He wants to earn a wage of \$3 a day. How much will he have to charge per toy if he wants to cover the costs of production and this wage?

*Note down the answers and check them with the answers at the end of this booklet*

**Back to Uno How Farm Visit 19**

## Uno How's Farm Visit 19

### Rural businesses (2)

#### Pricing products in other ways



Jon would like to increase his profits. He can consider charging more for his products - but there are other ways he could increase his profit.

If Jon wishes to increase the price of his products he would need to find out what the prices on the market are for items like his.

#### What are the prices on the market for items like Jon's?

Imported Chinese hoes and cutlasses are currently sold for around \$22 each but these have been found to be brittle and have soft wood-handles.

Jon's tools are not brittle; and the hard-wood handles he makes are very durable.

So Jon has a **market advantage** over "foreign" tools - but he may also face competition from other local blacksmiths.

Jon knows that, if he is to cover all fixed and variable costs and be able to pay himself as salary, he needs to charge at least \$20.01 per tool.

However, he is cautious about over charging, because he is a new business and he wants to attract customers.

He decides to still charge \$20 per tool (most local blacksmiths charge about \$24 to \$27). This means that he is covering costs and will be able to pay himself a salary of just less than \$15 a day.

Another way he could increase his profit but not put up his prices is to produce more tools per day, so the total cost of producing each tool is reduced.

He would have to know whether he and his workforce could increase the number of tools they make per day (increase their **output**).

He can also calculate the gross margin for each tool, before and after increasing production, to see how the efficiency of the business changes with increased production.

**Can Jon and his workforce increase the number of tools they make per day?**

Jon has been planning on producing 900 tools a year. If the workshop runs 220 days a year, this is an average of about 4 tools produced per working day. Jon thinks that this could be increased to 5 tools per day.

Uno suggests that they look at the estimates of the costs of the producing the tools in more detail.

**Total Cost = Fixed Cost + Variable Cost + Jon's Salary**

**Output of 900 tools a year**

Let's recap - at an output of 900 items a year, the cost breakdown was calculated at:

$$\$7268 + \$5270 + \$5475 = \$18\ 013$$

$$\text{Total cost per tool} = \$18\ 013 \div 900 = \mathbf{\$20.01 \text{ per tool}}$$

**Output of 1100 tools a year**

If they were able to increase their output to 5 tools a day (1100 per year), then their production costs would increase. These are shown in Table 32. Their fixed costs would not change.

Material costs would be 1.22 times higher (1100 ÷ 900).

Stall fees and transport costs would not increase as Jon would still only have a stall 26 times a year.

Contract work costs would not increase as Jon thinks they could make 1 extra tool per day with the same labour, as they are more skilled now than when he first employed them.

**Table 32: Jon's variable costs and revenue per year.**

Variable cost	For 900 tools	Amount per year	For 1100 tools	Amount per year
<b>Steel</b>	2 tonnes	\$ 2000	2.44 tonnes	\$2440
<b>Charcoal</b>	\$1 x 20 x 52	\$1040	\$1 x 25 x 52	\$1300
<b>Wood for handles</b>	\$1.50 x 300 tools	\$450	\$1.50 x 366 tools	\$549
<b>Contract work</b>	\$20 x 50 days	\$1000	\$20 x 50 days	\$1000
<b>Transport</b>	\$20 x 26 trips	\$520	\$20 x 26 trips	\$520
<b>Stall fees</b>	\$10 x 26 sales	\$260	\$10 x 26 sales	\$260
<b>Total variable costs</b>		<b>\$5270</b>		<b>\$6069</b>

So at an output of 1100 items a year, the cost breakdown is calculated at:

$$\$7268 + \$6069 + \$5475 = \$18\ 812$$

$$\text{Total cost per tool} = \$18\ 812 \div 1100 = \mathbf{\$17.10}$$

So, if Jon's workshop was able to increase its output to 5 tools a day, the cost per tool would be reduced by approximately \$3.00 to \$17.10 per tool. If he continued to sell these for \$20 per tool his profit would therefore increase.

Uno suggests Jon also calculates his gross margins as an indicator for his performance that could be compared to other activities undertaken in his workshop.

**Gross Margin = Revenue (value of output) – Variable Costs**

**Gross Margin (%) =  $\frac{\text{Revenue (Gross Income)} - \text{Variable Costs}}{\text{Revenue (Gross Income)}} \times 100$**

Jon's gross margins are shown in the table below:

**Table 33: Jon's fixed, variable costs and revenue per year.**

Costs	Output 900 tools	Output 1100 tools
Fixed cost	\$7268	\$7268
Variable cost	\$5270	\$6069
Revenue	\$20 x 900 = \$18 000	\$20 x 1100 = \$22 000
Gross margin per year	\$18 000 - \$5270 = \$12 730	\$22 000 - \$6069 = \$15 931
Gross margin per tool	$(\$18\,000 - \$5270)/900 = \mathbf{\$14.14}$	$(\$22\,000 - \$6069)/1100 = \mathbf{\$14.48}$
Gross margin %	$(18\,000 - 5270)/18\,000 = \mathbf{70.7\%}$	$(22\,000 - 6069)/22\,000 = \mathbf{72.4\%}$

Jon calculates his net profit for the output of the tools.

**Net Profit (income) = Revenue – (Fixed Costs + Variable Costs) - taxes**

**Net profit for output of 900 tools = \$18 000 – (\$7268 + \$5270) – taxes = \$5462 – taxes**

**Net profit for output of 1100 tools = \$22 000 – (\$7268 + \$6069) – taxes = \$8663 – taxes**

If Jon increased his output of tools to 5 per day (1100 per year) his profit will increase from \$5462 to \$8663, an increase of \$3201.

**Jon can also calculate net margins.** Net margins take account of all the businesses expenses. The higher the net margin % is, the more effective the company is at converting revenue into profit.

**Net margin % = Net Profit / Revenue x 100**

**Net margin % for output of 900 tools =  $5462/18\,000 \times 100 = 30.34\%$**

**Net margin % for output of 1100 tools =  $8663/22\,000 \times 100 = 39.38\%$**

If Jon increases his tool production (and can sell these extra tools) then he will make more money per tool, and the efficiency of his business will increase.

There are of course other ways of reducing costs of production other than making more. Jon could source cheaper materials. That would reduce his variable costs and so reduce the cost of production for each tool. He does not want to do this however, as he thinks the quality of his tools is a good selling point for his tools. His customers are happy with his products and recommend him to other people. This is very important for Jon.

**Quick Test 13 – Taking market prices and output into account when pricing products**

**1** A tea shop has the following costs per year: equipment \$300; fuel for stove \$350; electricity, water and rent \$800; ingredients \$500.

Calculate the yearly fixed and variable costs for the tea shop.

They estimate they can sell 50 cups of tea a day. They are open 300 days a year. How much would they have to charge for a cup of tea to break-even?

If she wanted to expand output to 60 cups of tea a day, using just her labour, while still opening 300 days a year (assuming she could sell all 60 cups a day), how would this affect the break-even point for the price of a cup of tea?

How would her yearly gross margins and gross margin % change if she did increase output to 60 cups and sold the tea for \$0.13 per cup?

Calculate the change in the tea shop owner's net profit for the year if she increased output from 50 to 60 cups per year and charged \$0.13 per cup.

Calculate the net margin % for both outputs.

**2** A baker has the following costs per year: rent and electricity \$500; wages (to himself) \$700; equipment \$50; fuel for stove \$750; water \$250; ingredients \$400.

Calculate the yearly fixed and variable costs of the bakery.

The baker estimates that he sells 40 loaves of bread a day and he will open the bakery 320 days a year. How much would he have to sell each loaf of bread for in order to break-even?

The baker thinks he might increase his output to 60 loaves a day. He would need to employ casual labour for \$80 for the year. How would this affect the break-even point per loaf of bread if the bakery was still open for 320 days a year?

If he sells the loaves for \$0.25 each, what are his gross margins and gross margin % when he sells 40 loaves? How would these change if he increased output to 60 loaves?

Calculate the change in the bakery's net profit for the year if it increased output from 40 to 60 loaves per year, and sold the loaves for \$0.25.

Calculate the net margin % for both outputs.

If he did not increase output, but increased the price of the loaves to \$0.35 each, how would the net profit and net margin % change?

What is the best option for the bakery?

*Note down the answers and check them with the answers at the end of this booklet*

## Uno How's Farm Visit 19

### Rural businesses (2)

#### Stock



It is important to know how much stock your business has. If you have too much stock you may not be able to sell it all, if you have too little you may run out of products!

**Stock** is anything that you have purchased or produced that is unused at the end of the year. This can include seed, fertiliser or products that have been made but remain unsold. The value of the closing stock is included in the farm accounts, as we will see in *Visit 20*.

It is very important that:

- Stock is entered at the right value.
- The right amount of stock is included, as it will have a major impact on the final profit.

There are two things that you need to consider when calculating your stock:

1. **Cut off point:** This is the date at the end of your accounting period. If you make your financial report up to 31st December you also need to count your stock at 31st December.

When deciding what to include in your stock you need to consider the **Cut-off Point**.

- a) You bought some seed on credit to be paid later in the year. The cost of the seed is included in the expenses and also showing as a creditor for the year. **Yes**, you need to include the seed remaining as stock.
- b) You have bought some seed and paid for it, but it will be delivered after your period end. So you do not have the seed but the cost is in the expenses. **Yes**, you need to include the seed as Stock, but note that it is *in transit*.
- c) Your supplier delivered some seed early to save on the transport costs, so you have the seed but it will be invoiced in the following accounting period as that is when you wanted it to arrive. **No**, the seed is not included in the stock even though it is present.

#### 2. Valuation of stock:

- a) **Purchase price:** If it is stock that you have purchased in the year, i.e. seed or fertiliser, the value to be included in the stock calculation is the actual purchase price.
- b) **Production cost:** If it is stock that you have produced, this would be the actual cost to produce the stock. Say you have produced 500 kg of grain in the year. To do this you have paid \$10 for seed and \$20 for fertiliser. You also spent \$20 on labour to harvest it.

The cost would be calculated **pro-rata** (according to the expenditure and the amount of the full crop). For example, taking the example above:

$\$10 + \$20 + \$20/500 \text{ kg} = \$0.10 /\text{kg}$  to produce the grain.

The stock you have left is 100 kg so the stock value would be  $\$0.10 \times 100 = \$10$ .

- c) **Deemed price:** If it is too difficult to calculate the production cost you can value the stock at a % of the market value.

You should not value the stock at the price you expect to receive when selling it, as you can not guarantee the sale price. Therefore you need to enter the market price less the accepted profit margin.

Common levels are:

- Cattle, chickens: 60% of open market value
- Goats, sheep and pigs: 75% of open market value
- Harvested crop: 75% of open market value.

To record the stock we do a stock-take and make a stock valuation list, as in the example below.

**Table 34: Example of a stock valuation list.**

Item	Method	Value per unit	Units	Total
Seed	Purchase price	\$1	4	\$4
Fertiliser	Purchase price	\$1.50	6	\$9
Grain	Deemed Price 75%	75% of \$2 = \$1.50	15	\$22.50
<b>TOTAL CLOSING STOCK</b>				<b>\$35.50</b>

### Jon's stock

Uno and Jon do a stock take of Jon's business. He lists his stock, shown below:

**Table 35: Jon's Stock on 25<sup>th</sup> August 2016.**

Item	Method	Value per unit	Units	Total
<b>Materials</b>				
<b>Steel</b>	Purchase price	\$1000	0.25	\$250
<b>Wood for handles</b>	Purchase price	\$1.50	60	\$90
<b>Charcoal</b>	Purchase price	\$1	40	\$40
<b>Finished products</b>				
<b>Hoes</b>	Deemed price 75%	75% of \$20 = \$15	3	\$45
<b>Picks</b>	Deemed price 75%	75% of \$20 = \$15	2	\$30
<b>TOTAL CLOSING STOCK</b>				<b>\$455</b>

Jon values his materials, the steel, wood and charcoal based on what he paid for them. He has valued his tools for sale at 75% of the market value at which he could sell them as he cannot guarantee prices.

**Jon has \$455 worth of closing stock.**

**Quick Test 14 – Calculating the value of stock**

**1** A farmer has the following in stock at the end of his financial year:

5 sacks of sorghum; 2 sacks of pearl millet; 5 goats; 10 chickens

Last week he sold a similar sack of sorghum for \$20 and a sack of pearl millet for \$20. At market goats are selling for \$25 each and chickens for \$5 each.

Make a stock list for the farmer and calculate the value of his stock.

**2** A rug maker has the following in stock at the end of her financial year:

5 reels of cotton; 2 bundles of rags; 5 small rugs; 2 large rugs

He sells small rugs for \$5 each and large rugs for \$10. He paid \$1 a reel for the cotton and \$2 a bundle for the rags.

Make a stock list for the rug maker and calculate the value of his stock.

**3** A stallholder who sells tea and cakes has the following in stock at the end of her financial year. She does not include any freshly baked cakes as these are very short lived – they need to be sold on the day and so are not included.

1 bag herbs; 1 bag loose leaf tea; assorted dry ingredients for cakes

She bought the bags of herbs for \$3 each and bags of tea for \$4 each. The assorted dry ingredients are part bags. They are worth \$10 based on prices paid when they were bought.

Make a stock list for the stallholder and calculate the value of their stock.

*Note down the answers and check them with the answers at the end of this booklet*

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## Uno How's Farm Visit 19

### Rural businesses (2)

#### Tad and Mim's stock

Tad and Mim do not have much grain left at the end of the year, but they do have livestock. Their stock is shown in the table below:

**Table 36: Tad and Mim's stock on 1st January 2016.**

Item	Method	Value per unit	Units	Total
<b>Crops</b>				
50 kg bag sorghum	Deemed Price 75%	75% of \$40 = \$30	1	\$30
50 kg bag maize	Deemed Price 75%	75% of \$28 = \$21	2	\$42
<b>Livestock</b>				
2 goats	Deemed Price 75%	75% of \$40 = \$30	2	\$60
10 chickens	Deemed Price 60%	60% of \$5 = \$3	10	\$30
<b>Other Items</b>				
Seed	Purchased Price	\$5	1	\$5
<b>TOTAL CLOSING STOCK</b>				<b>\$167</b>

**Tad and Mim have \$167 worth of stock.**

Depending on the type and size of farm stock that farmers may need to include in their stock take are:

**Crops in storage - either in silos or cribs.** The value of these is based on current market prices minus the allowed profit margin.

**Processed produce - produce that is produced from crops, for example maize flour, sorghum flour.** The value of these is based on current market prices minus the allowed profit margin.

**Other products - such as honey.** The value of these is based on current market prices minus the allowed profit margin.

**Livestock - goats, chickens, sheep, camels and so on.** The value of these is based on current market prices minus the allowed profit margin.

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## Uno How's Farm Visit 20... Accounts and planning

Our friend Matti has a farm. She said we could visit today.

She has some big ideas for the future.

Ok. Lets go and talk to her.

Hi Matti. This is Uno, our extension agent.

You said you had big plans.

Yes I do. I want to run the farm next door for my neighbour!

But you already have a big farm.

Well I think I am doing well and that I can do more.

Do you keep **accounts**?

Yes and I have just started to use a **double-entry bookkeeping system**.

DOUBLE-ENTRY ACCOUNTS		
	DEBIT (\$)	CREDIT (\$)
Capital Account		2000
Opening balance		
Bank Account	2000	
Opening balance		1000
Money for two-wheeled tractor taken out		
Fixed Assets Account		
Two-wheeled tractor		

I also make sure I record all my **income and expenses**.

TRAIL BALANCE	DEBIT (\$)	CREDIT (\$)
Fixed Assets		
Bank account		
Debtor		
Creditor		
Loan		
Capital		
Sales		
Seeds		

Then I can produce a **trial balance** so I know everything is correct.

How about stock?

**Yes I do have stock.** I store grain and have livestock...

Matti, you must be making a profit then?

PROFIT AND LOSS ACCOUNT		
Sales	10	
Seed	20	
Fertiliser	20	
Labour	-858.75	
Closing-Stock		1908.75
Gross Profit		25
Interest		125
Depreciation		1758.75
Profit before tax		

Yes my **profit and loss account** shows that I am making a profit.

You could use a **cash book** if you have lots of transactions to record with your new farm.

What will you grow?

I have been calculating my **gross margins**. I should grow more finger millet.

Can we come and see you again soon?

Yes of course. I may need help on the farm!

## Uno How's Farm Visit 20

### Accounts and planning

#### Introduction to accounting



**Different accounts are needed depending on the type and size of the business.**

Matti has a large farm, and wants to expand her business so it is very important she has up-to-date and accurate accounts.

**Accounts** are accounting records which store information from the business including all the financial transactions.

**Accounts are important because they show:**

- **How money has been spent.**
- **How goods and capital owned by the business change over time.**

A small business may have only a few accounts, whereas a larger business may have hundreds.

There are several different types of business:

The simplest type of business is the **sole trader**. This is a business owned and run by one person. The owner may employ other people but still owns the business. The profit from the business goes to the owner. Likewise, the owner is liable for any debts that the business incurs.

Whatever the size or type of the business, business accounts must be kept separate from personal accounts, and **financial statements** (summaries of the accounts) must be prepared.

#### Financial statements

The financial statement is made up of two parts, a **profit and loss account** and a **balance sheet**.

It is easy to see why you need to prepare the profit and loss account. You want to know if you are making a profit or not. This will tell you if you have priced your products correctly and also if you are able to make investments into the business.

The balance sheet is also very important. This will tell you how much your business is worth at any given moment and will also show what assets you have to run the business on a day-to-day basis.

We will look at financial statements in the next lesson.

## Uno How's Farm Visit 20

### Accounts and planning

#### Double- entry bookkeeping



Double-entry bookkeeping is used if a business has hundreds of transactions.

#### Financial statements

**Balance sheets** record transactions of assets, liabilities and capital, while **profit and loss accounts** record transactions for income and expenses.

When preparing the financial statement you need to make sure that all the information is accurate. This is done by using **double-entry bookkeeping**.

#### Preparing balance sheets

When you spend money in the business there will be two changes, one increase and one decrease. Matti buys a second-hand two-wheeled tractor for her farm. This is an asset and costs \$1000.

She will now have:

- \$1000 less money in her bank account.
- A two-wheeled tractor, an asset that she can use and possibly sell later on.

So the amount of money in the bank has decreased but her assets have increased to an equal amount of \$1000.

To show this in bookkeeping we use what is called **DEBITS** and **CREDITS**.

**Every Debit must be balanced out by a Credit of an equal amount.**

**You show these changes by using ledgers for different accounts.**

Let's have a look at the example using the two-wheeled tractor above. We need a **ledger** for each account showing the DEBITS and CREDITS like this:

BANK ACCOUNT	DEBIT	CREDIT

FIXED ASSETS	DEBIT	CREDIT

Whether the transaction is recorded as a DEBIT or a CREDIT depends on whether the

Figure 2: Recording balance sheet transactions.

