



Start-up Village Entrepreneurship Programme

FACULTY MANUAL

Team A Module



Aajeevika
National Rural Livelihoods Mission
Government of India



Kudumbashree
Kerala State Poverty Eradication Mission
Government of Kerala

Kudumbashree-National Resource Organization

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Photo Details: Community Resource Person for Enterprise Promotion (CRP-EP) Vijayakumari conducting enterprise census in Waltaire Gram Panchayath, Srikakulam, Andhra Pradesh

PREFACE

Kudumbashree National Resource Organisation (KS - NRO) began working in the area of enterprise promotionin the year 2013 initially with Bihar and Jharkhand States, by supporting entrepreneurs among the rural poor. The partnerships have steadily grown and have increased to six States under the Micro Enterprise Consultants (MEC) Project and seven States under the Start-up Village Entrepreneurship Programme (SVEP). This work has been based on the experiences of Kudumbashree, the State Poverty Eradication Mission of Kerala, which has been working with more than thirty thousand enterprises in the State.

The Micro Enterprise Consultants (MEC) Project focuses on building an ecosystem for supporting and encouraging rural entrepreneurship. Capacity building of micro enterprise consultants being one of the most important tasks on hand, a lot of work has gone into developing a systematic process for meeting their training needs. The initial training modules to be used under the MEC project were developed by Kudumbashree Training Resources for Enabling Enterprises (TREE) Society, a professional training group run by practicing entrepreneurs and professionals. Later, these modules were incorporated under SVEP to impart training to Community Resource Persons -Enterprise Promotion (CRP-EP) in Kerala, Rajasthan, Jharkhand, and Bihar. With the objective of standardising training tools for SVEP, the National Rural Livelihoods Mission (NRLM) has entrusted the task to Kudumbashree NRO so that it can be used by SRLMs across the country.

The book Faculty Manual developed under the Start-up Village Entrepreneurship Programme (SVEP), is part of a set of three training tools developed for enhancing the skill sets of CRP-EPs. The other two are (1) Classroom Teaching Aids and Participant Handbook. Faculty Manual, which covers TEAM (Training in Enterprise Administration and Management) training programme developed by TREE Society for Kudumbashree has been divided into two parts- TEAM A and TEAM B.

TEAM A includes a general preparatory session on mathematics, various types of businesses, understanding customers, and making products. TEAM B covers topics such as generation of financial statements, business diagnostics, and opportunity identification. The modules can be used by faculty members for providing training to MECs and CRP EPs under SVEP.

It should be noted that these training materials have been developed based on years of experiences of working with enterprises and are intended to be continuously improved through its practical usage.

Kudumbashree NRO

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Mathematics Preparatory

We will start this class by introducing ourselves to the participants and explaining what the SVEP TEAM course is about. Say that the course is divided into two parts – Part A and Part B. We will cover various modules in these two parts to understand the different concepts of business necessary for them to do their job as a Community Resource Person – Enterprise Promotion (CRP-EP)



We will then show the first slide and briefly discuss the modules, which will be covered in Part A. We will then show slide 2 and briefly discuss the modules, which will be covered in Part B.



This module introduces ‘Preparatory Mathematics’ to the participants in five sections. The following table summarises the sections and the topics covered.

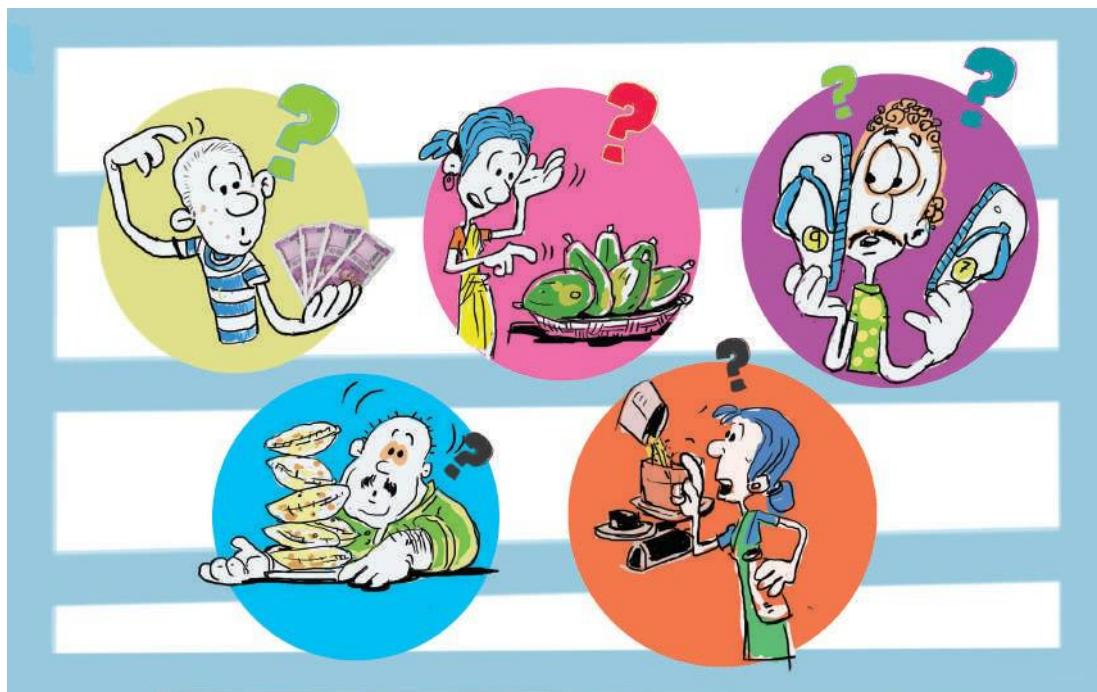
The first and second column shows the order of the sections and topic covered in each section. The next column shows page numbers corresponding to each section in this chapter. The corresponding slide Numbers in the Classroom Teaching Aid are shown against each section.

Sections	Topics	Page Nos in this Manual	Slide Numbers
1	Why we teach mathematics? – Day 1	4 - 6	4 – 5
2	Understanding operations and fractions – Day 1	7 - 19	7 – 21
3	Understanding percentages (Basics) – Day 2	20 - 45	23 – 36
4	Understanding simple equations (Basics) – Day 3	46 - 56	38 – 54
5	Understanding averages – Day 3	57 - 58	56 - 61

Now let us move on to the first section, which is ‘Why we teach Mathematics?’

Section 1

Why we teach Mathematics?



In this section, we will convince the participants on the importance of mathematics not only in business but also in real life. This section will be taught on Day 1 of the course.

What will you say at the start of this section?

Tell the participants that we will see why we need mathematics in the first section shown on the slide.

How Will You Teach This Section?



Ask the participants the following questions.

After the participant gives an answer, say what the answer (number) given by them represents (written next to each question):



- How old are you? – Age
- How many rotis did you have yesterday? – Quantity eaten
- How much quantity of rice/wheat do you buy in a week? – Quantity .
At what price? – Price
- How long do you think this class will go on? – Time
- How tall are you? – Height

· What is the size of your chappal/shoes? – Size

Tell the participants that the common thing about the answers to these questions that is that they are all in numbers. And we use these numbers in daily life to make decisions every day.

Remind them that it is about business that they have come to learn. And tell them that just as in our daily life, business also deals with numbers. And just as in our daily life, these numbers help the entrepreneur to make decisions regarding the business. Thus, there is a need for maths in our daily life.



Before showing the next slide,

Ask and write the following questions on the board:



- How much tea leaves are bought in a week in a tea shop? – Quantity bought
- At what price is tea sold in a tea shop? Price
- How much is spent on purchasing raw material in the last week in the tea shop? Cost
- How much tea was sold in the last week in the tea shop? Quantity sold

After the participant gives an answer, say what the answer (number) given by them represents (written next to each question).

These are again numbers used in business just as in our daily lives.



Show slide 4.

Tell them that these are similar type of questions asked in business as the one seen just before. Emphasize using the key point on the slide that most of the business decisions are based on numbers as we have just seen. Thus, there is also a need for maths in business.

What these numbers represent such as cost, revenue etc. we will learn in the other modules in the

course. This is because knowledge about these key business concepts are also needed to answer the questions we have seen before.

What will you say at the end of this section?



Show slide 5 .

Briefly describe the four concepts in maths that we will be covering in detail in the rest of the module.

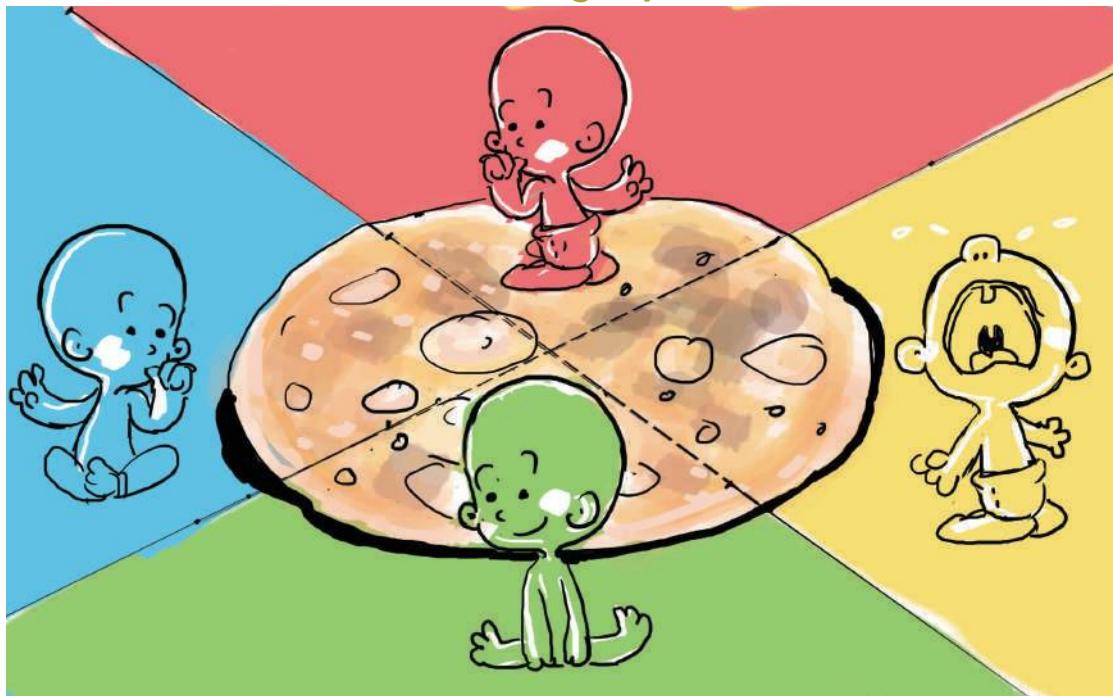


Also point out that the participants while learning about these concepts in the rest of the module should focus mainly on understanding them and not on the calculations involved. Explain this using the following example.

For example, if you are going to study about a mobile, focus should be on what the mobile is and what it is used for. A mobile is something used for talking to others and for sending messages etc. ! We will not focus so much on how the mobile works i.e. the technology behind how it operates.

Section 2

Understanding Operations and Fractions



This section will be taught on Day 1 of the course.

What will you say at the start of this section?

Show slide 6.



The second section is on operations in maths and fractions. This is something that most participants can easily connect with as they would have used these concepts in school or their daily life. So this section will be more in the form of exercises to be done by the participants than in the form of lessons.

How Will You Teach This Section?

Revision of the four basic mathematical operations – Addition, Subtraction, Multiplication and Division

Ask participants for examples of the four above mathematical operations.



Then show slide 7 and discuss the four operations on the slide.



Say that we will start by doing an exercise in which the participants have to identify the four mathematical operations shown on the slide.



Before performing the exercise, keep a packet of beads/coins/marbles of the same size with you.

Let us assume that you use beads for the exercise.

Operation 1 – Addition

$$\bullet\bullet\bullet + \bullet\bullet\bullet = \bullet\bullet\bullet\bullet$$

Step 1 - Keep 3 beads on one part of the table.



Ask the participants to count it and write it on the board.



Step 2 - Now keep another 5 beads on another part of the table and

Ask the participants to count it. Now ask them to write it on the board a few spaces after the last number.



Step 3 - Now combine the two sets of beads.

Ask the participants to count the combined set of beads (8 beads) and write it next to the other two numbers on the board.



Step 4 – Ask the participants to state which operation has been done here.

Now ask them to put the symbol for the operation between the first two numbers on the blackboard used to arrive at the final number.



Step 5 – Put an '=' sign between the combined value and the other numbers to show that 3 and 5 added together gives 8.



Step 6 – Ask the participants to add the numbers in step 1 and step 2 using a calculator now to verify the answer.

Repeat the exercise with different number of beads until all the participants are clear with the operation.

Tell the participants that the emphasis is not on how to calculate here, whether by using a calculator or by any other method. The emphasis is on what is happening when you add two quantities.

Operation 2 – Subtraction

$$\bullet\bullet\bullet\bullet - \bullet\bullet = \bullet\bullet\bullet$$

Step 1 – Keep 9 beads on the table.