Balance Sheet Accounts

	DEBIT (DR)	CREDIT (CR)
<b>ASSETS</b>	<b>INCREASE</b> in Asset Account	<b>DECREASE</b> in Asset Account
<b>LIABILITIES</b>	<b>DECREASE</b> in Liability Account	<b>INCREASE</b> in Liability Account

First we record the money Matti had in her bank account before she bought the two-wheeled tractor (we call this **opening balance**) say \$2000.

**The bank account is an asset account.** Using the table above we can see that an increase in an asset account is shown as a debit so the \$2000 will be recorded as a DEBIT.

BANK ACCOUNT	DEBIT (\$)	CREDIT (\$)
Opening balance	2000	

As double-entry bookkeeping has to have an equal credit for each debit we need to think about where the \$2000 came from. This was money that she put into the business at the start. It is therefore **capital**.

As the capital account is money owed to her from the business **the capital account is a liability**.

We show an increase in a liability account as a CREDIT and a decrease as a DEBIT. In this case the Liability account has increased, therefore it is recorded as a CREDIT.

*(Note: in this case there is only one entry for capital transactions so this will be the final account. Final accounts are shown with red borders).*

CAPITAL ACCOUNT	DEBIT (\$)	CREDIT (\$)
Opening balance		2000

The next step is to show the \$1000 she spent on the two-wheeled tractor. She took this from the bank account so the balance in the bank account has decreased by \$1000.

The bank account is an asset account. The amount in the bank account has decreased by \$1000, so this will be recorded as a CREDIT.

BANK ACCOUNT	DEBIT (\$)	CREDIT (\$)
Opening balance	2000	
Money for two-wheeled tractor taken out		1000

The purchase of the two-wheeled tractor will have increased the value of her fixed assets.

Another account, the fixed assets account will show this. **Fixed assets are an asset account.** They have increased by \$1000 and are recorded as a DEBIT.

FIXED ASSETS	DEBIT (\$)	CREDIT (\$)
Two-wheeled tractor	1000	

Now you have the two sides of the transaction.

Sometimes the business might need more cash to be able to expand, for example Matti wants to build a silo but she does not want to use all of her capital, so she has borrowed \$500 to do this. How is this shown in the bookkeeping?

Start with the money coming into the bank account from the loan.

The bank account is an asset account and has increased by \$500, so it is recorded as a DEBIT.

BANK ACCOUNT	DEBIT (\$)	CREDIT (\$)
Opening balance	2000	
Money for two-wheeled tractor taken out		1000
Loan money coming in	500	

Now we need to show the liability of the loan. So we need set up a new account. This is a liability account.

Just as **assets and liabilities are opposites** the rule for dealing with debits and credits are opposite (as shown in Figure 2).

**Decrease in the liability account = DEBIT.**

**Increase in the liability account = CREDIT.**

By borrowing money our liability is increasing so it will be recorded as a CREDIT.

LOAN ACCOUNT	DEBIT (\$)	CREDIT (\$)
Loan of cash for silo		500

Now Matti will buy the materials for the silo, which will become a fixed asset.

Following the same principles as above we need to make the following entries in the bank account and the fixed assets account.

BANK ACCOUNT	DEBIT (\$)	CREDIT (\$)
Opening balance	2000	
Money for two-wheeled tractor taken out		1000
Loan money coming in	500	
Money taken out for silo material		500

FIXED ASSETS	DEBIT (\$)	CREDIT (\$)
Two-wheeled tractor	1000	
Silo	500	

All of these transactions have been for fixed assets, liabilities and capital and will be used to prepare the balance sheet.

Before we prepare the balance sheet we need to record **income and expenditure**, which will be used to prepare the **profit and loss accounts**. These are recorded in separate accounts which we look at in the next lesson.

**Quick Test 15 – Recording assets, capital and liabilities using double-entry bookkeeping**

**1** A farmer puts \$3000 capital into his farm using his own own money.

He then buys some tools for \$500. He also took out a loan to buy an old two-wheeled tractor for \$2500. The loan is from a family member who does not charge interest. Finally, he buys a silo for \$400.

Record these transactions using the double-entry bookkeeping system.

**2** A shop-keeper puts \$500 capital into her business using her own money.

She buys a fridge for \$400. Then she buys shelving for \$50. She also buys a till and other equipment for \$250, using money loaned by a friend who does not charge interest.

Record these transactions using the double-entry bookkeeping system.

**3** A wood carver puts \$200 capital into his business using his own money.

He buys wood carving tools for \$100. Then he buys a bench for \$20. He wants to buy a lathe and other workshop machinery for \$150. For this he borrows \$150 from a friend who does not charge interest.

Record these transactions using the double-entry bookkeeping system.

*Note down the answers and check them with the answers at the end of this booklet*

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**Back to Uno How Farm Visit 20**

## Uno How's Farm Visit 20

### Accounts and planning

#### Income and expenses using double-entry bookkeeping



The balance sheets show transactions for assets, capital and liabilities. Income and expense transactions are shown in the profit and loss income and expenses accounts.

#### Preparing income and expense accounts for the profit and loss account

For income and expenses, we will continue with Matti's example from the previous lesson, following the same principle with double-entry bookkeeping by making sure that for every debit we have an equal credit. Some of the transactions will be part of the **balance sheet** and some (**the expenses and income transactions**), will be part of the **profit and loss accounts**.

How the transactions are recorded in the accounts is shown below in Figure 3.

Figure 3: Recording both balance sheet and profit and loss account transactions.

#### Balance Sheet Accounts

	DEBIT (DR)	CREDIT (CR)
<b>ASSETS</b>	<b>INCREASE</b> in Asset Account	<b>DECREASE</b> in Asset Account
<b>LIABILITIES</b>	<b>DECREASE</b> in Liability Account	<b>INCREASE</b> in Liability Account

#### Profit and Loss Accounts

	DEBIT (DR)	CREDIT (CR)
<b>EXPENSES</b>	<b>INCREASE</b> in Expenses Account	<b>DECREASE</b> in Expenses Account
<b>INCOME</b>	<b>DECREASE</b> in Income Account	<b>INCREASE</b> in Income Account

Let's start with the **expenses**. Matti needs to buy some seeds and fertiliser during the season. She also paid for some labour during the harvest.

She needs to record these costs to be able to calculate the profit for the period. The seed and labour was paid with cash but she bought the fertiliser on credit.

Starting with the seed and labour we need to show that money has been taken out of the bank account. The bank account is an asset account. It has decreased so this is recorded as a CREDIT.

BANK ACCOUNT	DEBIT (\$)	CREDIT (\$)
Opening balance	2000	
Money for two-wheeled tractor taken out		1000
Loan money coming in	500	
Money taken out for silo material		500
Money taken out for seed		10
Money taken out for labour		20

The corresponding entry will be in a profit and loss expenses account. **We will need two accounts for these purchases, one for seed and one for labour.**

These are **expense accounts** that will increase with the transactions, therefore they are recorded as a DEBIT.

SEED	DEBIT (\$)	CREDIT (\$)
Seed bought for cash	10	

LABOUR	DEBIT (\$)	CREDIT (\$)
Labour during harvest paid cash	20	

The next purchase of fertiliser was on credit. We know that a purchase is recorded as a DEBIT.

FERTILISER	DEBIT (\$)	CREDIT (\$)
Purchase of fertiliser on credit	20	

She bought the fertiliser on credit, so we cannot enter the corresponding entry in the bank account. The money is owed to a neighbour, so the neighbour is a **creditor**. We need to show that the money is owed and will be paid at a later date.

This is a liability to the business, so the liability account will increase. This is recorded as a CREDIT.

CREDITORS	DEBIT (\$)	CREDIT (\$)
Credit purchase of fertiliser		20

Directly after the harvest she sold some grain to two different people. This will be recorded as an **income account**. One person paid with cash that Matti put in the bank account and the other bought it on credit.

Starting with the cash payment we show the money coming into the bank account. The bank account is an asset account. Its balance increases with the transaction and so is recorded as a DEBIT.

BANK ACCOUNT	DEBIT (\$)	CREDIT (\$)
Opening balance	2000	
Money for two-wheeled tractor taken out		1000
Loan money coming in	500	
Money taken out for silo material		500
Money taken out for seed		10
Money taken out for labour		20
Sale of grain in cash	500	

Now we need an account for the **sales**. Using Figure 3 we can see that an income account that increases is recorded as a CREDIT.

SALES	DEBIT (\$)	CREDIT (\$)
Cash sale of grain		500

Although sold on credit, the other sale still needs recording in the sales account, as a CREDIT.

SALES	DEBIT (\$)	CREDIT (\$)
Cash sale of grain		500
Credit sale of grain		600

Because this sale was on credit, we cannot enter it into the bank account. This money is still owed to her, so this customer is a **debtor**.

We need to show that the money will be coming in at a later date and is an asset of the business. An increase in an asset account is recorded as a DEBIT.

DEBTORS	DEBIT (\$)	CREDIT (\$)
Credit sale of grain	600	

### Accounting for the depreciation of fixed assets

During the period Matti has bought materials for a silo and a two-wheeled tractor. The purchases of these fixed assets are not part of the profit and loss. As we saw in the previous lesson they have been recorded in the balance sheet accounts.

The use of the fixed assets however causes wear and tear, or depreciation, to the assets, and we need to **show the cost of this depreciation in the profit and loss accounts**.

The silo is anticipated to last for 20 years and the two-wheeled tractor for 10 years. So the wear and tear for the silo (depreciation) would be 1/20 per year (5%). And the two-wheeled tractor wear and tear would be 1/10 per year (10%).

**Silo** – The new value that is recorded in the expenses account =  $\$500 \times 5\% = \$25$

**Two-wheeled tractor** – The new value recorded in the expenses account =  $\$1000 \times 10\% = \$100$

The depreciation needs to be reflected both in the fixed assets account and in the profit and loss account.

Starting with the fixed asset account, record the depreciation for both the silo and the two-wheeled tractor. This is a reduction in the value of the assets. Recording the depreciation means the account now includes the fixed assets less depreciation.

The fixed assets account is an asset account and a decrease in the value of the account is recorded as a CREDIT.

FIXED ASSETS	DEBIT (\$)	CREDIT (\$)
Two-wheeled tractor	1000	
Silo	500	
Silo – depreciation year 1		25
Two-wheeled tractor – depreciation year 1		100

To show the cost in the year of using the fixed assets we create a **depreciation account in the profit and loss account**.

This is an expense account. An increase in an expense account is recorded as a DEBIT.

DEPRECIATION	DEBIT (\$)	CREDIT (\$)
Depreciation of silo	25	
Depreciation of two-wheeled tractor	100	

### Recording interest from loans

A loan was taken out to pay for the silo. Interest on loans can be calculated in two ways: **Simple interest** or **compound interest**.

#### Simple interest:

Simple Interest is calculated by taking the loan amount (\$500), multiplied by the interest rate (5% per year) and the number of payment periods (2 years). So calculating the interest on the money borrowed for the silo using simple interest would be  $500 \times 0.05 \times 2 = \$50$ .

**Total interest: \$50.00**

#### Compound interest:

Compound Interest is not only calculated on the amount borrowed, but also on the amount of interest added in the pay-back period.

Year 1:  $500 \times 1 \text{ year} \times 5\% = \$25$  in interest

Year 2:  $525 (\$500 \text{ original loan plus } \$25 \text{ accrued interest}) \times 1 \text{ year} \times 5\% = \$26.25$  in interest.

**Total interest: \$51.25**

Matti is using simple interest to repay the silo loan.

The accounts we need to use for recording the loan will be the loan account that we covered earlier, as well as a new profit and loss account for interest.

Using Figure 3 again, work out whether the loan and interest will be recorded as DEBITS or CREDITS.

The loan is a liability and the amount will increase, so it is recorded as a CREDIT.

LOAN ACCOUNT	DEBIT (\$)	CREDIT (\$)
Loan of cash for silo		500
Interest year 1		25

The cost of the loan, the interest, for the year would be entered into an expense account. The interest increases the expense account so it is recorded as a DEBIT.

INTEREST	DEBIT (\$)	CREDIT (\$)
Interest in year 1	25	

To make sure that all the entries made so far are correct and to prepare the profit and loss and balance sheet for the first month, we use a **trial balance**. We explain trial balances in the next lesson.

**Quick Test 16 – Including expenses and income in double-entry bookkeeping**

**1** A farmer puts \$5000 capital into his farm.

He then buys some tools for farming for \$2000, using a loan which he pays back over 5 years at a simple rate of 5%. He estimates the tools will last for 10 years, and so will depreciate at a rate of 10%. He uses the straight line depreciation method.

He buys some seed for \$50 and some fertiliser for \$25. He pays \$20 to transport livestock to market. At market he sells 3 goats for \$40 each and 10 sheep for \$20 each, all for cash.

He also buys a silo using money from his bank account for \$500. He expects the silo to last 10 years, so will depreciate at a rate of 10%. He uses the straight line depreciation method.

Record these transactions for year 1 using the double-entry bookkeeping system.

**2** A farmer puts \$1000 capital into his farm.

He then buys some seeds for \$25 and spray for \$15. He also buys 10 empty sacks for \$5.

At market he sells 10 chickens for \$30 and 5 sheep for \$60. He pays \$10 to transport them to market.

The farmer buys a second-hand two-wheeled tractor for \$1500. He takes out a loan which he pays back over 5 years at a simple rate of 2%. He estimates the tractor will last for 10 years, and so will depreciate at a rate of 10%.

He also buys a silo using money from his bank account for \$300. He expects the silo to last 10 years, so will depreciate at a rate of 10%. He uses the straight line depreciation method for both the two-wheeled tractor and silo.

Record these transactions for year 1 using the double-entry bookkeeping system.

**3** A farmer puts \$500 capital into her business.

She buys some feed for her livestock for \$30, pays the rent for the farm for \$300 and pays \$50 for some labour. She also buys some equipment for \$100 for cash. This equipment is expected to last for 5 years and so has a depreciation rate of 20%.

On her stall she sells 10 sacks of sorghum for \$400 and 2 sacks of pearl millet for \$60, all for cash. She also sells 3 sacks of pearl millet for \$90 on credit.

Record these transactions for year 1 using the double-entry bookkeeping system.

*Note down the answers and check them with the answers at the end of this booklet*

## Uno How's Farm Visit 20

### Accounts and planning

#### Preparing a trial balance



A trial balance is a list of the closing balances of all accounts at a certain date (usually at the end of the financial year).

#### Trial balance

A **trial balance** is a list of the closing balances of all accounts at a certain date (usually at the end of the financial year). **The accounts are closed and the closing DEBIT and CREDIT balances are transferred to the trial balance.**

Starting with the Bank Account, let's summarise Matti's DEBITS and CREDITS. **Firstly calculate the totals of the DEBITS and CREDITS.**

**DEBIT** (money received into the bank account) = \$3000 and **CREDIT** (money spent) = \$1530.

**Next find the difference between the DEBITS and CREDITS. This amount is then carried forward (C/F) on the account.**

DEBIT - CREDIT = \$3000 - \$1530 = DEBIT of \$1470.

The \$1470 is **carried forward (C/F)** and recorded under DEBIT.

BANK ACCOUNT	DEBIT (\$)	CREDIT (\$)
Opening balance	2000	
Money for two-wheeled tractor taken out		1000
Loan money coming in	500	
Money taken out for silo materials		500
Money taken out for seed		10
Money taken out for labour		20
Sale of grain in cash	500	
<b>TOTAL</b>	<b>3000</b>	<b>1530</b>
<b>Amount C/F</b>	<b>1470</b>	

The loan account is summarised in the same way.

DEBIT - CREDIT = \$0 - \$525 = CREDIT of \$525

This \$525 is carried forward (C/F) and recorded under CREDIT.

LOAN ACCOUNT	DEBIT (\$)	CREDIT (\$)
Loan of cash for silo material		500
Interest year 1		25
<b>TOTAL</b>		<b>525</b>
<b>Amount C/F</b>		<b>525</b>

After summarising all the accounts (the full set of summarised accounts are shown in Annex 1) we can put all the C/F amounts into the trial balance. In a trial balance, we want the total of all DEBITS to be equal to the total of all CREDITS.

Matti's trial balance is shown below:

TRIAL BALANCE	DEBIT (\$)	CREDIT (\$)
Fixed Assets (including depreciation)	1375	
Bank account	1470	
Debtors	600	
Creditors		20
Loan		525
Capital		2000
Sales		1100
Seed	10	
Fertiliser	20	
Labour	20	
Interest	25	
Depreciation	125	
	<b>3645</b>	<b>3645</b>

**You can see that the total of all DEBITS is the same as the total of all CREDITS, which indicates that it is correct.**

The second way of checking that the figures in the trial balance are correct is to check it against your bank account. Look at the amount in the trial balance in the bank account line, then compare this amount to the actual amount in your bank account on the same date. These two amounts should be the same.

If they are **not**, something will have been missed of in the recording process, and further checks are needed to identify the items not recorded.

### Quick Test 17 – Preparing the trial balance

**1** Using the accounts that you prepared from Quick Test 16 - Question 1, draw up a trial balance.

**2** Using the accounts that you prepared from Quick Test 16 - Question 2, draw up a trial balance.

**3** Using the accounts that you prepared from Quick Test 16 - Question 3, draw up a trial balance.

*Note down the answers and check them with the answers at the end of this booklet*

## Uno How's Farm Visit 20

### Accounts and planning

#### Matti's closing stock



Matti lists her stock, with values. She then incorporates the closing stock into her financial accounts.

Matti does a stocktake of all her produce and livestock.

Table 37: Matti's Stocktake.

Items	Method	Value per unit	Units	Total
<b>Crop produce</b>				
10 kg bag of sorghum	Deemed price 75%	75% of \$35 = \$26.25	5	\$131.25
50 kg bag of maize	Deemed price 75%	75% of \$30 = \$22.50	5	\$112.50
<b>Livestock</b>				
Goats	Deemed price 75%	75% of \$40 = \$30	10	\$300
Chickens	Deemed price 60%	60% of \$3 = \$1.80	50	\$90
Sheep	Deemed price 75%	75% of \$20 = \$15	10	\$150
<b>Other produce</b>				
Honey	Deemed price 75%	75% of \$5 = \$3.75	20 jars	\$75
<b>TOTAL CLOSING STOCK</b>				<b>\$858.75</b>

Matti's stocktake shows she has \$858.75 of closing stock.

Matti has been using double-entry bookkeeping for her accounts. She has different accounts for all her assets, liabilities, capital, expenditure and income. She does not however have one for stock. To include the stock in the accounts Matti will need to create two new accounts, one for **stock** and one for **closing stock**.