Ask the participants to count it and write it on the board.



Step 2 – Now ask the participants to take 4 beads from the initial set of 9 beads and write it on the board a few spaces after the earlier number.

Step 3- Now ask the participants to count the remaining beads (5 beads) on the table and write it next to the other two numbers on the board.

Step 4 – Ask the participants to state which operation has been done here.

Now ask them to put the symbol for the operation between the numbers on the blackboard used to arrive at the last number.



Step 5 – Put an '=' sign between the remaining value and the other numbers to show that 4 subtracted from 9 gives 5.



Step 6 – Ask the participants to reduce the numbers in step 1 with number in step 2 using a calculator now to verify the answer.



Repeat the exercise with different number of beads until all the participants are clear with the operation.

Tell the participants that the emphasis is not on how to calculate here, whether by using a calculator or by any other method. The emphasis is on what is happening when you subtract two quantities.

Opposite nature of addition and subtraction

Now we will have a small demonstration for showing the opposite nature of addition and subtraction operations.



Once again repeat the exercise for addition by taking 3 beads and 5 beads and combining them. We can once again see that adding 3 beads and 5 beads gives 8 beads.



Ask the participants to write this operation on the board as done before i.e.
 $3 + 5 = 8$



Now take the combined 8 beads and remove 3 beads from the pile. We see that we are left with only 5 beads.



Ask the participants to write the operation for this on the board as done before i.e. $8 - 3 = 5$.

Thus, we can see that 3 and 5 on adding gave us 8 and the same 8 when subtracted or reduced by 3 gives us back 5.



Instead of 3 beads, if we remove 5 beads from the pile of 8 beads, we get 3 beads instead i.e. 8 when subtracted by 5 gives us 3 i.e. $8 - 5 = 3$.

Hence, we can see that addition and subtraction operations are just opposites.

Operation 3 – Multiplication

$$\begin{array}{c} \bullet\bullet \\ \times \end{array} \bullet\bullet = \bullet\bullet\bullet\bullet$$

Step 1 - Keep 4 groups of 3 beads on the table.

Ask the participants to count the number of groups there are and write on the board.





Step 2 – Ask the participants to count the number of beads in the each group (4 in each of the groups) and write it on the board a few spaces after the earlier number.



Step 3– Ask the participants to count the total number of beads on the table and write it next to the other two numbers on the board.



Step 4 – Ask the participants to state which operation has been done here.

Now ask them to put the symbol for the operation between the numbers on the blackboard used to arrive at the last number.

Remind them that in step 3, what we have done is $3 + 3 + 3 + 3$ which we can see is the same as 4×3 .



Step 5 – Put an '=' sign between the combined value and the other numbers to show that 4 and 3 multiplied together gives 12.



Step 6 – Ask the participants to multiply the numbers in step 1 and step 2 using a calculator now to verify the answer.

Repeat the exercise with different number of beads until all the participants are clear with the operation.

Tell the participants that the emphasis is not on how to calculate here, whether by using a calculator or by any other method. The emphasis is on what is happening when you multiply two quantities.

Operation 4 – Division



Step 1 – Keep15 beads on the table.

Ask the participants to count it and write it on the board.



Step 2 – Now ask the participants to make 3 groups with equal number of beads. Also ask them to write on the board the number of groups next to the earlier number.



Step 3 – Now ask the participants to count the number of beads in each group and write it next to the other two numbers on the board.



Step 4 – Ask the participants to state which operation has been done here.

Now ask them to put the symbol for the operation between the numbers on the blackboard used to arrive at the last number.



Step 5– Put an '=' sign between the combined value and the other numbers to show that 15 when divided by 3 gives 5.

Step 6 – Ask the participants to divide the numbers in step 1 with the number in step 2 using a calculator now to verify the answer.



Repeat the exercise with different number of beads until all the participants are clear with the operation.

Tell the participants that the emphasis is not on how to calculate here, whether by using a calculator or by any other method. The emphasis is on what is happening when you divide two quantities.

Reminder

We will now use an exercise to understand the concept of remainders in division.

Repeat the same exercise as before but with 17 beads to begin with instead of 15. Now ask them to make 3 equal groups as before with the 17 beads.



We can say that there will be 2 beads left over after 3 equal groups of 5 has been made. Tell them that this is the remainder. In such cases, the answer is still 5.

Now ask them to do the same operation on a calculator.



We can see that $17/3$ gives 5.66666. Ask them to ignore the digits after the decimal point. So the answer is 5 i.e. 17 can be divided into 3 groups with a maximum of 5 beads in each group.

Opposite nature of multiplication and division

Now we will do a small exercise for showing the opposite nature of multiplication and division operations.



Once again repeat the exercise for multiplication by taking 4 groups of 3 beads each.

We know that when we combine these groups, we get a total of 12 beads as $3 + 3 + 3 + 3$ is the same as 4 times 3 i.e. 12. Ask the participants to write the mathematical operation for this on the board i.e. $4 \times 3 = 12$.

Now ask the students to once again take the 12 beads and make them into 4 equal groups. We can see that we will be left with 3 beads in each of the 4 groups. Ask the participants to write the mathematical operation for this as done before i.e. 12 divided by 4 gives or $12 / 4 = 3$.

We can see that even if instead of 4 groups, if we divide the 12 beads into 3 equal groups, we will be left with 4 beads in each of the 3 groups. i.e. 12 divided by 3 gives 4 or $12/3 = 4$.

Hence, we can see that multiplication and division operations are just opposites.

Common application of the four basic mathematical operations – Addition, Subtraction, Multiplication and Division.

Show slide 8.



For each of the below given situations in slide 8, ask the participants to repeat the steps they have performed in the earlier exercise to arrive at the answer. Once the participants have written down the numbers and operations between the number, instruct them to use a calculator to make the final calculations.



Work out the solution after all the participants have attempted the question in each of the situations. The solution for each of the questions is given in a box next to the description of the situation.



Applications of Addition

Kanku's General Store sold 10 Kgs, 3 Kgs and 6 Kgs of rice to three different customers yesterday. What was the total rice sold by Kanku's General Store yesterday?

Step 1

$$10 + 3 + 6$$

Step 2

$$10 + 3 + 6 = 19$$

Ramu's tasty tea shop sells Rs. 750 worth of tea on day 1, Rs. 1000 on day two and Rs. 1250 on day 3. What is the total money received from sale of tea for the three days?

Step 1

$$750 + 1000 + 1250$$

Step 2

$$750 + 1000 + 1250 = 3000$$

200 men, 500 women and 100 children attend a mela. What is the total number of people who attended the mela?

Step 1

$$200 + 500 + 100$$

Step 2

$$200 + 500 + 100 = 800$$



Use this problem if any participants seem to have difficulties in working out the above problems.



Applications of Subtraction

There are 85 bananas in a basket. 15 of them are rotten. How many good bananas are there in the basket?

Step 1

$$85 - 15$$

Step 2

$$85 - 15 = 70$$

A person will take 150 to complete building a shed. If the person has already worked for 89 days, how many days more will he take to complete the shed?

Step 1

$$10 + 3 + 6$$

Step 2

$$10 + 3 + 6 = 19$$

Kanku had 12 packets of biscuit in his shop in the morning. He sold 6. How many does he have left?

Step 1

$$12 - 6$$

Step 2

$$12 - 6 = 6$$

Applications of addition and subtraction combinations

Show slide 10.

For solving more complex problems in subtraction or problems where both subtraction and addition have to be used, it is easier to diagrammatically represent the problem in the following way.



For example, solving one of the previous problems again. Show the total number of biscuits in the beginning as a box.

Now assume that this is the total number of biscuits.

We know that some of the biscuits are rotten. We show this in the diagram in the following way.

6 packets	????
	12 packets

To find out the rest, the number of good packets of biscuits, we subtract 6 from 12 i.e $12 - 6$ is 6

Therefore, 6 packets are still good



Show slide 11.

Ask the participants to solve the following problems on the board using the same method.

Work out the solution after the participants have attempted the problem themselves.



You have 7 shirts. Your friend has 2 shirts lesser than you. What is the total number of shirts you and your friend have?

Solution

7 shirts	7 – 2 shirts
???	

Number of shirts your friend has $7 - 2$ i.e. 5 shirts

Total number of shirts you and your friend have $7 + 5$ i.e. 12 shirts



There are 127 fruits in a fruit basket. 50 of these are oranges, 13 are apples and the rest are bananas. How many bananas are there in the basket?

Solution

50 oranges	13 apples	????
127 fruits		

Since there are 127 fruits in total, we reduce the number of oranges and apples from this to get the number of remaining fruits, which we know are bananas.

$127 - 50 - 13$ i.e. 64 bananas

Applications of multiplication



Show slide 12.

A bus can carry a maximum of 75 students. If a school owns 7 buses, what is the maximum number of students that can travel in all the buses combined?

Solution :- 525 students

A child goes to buy 10 samosas. If each samosa costs Rs. 5. What is the total money she has to pay to buy the samosas?

Solution :- Rs. 50

Step 1

10×5

Step 2

$$10 \times 5 = 50$$

50 customers visit a sweets shop on a particular day. Each person buys 2 sweets. What is the total number of sweets sold by the shop on that day?

Solution :- 100 sweets

Step 1

$$50 \times 2$$

Step 2

$$50 \times 2 = 100$$

The length of a bus is 5 metres. If 11 buses stand back to back, they cover an entire bridge. What is the length of the bridge?

Solution :- 55 metres.

Step 1

$$5 \times 11$$

Step 2

$$5 \times 11 = 55$$

Use this problem if any participants seem to have difficulties in working out the above problems.



Applications of multiplication and addition/subtraction



Show slide 13.

500 children study in a school. Up to 50 students can travel in a single bus. The school has 8 school buses. The school wants to take as many children as it can on the buses for a picnic. How many students can't go for the picnic?

Solution :- 100 students

Step 1

$$50 \times 8 = 400$$

Step 2

$$500 - 400 = 100$$

Ramu sells 4 toffees each to 4 of his customers and he is still left with 3. How many did he have to begin with?

Solution :- 19 toffees

Step 1

$$4 \times 4 = 16$$

Step 2

$$16 + 3 = 19$$

Kanku sells 5 Kgs of onion @ Rs. 20/kg and 7 Kgs of tomato @ Rs. 30/kg. How much money does he make from selling onions and tomatoes?

Solution :- Rs. 310

Step 1

$$5 \times 20 = 100$$

Step 2

$$7 \times 30 = 210$$

Step 3

$$100 + 210 = 310$$

Applications of Division



Show slide 14.

I have Rs. 300 with me. 1 Kg of onion costs Rs. 30. How many kgs of onions can I buy?

Solution :- 10 kgs

Step 1

$$300 / 30$$

Step 2

$$300 / 30 = 10$$

There are 100 students in a class. Each bench in the class has 5 students sitting on it. How many benches are there in the class? Solution :- 20 benches

Step 1

$$100 / 5$$

Step 2

$$100 / 5 = 20$$

Sequencing of operations



Show slide 15.

Have a cutout ready before the class which has the 4 letter D, M, A and S in large bold font as shown below.

D M A S

Tell the participants that we have seen 4 different operations so far. Sometimes we might get problems where all or few of these operations might be part of the same problem.

In such cases, to solve the problem, we have to remember the following:

We treat the variables that are to be divided as a house with two floors and keep them aside. We then solve the rest of the operations in the following order:

- i) Division
- ii) Multiplication
- iii) Addition after that
- iv) Subtraction finally

Use the following examples to show this: $8 \times 3 + 5 - 2$

We first multiply 8 and 3 first to get 24. Now the problem becomes: $24 + 5 - 2$

Now we add 24 and 5 to get 29. Now the problem becomes: $29 - 2$

Now we subtract the remaining 29 and 2 to get 27.

Now ask the participants to solve the following and work out the solution on the board once the participants have attempted to solve the problem.

i) $15 / 3 + 2 \times 3 - 1$

Solution :- $5 + 2 \times 3 - 1 = 5 + 6 - 1 = 11 - 1 = 10$

ii) $10 + 3 - 5 \times 2$

Solution : $-10 + 3 - 10 = 13 - 10 = 3$

iii) $12 + 2 \times 2 - 3$

Solution : $-12 + 4 - 3 = 16 - 3 = 13$

Fractions

Show slide 16.



Fractions are a way to represent a part of something. It is normally used when an item is divided into many equal parts. Fractions are in the form a/b .

Since fractions are also division, it is like a house with two floors. Fractions are expressed as 'How many parts did you give/take out of the whole?' divided by 'How many total parts has the item been broken into?'

OR

How many parts out of the whole do you have?

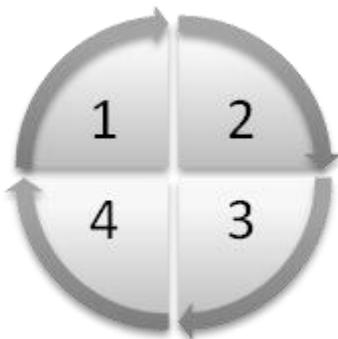
How many total parts has the item been broken into?