**Stock** is an asset. The asset has increased, so is recorded as a DEBIT.

STOCK ACCOUNT	DEBIT (\$)	CREDIT (\$)
Stock	858.75	

**Closing stock** is a reduction of purchases and is therefore a credit in the Profit and Loss account.

CLOSING STOCK ACCOUNT	DEBIT (\$)	CREDIT (\$)
Closing stock		858.75

Note: The closing stock will be entered the following year as opening stock. Closing stock is recorded as a CREDIT. Opening stock is recorded as a DEBIT.

Matti's trial balance is shown below. She can now incorporate stock into her trial balance, which will then be used to prepare the profit and loss accounts.

TRIAL BALANCE	DEBIT (\$)	CREDIT (\$)
Fixed Assets (including depreciation)	1375	
Bank account	1470	
Stock	858.75	
Debtors	600	
Creditors		20
Loan		525
Capital		2000
Sales		1100
Seed	10	
Fertiliser	20	
Labour	20	
Closing stock		858.75
Interest	25	
Depreciation	125	
	<b>4503.75</b>	<b>4503.75</b>

### Quick Test 18 – Accounting for closing stock

**1** A farmer does a stocktake and calculates she has \$500 worth of closing stock.

Using the accounts that you prepared from Quick Test 17 - Question 1, incorporate the farmer's stock into the double-entry accounts and the trial balance.

**2** A farmer does a stocktake and calculates he has \$700 worth of closing stock.

Using the accounts that you prepared from Quick Test 17 - Question 2, incorporate the farmer's stock into the double-entry accounts and the trial balance.

**3** A farmer does a stocktake and calculates she has \$1000 worth of closing stock.

Using the accounts that you prepared from Quick Test 17 - Question 3, incorporate the farmer's stock into the double-entry accounts and the trial balance.

*Note down the answers and check them with the answers at the end of this booklet*

## Uno How's Farm Visit 20

### Accounts and planning

#### Preparing the profit and loss account and the balance sheet



Matti uses the trial balance she has prepared to produce a profit and loss account so she can see how much profit she is making; and a balance sheet so she can see the value of her net assets.

#### 1. Profit and loss account

Both the profit and loss accounts and the balance sheet are prepared using the information in the trial balance. To do this we need to identify which are balance sheet accounts and which are profit and loss accounts.

Here is Matti's trial balance from the accounts she has prepared so far:

TRIAL BALANCE	DEBIT (\$)	CREDIT (\$)
<b>BALANCE SHEET ACCOUNTS</b>		
Fixed assets (including depreciation)	1375	
Bank account	1470	
Stock	858.75	
Debtors	600	
Creditors		20
Loan		525
Capital		2000
<b>PROFIT AND LOSS ACCOUNTS</b>		
Sales		1100
Seed	10	
Fertiliser	20	
Labour	20	
Closing stock		858.75
Interest	25	
Depreciation	125	
	<b>4503.75</b>	<b>4503.75</b>

For the profit and loss account:

- **Gross Profit = Sales – Expenses**
- **Profit before tax and drawings = Gross profit – Interest – Depreciation**

*Note:* Closing stock is recorded as a – value, as it is money that has been spent on stock that has not been sold.

Matti's profit and loss account includes the value of all sales and expenses; closing stock; interest; and depreciation - because all these items affect profit/loss.

	\$	\$
Sales		1100
Seed	10	
Fertiliser	20	
Labour	20	
Closing stock	-858.75	
<b>Gross profit</b>		<b>1908.75</b>
Interest		25
Depreciation		125
<b>Profit before tax and drawings</b>		<b>1758.75</b>

Matti has made a profit of \$1758.75 in the period which these accounts cover.

## 2. Balance sheet

We now need to prepare the balance sheet from the balance sheet accounts. Grouping the accounts together in assets and liabilities shows you the totals of each.

Asset accounts	DEBIT (\$)	CREDIT (\$)
Fixed assets less depreciation	1375	
Bank account	1470	
Debtors	600	
Stock	858.75	
<b>Liabilities accounts</b>		
Loan		525
Creditors		20

We put these totals for the accounts into the balance sheet where:

**Total Net Assets = Fixed Assets + Current Assets – Liabilities**

Matti's balance sheet includes the value of all her assets and liabilities at that point in time – because these affect the value of her farm at that moment.

	\$	\$
<b>Fixed assets</b>		<b>1375</b>
Current assets:		
Bank account	1470	
Stock	858.75	
Debtors	600	
<b>Total current assets</b>		<b>2928.75</b>
<b>Liabilities</b>		
Loan	525	
Creditors	20	
<b>Total liabilities</b>		<b>545</b>
<b>Total net assets</b>		<b><u>3758.75</u></b>

To prove that the accounts are correct we can calculate the capital account using the capital carried forward and add this to the profit or loss for this period.

This should balance with the total net assets.

**Total Net Assets = Capital + Profit (or loss) for period**

Capital account	DEBIT (\$)	CREDIT (\$)
Capital		2000

Profit before tax and drawings	1758.75
--------------------------------	---------

	\$	\$
<b>Capital</b>		
Capital C/F	2000.00	
<b>Profit in period</b>	<u>1758.75</u>	
		<u>3758.75</u>

**Total Net Assets = \$3758.75**

**Capital + Profit (or loss) for period = \$3758.75**

The accounts have therefore been recorded accurately.

### Quick Test 19 – Preparing profit and loss accounts and balance sheets

**1** Using the trial balance that you prepared from Quick Test 18 - Question 1, produce the profit and loss account.

Next prepare the balance sheet to find the total net assets.

Lastly check that the Net Assets = Capital + Profit (or loss) for the period.

**2** Using the trial balance that you prepared from Quick Test 18 - Question 2, produce the profit and loss account.

Next prepare the balance sheet to find the total net assets.

Lastly check that the Net Assets = Capital + Profit (or loss) for the period.

**Quick Test 19 cont... – Preparing profit and loss accounts and balance sheets**

**3** Using the trial balance that you prepared from Quick Test 18 - Question 3, produce a profit and loss account.

Next prepare the balance sheet to find the total net assets.

Lastly check that the Net Assets = Capital + Profit (or loss) for the period.

*Note down the answers and check them with the answers at the end of this booklet*

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**Back to Uno How Farm Visit 20**

## Uno How's Farm Visit 20

### Accounts and planning

#### Using a cash book for recording accounts



If your business has hundreds of transactions it would not be practical for you to enter each transaction individually in ledgers. A quicker way to do this is by using a cash book with analysis columns.

When using a cash book, the amounts paid from the bank account and the amounts paid in cash need to be recorded separately. This can be done either by having separate columns for cash and bank payments or simply having two separate cash books. Here we will use separate cash books and use an example of a farmer that Uno knows. For simplicity we will assume all **payments out**, shown below, are from the bank account.

Date	Payee	Item	Amount \$		Seed \$	Fertiliser \$	Labour \$	Assets \$
10/05/2016	Min	Maize seed	25		25			
12/05/16	Jose	Rice seed	15		15			
15/05/16	Adam	Fertiliser	50			50		
16/05/16	Min	Fertiliser	15			15		
17/05/16	Ross	Help to saw	8				8	
17/05/16	Todd	Help to fertilise	12				12	
19/05/16	Ross	Wheelbarrow	50					50
		<b>TOTALS</b>	<b>175</b>		<b>40</b>	<b>65</b>	<b>20</b>	<b>50</b>

The payments are recorded in columns on the left. On the right each type of payment has an **analysis column**. First we have to check that the entries “**cross cast**”.

This means making sure the **TOTAL** of the 4 columns to the right (in this case the seed, fertiliser, labour and asset columns) are the same as the **TOTAL** in the amount column.  $40 + 65 + 20 + 50 = 175$  so the cash book is correctly entered.

Now we need to do the same for the **amounts paid into** the bank account. The money into the account is recorded on the left, and the analysis columns are on the right.

Date	Payer	Item	Amount		Sales	Loan
10/05/2016	Sarah	Sale of maize	40		40	
12/05/16	Karl	Sale of rice	20		20	
15/05/16	Adam	Sale of maize	60		60	
16/05/16	Bank	LOAN	50			50
17/05/16	Peter	Sale of rice	45		45	
17/05/16	Karl	Sale of maize	45		45	
		<b>TOTALS</b>	<b>260</b>		<b>210</b>	<b>50</b>

Again we need to make sure the columns cross cast:  $210 + 50 = 260$ . So this is also correct.

Now we can enter these numbers directly into the trial balance, starting with payments out of the bank account. Remember the following when entering transactions into accounts:

**Balance Sheet Accounts**

	DEBIT (DR)	CREDIT (CR)
<b>ASSETS</b>	<b>INCREASE</b> in Asset Account	<b>DECREASE</b> in Asset Account
<b>LIABILITIES</b>	<b>DECREASE</b> in Liability Account	<b>INCREASE</b> in Liability Account

**Profit and Loss Accounts**

	DEBIT (DR)	CREDIT (CR)
<b>EXPENSES</b>	<b>INCREASE</b> in Expenses Account	<b>DECREASE</b> in Expenses Account
<b>INCOME</b>	<b>DECREASE</b> in Income Account	<b>INCREASE</b> in Income Account

Payments **out** of the bank account are a reduction of the cash asset so we enter the total as a **CREDIT**.

The individual columns, seed, fertiliser and labour are expenses. They increase the expenses account and so are recorded as a **DEBIT**.

The wheelbarrow is an asset and as the value of the asset is increasing this will be recorded as a **DEBIT**.

TRIAL BALANCE	DEBIT (\$)	CREDIT (\$)
<b>BALANCE SHEET ACCOUNTS</b>		
Fixed assets (less depreciation)	50	
Bank account		175
Debtor		
Creditors		
Loan		
Capital		
<b>PROFIT AND LOSS (INCOME AND EXPENDITURE) ACCOUNTS</b>		
Sales		
Seed	40	
Fertiliser	65	
Labour	20	
Interest		
	<b>175</b>	<b>175</b>

Now we need to enter **the income into the bank account** in the same trial balance.

Payments **into** the bank account are assets and the asset is increasing so we enter the total as a **DEBIT**.

Sales is an income and it is increasing so is recorded as a **CREDIT**.

The loan we have taken out to buy the wheelbarrow is a liability. This increases the liability account and so is recorded as a **CREDIT**.

TRIAL BALANCE	DEBIT (\$)	CREDIT (\$)
<b>BALANCE SHEET ACCOUNTS</b>		
Fixed assets (less depreciation)	50	
Bank account	260	175
Debtor		
Creditors		
Loan		50
Capital		
<b>PROFIT AND LOSS (INCOME AND EXPENDITURE) ACCOUNTS</b>		
Sales		210
Seed	40	
Fertiliser	65	
Labour	20	
Interest		
	<b>435</b>	<b>435</b>

You can see how by doing this we have introduced assets, liabilities, expenses and income.

We can now make a simple set of **profit and loss accounts** from these figures.

Remember for the profit and loss account:

**Gross Profit = Sales – Expenses**

**Profit before tax and drawings = Gross profit – Interest – Depreciation**

**PROFIT AND LOSS ACCOUNT**

	\$	\$
Sales		210
Seed	40	
Fertiliser	65	
Labour	20	
<b>Gross profit</b>		<b>85</b>
Interest		0
Depreciation		0
<b>Profit before tax and drawings</b>		<b>85</b>

And the **balance sheet**:

Looking at the bank account in the trial balance we now have an amount in both DEBIT and CREDIT. The DEBIT is larger than the CREDIT which means it will be an asset:

To enter it into the balance sheet we deduct the CREDIT from the DEBIT and enter the balance as an asset.

$$\$260 - \$175 = \$85$$

Remember in the balance sheet:

**Total Net Assets = Fixed Assets + Current Assets - Liabilities**

**BALANCE SHEET**

	\$	\$
<b>Fixed assets</b>		<b>50</b>
Current assets:		
Bank account	85	
Debtors	0	
<b>Total current assets</b>		<b>85</b>
<b>Liabilities</b>		
Loan	50	
Creditors	0	
<b>Total liabilities</b>		<b>50</b>
<b>Total net assets</b>		<b><u>85</u></b>

To prove that the accounts are correct we will calculate the capital account. We have no capital carried forward.

	\$	\$
<b>Capital</b>		
Capital C/F	0	
<b>Profit in period</b>	<u>85</u>	
		<b><u>85</u></b>

As you can see this the total net assets equal the capital plus profit. The transactions have therefore all been recorded correctly in the accounts.

**Quick Test 20 – Using a cash book to record transactions**

**1** A farmer has made the following payments out of her bank account.

Date	Payee	Item	Amount (\$)
3/04/2016	Ross	Sorghum seed	30
8/04/16	Min	Maize seed	20
9/04/16	Joseph	Casual labour – half a day for maize	10
14/04/16	Adam	Fertiliser	20
21/04/16	Ross	Transport to market	5

And had the following payments into her bank account.

Date	Payee	Item	Amount (\$)
5/04/2016	Sara	Sale of honey	5
10/04/16	Mark	Sale of sheep	150
16/04/16	Paul	Sale of maize	30
20/04/16	Bank	LOAN	100

From these prepare a trial balance, the profit and loss account and the balance sheet.

How do you know the accounts have been correctly recorded?

**2** A farmer has made the following payments in cash.

Date	Payee	Item	Amount
1/06/2016	Mark	Pearl Millet seed	25
3/06/16	Sara	Maize seed	15
11/06/16	Pat	Tools	50
12/06/16	Mark	Casual labour	10
14/06/16	Geoffrey	Fertiliser	15

And received the following payments in cash.

Date	Payee	Item	Amount
2/06/2016	Geoffrey	Sale of chickens	15
8/06/16	Mark	Sale of sorghum seed	10
14/06/16	Bank	LOAN	50
16/06/16	Pat	Sale of cattle	200

From these prepare a trial balance, the profit and loss account and the balance sheet.

How do you know the accounts have been correctly recorded?

*Note down the answers and check them with the answers at the end of this booklet*

## Uno How's Farm Visit 20

### Accounts and planning

#### Farming and gross margins



Matti has calculated her gross margins for each of her crops and livestock types. This allows her to see which part of her business is performing well and will help her to plan for the future.

In Module 4, when Sheba, and earlier, when Sara and Jon were thinking of how they could increase their profits, Uno suggested they calculate their **gross margins**.

#### Gross Margins = Gross Income – Variable Costs

Matti grows several crops on her farm: maize, sorghum and finger millet, and she keeps goats, sheep and chickens. To calculate the gross margins for all of her different crops and livestock she has treated them all as **separate enterprises**, then she can compare the results to see which part of her business is giving her the best returns.

She could also compare her gross margins with those of other farms and with “targets” prepared by extension agents.

Calculating **gross margins** can be done with a simple calculation, like the one above, or at the other extreme, by using a database, which allows for more complex analysis of the different business enterprises being assessed.

A free to use **online gross margin calculator** is available through the **AgriTechTalk International website**. See Annex 2 for more details.

**Matti has used the simple equation above to calculate her gross margins.**

She has however used **more detailed recording sheets** than Tad and Mim, or Sara and Jon.

#### Calculating the gross margins for crops

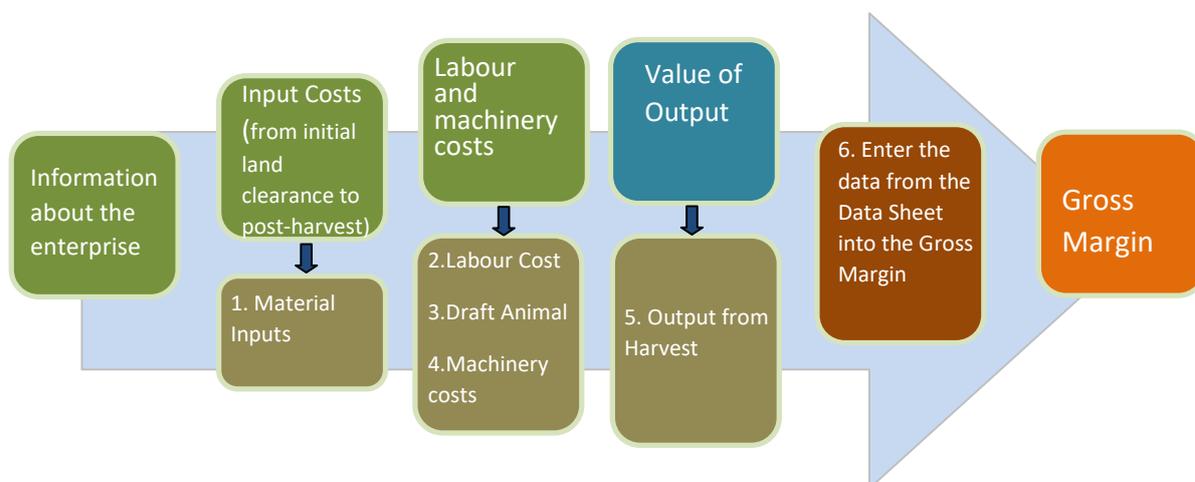
When calculating the gross margin for the crops, Matti wants to be able to look at her costs and sales for each crop for the year. She will split up all her input costs into different categories, and also any labour costs or machinery costs.

With her outputs she would like to be able to see the different outputs from all the individual crops.

Figure 4 shows the structure of level of detail that Matti is trying to achieve from her gross margins.

Tables 38 and 39 show her recording sheets for the outputs (sales) and inputs (revenue) for crops for the week.

**Figure 4: The structure of the crops gross margin and Matti's corresponding records.**



Matti starts with the outputs (sales) for crops.

**Table 38: Example of one of Matti's weekly recording sheet for outputs from crops.**

Outputs for grain (cereals, pulses, oilseeds), tubers, root crops, groundnuts, green vegetables, fruits.						
Date:	Output type	Number of sacks/bags/baskets threshed and stored	Weight of one full sack/bag or basket	Price per unit (kg or local unit)	Total	Cash/credit
1 st	Sorghum	4	50 kg	\$25	\$100	cash
2 nd						
3 rd						
4 th	Sorghum	10	50 kg	\$30	\$300	cash
5 th	Maize	20	50 kg	\$30	\$600	credit
6 th						
7 th	Maize	4	50 kg	\$25	\$100	cash
<b>Total for the week</b>					<b>\$1100</b>	

Matti will also keep a similar sheet for the following outputs:

- The number of sacks/bags/baskets of output sold/eaten or given away
- By-products

She records the inputs for crops, with a different sheet for each crop, so that when she calculates her gross margins she will be able to separate the crops and their inputs.