Show slide 17.

For example,



If a circle is divided into four equal parts and you take one part out of the circle.



Each part can be represented as a fraction in the following way: $1/4$ or 1 divided by 4.

If you take two parts out of the four, then the fraction you would have would be: $2/4$ or 2 divided by 4.

Show slide 18.



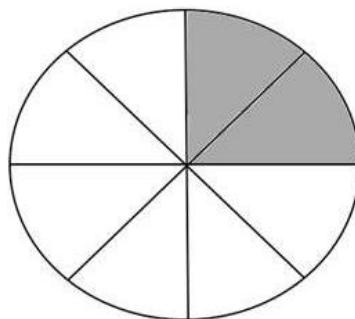
Similarly, if a bar is divided into 3 equal parts and 2 parts are taken out of it.

1	2	3
---	---	---

The fraction to represent that would be $2/3$ or 2 divided by 3.

Ask the participants to represent the following as fractions as an exercise and show them the solution after they have worked out the solutions themselves:

- i) A circle is divided into 8 equal parts. If you take shaded parts out of that, what fraction of the circle do you have ?



Solution : - $4/8$

- ii) A box is divided into 10 equal parts. If you take shaded parts out of that, what fraction of the box do you have ?



Use this problem if any participants seem to have difficulties in working out the above problems.

Solution :- $4/10$

Show slide 19.



Multiplication of fractions

The following steps need to be kept in mind while performing multiplication on fractions. The following steps can be done to solve problems without changing the final result of the multiplication:

- i) When you see a number multiplied with a fraction, then treat the number as a fraction and put 1 on the bottom floor of the fraction.

For example, $5 \times \frac{2}{3}$ should be made $\frac{5}{1} \times \frac{2}{3}$

- ii) Divide the top floor of any fraction and bottom floor of any fraction with the same number

For example, $\frac{4}{6} \times \frac{3}{12}$; The number on the top floor of the first section i.e. 4 and number on the bottom floor of the second fraction i.e. 12 can both be divided by 4 to get $\frac{1}{6} \times \frac{3}{3}$

Similarly, The number on the top floor of the first fraction i.e. 4 and number on the bottom floor of the first fraction i.e. 6 can both be divided by 2 to get $\frac{2}{3} \times \frac{3}{12}$.

- iii) Multiply the numbers on the top floors of the fractions and the numbers on the bottom floor of the fractions.

For example, $\frac{2}{3} \times \frac{5}{7}$ need to be written as $\frac{10}{21}$.

- iv) If a fraction has only 1 in bottom after performing the above steps, then write only the top floor of that fraction.

Show slide 20.



Ask the participants to solve the following problems and work out the solution for them once they have solved the problems themselves.

- i) $\frac{2}{5} \times 5$

Solution :- Step 1: $\frac{2}{5} \times \frac{5}{1}$; Step 2: $\frac{2}{1} \times \frac{1}{1}$; Step 3: $\frac{2}{1}$; Step 4: 2

- ii) $\frac{2}{5} \times \frac{1}{3}$

Solution :- Step 1: $\frac{2}{5} \times \frac{1}{3}$; Step 2: $\frac{2}{15}$ since second and third step are not possible

- iii) $\frac{2}{5} \times \frac{2}{5}$

Solution :- Step 1: $\frac{2}{5} \times \frac{5}{1}$; Step 2: $\frac{4}{25}$ since second and third step are not possible

- iv) $3 \times \frac{1}{6}$

Solution :- Step 1: $\frac{3}{1} \times \frac{1}{6}$; Step 2: $\frac{1}{1} \times \frac{1}{2}$; Step 3: $\frac{1}{2}$ since third step is not possible

What will you say at the end of this section?

Show slide 21.



Use the key points on slide to revise the important concepts introduced in the section.

Section 3

Understanding Percentages

Percentages



In this section, we introduce the concept of percentages to the participants. We will begin by seeing some situations in real life where we need to use percentages and where we don't.

How will you start this section?



Let us introduce the section using a demonstration.

Make any two participants stand up. Ask the other participants who is taller?

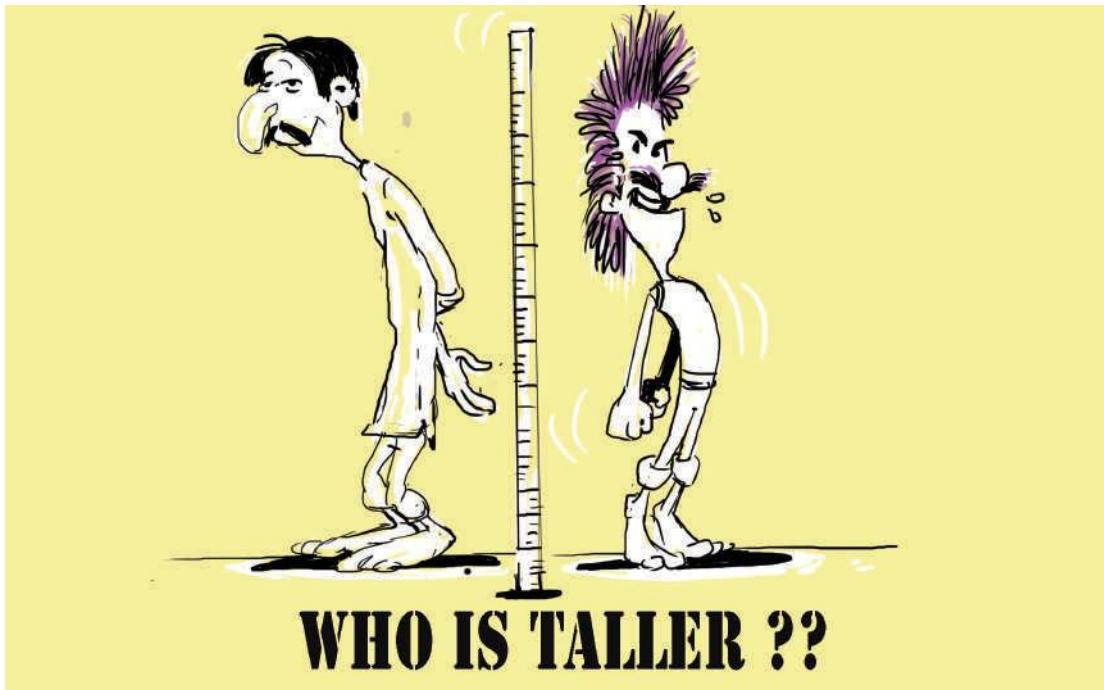
Ask two participants their age. Ask other participants which one is older?

Which was hotter? Today or yesterday?

How Will You Teach This Section?



Show slide 23.



- Rina is 150 cm. Amir is 125 cm. Who is taller?
Rina is taller than Amir.
- Ramu is 40 years old. Shamu is 42 years old. Who is older?
Shamu is older than Ram.
- Temperature in Udaipur is 40 degrees centigrade, Temperature in Baroda is 37 degrees centigrade. Which is hotter?
Udaipur is hotter than Baroda.

Tell the participants that the above problems as well as the questions that were asked in the beginning of the class can be solved easily by directly comparing the two numbers.

Now let use a demonstration to explain a more complex problem to the participants and see whether they can answer the question.



Demonstration

Take 2 large bowls. In one bowl, pour 2 cups of milk and 3 cups of water. In the other bowl, pour 1 cup of milk and 2 cups of water.

Now ask the participants, which bowl would they like to drink from?



(based on which bowl has more milk)

Listen to the participants but don't give any answer then.



Tell them that we will see the solution later.



Show slide 24.



Tell the participants that a similar problem happened to Chandra and Guddu as well. Chandra and Guddu are two small farmers in the village who sell milk. They began adding water to their milk so the villagers called a meeting under a banyan tree and thought both are 'badmaash' but who is worse? The villages found out that Chandra added 6 liters of water to 24 litres of milk and Guddu added 15 litres of water to 85 litres of milk. Ask the participants whose milk they think is more watery?



Slide 25.

Rekha has just got the exam results for science and social science from her school. In Science she has got 34 marks out of the total of 50 marks. In Social Science she has got 45 marks out of the total of 75 marks.

Rekha thinks she has done better in Social Science. But which one has she done better in?



Slide 26.

Imagine that you urgently need some money for some medical expenses. You go to the money lenders to borrow money.

Money lender Abhishek Singh is willing to give you Rs. 1,000. He wants you to give him back Rs. 1,150 at the end of the month.

Money lender Sukhram is willing to give you Rs. 1,250, but he wants you to give him back Rs. 1,450.

From whom would you borrow the money and why ?

Tell the participants that the question here is not of the specific amount Rs. 1000 or Rs. 1250 you are getting but of the money that you are borrowing from the lender and what you have to pay back with respect to that money.



Show slide 27.



We have seen the following three comparisons in the three situations we discussed so far.

- Is Chandra's milk more watery or is Guddu's milk more watery?
- Has Rekha done better in Science or in Social Science ?
- Who charges a higher rate of interest, Abhishek or Sukhram ?

Unlike the simple comparisons we saw in the earlier problems, it is not easy to compare here because there is no single number to compare in each of the situations. Instead, there are sets of two or more numbers that has to be compared with other sets of such numbers.

Before seeing how to solve such problems, let us do another demonstration.



Demonstration

Take two stools of different size. Now ask any two participants to stand on these stools. Now ask the other participants who is taller?

Tell the participants that this is similar to the three problems we have just seen now since we cannot compare the heights of the two participants easily and directly.



To solve this, take two stools of the same size now. Ask the participants to once again stand on the stools or on the ground. Now ask the other participants to say who is taller?

Here, we can see that we are once again able to easily compare the two heights since the base (the stool) or the ground is of the same height now.

Thus, to solve such complex problem, we have to first make the ground (the base) same for the two things we are comparing.

It is to solve such complex problems where we use “percentage”.

Percentage simply means making “the ground or the base” out of 100 for any quantity.

This makes it easier to make complex comparisons.

Let us now try to do this for the problems we have seen so far and use it to solve them.



Show slide 28.

Let us now go back to the example of farmers Chandra and Guddu.

Chandra added 6 litres of milk to 24 litres of water. Guddu added 15 litres of milk to 85 litres of water. We need to find whose milk is more watery by comparing the two?

To make this comparison easier, we need to make “the ground” same for both.

But first let us see what the ground is at present for both. In this situation, the ground would be the total volume of milk and water for each of the farmers.

Therefore, for Chandra, the ground is $6+24$ i.e. 30 litres while for Guddu the ground is $15+85$ i.e. 100 litres.

Finally to compare the water in Chandra and Guddu's milk, we compare the relationship between volume of water and the ground i.e. volume of water and milk of Chandra and Guddu.

Thus, instead of comparing single numbers, we are comparing the relationship between two numbers in case of complex problems such as these.

Let us see how to make the ground the same in the next slide.



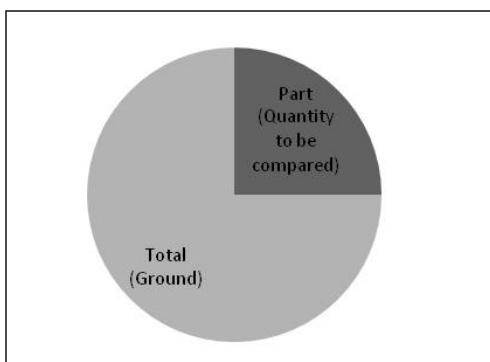
Show slide 29.

As mentioned before, to solve complex problems such as these, we will convert these quantities into percentages. This means that we are making the ground 100 for both quantities, which makes it easier to compare them.

We will now teach the participants the method for converting the ground of different quantities to 100.

Before we look at the method for converting the ground into 100, let us learn to express these complex problems using pictures first.

We will do this by drawing circles with a part of each circle shown distinctively as shown below. We will call these circles as houses.

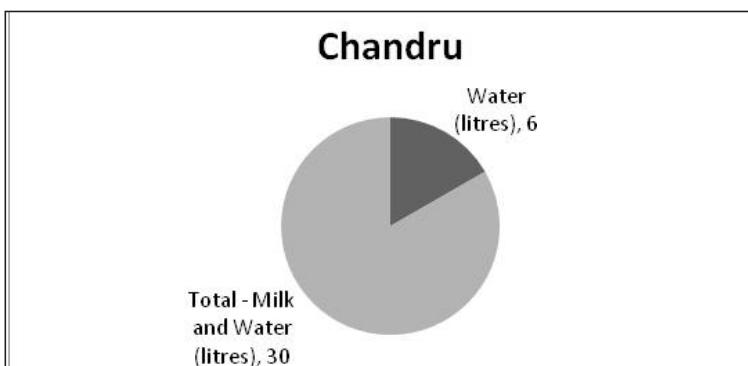


The number written inside the small part represents the quantity to be compared or a part of the total. The number written outside the small part but inside the circle shows “the ground” or the total.