**Table 39: Example of Matti's weekly recording sheet for Inputs (costs) from crops.**

<b>Cultivation costs</b>	<b>Cost per unit/ day /local measure</b>	<b>Number of units used</b>	<b>Total</b>
Area used in ha or local measures			
Labour costs for clearing, ploughing, harrowing/ discing/ digging, broad-bed making; levelling/ bunding.			
Machinery hire			
Fuel (litres)			
Oil (litres)			
<b>Inputs – seeds</b>			
Cost of seed (kg or local measure)			
Labour in days for sowing			
<b>Inputs - fertilisers or manure</b>			
Cost of fertiliser or manure (kg or cart-loads)			
Labour for spreading			
<b>Inputs - sprays</b>			
Cost of pesticides and herbicides (per litre, per kg)			
Labour for spraying			
<b>Other husbandry tasks</b>			
Cost for weeding, thinning, earthing up, bird/wild animal scaring			
<b>Harvesting - post harvest actions</b>			
Labour cost of cutting, gathering, stooking, threshing			
Machinery hire			
Containers for products: sacks, baskets.			
Transport costs from field to store – labour costs			
Vehicle hire to transport crops			

The weekly totals are transferred to a monthly sheet, from which yearly totals are calculated.

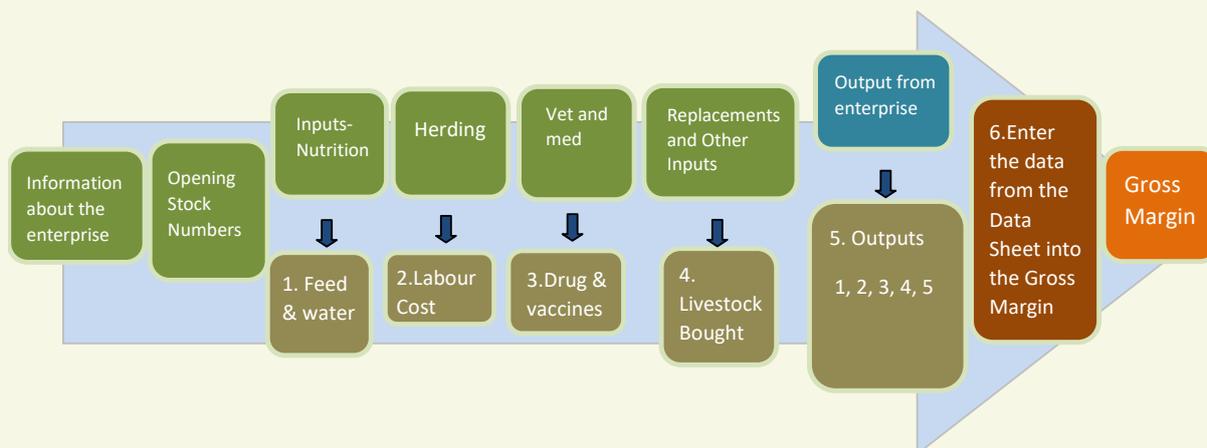
### Calculating the gross margins for livestock

As with crops – record all production sold, consumed or given away. Sales from these will include sale/use/ gifts of fat-stock, store-stock, breeding stock, draught animals, cull stock, hides- skins, wool, milk eggs and dung (as fuel or as manure).

Again recording sheets are more detailed to allow for detailed analysis.

**Figure 5: The structure of the livestock gross margin and Matti's corresponding records**

**Figure 2: The structure of the Livestock Gross margin and corresponding records**



**Note:** *If gross margins are to be calculated then records need to be taken for the different types of livestock, e.g. one for camels, one for cattle and so on. If recording is done at a basic level then livestock types can be grouped together for ease of recording. These records will not give as much information as more detailed type specific records but they will still be very useful and will still enable profits and losses to be calculated.*

Matti keeps a different sheet for each type of livestock, and depending on how detailed she wants her gross margins to be, the class of livestock.

**Table 40: Example of a daily recording sheet for inputs for livestock for Matti.**

Input	Cost per unit/day/local measure	Number of units used	Total
Feed costs - concentrates			
Feed costs - forages			
Water			
Labour costs			
Drug treatment			
Vaccinations			

Matti also records the outputs (sales) for livestock.

**Table 41: Example of a daily recording sheet for outputs for livestock for Matti.**

Type of output: For example:	Value per unit//local measure	Number of units sold/eaten/in-store/given away	Total
Milk/cheese			
Eggs			
Male calves			
Breeding bull calves			
Female calves			
Cull females			
Broilers/chicks			
Cull hens/pullets			
Piglets			
By-products			

At the end of the week, as with Tad and Mim, the records are transferred to a monthly recording sheet from which yearly totals can be calculated.

**Matti has calculated her gross margins based on her financial records for last year.**

**Gross Margins = Gross Income – Variable Costs**

**Crops: Sorghum (4 ha)**

Gross Income for last year was \$750. Her variable costs were \$100.

$$\$750 - \$100 = \$650$$

$$\text{Gross Margin per ha} = \$650/4 = \$162.5 \text{ ha.}$$

**Crops: Maize (2 ha)**

Gross Income for last year was \$500. Her variable costs were \$50.

$$\$500 - \$50 = \$450$$

$$\text{Gross Margin per ha} = \$450/2 = \$225 \text{ ha.}$$

**Crops: Finger Millet (6 ha)**

Gross Income for last year was \$2000. Her variable costs were \$600.

$$\$2000 - \$600 = \$1400$$

$$\text{Gross Margin per ha} = \$1400/6 = \$233.33 \text{ ha.}$$

**Matti's Gross Margins for livestock are:**

**Livestock: Goats (10)**

Gross Income for last year was \$500. Her variable costs were \$200.

$$\$500 - \$200 = \$300$$

**Gross Margin per ha =  $\$300/10 = \$30$  per head.**

**Livestock: Sheep (10)**

Gross Income for last year was \$600. Her variable costs were \$250.

$$\$600 - \$250 = \$350$$

**Gross Margin per ha =  $\$350/10 = \$35$  per head.**

Because her gross margin is particularly good for finger millet, she has decided that she will grow more finger millet.

She is also thinking she may buy some more sheep rather than goats, as they have a higher gross margin.



**Before she makes any decisions Uno suggests Matti could compare what she has already done with other farmers; OR compare what they might do (using predicted values) against standard values or *benchmarks*.**

The **AgriTechTalk gross margin calculator** not only compiles and analyses, but compares gross margins from different enterprises, different farms, different areas and different countries.

**Benchmark figures are given, where available, for different countries and regions. More information about the gross margin calculator is given in Annex 2.**

**Quick Test 21 – Gross margins for farming**

**1** A farmer wants to calculate his gross margins for the crops he grows. He has kept records for his variable costs. He has recorded some of the variable costs by crop type, but for others he has recorded them for the farm as a whole. He will therefore have to estimate the proportion of these costs (transport and casual labour) for each crop.

Crop	Variable costs by crop (\$)	Transport (\$)	Casual labour (\$)
Sorghum (2 ha)	250	33% of \$60	20% of \$75
Maize (1.5 ha)	300	33% of \$60	40% of \$75
Pearl Millet (1 ha)	100	33% of \$60	40% of \$75

His revenue (sales) from the crops is listed below.

Crop	Revenue (\$)
Sorghum (2 ha)	800
Maize (1.5 ha)	400
Pearl Millet (1 ha)	400

Calculate his gross margin for each crop.

**2** A farmer has the following variable costs for his farm. Some of his variable costs (transport and casual labour) have been recorded for the farm as a whole and so will need to be calculated as a percentage of the cost.

Crop/livestock	Variable costs by crop (\$)	Transport (\$)	Casual labour (\$)
Sorghum (2.5 ha)	500	15% of \$150	50% of \$50
Finger Millet (1.5 ha)	200	5% of \$150	35% of \$150
20 Goats	700	40% of \$150	10% of \$150
30 Sheep	400	40% of \$150	5% of \$150

His revenue (sales) from the farm is listed below.

Crop/livestock	Revenue (\$)
Sorghum (2.5 ha)	650
Finger Millet (1.5 ha)	300
20 Goats	800
30 Sheep	600

Calculate his gross margin for the farmer's crops and livestock.

*Note down the answers and check them with the answers at the end of this booklet*

## ANSWERS TO QUICK TESTS

### Quick Test 1 – Calculating fixed and variable costs

**Answer:**

1. **\$4150 (before taxes are taken off)**
2. **\$6445 (before taxes are taken off)**
3. **\$3725 (before taxes are taken off)**
4. **- \$40 (before taxes are taken off)**

**Explanation:**

1.

Fixed costs/year	\$	Variable costs/year	\$
Electricity	1 x 300 = 300	Materials	2 x 300 = 600
Rent for stall	300		
Tools/Equipment	50		
<b>Total</b>	<b>650</b>		<b>600</b>

Profit = Income – Expenses

Income per day = (2 x 5) + (1 x 8) = 10 + 8 = 18

Income per year = 18 x 300 = \$5400

Expenses for year = 650 + 600 = \$1250

Profit for year = \$5400 - \$1250 = **\$4150 before taxes taken off**

2.

Fixed costs/year	\$	Variable costs/year	\$
Wages	4 x 285 = 1140	Materials	5 x 285 = 1425
Equipment	45		
Electricity	1.5 x 285 = 427.50		
Rent	350		
<b>Total</b>	<b>1962.50</b>		<b>1425</b>

Profit = Income – Expenses

Income per day = (4 x 4.5) + (6 x 2) = 22.50 + 12 = 34.50

Income per year = 34.50 x 285 = \$9832.50

Expenses for year = 1962.50 + 1425 = \$3387.50

Profit for year = \$9832.50 - \$3387.50 = **\$6445 before taxes taken off**

3.

Fixed costs/year	\$	Variable costs/year	\$
Wages	3000	Materials	3 x 300 = 900
Equipment	75		
Electricity	1 x 300 = 300		
Rent	400		
<b>Total</b>	<b>3775</b>		<b>900</b>

Profit = Income – Expenses

Income per day = (4 x 4) + (8 x 1.50) = 16 + 12 = 28

Income per year = 28 x 300 = \$8400

Expenses for year = 3775 + 900 = \$4675

Profit for year = \$8400 - \$4675 = **\$3725 before taxes taken off**

**4.**

<b>Fixed costs/year</b>	<b>\$</b>	<b>Variable costs/year</b>	<b>\$</b>
Equipment	140	Ingredients	10 x 300 = 3000
Electricity	1 x 300 = 300		
Rent	350		
<b>Total</b>	<b>790</b>		<b>3000</b>

Profit = Income – Expenses

Income per day = (0.10 x 50) + (25 x 0.30) = 5 + 7.5 = 12.50

Income per year = 12.50 x 300 = \$3750

Expenses for year = 790 + 3000 = \$3790

Profit for year = \$3750 - \$3790 = **- \$40 before taxes taken off.**

The business has made a loss.

**Back**

**Quick Test 2 – Using tokens**

**Answer:**

- 1. Total of livestock sales \$650**
- 2. Farmer's expenses = \$95**

**Explanation:**

**1.** 5 x large green token = 5 x \$30 = \$150; 10 x large blue token = 10 x \$40 = \$400; 20 x large yellow = 20 x \$5 = \$100.

Total = \$150 + \$400 + \$100 = \$650.

**Total of livestock sales = \$650.**

**2.** 1 x large red token = 1 x \$20 = \$20; 2 x small yellow token = 2 x \$10 = \$20; 1 x small blue = 1 x \$15 = \$15; 2 x large brown = 2 x \$5 = \$10; 3 x large black = 3 x \$10 = \$30.

Total = \$20 + \$20 + \$15 + \$10 + \$30 = \$95.

**Farmer's expenses = \$95.**

**Back**

**Quick Test 3 – Cash generation and profit**

**Answer:**

- 1. Business 1: Profit = \$200; Cash generated = \$200  
Business 2: Profit = \$650; Cash generated = \$150**
- 2. Business 1: Profit = \$20; Cash generated = \$20  
Business 2: Profit = \$15; Cash generated = - \$15**

**Explanation:**

**Profit = Revenue – Expenses**

- 1. Business 1:** Revenue =  $20 \times 20 = \$400$ ; Expenses = \$200.  
**Profit =  $400 - 200 = \$200$**

**Business 2:** Revenue =  $75 \times 10 = \$750$ ; Expenses = \$100.  
**Profit =  $750 - 100 = \$650$**

**Cash generated**

	Cash at start	Expenses	Income	Cash	Cash generated
Business 1	\$300	\$200	\$400 (cash)	$300 - 200 + 400 = \$500$	$500 - 300 = \$200$
Business 2	\$200	\$100	\$500 (credit) \$250 (cash)	$200 - 100 + 250 = \$350$	$350 - 200 = \$150$

**Business 1: Profit = \$200; Cash generated = \$200**

**Business 2: Profit = \$650; Cash generated = \$150**

- 2. Business 1:** Revenue =  $100 \times 0.50 = \$50$ ; Expenses = \$30.  
**Profit =  $50 - 30 = \$20$**

**Business 2:** Revenue =  $300 \times 0.30 = \$90$ ; Expenses = \$75.  
**Profit =  $90 - 75 = \$15$**

**Cash generated**

	Cash at start	Expenses	Income	Cash	Cash generated
Business 1	\$100	\$30	\$50 (cash)	$100 - 30 + 50 = \$120$	$120 - 100 = \$20$
Business 2	\$150	\$75	\$30 (credit) \$60 (cash)	$150 - 75 + 60 = \$135$	$135 - 150 = - \$15$

**Business 1: Profit = \$20; Cash generated = \$20**

**Business 2: Profit = \$15; Cash generated = - \$15**

**Back**

**Quick Test 4 – Calculating break-even points**

**Answer:**

- The farmer would need to sell 20 bags of grain at market to break-even.
- The baker would need to sell 22 loaves per day. The baker makes a loss of - \$250.
- The stallholder would need to sell 15 rugs per day. The stallholder makes a profit of \$500 if they sell 17 rugs a day, at \$1 each.
- They would need to sell 3 hoes per day to break-even. If they sell 5 hoes per day, for \$5 each, they will make a profit of \$3750.

**Explanation:**

- 1.** Bags of grain are \$25. Costs are \$500. Cost per bag =  $500/25 = \$20$

The farmer would need to sell 20 bags of grain at market to break-even.

**2.** Costs = 1000 + 2250 = \$3250. Sells for 300 days a year.

Costs/day = 3250/300 = \$10.83. The baker sells his loaves for \$0.50

$10.83/0.50 = 21.66$  Round to 22.

The baker would need to sell 22 loaves per day to break-even. The baker estimates he sells 20 loaves per day so he is not breaking-even.

Profit (or loss) = Revenue – Costs

Revenue = (20 x 300) x 0.50 = \$3000

Costs = \$3250

Profit (or loss) for the year = 3000 – 3250 = - **\$250**

**3.** Costs = \$3750. Sells for 250 days a year.

Costs/day = 3750/250 = \$15. Rugs sell for \$1 each.

$15/1 = 15$

The stallholder needs to sell 15 rugs per day to break-even. They estimate they sell 17 rugs per day so they are making a profit.

Profit (or loss) = Revenue – Costs

Revenue = (17 x 250) x 1 = \$4250

Costs = \$3750

Profit (or loss) for the year = 4250 – 3750 = **\$500**

**4.** Costs = 2250 + 2000 = \$4250. Sells tools for 320 days.

Costs/day = 4250/320 = 13.28. Hoe sells for \$5.

$13.28/5 = 2.66$  Round to 3.

They would need to sell 3 hoes per day to break-even.

If they sold the hoes for \$5, their Profit = Revenue – Costs

Revenue = (5 x 320) x 5 = 1600 x 5 = \$8000

Costs = \$4250

Profit for the year = 8000 – 4250 = **\$3750**

**Back**

**Quick Test 5 – Calculating gross margins and net margins**

**Answer:**

1. Net profit (income) = \$2100 a year. Gross margin = \$2100 a year.  
New net profit = \$2540. New gross margin = \$2540.  
Net margin = 70%. New net margin = 60.5%.
2. Net profit (income) = \$9050 a year. Gross margin = \$9950 a year.  
New net profit = \$15 872.50. New gross margin = \$16 775.50.  
Net margin = 80%. New net margin = 80.6%.

**Explanation:**

1. Net Profit = Revenue – Expenses

Revenue = 10 x 300 x \$1 = \$3000

Expenses (costs) = \$3 x 300 = \$900

**Net profit (income) = 3000 – 900 = \$2100 per year.**

**Gross Margins = Revenue – Variable Costs**

Variable costs = \$900. There are no fixed costs.

**Gross margin = 3000 – 900 = \$2100 a year.**

**Gross margin % =  $\frac{3000 - 900}{3000} \times 100 = 70\%$**

If they employed someone for \$2 a day, for 200 days, variable costs:

Casual labour = 2 x 200 = \$400

Previously spent 3 x \$300 = \$900 on soap. If they increase washing by 40%,  
soap = 900 + (900 x 40%) = 900 + 360 = \$1260

New variable costs = \$400 + \$1260 = \$1660

Revenue = \$3000 + 40% = 3000 + 1200 = \$4200

**New gross margin = \$4200 - \$1660 = \$2540**

**New gross margin % =  $\frac{4200 - 1660}{4200} \times 100 = 60\%$**

**New net profit (income) = 4200 – 1660 = \$2540**

Net margins = Net profit/revenue x 100%

Before: Net Profit = \$2100. Revenue = \$3000.

**Net margin % = 2100/3000 x 100 = 70%**

After: New net profit = \$2540. New revenue = \$4200.

**Net margin % = 2540/4200 x 100% = 60.5%**

2. Net Profit = Revenue – Expenses

Revenue/day = 75 x 0.50 = \$37.50 per day.

Works for 320 days.

Revenue/year =  $320 \times 37.50 = \$12\,000$ .

Variable costs per year =  $\$1000 + \$300 = \$1300$ .

Fixed costs per year =  $300 + 200 + 400 = \$900$

Total costs per year =  $1300 + 900 = \$2200$ .

**Net profit (income) =  $12\,000 - 2200 = \$9800$  per year.**

**Gross Margins = Revenue – Variable Costs**

Revenue =  $\$12\,000$

Variable costs =  $\$1300$

**Gross margin =  $12\,000 - 1300 = \$10\,700$  a year.**

**Gross margin % =  $\frac{12\,000 - 1300}{12\,000} \times 100 = 89\%$**

If they employed someone for  $\$2$  a day, for 320 days:

Variable costs:

Casual labour =  $2 \times 320 = \$640$ .

Previously spent  $\$1000$  on ingredients. If they increase loaves from 75 to 120 (by 60%).

Ingredients =  $1000 + (1000 \times 60\%) = 1000 + 600 = \$1600$

Fuel for oven =  $300 + (300 \times 60\%) = 300 + 180 = \$480$

New variable costs =  $\$640 + \$1600 + \$480 = \$2720$ . Fixed costs do not change =  $\$900$ .