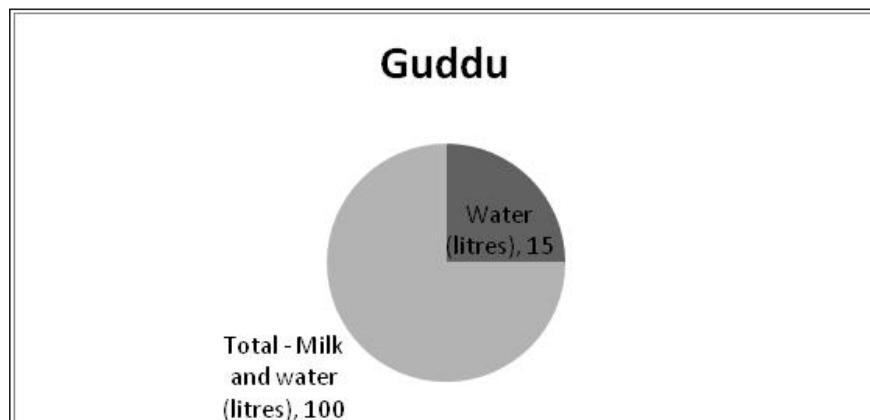
Let us now try to express Chandru and Guddu’s milk in this form.



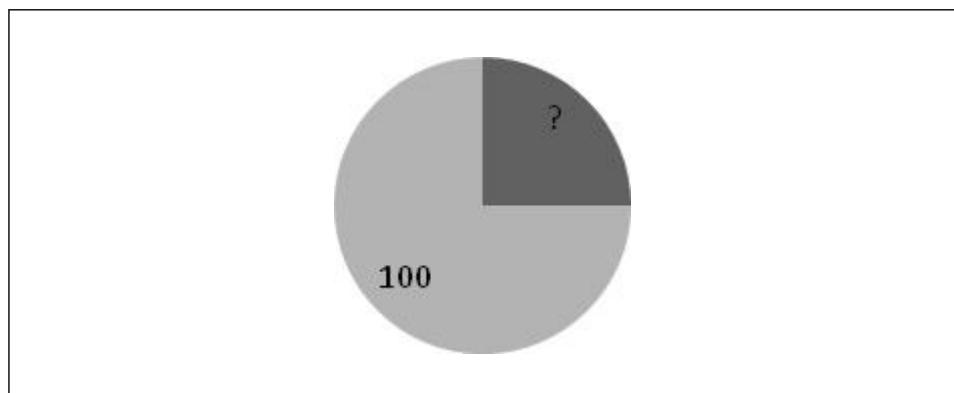
In case of Chandru, we know that the volume of water is 6 litres and that total volume or ground is $24+6$ i.e. 30 litres.



In case of Guddu, we know that the volume of water is 15 litres and that total volume or ground is $15+85$ i.e. 100 litres.



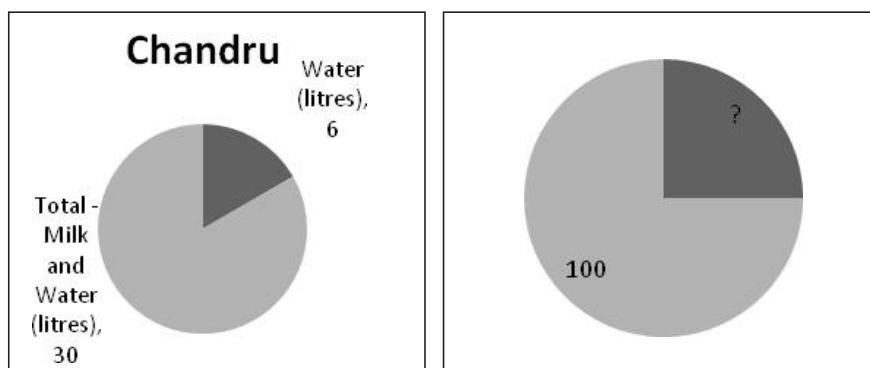
We can also express the above items as a percentage or with the ground as 100 in a similar way as shown below with the missing number/part being shown as “?”.



Now that we have seen how to express such problems, let us see what is the method for finding the missing number.

We will first see how to calculate the volume of water in the milk provided by Chandru when total volume of milk and water is 100. We already know that Chandru has 6 litres of water in 30 litres total volume of milk and water.

Step 1: We start off by keeping the two pictures of the above situation next to each other.



We know that the above two pictures are different ways of expressing the same thing.

Step 2: We now make a table with two columns and two rows.

Step 3: We now fill the table by first writing the missing number in the bottom right corner. We also name the columns based on the missing number. Since we know that the missing number is a "Part". We name that column as the "Part" portion of the house. We name the other column "Total" based on the total or ground part of the houses.

Total	Part
	?

Step 4: We next write equivalent number in the other house directly above it. The equivalent number (i.e. Part) in the other house we know is 6.

Total	Part
	6
	?

Step 5: We will now write the "total" number corresponding to the parts next to it. We know that for the first house this is 30 and for the other house, it is 100.

Total	Part
30	6
100	?

Step 6: We will now use an inverted (ulta) 'L' tool for helping us calculate the missing number. This tool will have the division symbol on one side and the multiplication symbol on the other side. We keep this tool above the table as shown below.

X	/	
Total		Part
30		6
100		?

Show slide 29.



Step 7: We will now see the actual calculation.

To find "?", we start from the number we first wrote on the table after ? i.e. 6. Since the division symbol is above 6 and 30, we divide 6 by 30 i.e.. $6/30$. Since the multiplication symbol is above 30 and 100, we multiply $6/30$ with 100 i.e.. $6/30 \times 100$.

We have seen that $6/30 \times 100$ is 20 by following the steps in the previous section.

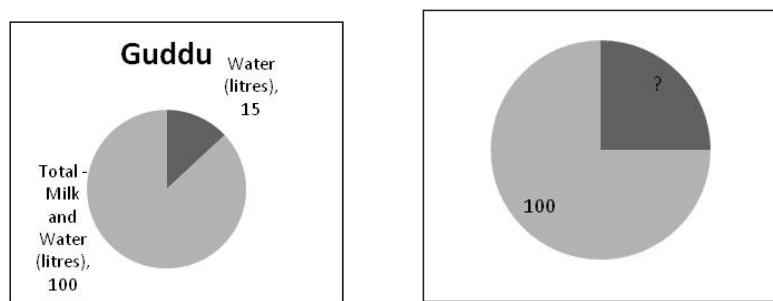
20, the missing number is the volume of water in 100 litres total volume of water and milk provided by Chandru OR we can say that 20% is the percentage of water in the total volume of milk and water provided by Chandru.

Thus, when we change the ground to 100, 6 litres of water in 30 litres of water and milk becomes 20 litres of water.

Let us calculate the same for Guddu now by following the same steps.

We need to calculate the volume of water in the milk provided by Guddu when total volume of milk and water is 100. We already know that Guddu has 15 litres of water in 100 litres total volume of milk and water.

Step 1: We start off by keeping the two pictures of the above situation next to each other.



We know that the above two pictures are different ways of expressing the same thing.

Step 2: We now make a table with two columns and two rows.

Step 3: We now fill the table by first writing the missing number in the bottom right corner. We also name the columns based on the missing number. Since we know that the missing number is a "Part". We name that column as the "Part" portion of the house. We name the other column "Total" based on the total or ground part of the houses

Total	Part
	?

Step 4: We next write equivalent number in the other house directly above it. The equivalent number (i.e. Part) in the other house we know is 6.

Total	Part
	15
	?

Step 5: We will now write the "total" number corresponding to the parts next to it. We know that for the first house this is 100 and for the other house too, it is 100.

Total	Part
100	15
100	?

Step 6: We will now use the inverted (ulta) 'L' tool for helping us calculate the missing number. This tool will have the division symbol on one side and the multiplication symbol on the other side. We keep this tool above the table as shown below.

X	/	
	Total	Part
	100	15
	100	?

Show slide 30.



Step 7: We will now see the actual calculation.

To find "?", we start from the number we first wrote on the table after ?i.e. 15. Since the division symbol is above 15 and 100, we divide 15 by 100 i.e.. $15/100$. Since the multiplication symbol is above 15 and 100, we multiply $15/100$ with 100 i.e.. $15/100 \times 100$.

We have seen that $15/100 \times 100$ is 15 by following the steps in the previous section.

15, the missing number is the volume of water in 100 litres total volume of water and milk provided by Guddu OR we can say that 15% is the percentage of water in the total volume of milk and water provided by Guddu.

In Guddu's case, since the initial total volume of milk and water is 100 litres to begin with, we can avoid the above 7 steps and directly say that the percentage of water in the total volume of milk and water provided by Guddu is 15%.

Since we now only have one number, which shows how watery Chandra's milk is and another number, which shows how watery Guddu's milk is, It is now possible to compare these two numbers with each other just like other simple comparisons. From this, we can easily say that Chandra's milk is more watery.

Tell the participants that they should pay more attention to what has been calculated than on following the steps for calculation.



For example, remind the participants that in the case of Chandru and Guddu, the villagers wanted to know whose milk is more watery. Hence, we calculated the percentage of water in the milk in the two cases.

If the villagers wanted to know which milk was more milky, then we would need to calculate the percentage of milk provided by Chandru and Guddu.

We can use the same steps as above to solve the other complex problems we have discussed in this section.

Show slide 31.



Let us once again recollect what these problems were from slide 31. Ask the participants to solve these on their own.



Ask two participants to solve this on the board.

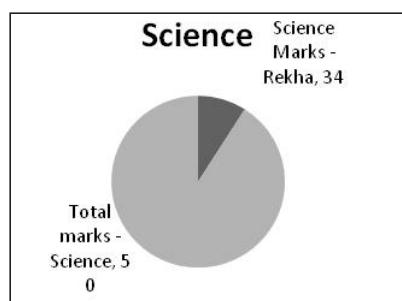
Let us look at Rekha's problem first.

- Rekha got 34 marks out of 50 marks in science and she got 45 marks out of 75 marks in social science. Which subject did she do better in?

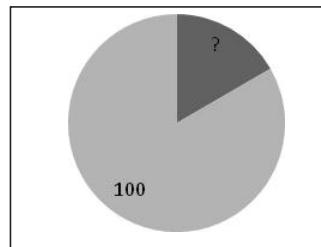
We have to first make the ground equal for both subjects to compare them. We will do this by making both into percentage or BY making the ground 100. Let us first do it for Science by following the steps shown before.

Step 1: We start off by representing the situation graphically (in pictures) in the form of two houses. We write the missing number as “?” just like before.

In the first house, we can see that the “total” or total marks in the Science exam is 50. The part or the marks she scored in Science is 34.



As far as the other house is concerned, we already know that we need Rekha's Science mark in percentage. This means that we need to find her marks when the total mark in science is 100. We show the part as ‘?’ since it is the missing number.



Step 2: We now make a table with two columns and two rows.

Step 3: We now fill the table by first writing the missing number in the bottom right corner. We also name the columns based on the missing number. Since we know that the missing number is a “Part”. We name that column as the “Part” portion of the house. We name the other column “Total” based on the total or ground part of the houses

Total	Part
	?

Step 4: We next write equivalent number in the other house directly above it. The equivalent number (i.e. Part) in the other house we know is 60.

Total	Part
	34
	?

Step 5: We will now write the “total” number corresponding to the parts next to it. We know that for the house with 34 as “part” this is 50 and for the other house, it is 100.

Total	Part
50	34
100	?

Step 6: We will now use the inverted (ulta) ‘L’ tool for helping us calculate the missing number. This tool will have the division symbol on one side and the multiplication symbol on the other side. We keep this tool above the table as shown below.

X	÷	
Total		Part
50		34
100		?

Step 7: We will now see the actual calculation.

To find ‘?’ we start from the number we first wrote on the table after ‘?’ i.e. 34. Since the division symbol is above 34 and 40, we divide 34 by 50 i.e.. $34 \div 50$. Since the multiplication symbol is above 50 and 100, we multiply $34 \div 50$ with 100 i.e.. $34 \div 50 \times 100$.

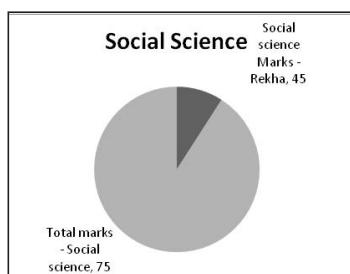
We can seen that $34 \div 50 \times 100$ is 68.

68, the missing number, is the percentage of marks in Science of Rekha or the mark scored by Rekha when the total marks in science is 100.

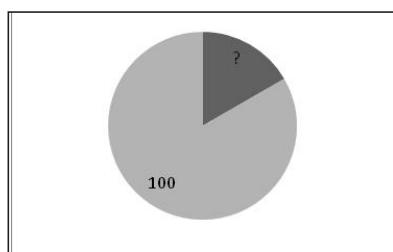
Let us now do the same for Social science.

Step 1: We start off by representing the situation graphically (in pictures) in the form of two houses. We write the missing number as “?” just like before.