Total new costs =  $2720 + 900 = \$3620$

Revenue =  $\$12\,000 + 60\% = 12\,000 + 7200 = \$19\,200$

**New gross margin =  $\$19\,200 - \$2720 = \$16\,480$**

**New gross margin % =  $\frac{19\,200 - 2720}{19\,200} \times 100 = 86\%$**

**New net profit (income) =  $19\,200 - 3620 = \$15\,580$**

**Net margin = Net Profit/Revenue x 100%**

Before: Net profit =  $\$9800$ . Revenue =  $\$12\,000$ .

**Net margin =  $9800/12\,000 \times 100\% = 82\%$**

After: New net profit =  $\$15\,580$ . New revenue =  $\$19\,200$

**Net margin =  $15\,580/19\,200 \times 100\% = 81\%$**

**YES efficiency is sustained and profit is greatly increased! He would be wise to take somebody on to help him.**

**Back**

**Quick Test 6 – Recording revenue**

**Answer:**

1.

Month: April 2016					
Date:	Product sold/eaten/given away				Total sales
	Maize	Chickens	Millet	Goat	
1 st					
2 nd					
3 rd	\$10 (20 kg)				\$10
4 th					
5 th		10 x \$3			\$30
6 th					
7 th					
Total for the week					\$40
8 th					
9 th					
10 th			\$60 (50 kg)		\$60
11 th					
12 th	\$2.50 (5 kg eaten)		\$6 (5 kg eaten)		\$8.50
13 th					
14 th					
Total for the week					\$68.50
15 th					
16 th					
17 th					
18 th					
19 th					
20 th				\$90 (3 sold)	\$90
21 st					
Total for the week					\$90
22 nd					
23 rd					
24 th					
25 th					
26 th					
27 th					
28 th					
Total for the week					\$0
29 th					
30 th		\$10 (5 sold)			\$10
Total for the week					\$10
<b>MONTHLY TOTAL</b>					<b>\$208.50</b>

**2.**

Month: July 2016						
Date:	Product sold/eaten/given away					Total sales
	Sorghum	Millet	Maize	Goat	Chicken	
1 st						
2 nd						
3 rd	\$30 (30 kg)					\$30
4 th						
5 th						
6 th						
7 th			\$15 (10 kg)			\$15
<b>Total for the week</b>						<b>\$45</b>
8 th						
9 th						
10 th						
11 th						
12 th		\$40 (30 kg given away)				\$40
13 th						
14 th		\$40 (30 kg sold)				\$40
<b>Total for the week</b>						<b>\$80</b>
15 th						
16 th						
17 th						
18 th				\$70 (2 sold)		\$70
19 th						
20 th						
21 st						
<b>Total for the week</b>						<b>\$70</b>
22 nd						
23 rd						
24 th						
25 th						
26 th			\$15 (10 kg sold)		\$20 (10 sold)	\$35
27 th						
28 th						
<b>Total for the week</b>						<b>\$35</b>
29 th						
30 th						
31 st						
<b>Total for the week</b>						<b>\$0</b>
<b>MONTHLY TOTAL</b>						<b>\$230</b>

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**Quick Test 7 – Recording expenses**

**Answer:**

**1.**

Month: March 2016				
Date:	Fixed costs		Variable costs	
	Item	Cost	Item	Cost
1 st			10 kg Maize	\$10
2 nd				
3 rd	Trailer	\$50	5 goats	\$50
4 th				
5 th			Casual labour	\$5
6 th				
7 th				
Weekly total		\$50	Weekly total	\$65
8 th				
9 th				
10 th	Tools	\$10		
11 th				
12 th				
13 th				
14 th				
Weekly total		\$10	Weekly total	
15 th			5 kg wheat	\$5
16 th				
17 th				
18 th				
19 th				
20 th			5 kg fertiliser	\$10
21 st				
Weekly total			Weekly total	\$15
22 nd				
23 rd				
24 th				
25 th				
26 th				
27 th				
28 th				
Weekly total			Weekly total	
29 th				
30 th				
31 st				
Weekly total			Weekly total	
MONTHLY TOTAL		\$60	MONTHLY TOTAL	\$80

2

Month: September 2016				
Date:	Fixed costs		Variable costs	
	Item	Cost	Item	Cost
1 st				
2 nd				
3 rd	Silo	\$100		
4 th				
5 th			Casual labour	\$10
6 th				
7 th				
Weekly total		\$100	Weekly total	\$10
8 th				
9 th				
10 th			20 empty sacks	\$5
11 th				
12 th				
13 th				
14 th				
Weekly total			Weekly total	\$5
15 th				
16 th				
17 th				
18 th				
19 th				
20 th			5 kg maize	\$5
21 st				
Weekly total			Weekly total	\$5
22 nd			1 goat	\$20
23 rd			Transport	\$10
24 th				
25 th				
26 th				
27 th				
28 th				
Weekly total			Weekly total	\$30
29 th				
30 th				
Weekly total			Weekly total	
MONTHLY TOTAL		\$100	MONTHLY TOTAL	\$50

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**Quick Test 8 – Calculating profit (or loss) – revision**

**Answer:**

1. Profit (or loss) = \$300.
2. Profit (or loss) = - \$200.
3. Sales = \$450
4. Production = \$125

**Explanation:**

1. Sales maize (revenue) = \$900; Production costs = \$600  
 Profit (or loss) = 900 – 600 = **\$300 profit**

2. Sales = \$100 + \$200 = \$300; Production costs = \$500  
 Profit (or loss) = 300 – 500 = **- \$200 loss**

3. Production costs = \$450

Sales = **\$450** (the same as costs as he broke even)

4. Sales = \$825; Profit = \$700  
 Profit = Sales – Production costs

Production costs = 825 – 700 = **\$125**

**Back**

**Quick Test 9 – Fixed and variable costs - revision**

**Answer:**

1. Fixed costs = \$750. Variable costs = \$1830.
2. Fixed costs = \$261.50. Variable costs = \$150.
3. Fixed costs = \$201. Variable costs = \$730.
4. Production = \$125

**Explanation:**

1.

Item	Fixed Costs	Item	Variable Costs
Electricity (fixed for year)	\$200	Ingredients	\$1500
Rent	\$200	Casual labour	\$80
Oven	\$300	Water	\$100
Depreciation (oven)	\$30	Materials	\$150
Interest on loan	\$20		
<b>Total</b>	<b>\$750</b>	<b>Total</b>	<b>\$1830</b>

2.

Item	Fixed Costs	Item	Variable Costs
Stall rental	\$100	Transport	\$30
Tools	\$150	Casual labour	\$50
Depreciation (tools)	\$1.50	Fertiliser	\$40
Interest on loan	\$10	Seeds	\$30
<b>Total</b>	<b>\$261.50</b>	<b>Total</b>	<b>\$150</b>

3.

Item	Fixed Costs	Item	Variable Costs
Stall rental	\$100	Wood	\$500
Tools	\$100	Other materials	\$150
Depreciation (tools)	\$1	Casual labour	\$50
		Water	\$30
<b>Total</b>	<b>\$201</b>	<b>Total</b>	<b>\$730</b>

4.

Item	Fixed Costs	Item	Variable Costs
Rent	\$100	Spray	\$20
Tools	\$100	Livestock	\$450
Depreciation (tools)	\$5	Casual labour	\$20
		Transport	\$40
		Empty sacks	\$10
		Seeds	\$50
		Fertiliser	\$60
<b>Total</b>	<b>\$205</b>	<b>Total</b>	<b>\$650</b>

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**Quick Test 10 – Assets and liabilities**

**Answer and Explanation:**

1.

	Amount per year
<b>Current assets</b>	
Bank	\$50
<b>Total current assets</b>	<b>\$50</b>
<b>Fixed assets</b>	
Tools	\$100
Equipment	\$200
<b>Total fixed assets</b>	<b>\$300</b>
<b>Liabilities</b>	
Money owed to them	\$20
Loan repayments (1 year)	\$50
Interest on loan (5%)	\$2.50
<b>Total liabilities</b>	<b>\$72.50</b>
<b>TOTAL assets and liabilities</b>	<b>\$422.50</b>

2.

	Amount per year
<b>Current assets</b>	
Bank	\$300
Cash	\$100
<b>Total current assets</b>	<b>\$400</b>
<b>Fixed assets</b>	
Equipment	\$2000
<b>Total fixed assets</b>	<b>\$2000</b>
<b>Liabilities</b>	
Money owed to them	\$50
Loan repayments (2 years)	$\$500/2 = \$250$
Interest on loan (5% of 500)	\$25
<b>Total liabilities</b>	<b>\$325</b>
<b>TOTAL assets and liabilities</b>	<b>\$2725</b>

3.

	Amount per year
<b>Current assets</b>	
Bank	\$200
Cash	\$150
<b>Total current assets</b>	<b>\$350</b>
<b>Fixed assets</b>	
Equipment	\$1000
<b>Total fixed assets</b>	<b>\$1000</b>
<b>Liabilities</b>	
Money owed to them	\$250
Loan repayments (5 years)	$\$1000/5 = \$200$
Interest on loan (5% of 1000)	\$50
Money they owe to a friend	\$30
<b>Total liabilities</b>	<b>\$530</b>
<b>TOTAL assets and liabilities</b>	<b>\$1880</b>

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**Quick Test 11 – Depreciation**

**Answer:**

- 1. Depreciation will be \$200 a year for 10 years.**
- 2. Truck is worth an estimated \$308.82 after 15 years.**
- 3. The depreciation for the tools is \$40 a year for 5 years.**  
**The two-wheeled tractor will be worth \$1853.16 after 16 years.**

**Explanation:**

**1.** \$2000 worth of equipment. Will last 10 years. Depreciation =  $100\%/10 = 10\%$

10% of 2000 = \$200.

As it is straight line depreciation, the depreciation will be the same each year, which is **\$200**.

**2.** Truck worth \$1500. Loses 10% of value in first year. Uses reducing balance depreciation.

	<b>Depreciation (\$)</b>	<b>Value of equipment (\$)</b>
Start		1500
Year 1	$1500 \times 10\% = 150$	$1500 - 150 = 1350$
Year 2	$1350 \times 10\% = 135$	$1350 - 135 = 1215$
Year 3	$1215 \times 10\% = 121.50$	$1215 - 121.50 = 1093.50$
Year 4	$1093.50 \times 10\% = 109.35$	$1093.50 - 109.35 = 984.15$
Year 5	$984.15 \times 10\% = 98.42$	$984.15 - 98.42 = 885.73$
Year 6	$885.73 \times 10\% = 88.57$	$885.73 - 88.57 = 797.16$
Year 7	$797.16 \times 10\% = 79.72$	$797.16 - 79.72 = 717.44$
Year 8	$717.44 \times 10\% = 71.74$	$717.44 - 71.74 = 645.70$
Year 9	$645.70 \times 10\% = 64.57$	$645.70 - 64.57 = 581.13$
Year 10	$581.13 \times 10\% = 58.11$	$581.13 - 58.11 = 523.02$
Year 11	$523.02 \times 10\% = 52.30$	$523.02 - 52.30 = 470.72$
Year 12	$470.72 \times 10\% = 47.10$	$470.72 - 47.10 = 423.62$
Year 13	$423.62 \times 10\% = 42.36$	$423.62 - 42.36 = 381.26$
Year 14	$381.26 \times 10\% = 38.13$	$381.26 - 38.13 = 343.13$
Year 15	$343.13 \times 10\% = 34.31$	$343.13 - 34.31 = 308.82$

**3.** Tools are worth \$200. Estimated they will last 5 years. Depreciation =  $100\%/5 = 20\%$ .

As this is straight line depreciation, the tools will lose the same amount of value each year.  
 $\$200 \times 20\% = \$40$ .

The depreciation for the tools is **\$40 a year for 5 years**.

Two-wheeled tractor is worth \$4000. The depreciation is 5%, using reducing balance depreciation.

	<b>Depreciation (\$)</b>	<b>Value of equipment (\$)</b>
Start		4000
Year 1	$4000 \times 5\% = 200$	$4000 - 200 = 3800$
Year 2	$3800 \times 5\% = 190$	$3800 - 190 = 3610$
Year 3	$3610 \times 5\% = 180.50$	$3610 - 180.50 = 3429.50$
Year 4	$3429.50 \times 5\% = 171.48$	$3429.50 - 171.48 = 3258.02$
Year 5	$3258.02 \times 5\% = 162.90$	$3258.02 - 162.90 = 3095.12$
Year 6	$3095.12 \times 5\% = 154.76$	$3095.12 - 154.76 = 2940.36$
Year 7	$2940.36 \times 5\% = 147.02$	$2940.36 - 147.02 = 2793.34$
Year 8	$2793.34 \times 5\% = 139.67$	$2793.34 - 139.67 = 2653.67$

Year 9	$2653.67 \times 5\% = 132.68$	$2653.67 - 132.68 = 2520.99$
Year 10	$2520.99 \times 5\% = 126.05$	$2520.99 - 126.05 = 2394.94$
Year 11	$2394.94 \times 5\% = 119.75$	$2394.94 - 119.75 = 2275.19$
Year 12	$2275.19 \times 5\% = 113.76$	$2275.19 - 113.76 = 2161.43$
Year 13	$2161.43 \times 5\% = 108.07$	$2161.43 - 108.07 = 2053.36$
Year 14	$2053.36 \times 5\% = 102.67$	$2053.36 - 102.67 = 1950.69$
Year 15	$1950.69 \times 5\% = 97.53$	$1950.69 - 97.53 = 1853.16$

The two-wheeled tractor will be worth **\$1853.16** after 15 years.

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### Quick Test 12 – Pricing products based on production costs

#### Answer:

1. She would have to sell the rugs for **\$3.31** each to break-even. If she wants to earn \$3 a day as a wage, she would need to sell the rugs for **\$4.44** each.
2. She would have to sell the tools for **\$7.72** each to break-even. If she wants to earn \$3.25 a day as a wage, she would need to sell the tools for **\$9.89** each.
3. He would have to sell the tools for **\$1.84** each to break-even. If he wants to earn \$2.54 a day as a wage, he would need to sell the tools for **\$2.54** each.

#### Explanation:

1. Costs =  $\$2000 + \$300 + \$300 + \$50 = \$2650$ .

She can make 8 rugs from \$20 worth of materials. She buys \$2000 worth of material. From this material she can make  $(2000/20) \times 8 = 800$  rugs.

Break-even point =  $2650/800 = \mathbf{\$3.31}$  per rug.

If she wants to earn \$3 a day and works for 300 her wages = \$900. Costs increase to  $\$2650 + \$900 = \$3550$ .

New break-even point =  $3550/800 = \mathbf{\$4.44}$  per rug.

2. Costs =  $500 + 75 + 200 + 2700 = \$3475$ .

She can make 5 tools from \$30 of scrap metal. She buys \$2700 of scrap metal. From this she can make  $(2700/30) \times 5 = 450$  tools.

Break-even point =  $3475/450 = \mathbf{\$7.72}$  per tool.

If she wants a wage of \$3.25 a day, for 300 days = \$975. Costs increase to  $3475 + 975 = \$4450$ .

New break-even point =  $4450/450 = \mathbf{\$9.89}$  per tool.

3. Costs =  $1750 + 50 + 200 + 100 + 475 = \$2575$ .

He can make 20 tools from \$25 of wood. He buys \$1750 of wood. From this he can make  $(1750/25) \times 20 = 1400$  tools.

Break-even point =  $2575/1400 = \mathbf{\$1.84}$  per toy.

If he wants a wage of \$3 a day, costs increase to  $2575 + (3 \times 325) = \$3550$ .

New break-even =  $3350/1400 = \mathbf{\$2.54}$  per toy.

**Back**

**Quick Test 13 – Taking market prices and output into account when pricing products**

**Answer:**

1. Break-even = \$0.13 per cup. New break-even costs = \$0.12 per cup.  
 If selling 50 cups per year, gross margin per year = \$1100. Gross margin % = 56%.  
 New gross margin = \$1140 per year. New gross margin % = 53%.  
 Net profit if selling 50 cups = \$0. Net profit if selling 60 cups = \$40 - taxes.  
 Net margin % if selling 50 cups = 0%. Net margin % if selling 60 cups = 2% (not including taxes).
2. Break-even = \$0.21 per loaf. New break-even costs = \$0.18 per loaf.  
 If selling 40 loaves per year, gross margin per year = \$1800. Gross margin % = 0.56%.  
 New gross margin = \$2620 per year. New gross margin % = 0.55%.  
 Net profit if selling 40 loaves = \$550 - taxes. Net profit if selling 60 loaves = \$1370 - taxes.  
 Net margin % if selling 40 loaves = 17.9% (not including taxes). Net margin % if selling 60 loaves = 28.54% (not including taxes).  
 Net profit if sell loaves for \$0.35 each = \$1830 – taxes. Net margin % = 40.85%.  
 If the baker is able to increase his prices to \$0.35 and still sell 40 loaves a day then this would be the most efficient way to increase his profit.

**Explanation:**

1.

Fixed costs/year	\$	Variable costs/year	\$	Total costs
Equipment	300	Fuel for oven	350	
Electricity, water & rent	800	Ingredients	500	
<b>Total</b>	<b>1100</b>		<b>850</b>	<b>1950</b>

Sell 50 cups per day. Open 300 days per year.

Cups per year = 50 x 300 = 15 000 cups.

Break-even = 1950/15 000 = **\$0.13 per cup.**

If they expand to selling 60 cups per year, number of cups per year = 60 x 300 = 18 000.

Variable costs increase by 60/50 = 1.2 times.

New variable costs = 850 x 1.2 = \$1020. Fixed costs stay the same = \$1100.

Total new costs = \$2120.

New break-even = 2120/19 500 = **\$0.12 per cup.**

Gross Margins = Revenue – Variable costs.

If selling 50 cups/day: Revenue/day = 50 x 0.13 = \$6.50. Revenue/year = \$1950.

Variable costs = \$850.

**Gross margin if selling 50 cups/day = 1950 – 850 = \$1100 per year.**

**Gross margin % = (1950 – 850)/1950 x 100 = 56%.**

Gross margin if selling 60 cups per year: Revenue/year = (60 x 0.12) x 300 = \$2160.

New variable costs = \$1020.

**New gross margin if selling 60 cups per year = 2160 – 1020 = \$1140 per year.**

**Gross margin % = (2160 – 1020)/ 2160 x 100 = 53%.**

**Net profit/year if selling 50 cups = revenue – costs – taxes = 1950 – 1950 – taxes = \$0.**

Because they are selling at break-even point they will not make a profit.

**Net profit/year if selling 60 cups = revenue – costs – taxes = 2160 – 2120 – taxes = \$40 - taxes.**

**Net margin % selling 50 cups per year = Net profit/revenue x 100% = 0/1950 x 100% = 0%**

**Net margin % selling 60 cups per year = Net profit/revenue x 100% = 40/2160 x 100% = 2%**

**2.**

<b>Fixed costs/year</b>	<b>\$</b>	<b>Variable costs/year</b>	<b>\$</b>	<b>Total costs</b>
Rent & electricity	500	Fuel for stove	750	
Salary	700	Water	250	
Equipment	50	Ingredients	400	
<b>Total</b>	<b>1250</b>		<b>1400</b>	<b>2650</b>

Sell 40 loaves a day. Open 320 days per year.  
Loaves per year = 40 x 320 = 12 800.

**Break-even = 2650/12 800 = \$0.21 per loaf.**

If they expand to selling 60 loaves per day, number of loaves per year = 60 x 320 = 19 200.  
Variable costs increase by 60/40 = 1.5 times.

New variable costs = (1400 x 1.5) + 80 casual labour = \$2180. Fixed costs stay the same = \$1250.  
Total new costs = \$3430.

**New break-even = 3430/19 200 = \$0.18 per loaf.**

Gross Margins = Revenue – Variable costs.

If selling 40 loaves/day: Revenue = (40 x 0.25) x 320 = \$3200.  
Variable costs = \$1400.

**Gross margin if selling 40 loaves/day = 3200 – 1400 = \$1800 per year.**  
**Gross margin % = (3200 – 1400)/3200 x 100 = 56%**

Gross margin if selling 60 loaves per year: Revenue/year = (60 x 0.25) x 320 = \$4800.  
New variable costs = \$2180.

**New gross margin if selling 60 loaves per year = 4800 – 2180 = \$2620 per year.**  
**Gross margin % = (4800 – 2180)/ 4800 x 100 = 55%**

**Net profit/year selling 40 loaves = revenue – costs – taxes = 3200 – 2650 – taxes = \$550 - taxes.**

**Net profit/year selling 60 loaves = revenue – costs – taxes = 4800 – 3430 – taxes = \$1370 - taxes.**

**Net margin % selling 40 loaves per year = net profit/revenue x 100% = 550/3200 x 100% = 17.19% (not including taxes).**

**Net margin % selling 60 loaves per year = net profit/revenue x 100% = 1370/4800 x 100% = 28.54% (not including taxes).**

If they increase the price of the loaves to \$0.35, sell 40 loaves per day. Open 320 days.

Revenue = (0.35 x 40) x 320 = \$4480. Costs = \$2650.

**Net profit = 4480 – 2650 = \$1830 – taxes.**

Net margin % =  $1830/4480 \times 100\% = 40.85\%$ .

If the baker is able to increase his prices to \$0.35 and still sell 40 loaves a day then this would be the most efficient way to increase his profit.

**Back**

**Quick Test 14 – Stocktake**

**Answer:**

1. Value of the stock is \$236.25.
2. Value of the stock is \$42.75.
3. Value of the stock is \$17.

**Explanation:**

1.

Item	Method	Value per unit	Units	Total
Sack sorghum	Deemed price 75%	75% of \$20 = \$15	5	\$75
Sack pearl millet	Deemed price 75%	75% of \$20 = \$15	2	\$30
Goats	Deemed Price 75%	75% of \$25 = \$18.75	5	\$93.75
Chickens	Deemed Price 75%	75% of \$5 = \$3.75	10	\$37.50
<b>TOTAL CLOSING STOCK</b>				<b>\$236.25</b>

2.

Item	Method	Value per unit	Units	Total
Reel of cotton	Purchased price	\$1	5	\$5
Bundle of rags	Purchased price	\$2	2	\$4
Small rug	Deemed price 75%	75% of \$5 = \$3.75	5	\$18.75
Large rug	Deemed price 75%	75% of \$10 = \$7.50	2	\$15
<b>TOTAL CLOSING STOCK</b>				<b>\$42.75</b>

3.

Item	Method	Value per unit	Units	Total
Bag of herbs	Purchased price	\$3	1	\$3
Bag of tea	Purchased price	\$4	1	\$4
Dry ingredients	Purchased price	\$10	1	\$10
<b>TOTAL CLOSING STOCK</b>				<b>\$17</b>

**Back**

**Quick Test 15 – Recording assets, capital and liabilities using double-entry bookkeeping**

**Answer:**

1. Capital is money owed from the business and so is a liability. An increase in a liability account is a CREDIT (Note: final accounts are shown with red borders).

CAPITAL ACCOUNT	DEBIT (\$)	CREDIT (\$)
Opening balance		3000

The capital is paid into the bank account. This is an asset account. An increase in the asset account is recorded as a DEBIT.

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	3000	

The farmer buys \$500 of tools. These are fixed assets. An increase in fixed assets is recorded as a DEBIT.

<b>FIXED ASSET ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Tools	500	

The money for the tools came from the bank account. The bank account is an asset account. A decrease in the asset account is recorded as a CREDIT.

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	3000	
Tools		500

Next they buy the two-wheeled tractor, which is a fixed asset. An increase in the fixed assets account is recorded as a DEBIT.

<b>FIXED ASSET ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Tools	500	
Two-wheeled tractor	2500	

The loan they take out to pay for the two-wheeled tractor is a liability. An increase in the liability account is recorded as a CREDIT.

<b>LOAN ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Loan for two-wheeled tractor		2500

The loan is paid into the bank account. An increase in the bank account is recorded as a DEBIT. He then uses the loan money to buy the two-wheeled tractor. This is a decrease in the bank account and so is recorded as a CREDIT.

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	3000	
Tools		500
Loan coming in for two-wheeled tractor	2500	
Money out to pay for two-wheeled tractor		2500

The silo is a fixed asset. An increase in the fixed asset account is recorded as a DEBIT.

<b>FIXED ASSET ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Tools	500	
Two-wheeled tractor	2500	
Silo	400	

The bank account decreases by \$400. The bank account is an asset account. A decrease in an asset account is recorded as a CREDIT.

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	3000	
Tools		500
Loan coming in for two-wheeled tractor	2500	
Money out to pay for two-wheeled tractor		2500
Silo		400

2. Capital is a liability as it is money owed from the business. An increase in a liability account is a CREDIT (Note: final accounts are shown with red borders).

CAPITAL ACCOUNT	DEBIT (\$)	CREDIT (\$)
Opening balance		500

The capital is paid into the bank account. An increase in the bank account is recorded as a DEBIT.

BANK ACCOUNT	DEBIT (\$)	CREDIT (\$)
Opening balance	500	

She then buys a fridge. This is a fixed asset. An increase in the fixed assets account is recorded as a DEBIT.

FIXED ASSET ACCOUNT	DEBIT (\$)	CREDIT (\$)
Fridge	400	

The money for the fridge has come from the bank account. A decrease in the bank account is recorded as a CREDIT.

BANK ACCOUNT	DEBIT (\$)	CREDIT (\$)
Opening balance	500	
Fridge		400

She buys shelving which is a fixed asset. Increases in the fixed asset account are recorded as a DEBIT.

FIXED ASSET ACCOUNT	DEBIT (\$)	CREDIT (\$)
Fridge	400	
Shelving	50	

The money for the shelving is from the bank. A decrease in the bank account is recorded as a CREDIT.

BANK ACCOUNT	DEBIT (\$)	CREDIT (\$)
Opening balance	500	
Fridge		400
Shelving		50

She buys a till and some equipment, which are fixed assets. Increases in fixed assets are shown as a DEBIT.

FIXED ASSET ACCOUNT	DEBIT (\$)	CREDIT (\$)
Fridge	400	
Shelving	50	
Till and equipment	250	

She takes out a loan for the till and equipment. The loan account is a liability account. An increase in the liabilities account is recorded as a CREDIT.

LOAN ACCOUNT	DEBIT (\$)	CREDIT (\$)
Loan for till and equipment		250

The loan is paid into the bank account. An increase in the bank account is recorded as a DEBIT. The money from the loan is then used to buy a till and other equipment. This decreases the bank

account and so is recorded as a CREDIT.

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	500	
Fridge		400
Shelving		50
Loan coming in for till and equipment	250	
Money out to pay for till and equipment		250

**3.** Capital is a liability as it is money owed from the business. An increase in a liability account is a CREDIT (Note: final accounts are shown with red borders).

<b>CAPITAL ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance		200

The capital is paid into the bank account. An increase in the bank account is recorded as a DEBIT.

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	200	

He buys tools. These are fixed assets. An increase in the fixed assets account is recorded as a DEBIT.

<b>FIXED ASSET ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Tools	100	

The money for the tools has come from the bank account. A decrease in the bank account is recorded as a CREDIT.

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	200	
Tools		100

He buys a bench. This is also a fixed asset. Increases in the fixed asset account are recorded as a DEBIT.

<b>FIXED ASSET ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Tools	100	
Bench	20	

The money for the bench has come from the bank account. A decrease in the bank account is recorded as a CREDIT.

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	200	
Tools		100
Bench		20

He takes out a loan for \$150. An increase in the loan account is recorded as a CREDIT.

<b>LOAN ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Loan for lathe and machinery		150

The money for the loan is paid into the bank account. An increase into the bank account is recorded as a DEBIT.

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	200	
Tools		100
Bench		20
Loan coming in for lathe and machinery	150	
Money out for lathe and machinery		150

The lathe and machinery are fixed assets. Increases in the fixed asset account are recorded as a DEBIT.

<b>FIXED ASSET ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Tools	100	
Bench	20	
Lathe and machinery	150	

**Back**

**Quick Test 16 – Including expenses and income in double-entry bookkeeping**

**Answers and Explanation:**

1. Capital is money owed from the business and so is a liability. An increase in a liability account is a CREDIT (Note: final accounts are shown with red borders).

<b>CAPITAL ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance		5000

The capital is paid into the bank account. An increase in the bank account is recorded as a DEBIT.

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	5000	

The farmer takes out a loan to buy tools. A loan is a liability. Increases in a liability account are recorded as a CREDIT.

<b>LOAN ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Loan for tools		2000

Interest for the loan is 5%. Using the simple rate, the interest is calculated as  $2000 \times 0.05 \times 5 = \$500$ . The loan is payable over 5 years, so the interest is  $500/5 = \$100$  per year. This is recorded in the loan account as Interest year 1.

<b>LOAN ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Loan for tools		2000
Interest for year 1		100

The interest, the cost of the loan is also recorded as an EXPENSE. An increase in an expense account is recorded as a DEBIT.

<b>INTEREST ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Interest for year 1	100	

The loan is paid into the bank account. An increase in the bank account is recorded as a DEBIT.

The money for the tools is then taken out of the bank account. This is recorded as a CREDIT.

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	5000	
Money in for loan for tools	2000	
Money out to buy tools		2000

The tools are recorded in the fixed assets account. As they cause the fixed assets to increase they are recorded as a DEBIT.

<b>FIXED ASSET ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Tools	2000	

The tools depreciate. This depreciation is recorded in both the fixed asset account. Depreciation decreases the asset account and so is recorded as a CREDIT.

<b>FIXED ASSET ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Tools	2000	
Depreciation of tools for year 1		200

The depreciation is also recorded in a depreciation (expense) account =  $2000/10 = \$200$  per year. This increases the expense account and so is recorded as a DEBIT.

<b>DEPRECIATION ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Depreciation of tools for year 1	200	

He buys seed for \$50. This is recorded as in expense account. An increase in the expense account is recorded as a DEBIT.

<b>SEED ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Seed bought for cash	50	

He buys fertiliser for \$25. This is also recorded in an expense account.

<b>FERTILISER ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Fertiliser	25	

Transport is also recorded in an expense account.

<b>TRANSPORT ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Transport for livestock	20	

The expenses are also recorded in the bank account. A decrease in the bank account is recorded as a CREDIT.

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	5000	
Money in for loan for tools	2000	
Money out to buy tools		2000
Seed bought for cash		50
Fertiliser		25
Transport for livestock		20

At market he sells 3 goats and 10 sheep. These are recorded in a sales account and in the bank account.

<b>SALES ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Cash sale of 3 goats		120
Cash sale of 10 sheep		200

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	5000	
Money in for loan for tools	2000	
Money out to buy tools		2000
Seed bought for cash		50
Fertiliser		25
Transport for livestock		20
Cash for sale of 3 goats	120	
Cash for sale of 10 sheep	200	

He also buys a silo. This is a fixed asset. An increase in assets is recorded as a DEBIT.

<b>FIXED ASSET ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Tools	2000	
Depreciation of tools for year 1		200
Silo	500	

He pays cash for the silo. This is a decrease in the bank account, which is recorded as a CREDIT.

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	5000	
Money in for loan for tools	2000	
Money out to buy tools		2000
Seed bought for cash		50
Fertiliser		25
Transport for livestock		20
Cash for sale of 3 goats	120	
Cash for sale of 10 sheep	200	
Silo		500

He expects the silo to last 10 years. The depreciation is  $10\% = 500/10 = \$50$  per year. This is recorded in the fixed asset account and the depreciation account.

<b>FIXED ASSET ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Tools	2000	
Depreciation of tools for year 1		200
Silo	500	
Depreciation of silo for year 1		50

<b>DEPRECIATION ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Depreciation of tools for year 1	200	
Depreciation of silo for year 1	50	

**2.** Capital is a liability. An increase in a liability account is a CREDIT.

<b>CAPITAL ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance		1000

The money is paid into the bank account. Increase in the bank account is recorded as a DEBIT.

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	1000	

The farmer buys some seeds, spray and empty sacks. These are recorded in expense accounts. Increases in expense accounts are recorded as DEBITS.

<b>SEED ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Seeds bought for cash	25	

<b>SPRAY ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Spray bought for cash	15	

<b>MISCELLANEOUS EXPENSES ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Empty sacks	5	

The money is taken out of the bank for these. A decrease in the bank account is recorded as a CREDIT.

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	1000	
Seeds bought for cash		25
Spray bought for cash		15
Empty sacks		5

He sells 10 chickens and 5 sheep. These are recorded in a sales account. An increase in sales is recorded as a CREDIT.

<b>SALES ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Cash sale of 10 chickens		30
Cash sale of 5 sheep		60

The sales are also recorded in the bank account. An increase is recorded as a DEBIT.

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	1000	
Seeds bought for cash		25
Spray bought for cash		15
Empty sacks		5
Sale of 10 chickens	30	
Sale of 5 sheep	60	

They pay for transport. This is recorded as an expense account, and also as a CREDIT to the bank account.

<b>TRANSPORT ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Transport to market	10	

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	1000	
Seeds bought for cash		25
Spray bought for cash		15
Empty sacks		5
Sale of 10 chickens	30	
Sale of 5 sheep	60	
Transport		10

He buys a two-wheeled tractor. This is a fixed asset. An increase in a fixed asset is recorded as a DEBIT.

<b>FIXED ASSET ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Two-wheeled tractor	1500	

Depreciation on the two-wheeled tractor is  $10\% = 1500/10 = \$150$  per year. This is recorded in the fixed asset account and in the depreciation account.

<b>FIXED ASSET ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Two-wheeled tractor	1500	
Depreciation of two-wheeled tractor for year 1		150

<b>DEPRECIATION ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Depreciation of two-wheeled tractor for year 1	150	

The two-wheeled tractor is bought with a loan. This is recorded as a CREDIT in the loan account as it is an increase to the liability account. The interest is also recorded in this account. The loan of \$1500 is over 5 years at a rate of 2%. Interest (simple rate) =  $1500 \times 0.02 \times 5 = \$150$ .  $150/5 = \$30$  a year.

<b>LOAN ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Loan for two-wheeled tractor		1500
Interest for year 1		30

The loan is also recorded in the bank account. It is an increase in the bank account so is recorded as a DEBIT. A decrease in the bank account is recorded as a CREDIT. The loan is used to buy a two-wheeled tractor. This causes a decrease in the bank account and so is recorded as a CREDIT.

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	1000	
Seeds bought for cash		25
Spray bought for cash		15
Empty sacks		5
Sale of 10 chickens	30	
Sale of 5 sheep	60	
Transport		10
Money in from loan for two-wheeled tractor	1500	
Money out to buy two-wheeled tractor		1500

The interest, the cost of the loan is also recorded as an EXPENSE. An increase in an expense account is recorded as a DEBIT.

<b>INTEREST ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Interest for year 1	30	

The farmer also buys a silo. This is a fixed asset. It is recorded in the fixed asset account as a DEBIT and the 10% depreciation =  $300/10 = \$30$  per year, is recorded in the fixed asset account and in the depreciation account.

<b>FIXED ASSET ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Two-wheeled tractor	1500	
Depreciation of two-wheeled tractor for year 1		150
Silo	300	
Depreciation of silo for year 1		30

<b>DEPRECIATION ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Depreciation of two-wheeled tractor for year 1	150	
Depreciation of silo for year 1	30	

As the silo is bought for cash it is also recorded in the bank account. A decrease in the bank account is recorded as a CREDIT.

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	1000	
Seeds bought for cash		25
Spray bought for cash		15
Empty sacks		5
Sale of 10 chickens	30	
Sale of 5 sheep	60	
Transport		10
Money in from loan for two-wheeled tractor	1500	
Money out to buy two-wheeled tractor		1500
Silo		300

**3.** Capital is a liability. An increase in a liability account is a CREDIT.

<b>CAPITAL ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance		500

The capital is recorded in the bank account as the opening balance. An increase in the bank account is recorded as a DEBIT.

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	500	

The farmer buys some feed for livestock and pays for rent and livestock. These are recorded in expense accounts. Increases in expense accounts are recorded as DEBITS.

<b>FEED ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Feed	30	

<b>RENT ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Rent	300	

<b>LABOUR ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Labour	50	

These are also recorded in the bank account. They increase the bank account and so are recorded as an CREDIT.

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	500	
Feed		30
Rent		300
Labour		50

The farmer buys some equipment. This is a fixed asset. It increases the fixed assets and so is recorded in the fixed asset account as a DEBIT.

<b>FIXED ASSET ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Equipment	100	

The equipment is also recorded in the bank account. A decrease in the bank account is recorded as a DEBIT.

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	500	
Feed		30
Rent		300
Labour		50
Equipment		100

The depreciation of the equipment needs to be recorded. The equipment is expected to last 5 years. Depreciation =  $100 \times 20\% = \$20$  per year. This is recorded in both the fixed assets account and in the depreciation account.

<b>FIXED ASSET ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Equipment	100	
Depreciation of equipment for year 1		20

<b>DEPRECIATION ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Depreciation of equipment for year 1	20	

On the stall the farmer sells 10 sacks of sorghum and 2 bags of pearl millet for cash. These are recorded in a sales (income) account. As the sales increase the sales account they are recorded as CREDITS.