In the first house, we can see that the “total” or total mark in the Social Science exam is 75. The part or the marks she scored in Science is 45.



As far as the other house is concerned, we already know that we need Rekha's Social Science mark in percentage. This means that we need to find her marks when the total mark in science is 100. We show the part as ‘?’ since it is the missing number.



Step 2: We now make a table with two columns and two rows.

Step 3: We now fill the table by first writing the missing number in the bottom right corner. We also name the columns based on the missing number. Since we know that the missing number is a “Part”. We name that column as the “Part” portion of the house. We name the other column “Total” based on the total or ground part of the houses

Total	Part
	?

Step 4: We next write equivalent number in the other house directly above it. The equivalent number (i.e. Part) in the other house we know is 45.

Total	Part
	45
	?

Step 5: We will now write the “total” number corresponding to the parts next to it. We know that for the house with 45 as “part” this is 75 and for the other house, it is 100.

Total	Part
75	45
100	?

Step 6: We will now use the inverted (ulta) ‘L’ tool for helping us calculate the missing number. This tool will have the division symbol on one side and the multiplication symbol on the other side. We keep this tool above the table as shown below.

X	÷	
	Total	Part
	75	45
	100	?

Step 7: We will now see the actual calculation.

To find ‘?’, we start from the number we first wrote on the table after ‘?’ i.e. 45. Since the division symbol is above 45 and 75, we divide 45 by 75 i.e.. $45 \div 75$. Since the multiplication symbol is above 75 and 100, we multiply $45 \div 75$ with 100 i.e.. $45 \div 75 \times 100$.

We can seen that $45 \div 75 \times 100$ is 60.

60, the missing number, is the percentage of marks in Social science of Rekha or the mark scored by Rekha when the total marks in Social science is 100.

Since we now have Rekhas mark in both Science and Social science in percentages or when total marks of these subjects are 100, we can compare her marks in the two subjects directly now. We can see that she has done better in Science in which she has 68% compared to Social science in which she has scored 60%.



Let us also look at the other example now where two lenders lend money at different interest rates.



Before we introduce the problems, ask the participants what they know about borrowing and what has to be returned to the lender.

Then tell them that when you borrow money, the money you borrow is called the loan amount. You then have to pay interest on this. And what you pay back to the lender after usually the end of a year is the loan amount and also that interest. The interest is usually expressed as some "part" or percentage of the loan amount.

Loan amount + interest = Amount paid back to Lender; OR

Interest = Amount paid back to Lender – Loan amount



Let us try to solve the following problem now.

- Abhishek Singh will give you Rs. 1,000 but wants Rs. 1,150 back at the end of the month. Sukhram will give you Rs. 1,250, and wants Rs. 1,450. Who will you borrow from and why?

Let us try to understand the problem first.

The loan amount for lender Abhishek Singh is Rs. 1000 while what needs to be paid back to him is Rs. 1150. This means that the interest he charges is RS. 1150 – Rs. 1000 i.e.. Rs. 150.

Similarly, the loan amount for lender Sukhram is Rs. 1250 while what needs to be paid back to him is Rs. 1450. This means that the interest he charges is RS. 1450 – Rs. 1250 i.e.. Rs. 200.

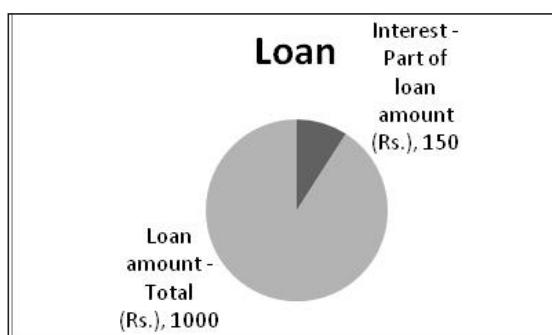
We have to find out who charges less interest as it would be cheaper to take loan from that person.

As we have seen before, interest is a "part" of the total or ground, which is the loan amount here. Since the loan amount is different in the two cases, we have to make the ground equal first by converting the two interests into percentages before comparing them.

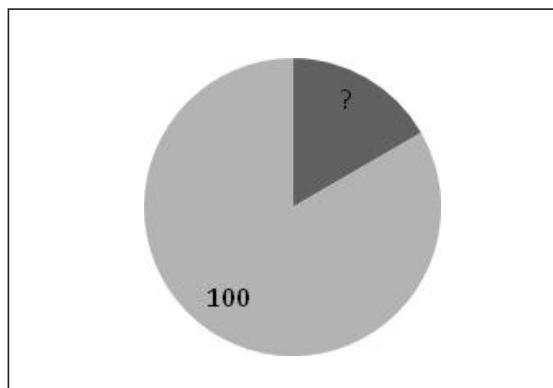
Let us find the interest percentage for lender Abhishek first.

Step 1: We start off by representing the situation graphically (in pictures) in the form of two houses. We write the missing number as "?" just like before.

In the first house, we can see that the total or the loan amount given by Abhishek is Rs. 1000. The "part" or the interest, which is expressed as a part of the loan amount, is Rs. 150.



- As far as the other house is concerned, we already know that we need the interest charged by Abhishek in percentage. This means that we need to find the interest he charges when the total loan amount given is 100. We show the part as ‘?’ since it is the missing number.



Step 2: We now make a table with two columns and two rows.

Step 3: We now fill the table by first writing the missing number in the bottom right corner. We also name the columns based on the missing number. Here, the missing number is “Part” or the Interest. We name that column as the “Part” portion of the house or the Interest. We name the other column “Total” or loan amount based on the total portion of the houses.

Total (Loan amount)	Part (Interest)
	?

Step 4: We next write equivalent number in the other house directly above it. The equivalent number (i.e. Part) in the other house we know is 150.

Total (Loan amount)	Part (Interest)
	150
	?

Step 5: We will now write the “total” or Loan amount number corresponding to the parts next to it. We know that for the house with 150 as “part” this is 1000 and for the other house, it is 100.

Total (Loan amount)	Part (Interest)
1000	150
100	?

Step 6: We will now use the inverted (ulta) 'L' tool for helping us calculate the missing number. This tool will have the division symbol on one side and the multiplication symbol on the other side. We keep this tool above the table as shown below.

X	÷	
	Total (Loan amount)	Part (Interest)
1000	150	
100	?	

Step 7: We will now see the actual calculation.

To find '?', we start from the number we first wrote on the table after '?' i.e..150. Since the division symbol is above 150 and 1000, we divide 150 by 1000 i.e. $150 \div 1000$. Since the multiplication symbol is above 1000 and 100, we multiply $150 \div 1000$ with 100 i.e.. $150 \div 1000 \times 100$.

We can see that $150 \div 1000 \times 100$ is 15.

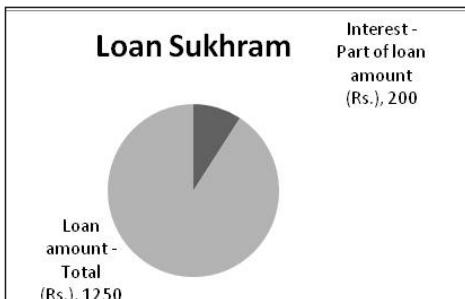
15 %, the missing number, is the interest percentage charged by Abhishek or Rs. 15 is the interest charged by Abhishek when the loan amount is Rs. 100.

Let us now find the interest percentage for Sukhram.

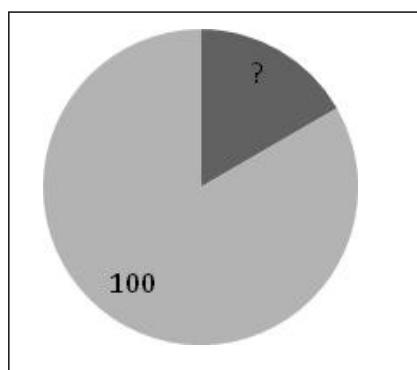


Step 1: We start off by representing the situation graphically (in pictures) in the form of two houses. We write the missing number as "?" just like before.

In the first house, we can see that the total or the loan amount given by Sukhram is Rs. 1250. The "part" or the interest, which is expressed as a part of the loan amount, is Rs. 200.



- As far as the other house is concerned, we already know that we need the interest charged by Sukhram in percentage. This means that we need to find the interest he charges when the total loan amount given is 100. We show the part as '?' since it is the missing number.



Step 2: We now make a table with two columns and two rows.

Step 3: We now fill the table by first writing the missing number in the bottom right corner. We also name the columns based on the missing number. Here, the missing number is “Part” or the Interest. We name that column as the “Part” portion of the house or the Interest. We name the other column “Total” or loan amount based on the total portion of the houses.

Total (Loan amount)	Part (Interest)
	?

Step 4: We next write equivalent number in the other house directly above it. The equivalent number (i.e.. Part) in the other house we know is 200.

Total (Loan amount)	Part (Interest)
	200
	?

Step 5: We will now write the “total” or Loan amount number corresponding to the parts next to it. We know that for the house with 150 as “part” this is 1000 and for the other house, it is 100.

Total (Loan amount)	Part (Interest)
1250	200
100	?

Step 6: We will now use the inverted (ulta) ‘L’ tool for helping us calculate the missing number. This tool will have the division symbol on one side and the multiplication symbol on the other side. We keep this tool above the table as shown below.

X	÷	
	Total (Loan amount)	Part (Interest)
1250	200	
100	?	

Step 7: We will now see the actual calculation.

To find ‘?’ , we start from the number we first wrote on the table after ‘?’ i.e.. 200. Since the division symbol is above 200 and 1250, we divide 200 by 1250 i.e.. $200 \div 1250$. Since the multiplication symbol is above 1250 and 100, we multiply $200 \div 1250$ with 100 i.e.. $200 \div 1250 \times 100$.

We can see that $200 \div 1250 \times 100$ is 16.

16 %, the missing number, is the interest percentage charged by Sukhram or Rs. 16 is the interest charged by Sukhram when the loan amount is Rs. 100.

Now that we have the interest percentage charged by both Abhishek and Sukhram, we can compare them directly as they are on the same ground or total. From this, we can say that Abhishek charges lesser interest – 15% than Sukhram – 16%.

Therefore, it makes more sense to borrow from Abhishek.

We have now seen the steps to find the missing number in complex problems when the missing number is the percentage.



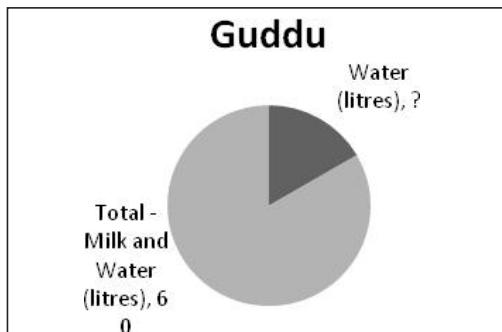
Let us now see how to find the missing number when the missing number is one of the other members in the two houses while the percentage is given.

We will once again use the complex problems we have seen for this. Let us try to solve the following problem using the same steps we learnt before.

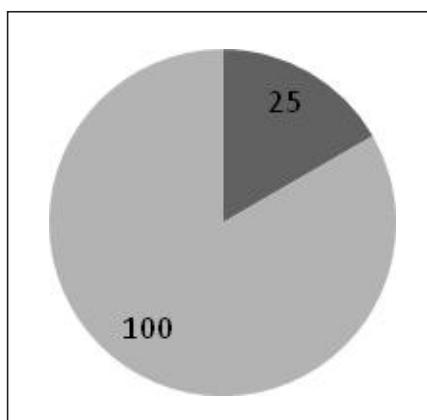
- If Guddu told you that his milk has 25% water and he delivers 60 litres. how much water has he added?

Step 1: We start off by representing the situation graphically (in pictures) in the form of two houses. We write the missing number as “?” just like before.

In the first house, we can see that the “total” or total volume of milk and water is 60 litres. The part or the volume of water is missing so we put this as ‘?’.



As far as the other house is concerned, we already know that the milk contains 25% water. This means that there is 25 litres of water in total 100 litres of milk and water. We can show this as follows.



Step 2: We now make a table with two columns and two rows.

Step 3: We now fill the table by first writing the missing number in the bottom right corner. We also name the columns based on the missing number. Since we know that the missing number is a “Part”. We name that column as the “Part” portion of the house. We name the other column “Total” based on the total or ground part of the houses

Total	Part
	?

Step 4: We next write equivalent number in the other house directly above it. The equivalent number (i.e. Part) in the other house we know is 25.

Total	Part
	25
	?

Step 5: We will now write the “total” number corresponding to the parts next to it. We know that for the house with 25 as part this is 60 and for the other house, it is 100.

Total	Part
100	25
60	?

Step 6: We will now use the inverted (ulta) ‘L’ tool for helping us calculate the missing number. This tool will have the division symbol on one side and the multiplication symbol on the other side. We keep this tool above the table as shown below.

X	÷	
Total		Part
100		25
60		?



Show slide 32.

Step 7: We will now see the actual calculation.

To find ‘?’ , we start from the number we first wrote on the table after ‘?’ i.e.. 25. Since the division symbol is above 25 and 100, we divide 25 by 100 i.e.. $25 \div 100$. Since the multiplication symbol is above 100 and 60, we multiply $25 \div 100$ with 60 i.e.. $25 \div 100 \times 60$.

We can see that $25 \div 100 \times 60$ is 15.

15, the missing number, is the volume of water in 60 litres total volume of water and milk provided by Guddu.

Now let us try the missing number in the case of Rekha.

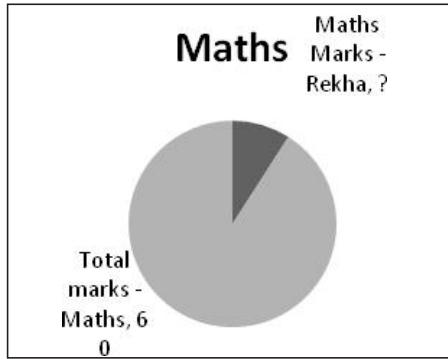
- If Rekha told you that she got 60% in maths exam and the total marks in her maths exam was 60, what was her marks in the maths exam ?



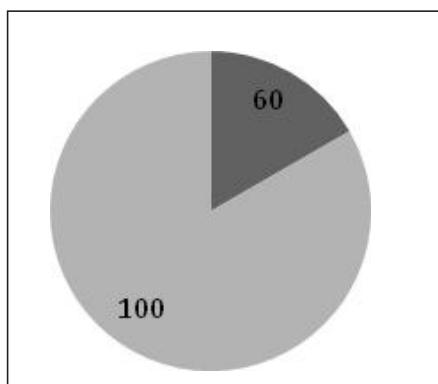
Ask the participants to solve the problem on their own. Then ask few participants to solve on the board.

Step 1: We start off by representing the situation graphically (in pictures) in the form of two houses. We write the missing number as “?” just like before.

In the first house, we can see that the “total” or total marks in the Maths exam is 60. The part or the marks she scored in Maths is missing so we put this as ‘?’.



As far as the other house is concerned, we already know that Rekha got 60% in the maths exams. This means that she gets 60 marks in maths when the total marks in maths is 100. We can show this as follows.



Step 2: We now make a table with two columns and two rows.

Step 3: We now fill the table by first writing the missing number in the bottom right corner. We also name the columns based on the missing number. Since we know that the missing number is a “Part”. We name that column as the “Part” portion of the house. We name the other column “Total” based on the total or ground part of the houses

Total	Part
	?

Step 4: We next write equivalent number in the other house directly above it. The equivalent number (i.e.. Part) in the other house we know is 60.

Total	Part
	60
	?

Step 5: We will now write the “total” number corresponding to the parts next to it. We know that for the house with 60 as “part” this is 100 and for the other house, it is 60.

Total	Part
100	60
60	?

Step 6: We will now use the inverted (ulta) ‘L’ tool for helping us calculate the missing number. This tool will have the division symbol on one side and the multiplication symbol on the other side. We keep this tool above the table as shown below.

X	÷
Total	Part
100	60
60	?



Show slide 33.

Step 7: We will now see the actual calculation.

To find ‘?’ we start from the number we first wrote on the table after ‘?’ i.e. 60. Since the division symbol is above 60 and 100, we divide 60 by 100 i.e.. $60 \div 100$. Since the multiplication symbol is above 100 and 60, we multiply $60 \div 100$ with 60 i.e.. $60 \div 100 \times 60$.

We can seen that $60 \div 100 \times 60$ is 36.

36, the missing number, is the marks scored by Rekha in maths when the total marks in maths is 60.



Let us look at one more case.

- If Rekha told you that she got 30 marks in her Hindi exam and that was 75%, what was the total marks in her Hindi exam ?



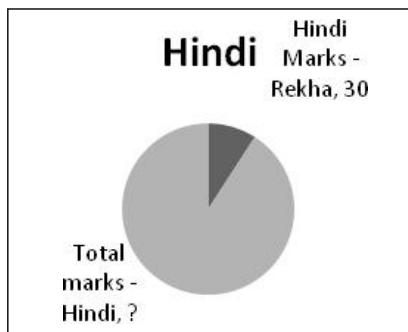
Ask the participants to solve the problem on their own. Then ask few participants to solve on the board.

Let us try to understand the problem first.

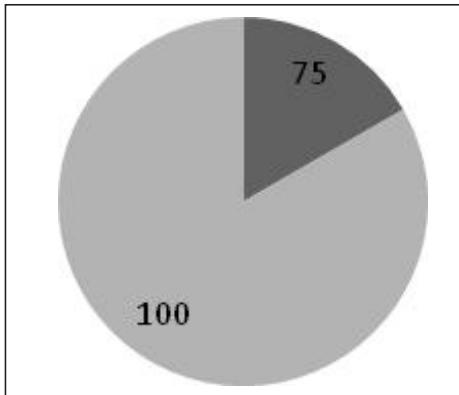
There is a Hindi exam. The total marks for the exam is missing. But we know that Rekha has scored 30 marks out of the the total marks. We also know that when we change the ground or the total marks to 100, the same 30 marks becomes 75 marks since she has scored 75% in the exam.

Step 1: We start off by representing the situation graphically (in pictures) in the form of two houses. We write the missing number as “?” just like before.

In the first house, we can see that the part or the marks scored by Rekha in Hindi is 30. The “total” or total marks in the Hindi exam is missing so we put it as ‘?’.



As far as the other house is concerned, we already know that Rekha got 75% in the Hindi exams. This means that she gets 75 marks in Hindi when the total mark in Hindi is 100. We can show this as follows.



Step 2: We now make a table with two columns and two rows.

Step 3: We now fill the table by first writing the missing number in the bottom right corner. We also name the columns based on the missing number. Here, the missing number is “Total”. We name that column as the “Total” portion of the house. We name the other column “Part” based on the part portion of the houses.

Part	Total
	?

Step 4: We next write equivalent number in the other house directly above it. The equivalent number (i.e.. Part) in the other house we know is 100.

Part	Total
	100
	?

Step 5: We will now write the “part” number corresponding to the “total” next to it. We know that for the house with 100 as “total” this is 75 and for the other house, it is 30.

Part	Total
75	100
30	?

Step 6: We will now use the inverted (ulta) ‘L’ tool for helping us calculate the missing number. This tool will have the division symbol on one side and the multiplication symbol on the other side. We keep this tool above the table as shown below.

X	÷	
Part	Total	
75	100	
30	?	

Show slide 34.



Step 7: We will now see the actual calculation.

To find '?', we start from the number we first wrote on the table after '?' i.e.. 100. Since the division symbol is above 75 and 100, we divide 100 by 75 i.e.. $100 \div 75$. Since the multiplication symbol is above 75 and 30, we multiply $100 \div 75$ with 30 i.e.. $100 \div 75 \times 30$.

We can see that $100 \div 75 \times 30$ is 40.

40, the missing number, is the total marks in Hindi out of which Rekha scored 30.



Let us now see another problem dealing with borrowing of money in slide 35.

- If Sukhram charged 12% interest on a 2500 loan for year.

What would be the amount you pay at the end of the year?



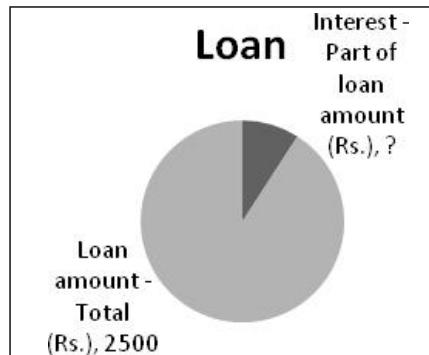
Ask the participants to solve the problem on their own. Then ask few participants to solve on the board.

Let us try to understand the problem first. Lender Sukhram gives a loan amount of Rs. 2500. The interest he charges is 12% i.e.. If the loan amount was Rs. 100, then Rs. 12 would have to be paid as interest at the end of the year. We do not know what the interest would be if the loan amount is Rs. 2500.

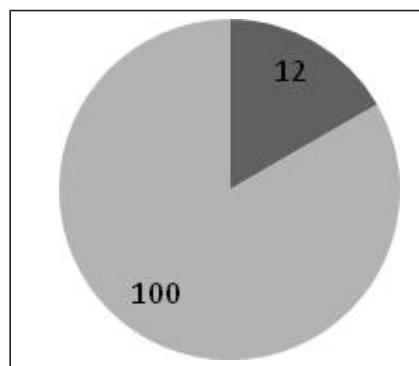
Once we know this interest, we can find out the amount to be paid back to the lender using the above formula : Interest + Loan amount = Amount paid back to Lender

Step 1: We start off by representing the situation graphically (in pictures) in the form of two houses. We write the missing number as "?" just like before.

In the first house, we can see that the total or the loan amount given by Sukhram is 2500. The "part" or the interest, which is expressed as a part of the loan amount, is missing so we put it as '?'.



As far as the other house is concerned, we already know that interest is 75%. This means that the interest is Rs. 12 when the loan amount or total is Rs. 100. We can show this as follows.



Step 2: We now make a table with two columns and two rows.

Step 3: We now fill the table by first writing the missing number in the bottom right corner. We also name the columns based on the missing number. Here, the missing number is “Part” or the Interest. We name that column as the “Part” portion of the house or the Interest. We name the other column “Total” or loan amount based on the total portion of the houses.

Total (Loan amount)	Part (Interest)
	?

Step 4: We next write equivalent number in the other house directly above it. The equivalent number (i.e.. Part) in the other house we know is 12.

Total (Loan amount)	Part (Interest)
	12
	?

Step 5: We will now write the “total” or Loan amount number corresponding to the parts next to it. We know that for the house with 12 as “part” this is 100 and for the other house, it is 2500.

Total (Loan amount)	Part (Interest)
100	12
2500	?

Step 6: We will now use the inverted (ulta) ‘L’ tool for helping us calculate the missing number. This tool will have the division symbol on one side and the multiplication symbol on the other side. We keep this tool above the table as shown below.

X	÷	
	Total (Loan amount)	Part (Interest)
	100	12
	2500	?

Step 7: We will now see the actual calculation.

To find ‘?’ , we start from the number we first wrote on the table after ‘?’ i.e.. 12. Since the division symbol is above 12 and 100, we divide 12 by 100 i.e.. $12 \div 100$. Since the multiplication symbol is above 100 and 2500, we multiply $12 \div 100$ with 2500 i.e.. $12 \div 100 \times 2500$.

We can see that $12 \div 100 \times 2500$ is 300.

300, the missing number, is the part or the interest charged by Sukhram when the Loan amount is 2500.

Let us see another simple problem with another number missing from the houses in slide 35. We will follow the same steps.



- If you paid Rs. 300 as interest to Sukhram and he had charged interest at 10%,

How much money did you borrow?

Ask the participants to solve the problem as homework

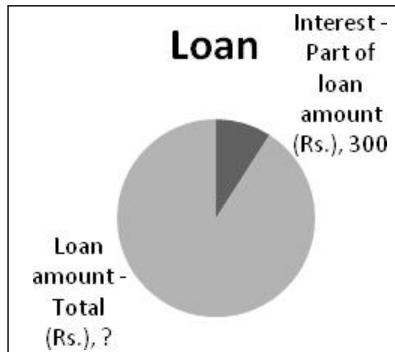


Share the solution with them later.

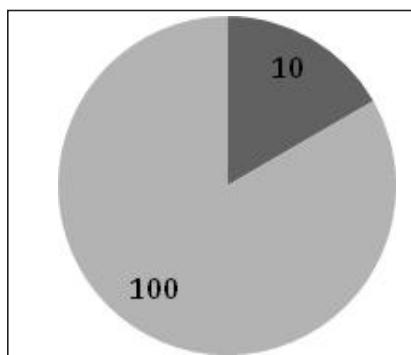
Let us try to understand the problem first. Lender Sukhram gives a loan amount which is unknown. Therefore, this is the missing number in the problem which we will call ‘?’’. The interest he charges is 10% i.e.. If the loan amount was Rs. 100, then Rs. 10 would have to be paid as interest at the end of the year. The actual interest that is paid to Sukhram is Rs. 300.

Step 1: We start off by representing the situation graphically (in pictures) in the form of two houses. We write the missing number as “?” just like before.

In the first house, we can see that the total or the loan amount given by Sukhram is missing, so we put it as ‘?’’. The “part” or the interest, which is expressed as a part of the loan amount, is Rs. 300.



As far as the other house is concerned, we already know that interest is 10%. This means that the interest is Rs. 10 when the loan amount or total is Rs. 100. We can show this as follows.



Step 2: We now make a table with two columns and two rows.

Step 3: We now fill the table by first writing the missing number in the bottom right corner. We also name the columns based on the missing number. Here, the missing number is “Total”. We name that column as the “Total” portion of the house or the Loan amount. We name the other column “Part” or Interest based on the part portion of the houses.

Part (Interest)	Total (Loan amount)
	?

Step 4: We next write equivalent number in the other house directly above it. The equivalent number (i.e.. Part) in the other house we know is 100.