<b>SALES ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Cash sale of 10 sacks of sorghum		400
Cash sale of 2 sacks of pearl millet		60

The sales transactions are also recorded in the bank account. An increase in the bank account is recorded as a DEBIT.

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	500	
Feed		30
Rent		300
Labour		50
Equipment		100
Cash sale of 10 sacks of sorghum	400	
Cash sale of 2 sacks of pearl millet	60	

The 3 sacks of pearl millet sold on credit are recorded in the sales account. The sale increases the sales (income) account and so is recorded as a CREDIT.

SALES ACCOUNT	DEBIT (\$)	CREDIT (\$)
Cash sale of 10 sacks of sorghum		400
Cash sale of 2 sacks of pearl millet		60
Credit sale of 3 sacks of pearl millet		90

The credit sale is not recorded in the bank account but is instead recorded in the debtors account. This credit will be paid at a later date and so is an asset to the business. Increases in assets are recorded as DEBITS.

DEBTORS ACCOUNT	DEBIT (\$)	CREDIT (\$)
Credit sale of 3 sacks of pearl millet	90	

**Back**

**Quick Test 17 – Preparing a trial balance**

**Answers and Explanation:**

- To prepare the trial balance the closing balances (**Amount C/F**) of all the accounts are calculated.

CAPITAL ACCOUNT	DEBIT (\$)	CREDIT (\$)
Opening balance		5000
<b>TOTAL</b>		<b>5000</b>
<b>Amount C/F</b>		<b>5000</b>

LOAN ACCOUNT	DEBIT (\$)	CREDIT (\$)
Loan for tools		2000
Interest for year 1		100
<b>TOTAL</b>		<b>2100</b>
<b>Amount C/F</b>		<b>2100</b>

INTEREST ACCOUNT	DEBIT (\$)	CREDIT (\$)
Interest for year 1	100	
<b>TOTAL</b>	<b>100</b>	
<b>Amount C/F</b>	<b>100</b>	

SEED ACCOUNT	DEBIT (\$)	CREDIT (\$)
Seed bought for cash	50	
<b>TOTAL</b>	<b>50</b>	
<b>Amount C/F</b>	<b>50</b>	

FERTILISER ACCOUNT	DEBIT (\$)	CREDIT (\$)
Fertiliser	25	
<b>TOTAL</b>	<b>25</b>	
<b>Amount C/F</b>	<b>25</b>	

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<b>TRANSPORT ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Transport for livestock	20	
<b>TOTAL</b>	<b>20</b>	
<b>Amount C/F</b>	<b>20</b>	

<b>SALES ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Cash sale of 3 goats		120
Cash sale of 10 sheep		200
<b>TOTAL</b>		<b>320</b>
<b>Amount C/F</b>		<b>320</b>

<b>FIXED ASSET ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Tools	2000	
Depreciation of tools for year 1		200
Silo	500	
Depreciation of silo for year 1		50
<b>TOTAL</b>	<b>2500</b>	<b>250</b>
<b>Amount C/F</b>	<b>2250</b>	

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	5000	
Money in for loan for tools	2000	
Money out to buy tools		2000
Seed bought for cash		50
Fertiliser		25
Transport for livestock		20
Cash for sale of 3 goats	120	
Cash for sale of 10 sheep	200	
Silo		500
<b>TOTAL</b>	<b>7320</b>	<b>2595</b>
<b>Amount C/F</b>	<b>4725</b>	

<b>DEPRECIATION ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Depreciation of tools for year 1	200	
Depreciation of silo for year 1	50	
<b>TOTAL</b>	<b>250</b>	
<b>Amount C/F</b>	<b>250</b>	

The trial balance is now prepared.

<b>TRIAL BALANCE</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Fixed assets	2250	
Bank account	4725	
Loan		2100
Capital		5000
Sales		320
Seed	50	
Fertiliser	25	
Transport	20	
Interest	100	
Depreciation	250	
	<b>7420</b>	<b>7420</b>

The two balances of the DEBIT and CREDIT are equal, so the transactions have been recorded correctly.

2. The closing balances (**Amount C/F**) of all the accounts are calculated for the trial balance.

<b>CAPITAL ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance		1000
<b>TOTAL</b>		<b>1000</b>
<b>Amount C/F</b>		<b>1000</b>

<b>SEED ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Seeds bought for cash	25	
<b>TOTAL</b>	<b>25</b>	
<b>Amount C/F</b>	<b>25</b>	

<b>SPRAY ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Spray bought for cash	15	
<b>TOTAL</b>	<b>15</b>	
<b>Amount C/F</b>	<b>15</b>	

<b>MISCELLANEOUS EXPENSES ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Empty sacks	5	
<b>TOTAL</b>	<b>5</b>	
<b>Amount C/F</b>	<b>5</b>	

<b>SALES ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Cash sale of 10 chickens		30
Cash sale of 5 sheep		60
<b>TOTAL</b>		<b>90</b>
<b>Amount C/F</b>		<b>90</b>

<b>TRANSPORT ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Transport to market	10	
<b>TOTAL</b>	<b>10</b>	
<b>Amount C/F</b>	<b>10</b>	

<b>LOAN ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Loan for two-wheeled tractor		1500
Interest for year 1		30
<b>TOTAL</b>		<b>1530</b>
<b>Amount C/F</b>		<b>1530</b>

<b>INTEREST ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Interest for year 1	30	
<b>TOTAL</b>	<b>30</b>	
<b>Amount C/F</b>	<b>30</b>	

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FIXED ASSET ACCOUNT	DEBIT (\$)	CREDIT (\$)
Two-wheeled tractor	1500	
Depreciation of two-wheeled tractor for year 1		150
Silo	300	
Depreciation of silo for year 1		30
<b>TOTAL</b>	<b>1800</b>	<b>180</b>
<b>Amount C/F</b>	<b>1620</b>	

DEPRECIATION ACCOUNT	DEBIT (\$)	CREDIT (\$)
Depreciation of two-wheeled tractor for year 1	150	
Depreciation of silo for year 1	30	
<b>TOTAL</b>	<b>180</b>	
<b>Amount C/F</b>	<b>180</b>	

BANK ACCOUNT	DEBIT (\$)	CREDIT (\$)
Opening balance	1000	
Seeds bought for cash		25
Spray bought for cash		15
Empty sacks		5
Sale of 10 chickens	30	
Sale of 5 sheep	60	
Transport		10
Money in from loan for two-wheeled tractor	1500	
Money out to buy two-wheeled tractor		1500
Silo		300
<b>TOTAL</b>	<b>2590</b>	<b>1855</b>
<b>Amount C/F</b>	<b>735</b>	

The trial balance is now prepared.

TRIAL BALANCE	DEBIT (\$)	CREDIT (\$)
Fixed assets	1620	
Bank Account	735	
Loan		1530
Capital		1000
Sales		90
Seed	25	
Spray	15	
Miscellaneous expenses	5	
Transport	10	
Interest	30	
Depreciation	180	
	<b>2620</b>	<b>2620</b>

The two balances of the DEBIT and CREDIT are equal, so the transactions have been recorded correctly.

3. The closing balances (**Amount C/F**) of all the accounts are calculated for the trial balance.

CAPITAL ACCOUNT	DEBIT (\$)	CREDIT (\$)
Opening balance		500
<b>TOTAL</b>		<b>500</b>
<b>Amount C/F</b>		<b>500</b>

## Field Numeracy - Uno How's Farm Visits™

FEED ACCOUNT	DEBIT (\$)	CREDIT (\$)
Feed	30	
<b>TOTAL</b>	<b>30</b>	
<b>Amount C/F</b>	<b>30</b>	

RENT ACCOUNT	DEBIT (\$)	CREDIT (\$)
Rent	300	
<b>TOTAL</b>	<b>300</b>	
<b>Amount C/F</b>	<b>300</b>	

LABOUR ACCOUNT	DEBIT (\$)	CREDIT (\$)
Labour	50	
<b>TOTAL</b>	<b>50</b>	
<b>Amount C/F</b>	<b>50</b>	

FIXED ASSET ACCOUNT	DEBIT (\$)	CREDIT (\$)
Equipment	100	
Depreciation of equipment for year 1		20
<b>TOTAL</b>	<b>100</b>	<b>20</b>
<b>Amount C/F</b>	<b>80</b>	

DEPRECIATION ACCOUNT	DEBIT (\$)	CREDIT (\$)
Depreciation of equipment for year 1	20	
<b>TOTAL</b>	<b>20</b>	
<b>Amount C/F</b>	<b>20</b>	

BANK ACCOUNT	DEBIT (\$)	CREDIT (\$)
Opening balance	500	
Feed		30
Rent		300
Labour		50
Equipment		100
Cash sale of 10 sacks of sorghum	400	
Cash sale of 2 sacks of pearl millet	60	
<b>TOTAL</b>	<b>960</b>	<b>480</b>
<b>Amount C/F</b>	<b>480</b>	

SALES ACCOUNT	DEBIT (\$)	CREDIT (\$)
Cash sale of 10 sacks of sorghum		400
Cash sale of 2 sacks of pearl millet		60
Credit sale of 3 sacks of pearl millet		90
<b>TOTAL</b>		<b>550</b>
<b>Amount C/F</b>		<b>550</b>

DEBTORS ACCOUNT	DEBIT (\$)	CREDIT (\$)
Credit sale of 3 sacks of pearl millet	90	
<b>TOTAL</b>	<b>90</b>	
<b>Amount C/F</b>	<b>90</b>	

The trial balance is now prepared.

<b>TRIAL BALANCE</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Fixed assets	80	
Bank account	480	
Capital		500
Sales		550
Feed	30	
Rent	300	
Labour	50	
Depreciation	20	
Debtors	90	
	<b>1050</b>	<b>1050</b>

The two balances of the DEBIT and CREDIT are equal, so the transactions have been recorded correctly.

**Back**

**Quick Test 18 – Accounting for stock**

**Answers and Explanation:**

1. The stock accounts are prepared and the closing balances calculated:

**Stock** is an asset. The asset has increased, so is recorded as a DEBIT.

<b>STOCK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Stock	500	
<b>TOTAL</b>	<b>500</b>	
<b>Amount C/F</b>	<b>500</b>	

**Closing stock** is an expense (because money has been spent on the items).

<b>CLOSING STOCK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Closing stock		500
<b>TOTAL</b>		<b>500</b>
<b>Amount C/F</b>		<b>500</b>

The stock can now be added to the trial balance.

<b>TRIAL BALANCE</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Fixed assets	2250	
Bank account	4725	
Stock	500	
Loan		2100
Capital		5000
Sales		320
Seed	50	
Fertiliser	25	
Transport	20	
Interest	100	
Depreciation	250	
Closing Stock		500
	<b>7920</b>	<b>7920</b>

The two balances of the DEBIT and CREDIT are equal, so the transactions have been recorded correctly.

**2.** The stock accounts are prepared and the closing balances calculated:

**Stock** is an asset. The asset has increased, so is recorded as a DEBIT.

STOCK ACCOUNT	DEBIT (\$)	CREDIT (\$)
Stock	700	
<b>TOTAL</b>	<b>700</b>	
<b>Amount C/F</b>	<b>700</b>	

**Closing stock** is an expense (because money has been spent on the items).

CLOSING STOCK ACCOUNT	DEBIT (\$)	CREDIT (\$)
Closing stock		700
<b>TOTAL</b>		<b>700</b>
<b>Amount C/F</b>		<b>700</b>

The stock can now be added to the trial balance.

TRIAL BALANCE	DEBIT (\$)	CREDIT (\$)
Fixed assets	1620	
Bank account	735	
Stock	700	
Loan		1530
Capital		1000
Sales		90
Seed	25	
Spray	15	
Miscellaneous expenses	5	
Transport	10	
Interest	30	
Depreciation	180	
Closing Stock		700
	<b>3320</b>	<b>3320</b>

The two balances of the DEBIT and CREDIT are equal, so the transactions have been recorded correctly.

**3.** The stock accounts are prepared and the closing balances calculated:

**Stock** is an asset. The asset has increased, so is recorded as a DEBIT.

STOCK ACCOUNT	DEBIT (\$)	CREDIT (\$)
Stock	1000	
<b>TOTAL</b>	<b>1000</b>	
<b>Amount C/F</b>	<b>1000</b>	

**Closing stock** is an expense (because money has been spent on the items).

<b>CLOSING STOCK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Closing stock		1000
<b>TOTAL</b>		<b>1000</b>
<b>Amount C/F</b>		<b>1000</b>

The stock can now be added to the trial balance.

<b>TRIAL BALANCE</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Fixed assets	80	
Bank account	480	
Stock	1000	
Capital		500
Sales		550
Feed	30	
Rent	300	
Labour	50	
Depreciation	20	
Debtors	90	
Closing Stock		1000
	<b>2050</b>	<b>2050</b>

The two balances of the DEBIT and CREDIT are equal, so the transactions have been recorded correctly.

**Back**

**Quick Test 19 – Preparing Profit and Loss Accounts**

**Answers and Explanation:**

- To prepare the profit and loss accounts identify which are balance sheet accounts and which are profit and loss (income and expense) accounts from the trial balance.

<b>TRIAL BALANCE</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
<b>BALANCE SHEET ACCOUNTS</b>		
Fixed assets	2250	
Bank account	4725	
Stock	500	
Loan		2100
Capital		5000
<b>PROFIT AND LOSS ACCOUNTS</b>		
Sales		320
Seed	50	
Fertiliser	25	
Transport	20	
Interest	100	
Depreciation	250	
Closing stock		500
	<b>7920</b>	<b>7920</b>

By using the income and expenditure accounts shown in the table above we can now calculate the profit.

**Profit and Loss Account**

	\$	\$
Sales		320
Seed	50	
Fertiliser	25	
Transport	20	
Closing stock	-500	
<b>Gross profit</b>	725	
Interest		100
Depreciation		250
<b>Profit before tax and drawings</b>		375

A profit of \$375 has been made in the period which these accounts cover.

Now prepare the balance sheet from the balance sheet accounts where:

**Total Net Assets = Fixed Assets + Current Assets - Liabilities**

Grouping the accounts together in assets and liabilities will show you the totals of each.

Asset accounts	DEBIT (\$)	CREDIT (\$)
Fixed assets (including depreciation)	2250	
Bank account	4725	
Stock	500	
<b>Liabilities accounts</b>		
Loan		2100

We can then put these totals into a balance sheet.

**Balance Sheet**

	\$
<b>Fixed assets</b>	2250
Current assets:	
Bank account	4725
Stock	500
<b>Total current assets</b>	5225
<b>Liabilities</b>	
Loan	2100
<b>Total liabilities</b>	2100
<b>Total net assets</b>	5375

**Total Net Assets = Capital + Profit (or loss) for period**

<b>Capital Account</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Capital		<b>5000</b>

<b>Profit before tax and drawings</b>	<b>375</b>
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	\$	\$
<b>Capital</b>		
Capital C/F	<b>5000.00</b>	
<b>Profit in period</b>	<u><b>375</b></u>	<u><b>5375</b></u>

Total net assets = \$5375

Capital + Profit (or loss) for period = \$5375

The accounts have therefore been recorded accurately.

- 2.** Firstly identify which are balance sheet accounts and which are profit and loss (income and expense) accounts from the trial balance.

<b>TRIAL BALANCE</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
<b>BALANCE SHEET ACCOUNTS</b>		
Fixed assets	1620	
Bank account	735	
Stock	700	
Loan		1530
Capital		1000
<b>PROFIT AND LOSS ACCOUNTS</b>		
Sales		90
Seed	25	
Spray	15	
Miscellaneous expenses	5	
Transport	10	
Interest	30	
Depreciation	180	
Closing stock		700
	<b>3320</b>	<b>3320</b>

By using the income and expenditure accounts shown in the table above we can now calculate the profit.

**Profit and Loss Account**

	\$	\$
Sales		90
Seed	25	
Spray	15	
Miscellaneous expenses	5	
Transport	10	
Closing stock	<u>-700</u>	
<b>Gross profit</b>		<b>735</b>
Interest		30
Depreciation		180
		<u>525</u>
<b>Profit before tax and drawings</b>		<b>525</b>

**A profit of \$525 has been made in the period which these accounts cover.**

Now prepare the balance sheet from the balance sheet accounts where:

**Total Net Assets = Fixed Assets + Current Assets - Liabilities**

Grouping the accounts together in assets and liabilities will show you the totals of each.

<b>Asset Accounts</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Fixed assets (including depreciation)	1620	
Bank account	735	
Stock	700	
<b>Liabilities Accounts</b>		
Loan		1530

We can then put these totals into a balance sheet.

**Balance Sheet**

		\$
<b>Fixed assets</b>		<b>1620</b>
Current assets:		
Bank account	735	
Stock	<u>700</u>	
<b>Total current assets</b>		<b>1435</b>
<b>Liabilities</b>		
Loan	<u>1530</u>	
<b>Total liabilities</b>		<b>1530</b>
<b>Total net assets</b>		<b><u>1525</u></b>

**Total Net Assets = Capital + Profit (or loss) for period**

<b>Capital Account</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Capital		<b>1000</b>

<b>Profit before tax and drawings</b>	<b>525</b>
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	\$	\$
<b>Capital</b>		
Capital C/F	<b>1000</b>	
<b>Profit in period</b>	<b>525</b>	
	<hr/>	<b>1525</b>

Total net assets = \$1525

Capital + Profit (or loss) for period = \$1525

The accounts have therefore been recorded accurately.

- 3.** Firstly identify which are balance sheet accounts and which are profit and loss (income and expense) accounts from the trial balance.

<b>TRIAL BALANCE</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
<b>BALANCE SHEET ACCOUNTS</b>		
Fixed assets	80	
Bank account	480	
Stock	1000	
Capital		500
Debtors	90	
<b>PROFIT AND LOSS ACCOUNTS</b>		
Sales		550
Feed	30	
Rent	300	
Labour	50	
Depreciation	20	
Closing stock		1000
	<b>2050</b>	<b>2050</b>

By using the income and expenditure accounts shown in the table above we can now calculate the profit.

**Profit and Loss Account**

	\$	\$
<b>Sales</b>		<b>550</b>
<b>Feed</b>	30	
<b>Rent</b>	300	
<b>Labour</b>	50	
<b>Closing stock</b>	<b>-1000</b>	
<b>Gross profit</b>	<hr/>	<b>1170</b>
<b>Depreciation</b>		20
<b>Profit before Tax and Drawings</b>		<hr/> <b>1150</b>

**A profit of \$1150 has been made in the period which these accounts cover.**

Now prepare the balance sheet from the balance sheet accounts where:

**Total Net Assets = Fixed Assets + Current Assets - Liabilities**

Grouping the accounts together in assets and liabilities will show you the totals of each. In this case there are no liability accounts.

<b>Asset Accounts</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Fixed assets (including depreciation)	80	
Bank account	480	
Stock	1000	
Debtors	90	

We can then put these totals into a balance sheet.

**Balance Sheet**

		\$
<b>Fixed assets</b>		<b>80</b>
Current assets:		
Bank account	480	
Stock	1000	
Debtors	90	
<b>Total current assets</b>	<u>1570</u>	
<b>Total Net Assets</b>		<u><b>1650</b></u>

**Total Net Assets = Capital + Profit (or loss) for period**

<b>Capital Account</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Capital		500

<b>Profit before tax and drawings</b>	<b>1150</b>
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	\$	\$
<b>Capital</b>		
Capital C/F	500	
<b>Profit in period</b>	<u>1150</u>	
		<u><b>1650</b></u>

**Total Net Assets = \$1650**

**Capital + Profit (or loss) for period = \$1650**

The accounts have therefore been recorded accurately.

**Back**

**Quick Test 20 – Using Cash Book to record transactions**

**Answers and Explanation**

1.

Date	Payee	Item	Amount	Seed	Labour	Fertiliser	Transport
3/04/2016	Ross	Sorghum seed	\$30	\$30			
8/04/16	Min	Maize seed	\$20	\$20			
9/04/16	Joseph	Casual labour – half a day for maize	\$10		\$10		
14/04/16	Adam	Fertiliser	\$20			\$20	
21/04/16	Ross	Transport to market	\$5				\$5
		<b>TOTALS</b>	<b>\$85</b>	<b>\$50</b>	<b>\$10</b>	<b>\$20</b>	<b>\$5</b>

Check the totals from the left hand columns equal the totals in the right hand columns.

$\$85 = \$50 + \$10 + \$20 + \$5$ . The totals equal so the transactions have been recorded correctly.

Now analysis the payments into her bank account.

Date	Payee	Item	Amount	Sales	Loan
5/04/2016	Sara	Sale of honey	\$5	\$5	
10/04/16	Mark	Sale of sheep	\$150	\$150	
16/04/16	Paul	Sale of maize	\$30	\$30	
20/04/16	Bank	LOAN	\$100		\$100
		<b>TOTALS</b>	<b>\$285</b>	<b>\$185</b>	<b>\$100</b>

Check the totals from the left hand columns equal the totals in the right hand columns.

$\$285 = \$185 + \$100$ . The totals equal so the transactions have been recorded correctly.

**Now prepare the trial balance.**

Payments **out** of the bank account are liabilities. Liabilities increase when payments are taken out of the bank account so we enter the total as a **CREDIT**.

The individual columns, seed, fertiliser, labour and transport are expenses. They increase the expenses account and so are recorded as a **DEBIT**.

Now we need to enter **the income into the bank account** in the same trial balance.

Payments **into** the bank account are assets and the asset is increasing so we enter the total as a **DEBIT**.

Sales is an income and it is increasing so is recorded as a **CREDIT**.

The loan taken out to buy the wheelbarrow is a liability. This increases the liability account and so is recorded as a **CREDIT**.

<b>TRIAL BALANCE</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
<b>BALANCE SHEET ACCOUNTS</b>		
Fixed assets (less depreciation)	0	
Bank account	285	85
Debtor	0	
Creditors	0	
Loan		100
Capital	0	
<b>PROFIT AND LOSS (INCOME AND EXPENDITURE) ACCOUNTS</b>		
Sales		185
Seed	50	
Fertiliser	20	
Labour	10	
Transport	5	
Interest	0	
	<u>370</u>	<u>370</u>

The debit and credit totals are equal, so the transactions have been recorded correctly.

Next prepare the profit and loss account.

**Profit and loss account**

	\$	\$
<b>Sales</b>		<b>185</b>
<b>Seed</b>	50	
<b>Fertiliser</b>	20	
<b>Labour</b>	10	
<b>Transport</b>	5	
<b>Gross profit</b>	<hr/>	<hr/> <b>100</b>
<b>Interest</b>		0
<b>Depreciation</b>		0
<b>Profit before tax and drawings</b>		<hr/> <b>100</b>

**The farmer has made a profit of \$100 in period which these accounts cover.**

Now prepare the balance sheet. Remember in the balance sheet:

**Total Net Assets = Fixed Assets + Current Assets – Liabilities**

Looking at the bank account in the trial balance we now have an amount in both DEBIT and CREDIT. The DEBIT is larger than the CREDIT which means it will be an asset.

To enter it into the balance sheet we deduct the CREDIT from the DEBIT and enter the balance as an asset.

**BALANCE SHEET**

	\$	\$
<b>Fixed assets</b>		<b>0</b>
Current assets:		
Bank account	200	
Debtors	0	
<b>Total current assets</b>		<b>200</b>
 <b>Liabilities</b>		
Loan	100	
Creditors	0	
<b>Total liabilities</b>		<b>100</b>
 <b>Total net assets</b>		<b><u>100</u></b>

To prove that the accounts are correct we will calculate the capital account. We have no capital carried forward.

	\$	\$
<b>Capital</b>		
Capital C/F	0	
<b>Profit in period</b>	100	
		<b><u>100</u></b>

As you can see this the total net assets equal the capital plus profit. The transactions have therefore all been recorded correctly in the accounts.

**2.**

Date	Payee	Item	Amount		Seed	Tools	Labour	Fertiliser
1/06/2016	Mark	Pearl Millet seed	\$25		\$25			
3/06/16	Sara	Maize seed	\$15		\$15			
11/06/16	Pat	Tools	\$50			\$50		
12/06/16	Mark	Casual labour	\$10				\$10	
14/06/16	Geoffrey	Fertiliser	\$15					\$15
		<b>TOTALS</b>	<b>\$115</b>		<b>\$40</b>	<b>\$50</b>	<b>\$10</b>	<b>\$15</b>

Check the totals from the left hand columns equal the totals in the right hand columns.

\$115 = \$40 + \$50 + \$10 + \$15. The totals equal so the transactions have been recorded correctly.

Now analysis the payments into her bank account.

Date	Payee	Item	Amount		Sales	Loan
2/06/2016	Geoffrey	Sale of chickens	\$15		\$15	
8/06/16	Mark	Sale of sorghum seed	\$10		\$10	
14/06/16	Bank	LOAN	\$50			\$50
16/06/16	Pat	Sale of cattle	\$200		\$200	
		<b>TOTALS</b>	<b>\$275</b>		<b>\$225</b>	<b>\$50</b>

Check the totals from the left hand columns equal the totals in the right hand columns.

\$275 = \$225 + \$50. The totals equal so the transactions have been recorded correctly.

**Now prepare the trial balance.**

Payments **out** of the bank account are liabilities. Liabilities increase when payments are taken out of the bank account so we enter the total as a **CREDIT**.

The individual columns, seed, tools, fertiliser and labour are expenses. They increase the expenses account and so are recorded as a **DEBIT**.

Now we need to enter **the income into the bank account** in the same trial balance.

Payments **into** the bank account are assets and the asset is increasing so we enter the total as a **DEBIT**.

Sales is an income and it is increasing so is recorded as a **CREDIT**.

The loan taken out is a liability. This increases the liability account and so is recorded as a **CREDIT**.

<b>TRIAL BALANCE</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
<b>BALANCE SHEET ACCOUNTS</b>		
Fixed assets (less depreciation)	50	
Bank account	275	115
Debtor	0	
Creditors	0	
Loan		50
Capital	0	
<b>PROFIT AND LOSS (INCOME AND EXPENDITURE) ACCOUNTS</b>		
Sales		225
Seed	40	
Labour	10	
Fertiliser	15	
Interest	0	
	<u>390</u>	<u>390</u>

The debit and credit totals are equal, so the transactions have been recorded correctly.

Next prepare the profit and loss account.

**Profit and loss account**

	\$	\$
Sales		225
Seed	40	
Labour	10	
Fertiliser	15	
<b>Gross profit</b>	<u>          </u>	<u>160</u>
Interest		0
Depreciation		0
<b>Profit before tax and drawings</b>		<u>160</u>

The farmer has made a profit of \$160 in period which these accounts cover.

Now prepare the balance sheet. Remember in the balance sheet:

**Total Net Assets = Fixed Assets + Current Assets – Liabilities**

Looking at the bank account in the trial balance we now have an amount in both DEBIT and CREDIT. The DEBIT is larger than the CREDIT which means it will be an asset.

To enter it into the balance sheet we deduct the CREDIT from the DEBIT and enter the balance as an asset.

**BALANCE SHEET**

	\$	\$
<b>Fixed assets</b>		<b>50</b>
Current assets:		
Bank account	160	
Debtors	0	
<b>Total current assets</b>	<b>160</b>	<b>160</b>
<b>Liabilities</b>		
Loan	50	
Creditors	0	
<b>Total liabilities</b>	<b>50</b>	<b>50</b>
<b>Total net assets</b>		<b><u>160</u></b>

To prove that the accounts are correct we will calculate the capital account. We have no capital carried forward.

	\$	\$
<b>Capital</b>		
Capital C/F	0	
<b>Profit in period</b>	<b>160</b>	<b><u>160</u></b>

As you can see this the total net assets equal the capital plus profit. The transactions have therefore all been recorded correctly in the accounts.

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**Quick Test 21 – Gross margins for farming**

**Answers**

- Gross margin for **sorghum** = -\$42.5/ha.  
Gross margin for **maize** = \$33.33/ha.  
Gross margin for **pearl millet** = \$250/ha.
- Gross margin for **sorghum** = \$41/ha.  
Gross margin for **finger millet** = \$50/ha.  
Gross margin per head for **goats** = \$1.75  
Gross margin per head for **sheep** = \$4.58

**Explanation:**

1. The farmers variable costs and revenue are shown below:

Crop	Variable costs by crop (\$)	Transport (\$)	Casual labour (\$)	Total variable costs (\$)	Revenue
Sorghum (2 ha)	250	33% of 60 = 20	20% of 75 = 15	285	800
Maize (1.5 ha)	300	33% of 60 = 20	40% of 75 = 30	350	400
Pearl millet (1 ha)	100	33% of 60 = 20	40% of 75 = 30	150	400

Calculations for his gross margins for each crop are shown below.

Crop	Gross margin (\$)	Gross margin per ha (\$)
Sorghum (2 ha)	800 – 285 = 515	515/2 = <b>257.5</b>
Maize (1.5 ha)	400 – 350 = 50	50/1.5 = <b>33.33</b>
Pearl millet (1 ha)	400 – 150 = 250	250/1 = <b>250</b>

2. The farmers variable costs and revenue are shown below:

Crop/Livestock	Variable costs by crop/livestock (\$)	Transport (\$)	Casual labour (\$)	Total variable costs (\$)	Revenue
Sorghum (2.5 ha)	500	15% of 150 = 22.50	50% of 50 = 25	547.50	650
Finger millet (1.5 ha)	200	5% of 150 = 7.50	35% of 50 = 17.50	225	300
20 goats	700	40% of 150 = 60	10% of 50 = 5	765	800
30 sheep	400	40% of 150 = 60	5% of 50 = 2.50	462.50	600

Calculations for his gross margins for the farmer's crops and livestock are shown below.

Crop	Gross margin (\$)	Gross margin per ha or per head (\$)
Sorghum (2.5 ha)	650 – 547.50 = 102.50	102.50/2.5 = <b>41</b>
Finger millet (1.5 ha)	300 – 225 = 75	75/1.5 = <b>50</b>
20 goats	800 – 765 = 35	35/20 = <b>1.75</b>
30 sheep	600 – 462.50 = 137.50	137.50/30 = <b>4.58</b>

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### Annex 1 – Matti's accounts for Trial Balance

SEED	DEBIT (\$)	CREDIT (\$)
Seed bought for cash	10	
<b>Total</b>	<b>10</b>	
<b>Amount C/F</b>	<b>10</b>	

LABOUR	DEBIT (\$)	CREDIT (\$)
Labour during harvest paid cash	20	
<b>Total</b>	<b>20</b>	
<b>Amount C/F</b>	<b>20</b>	

FERTILISER	DEBIT (\$)	CREDIT (\$)
Purchase of fertiliser on credit	20	
<b>Total</b>	<b>20</b>	
<b>Amount C/F</b>	<b>20</b>	

CREDITORS	DEBIT (\$)	CREDIT (\$)
Credit purchase of fertiliser		20
<b>Total</b>		<b>20</b>
<b>Amount C/F</b>		<b>20</b>

SALES	DEBIT (\$)	CREDIT (\$)
Cash sale of grain.		500
Credit sale of grain		600
<b>Total</b>		<b>1100</b>
<b>Amount C/F</b>		<b>1100</b>

DEBTORS	DEBIT (\$)	CREDIT (\$)
Credit sale of grain.	600	
<b>Total</b>	<b>600</b>	
<b>Amount C/F</b>	<b>600</b>	

FIXED ASSETS	DEBIT (\$)	CREDIT (\$)
Two-wheeled tractor	1000	
Silo	500	
Silo – depreciation year 1		25
Two-wheeled tractor – depreciation year 1		100
<b>Total</b>	<b>1500</b>	<b>125</b>
<b>Amount C/F*</b>	<b>1375</b>	

\* Value of fixed assets less depreciation

DEPRECIATION	DEBIT (\$)	CREDIT (\$)
Depreciation of silo	25	
Depreciation of two-wheeled tractor	100	
<b>Total</b>	<b>125</b>	
<b>Amount C/F</b>	<b>125</b>	

## Field Numeracy - Uno How's Farm Visits™

<b>LOAN ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Loan of cash for silo materials		500
Interest year 1		25
<b>Total</b>		<b>525</b>
<b>Amount C/F</b>		<b>525</b>

<b>INTEREST</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Interest in year 1	25	
<b>Total</b>	<b>25</b>	
<b>Amount C/F</b>	<b>25</b>	

<b>CAPITAL ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance		2000
<b>Total</b>		<b>2000</b>
<b>Amount C/F</b>		<b>2000</b>

<b>BANK ACCOUNT</b>	<b>DEBIT (\$)</b>	<b>CREDIT (\$)</b>
Opening balance	2000	
Money for two-wheeled tractor taken out		1000
Loan money coming in	500	
Money taken out for silo materials		500
Money taken out for seed		10
Money taken out for labour		20
Sale of grain in cash	500	
<b>TOTAL</b>	<b>3000</b>	<b>1530</b>
<b>Amount C/F</b>	<b>1470</b>	

## Annex 2 – Gross Margins

AgriTechTalk International CIC provide a free to use online Gross Margin calculator available through the TechTalk International website:

<http://www.techtalk-international.com/news/GMC.php>

By registering through the contact page or by emailing [info@agritechtalk.org](mailto:info@agritechtalk.org) you will be given your own login and will be able to save and edit your Gross Margins.

### More information on the TechTalk online Gross Margin calculator

The recording sheets on the following pages show an example of a crops recording sheets which is part of a set of recording sheets that could be used for detailed recording of enterprises.

As part of the TechTalk online Gross Margin Calculator a set of recording sheets (excel sheets) for crops and one for livestock are available at the following link:

<http://www.techtalk-international.com/GrossMarginTrainingDocument.php>

They are available as Microsoft Excel workbooks, or as printable recording sheets for filling in manually.

When filling in the sheets remember that each enterprise would have its own set of recording sheets to allow for detailed analysis.

The figures are entered into a weekly sheet and then transferred into a monthly sheet, from which the yearly totals can be calculated.

It is important to note that:

- Only details of CURRENT year crop are included.
- Remember any crops from the current year are as yet unsold and will be classed as closing-stock.

Value of all products from crops including that eaten, any that is fed to livestock or given way. These should be costed at market price when used.

A free training guide (pdf) for the Gross Margin calculator is also available at

<http://www.techtalk-international.com/GrossMarginTrainingDocument.php>



Gross Margin Training Notes



This free guide provides instructions for the use of the calculator and recording sheets.

# Field Numeracy - Uno How's Farm Visits™

Example of one of the sheets from the excel workbook for crops -

Excel workbooks for crops and livestock are available at <http://www.techtalk-international.com/GrossMarginTrainingDocument.php>

CropsFINAL - Microsoft Excel

VALUE OF OUTPUT FROM HARVEST													
HARVEST													
Month	Sold - Loose Produce (kgs)			Sold - Packaged (kgs)				Total for year	In-Store - Loose Produce (kg)				
	Price / Value per kg	Number of kgs	Value of produce sold	Price / Value per unit (Bag/Bale/Box/Bundle)	Number of units sold	Number of kgs per unit	Number of kgs sold		Value of units sold	Month	Value per kg	Number of kgs	Value produce store
1			0				0	0					
2			0				0	0					
3			0				0	0					
4			0				0	0					
5			0				0	0					
6			0				0	0					
7			0				0	0					
8			0				0	0					
9			0				0	0					
10			0				0	0					
11			0				0	0					
12			0				0	0					
13			0				0	0					
14			0				0	0					
15			0				0	0					
16			0				0	0					
17			0				0	0					
<b>Total number of kgs (A)</b>		0					0	0	<b>Total number of kgs (A)</b>		0		
<b>Total Value of produce sold (B)</b>			0					0	<b>Total Value of produce in-store (B)</b>				
<b>Average value per kg</b>								#DIV/0!	<b>Average value per kg</b>				
HARVEST													
Eaten - Loose Produce (kgs)			Eaten - Packaged (kgs)				Total for year	Given Away - Loose Produce (kg)					

1. Material INPUTS   2. LABOUR COSTS   3. DRAFT ANIMAL COSTS   4. MACHINERY COSTS   5. OUTPUT from HARVEST

Example of a 4 weekly recording sheet for Inputs – Crops.

More sheets are available at <http://www.techtalk-international.com/GrossMarginTrainingDocument.php>

AA International – Farm recording sheets – weekly

INPUTS	Irrigation (litres)			Fertiliser (bags or kg)			Fertiliser 2 (bags or kg)			Planting (seeds and cuttings)		
WEEK	Quantity Used (Q)	Unit Price (P)	Cost (QxP)	Quantity Used	Unit Price (P)	Cost (QxP)	Quantity Used	Unit Price (P)	Cost (QxP)	Quantity Used	Unit Price (P)	Cost (QxP)
1												
2												
3												
4												
<b>Total Quantity Used (A)</b>												
<b>Total Monthly Cost (B)</b>												
<b>Average Unit Price (B/A)</b>												

INPUTS	Spray (litres)			Empty Sacks (item)			Rent per season (ha)			Other		
WEEK	Quantity Used (Q)	Unit Price (P)	Cost (QxP)	Quantity Used	Unit Price (P)	Cost (QxP)	Quantity Used	Unit Price (P)	Cost (QxP)	Quantity Used	Unit Price (P)	Cost (QxP)
1												
2												
3												
4												
<b>Total Quantity Used (A)</b>												
<b>Total Monthly Cost (B)</b>												
<b>Average Unit Price (B/A)</b>												