Part (Interest)	Total (Loan amount)
	100
	?



Step 5: We will now write the “Part” or interestnumber corresponding to the “total” next to it. We know that for the house with 100 as “total” this is 10 and for the other house, it is 300.

Part (Interest)	Total (Loan amount)
10	100
300	?

Step 6: We will now use the inverted (ulta) ‘L’ tool for helping us calculate the missing number. This tool will have the division symbol on one side and the multiplication symbol on the other side. We keep this tool above the table as shown below.

X	÷	
	Part (Interest)	Total (Loan amount)
10		100
300		?

Step 7: We will now see the actual calculation.

To find ‘?’ , we start from the number we first wrote on the table after ‘?’ i.e.. 100. Since the division symbol is above 100 and 10, we divide 100 by 10 i.e.. $100 \div 10$. Since the multiplication symbol is above 10 and 300, we multiply $100 \div 10$ with 300 i.e.. $100 \div 10 \times 300$.

We can see that $100 \div 10 \times 300$ is 3000.

3000, the missing number, is the total or the loan amount for which an interest of Rs. 300 is paid to the lender.

What will you say at the end of this section?

Revise key points on slide 36.



We have seen various complex problems where the missing number has been different in each of the problems. But despite this, the steps for solving the problems remain the same.

Remind the participants that more attention should be given to interpreting the problem, especially on what is the missing number in the problem.

We will deal with more difficult problems in percentages in Part B of the course. This will include the concept of profitability and other applications of percentages in a business.

Section 4

Understanding Simple Equations

What will you say at the start of this section?

Simple equations is another concept in maths which we often use to solve problems in our daily life often without knowing. Let us see some such problems now:

How Will You Teach This Section?



Show slide 38.

Ask the participants to answer the following questions:



Start with the first question under simple problems from the slide. You bought 6 kgs of potatoes for Rs. 72. What is the cost of 1 kg of potato?

Now ask them if 1 Kg of onion costs Rs. 20. What does 5 kgs of onion cost?

What if 4 Kg tomatoes cost Rs. 40. How much does 3 Kg of potatoes cost?

Tell them they might be able to answer these questions easily using intuition although some of them might be harder to solve than the other.



Now let us ask them if we increase the difficulty of these problems will they still be able to solve it as easily.

Ask them the following question. You bought 7 Kgs of rice, 5 Kgs of wheat and 5 Kgs of sugar. Cost of rice is Rs. 15/Kg and cost of wheat is Rs. 13/Kg. If you paid total Rs.200 to the shopkeeper. What is the cost of 1Kg of sugar?

Tell them another such question is shown on the slide.



You bought 6 kgs of potatoes and 8 kgs of tomatoes totally for Rs. 120. If the cost of 1 kg of potato was Rs. 12 what is the cost of 1 kg of tomatoes ?



Highlight the key point after asking the last question.

Simple problems can be solved just with intuition. Complex problems like the last two problems might need mathematics to solve them easily and correctly.

Let us see how to use equations to solve such problems now.



Show slide 39.

Let us go back to the simple problem we started with. Let us see how to solve this in a different way using simple equations.

We know that 6 Kgs of potatoes cost Rs. 72. We need to find out how much 1 Kg of potatoes cost. Ask the participants how much? When they say Rs. 12, ask them how they know that?

Tell them they say that because 6 Kgs of potatoes of Rs. 12 each will cost Rs. 72 i.e. to begin with, they know that 6 multiplied by something gives Rs. 72 and that something is Rs. 12.

i.e. they know that $6 \times ?? = 72$

Now take another problem. Suppose Ramu sells tea @ Rs. 2 per cup. If Ramu earns Rs. 200 at the

end of the day from selling only tea, how many cups of tea does he sell?

Once again, the answer might seem obvious but let us see how the model for this would be like.

We know that Ramu has to sell some number of cups of tea @ Rs. 2 per cup to earn Rs. 200. To some of us it might be obvious that Ramu has to sell 100 cups, but how did we get this?

As pointed out before, we know some number of cups X Rs 2 is Rs. 200.

$$??? \times 2 = 200$$

These are mathematical models for simple real life problems that we would have done intuitively. Similarly, we can create such models using mathematics for even more difficult problems in real life.

Show slide 40.



The mathematical models we have just seen such as $6 \times ?? = 72$ are called equations.

It says that 6 multiplied by something 'is equal to' 72 or it equate $6 \times ??$ with 72. To make it easier to understand let us call this something p or a or b or x.

Then, we can be say that $6 \times p$ is 72

OR

$6 \times p = 72$; where p represents the cost of 1 Kg of potatoes

Thus, an equation such as this is used to show that two quantities on either side of the '=' sign are equal. Emphasize this using key point.



Exercise using a weighing balance



Use a weighing balance with an '=' sign written on a paper stuck on the middle. Now on one side keep a paper with $6 \times p$ written on it and on the other side keep a paper with 72 written.

Tell them this is what the equation means. Just like 2 quantities on either side a weighing balance would be equal. The quantities on both sides of an equation are also equal.



Before showing slide 41, tell the participants that we need to be able to understand and convert problems into simple models or equation before learning how to solve them. We will see this now.

Tell them we will learn how to make a problem into an equation as we read and speak out the problem aloud word by word.

For example, if 3 sarees cost Rs. 300 and we don't know the price of a saree. We read the problem and write the equation as follows:

3 sarees i.e. $3 \times$ price of a saree is equal to 300 OR $3 \times S = 300$ where S is the price of a saree

Now if we know that 3 sarees and 2 kurthas cost Rs. 400 where price of kurtha is Rs. 50 and price of saree is unknown.

We now write it as $3 \times S$ and $2 \times$ price of kurtha = 400; But we already know price of kurtha is 50.

So we can write it as $3 \times S + 2 \times 50 = 400$. Ask the participants to notice that 'and' becomes '+'.

Tell the participants that as they get more practice, they can skip some of the steps and directly write $3 \times S + 2 \times 50 = 400$ after reading and understanding the problem carefully.



Show slide 41.

Let us start with one of the more difficult problems we saw before.

You bought 6 kgs of potatoes and 8 kgs of tomatoes totally for Rs. 120. If the cost of 1 kg of potato was Rs. 12 what is the cost of 1 kg of tomatoes ?

Just as we did with the saree example, read the problem once.

Now write on the board the following as you read the problem word by word.

When you read 6 Kgs of potatoes, write 6×12 as we know cost of 1 Kg of potato is Rs. 12.

When you read 'and' write '+', we have ' $6 \times 12 +$ ' written on the board.

When you read 8 Kgs of tomato. Write $6 \times 12 + 8 \times t$.

And finally when you read Rs. 120. Write $6 \times 12 + 8 \times t = 120$

Step 1

6×12

Step 2

$6 \times 12 +$

Step 3

$6 \times 12 + 8 \times t$

Step 4

$6 \times 12 + 8 \times t = 120$

Where 't' represents the cost of 1 Kg of tomatoes.

Exercise using a weighing balance



Once again, take the same weighing balance with the '=' sign stuck to it. Now on one side, keep two pieces of paper, one with a picture of a potatoe and 6 written next to it and the other with a picture of tomato with 8 written on it. On the other side, write 120 on a piece of paper and keep it there.

Tell the participants that this shows that price of 6 Kgs of potatoes and 8 Kgs of tomatoes is equal to Rs. 120 or if we write the equation $6 \times$ price of potatoes + $8 \times$ price of tomatoes = 120; since we know price of 1 Kg of potatoes is Rs. 12.



Ask them to write the equation for the following problem on the board after working it out individually.

A shopkeeper sold 20 Kgs of rice and 40 Kgs of wheat in a day. He sold the rice @ RS. 10 per Kg. At the end of the day, he made a revenue of Rs. 1000 from selling rice and wheat. At what price did he sell the wheat?

Solving equations



Show slide 42

Now that we are clear how to form equation from problems. Let us see how to solve these equations now.

Let us start with our first equation for the problem to find the cost of 1 Kg of potatoes when 6 Kgs of potatoes cost Rs. 72. We said that p would be the cost of 1 Kg of potatoes. Therefore,

$$6 \times p = 72$$

We know that to solve the problem and the equation, we have to find the value of p. We already know how to solve this problem intuitively and know that the cost of 1 Kg of potatoes is Rs. 12.

But let us see how to find out the value of p from the equation.

To solve equations, we will follow four simple steps.

Step 1 – Circle what you don't know in the equation

We don't know the value of p in the equation $6 \times p = 72$. Therefore, we circle p – the person that we don't know.

Step 2 – See who is its friend

The friend of any a person (number or letter) in an equation is the operation next to it. Therefore, in the equation $6 \times p = 72$, the friend is 'x' – multiplication.

Step 3 – Use the opposites card to find the opposite of the friend

The opposites card is a card which tells you the opposites of different operation. We have already seen this in section 2 – Understanding Operations and Fractions. We learnt there that addition and subtraction are opposites while multiplication and division are opposites. The opposites card is an easy way to remember this.

+	opposite	-
x	opposite	/

Therefore, in the equation $6 \times p = 72$, the opposite of x is /.

Step 4 – We apply the operation, which is the opposite of the friend, to both sides of the equation with the person attached to the friend in the equation

The person attached to the friend, other than the unknown person p, is 6.

Therefore we divide by 6 on both sides of the equation.

Therefore,

$$\frac{(6 \times p)}{6} = \frac{72}{6}$$

We solve both sides of the equation separately.

We know from the rules for multiplication of fractions learnt in section 2 that we can divide the top floor and bottom floor by the same number.

Let us divide the top floor and bottom floor of the left hand side by 6 and the top floor and the bottom floor of the right hand side also by 6 as shown below.

$$\frac{(6^1 \times p)}{6} = 12$$

$$p = 12$$

As we can see, we are then left with p is equal to 12. Thus, we have solved the equation. We now know that the price of 1 Kg of potatoes is Rs. 12.

Ask the participants to solve the below equations as well using the above steps.

i) $6 + p = 72$

ii) $p - 6 = 72$

iii) $p / 6 = 72$

iv) $6 - p = 2$

Show the participants the following solution after they have worked out the above themselves.

i) $6 + p = 72$

Step 1 $\rightarrow 6 + p = 72$; Step 2 \rightarrow Friend is '+'; Step 3 \rightarrow Opposite is '-'; Step 4 $\rightarrow 6 + p - 6 = 72 - 6$;
 $p = 66$;

ii) $p - 6 = 72$

Step 1 $\rightarrow p - 6 = 72$; Step 2 \rightarrow Friend is '-'; Step 3 \rightarrow Opposite is '+'; Step 4 $\rightarrow p - 6 + 6 = 72 + 6$;
 $p = 78$;

iii) $p / 6 = 72$

Step 1 $\rightarrow p / 6 = 72$; Step 2 \rightarrow Friend is '/'; Step 3 \rightarrow Opposite is 'x' ; Step 4 $\rightarrow p / 6 \times 6 = 72 \times 6$;
 $p = 72 \times 6 = 432$;

iv) $6 - p = 2$

When the unknown has a negative symbol before it, we apply the steps to p first to make the equation into a normal form.

So $6 - p + p = 2 + p$;

$6 = 2 + p$

$6 - 2 = 2 + p - 2$

$p = 4$;

Now we will look at a more difficult equation where there is more than 1 friend or operation.

In such cases, we need to follow the same steps as before except one. Instead of the first

step where we circle only the unknown person, we circle the unknown person along with any multiplication or division friend and the person attached to it. We now treat the combination of these three things as the unknown. Once we solve this bigger circle. We then treat as the equation seen earlier and solve it again.

For example, let's take the example of $6 \times p - 12 = 18$

Step 1 $\rightarrow 6 \times p - 12 = 18$

Step 2 \rightarrow Friend is ' $-$ '; Step 3 \rightarrow Opposite is ' $+$ '

Step 4 $\rightarrow 6 \times p - 12 + 12 = 18 + 12$; Step 5 $\rightarrow 6 \times p = 30$

Now start from step 1 again with p as unknown person.

Step 1 $\rightarrow 6 \times p = 30$; And on solving the rest of the steps, we get $p = 30/6 = 5$. Tell the participants that they can do steps 2 and 3 mentally once they have practiced enough.

Show slide 43 and 44.



We will look at the earlier problem that we wrote the equation for and try to solve this using the steps used above.

$6 \times 12 + 8 \times t = 120$;

Before starting the steps to solve the equation, using D M A S, we can simplify the equation into:

$72 + 8 \times t = 120$;

Applying the steps:

Step 1 $\rightarrow 72 + 8 \times t = 120$

Step 4 $\rightarrow 72 + 8 \times t - 72 = 120 - 72$; Step 5 $\rightarrow + 8 \times t = 48$;

Solving once again,

Step 1 $\rightarrow 8 \times t = 48$; And on solving the rest of the steps, we get

$t = 48/8 = 6$

So, the cost of 1 kg of tomatoes is Rs. 6

Thus, we can see that by using equations we can systematically find answers to some real life questions. Emphasize this using the key point.

Let us now look at some shortcuts to solve equations faster.

Shortcut 1 $\rightarrow 3 \times a$ can be written as $3a$

This is easy to understand if you have 3 apples. Then it is the same as saying 3×1 apple.

Let us see an example for this on slide 45.



$3 \times a - 2 = 7$; This can also be written now as $3a - 2 = 7$;

Following the earlier steps, ask the participants to solve it and then show the below solution on the slide.



$$3a - 2 + 2 = 7 + 2$$

$$3a = 9$$

is the same as $(3 \times a) / 3 = 9 / 3$

$a = 3$

Shortcut 2 → $3a + 4a = 14 \rightarrow 7a = 14$

This is also easy to understand since 3 apples and 4 apples makes 7 apples. This also applies to subtraction i.e. $8a - 3a = 5a$.



We can see this in slide 46.

On solving such equations, when we follow step 1, which is to circle the unknown person along with adjoining friend and person - we will get 2 circles. Thus, when there are more than one circle, we should always try to make into one circle as shown below.

$$3a + 4a = 14 ; 7a = 14;$$

$$7a / 7 = 14 / 7;$$

$$a = 2$$



Ask the participants to solve the following equations shown on slide 47.

Then show the solutions after they have finished working out the solutions.

1. $2a + 32 = 50$

$$2a + 32 = 50; 2a + 32 - 32 = 50 - 32; 2a = 18; 2a/2 = 18/2;$$

$$a = 9$$

2. $7y - 19 = 30$

$$7y - 19 = 30; 7y - 19 + 19 = 30 + 19; 7y = 49;$$

$$y = 7$$

3.

$$x/3 \times 3 = 7 \times 3;$$

$$x = 21$$

4.

$$c/5 + 18 = 20; c/5 + 18 - 18 = 20 - 18; c/5 = 2; c/5 \times 5 = 2 \times 5;$$

$$c = 10$$

5. $6x + 12x = 72$

$$18x = 72; 18x / 18 = 72/18;$$

$$x = 4$$

We will see how to solve more complex problems in simple equations in the second module on Maths Preparatory in Part B of the course.



Show slide 48.

Let us now look at some equations where two unknowns of different type. Then, if the value of one of the unknowns is revealed, how would you solve the equation.

Let us take the example $3Xx + 4x = 62$.

We know this can be written as $3x + 4y = 62$.

Now, if the value of y is 8, we can easily find the value of x by solving this equation using the steps we studied.

$3x + 4y = 62$	$3 \times x + 4 \times y = 62$
$3x + 4 \times 8 = 62$	Replacing y with 8
$3x + 32 - 32 = 62 - 32$	Subtracting 32 from both sides
$3x = 30$	Dividing both sides by 3
$x = 10$	

Show slide 49.



Tell the participants that this is the same equation as before but instead of knowing the value of y , we know that the value of x is 2. So they have to find the value of y .

The equation remains the same i.e. $3x + 4y = 62$. We calculate y in the following way.

$3x + 4y = 62$	$3 \times x + 4 \times y = 62$
$3 \times 2 + 4y = 62$	Replacing x with 2
$6 + 4y - 6 = 62 - 6$	Subtracting 6 from both sides
$4y = 56$	
$4y / 4 = 56 / 4$	Dividing both sides by 4
$y = 14$	

Tell the participants that the unknown person can also be z in such questions where $z = 3x + 4y$, where value of x and y are given as 4 and 5.

Therefore,

$3x + 4y = z$	$3 \times x + 4 \times y = z$
$3 \times 4 + 4 \times 5 = z$	Replacing x with 4 and y with 5
$12 + 20 = z$	
$z = 32$	Adding 12 and 20

Ask the participants to solve the following exercises on slide 50



Next, show them the solution.



$$8a + 10b = 40. \text{ I) If } b \text{ is } 0, \text{ what is } a? \text{ ii) If } a \text{ is } 0, \text{ what is } b?$$

Solution

i)

$8a + 10b = 40$	
$8a + 10 \times 0 = 40$	Replacing b with 0
$8a = 40$	
$8a / 8 = 40 / 8$	Dividing by 8 on both sides
$a = 5$	

ii)

$8a + 10b = 40$	
$8 \times 0 + 10b = 40$	Replacing a with 0
$10b = 40$	
$10b / 10 = 40 / 10$	Dividing by 10 on both sides
$b = 4$	

$3b + 6c + 4d = 48$. i) If b is 2 and c is 5, what is d? ii) If c is 1 and d is 3, what is b?

Solution

i)

$3b + 6c + 4d = 48$	
$3 \times 2 + 6 \times 5 + 4d = 48$	Replacing b with 2 and c with 5
$6 + 30 + 4d = 48$	
$36 + 4d = 48$	
$36 + 4d - 36 = 48 - 36$	Subtracting 36 from both sides
$4d = 12$	
$4d / 4 = 12 / 4$	Dividing 4 on both side
$d = 3$	

i)

$3b + 6c + 4d = 48$	
$3b + 6 \times 1 + 4 \times 3 = 48$	Replacing c with 1 and d with 3
$3b + 6 + 12 = 48$	
$3b + 18 = 48$	
$3b + 18 - 18 = 48 - 18$	Subtracting 18 from both sides
$3b = 30$	
$3b / 3 = 30 / 3$	Dividing 3 on both side
$b = 10$	

Now that we have seen how to solve such equations, let us try to solve problems in business where such equations can be used.



Explain the following question to the participants on the board using illustrations. Show them the solution on slide 51 after they have worked out the solutions themselves.

Maya sells bananas in the market. She has a small shop for which she pays Rs. 600 in rent every month. She buys bananas at Rs. 8 a dozen and she sells them at Rs. 12 a dozen. If she buys and sells 250 dozens a month, how much profit would she make ?

As we have seen before, we start answering this problem by reading out the problem aloud and simultaneously writing the equation for it.

In this case, the equation cannot be deduced directly from the problem but need to be written based on our knowledge of business.

We know that Profit = Revenue – Costs in business. This is the equation for us in this problem.

We know that Profit is the unknown person in this equation.

We can see that Revenue can be calculated here as we know Maya sells 250 dozen bananas @ Rs. 12/dozen. Therefore, revenue is 12×250 .

Similarly, we can see the following costs in the problem – Rent, which is Rs. 600 and cost of 250 dozen bananas @ Rs. 8/dozen i.e. 8×250 .

Revenue	Costs
Bananas - 12×250	Rent - 600
	Bananas - 8×250

Thus, we can see that there is one revenue item and two cost items in the formula as shown below. So we know that the unknown person in this problem is the Profit. Let profit be P.

Therefore, $P = 12 \times 250 - 8 \times 250 - 600$;

Applying the D M A S rule,

$P = 3000 - 2000 - 600 = 1000 - 600 = 400$. Thus, the profit is Rs. 400.

Explain the following question to the participants on the board using illustrations. Show them the solution on slide 52 after they have worked out the solutions themselves.



Maya sells bananas in the market. She rents a shop for Rs. 600 a month. She buys bananas at Rs. 8/dozen and she sells them at Rs. 12/dozen. If she wants monthly profit of Rs. 3,000, how many dozens of bananas should she sell in a month?

As in the previous question, we know that Profit = Revenue – Costs in business. This is the equation for us in this problem.

We know that the number of dozens of bananas she sells in a month is the unknown in this problem.

Hence, We can see that Revenue cannot be calculated in this problem as we do not know how many bananas she sells. Let us call this unknown person as b. We know that she sells bananas @ Rs. 12/dozen. Therefore, Revenue is $12 \times b$.

Similarly, we can see the following costs in the problem – Rent, which is 600 but cost of bananas cannot be calculated since we do not know how many bananas she sells(unknown). But, we do know that she buys bananas @ Rs. 8/dozen. Therefore, cost of bananas can be written as $8 \times b$.

Profit	Revenue	Costs
3000	Bananas - $12 \times b$	Rent - 600 Bananas - $8 \times b$

Thus, we can see that there is one revenue item and two cost items in the formula as shown below. We know that the unknown person in this problem is the quantity of bananas ‘b’.

Therefore, $3000 = 12 \times b - 8 \times b - 600$;

We know that this can also be written as $3000 = 12b - 8b - 600$.

Using the shortcut we learnt earlier, we know that this can be further simplified into :

$$3000 = 4b - 600$$

Now using the steps of solving equations, adding 600 to both sides.

$$3000 + 600 = 4b - 600 + 600; 3600 = 4b; \text{Dividing both sides by 4.}$$

$$b = 3600/4 = 900$$

Therefore, she should sell 900 dozens of bananas a month.



Explain the following question to the participants on the board using illustrations. Show them the solution on slide 53 after they have worked out the solutions themselves.

Maya sells bananas in the market. She rents a shop for Rs. 600 a month. She buys bananas at Rs. 8/dozen. She wants monthly profit of Rs. 3,000. If she can sell 800 dozens in a month, what should be the price at which she should sell a dozen bananas?

As in the previous two questions, we know that Profit = Revenue – Costs in business. This is the equation for us in this problem.

We know that the price of bananas she sells is the unknown in this problem.

Hence, We can see that Revenue cannot be calculated in this problem as we do not know the price at which she sells the banana Let us call this unknown person as p . We know that she sells 800 dozen bananas. Therefore, Revenue is $p \times 800$.

Similarly, we can see the following costs in the problem – Rent, which is 600 and cost of the 800 dozen bananas @ Rs. 8/dozen i.e. 8×800 .

We know that profit made by Maya is Rs. 3000

Profit	Revenue	Costs
3000	Bananas - $p \times 800$	Rent - 600 Bananas - 8×800

Thus, we can see that there is one revenue item and two cost items in the formula as shown below. We know that the unknown person in this problem is the price of bananas ' p '.

Therefore, $3000 = p \times 800 - 8 \times 800 - 600$;

We know that this can also be written as $3000 = 800p - 8 \times 800 - 600$.

Applying the DMAS rule first,

$$3000 = 800p - 6400 - 600; 3000 = 800p - 7000$$

Adding 7000 on both sides – $3000 + 7000 = 800p - 7000 + 7000$;

$$10000 = 800p;$$

Dividing both sides by 800 – $p = 12.50$;

Therefore, Maya has to sell her bananas at Rs 12.50 a dozen.

What will you say at the end of this section?



Revise key points from slide 54.

- Equations are used to model real life situations and find solutions to problems.
- In a business the relationship between Revenues, Costs and Profits can be modeled as an equation

In this section, we have seen the basics of simple equations and how to solve them. Equations help us solve not just simple problems in daily life and business, but also in solving various complicated problems. We will see this in the second module of maths preparatory that will be covered in Part B of the course.

Section 5

Understanding Averages

What will you say at the start of this section?

Before we explain what averages are, discuss the following scenario with the participants and ask the question mentioned below.

Ramu buys milk everyday for his tea shop to make tea. Whatever milk is leftover at the end of the day is thrown away.

Ramu uses 2 litres of milk on day 1, 3 litres of milk on day 2 and 1.5 litres of milk on day 3. How much milk should he buy on day 4?

Show slide 56.



Now explain the following scenario on the slide and ask the question mentioned below.

The rainfall in Karnataka was 1160 mm in 2006, 1462 mm in 2007, 1108 mm in 2008, 1208 mm in 2009 and 1302 mm in 2010. How much rainfall do you think Karnataka will get in 2011?

Finally, ask explain the following scenario on the slide and ask the question mentioned below.

There are 25 boys and 20 girls in a class. After correcting their maths papers and calculating their marks, the maths teacher wanted to know whether the boys did better or the girls did better. How will he do this?

How Will You Teach This Section?

Show slide 57 and discuss the following points from the slide.



There are multiple ways to answer the questions above. Each method has a different level of accuracy.

One way is in using averages

Just like percentages and averages, averages provide a systematic way in maths to make sense of data and solve problems.

Tell the participants that averages:

- i) gives a rough idea of a large amount of data/information
- ii) helps us to predict, like in the case of milk and rainfall
- iii) gives us a representative value from the data of a group, like in the case of maths marks

iv)are not an exact answer/prediction but only an approximate answer



Show slide 58 and explain the following on the slide.

Average is a single number that is representative of the data set.

There are multiple ways to calculate average. Arithmetic Mean is the most common method. Arithmetic mean, being an average, provides a single number that represents the whole data of a set.

We will now learn how to find the arithmetic mean.



Show slide 59.

Let us use the example of rainfall to calculate the arithmetic mean.

We add all the rainfall data for the 5 years together...

$$1160 + 1462 + 1108 + 1208 + 1302 = 6240$$

And then we divide by the number of years, i.e.. $5 = 1248$

This is the arithmetic mean. This is the average.

Now let us see what all this means once again for this scenario.



Show slide 60.

1248 mm is the average rainfall for the last 5 years in a state .

This number, 1248, gives us an 'approximate' indication about what we can expect.

This number does not indicate that in 2011 the rainfall will surely be 1248. The actual rainfall for 2011 could be more than this or lesser than this. But it is most likely to be close to this number – 1248.

What will you say at the end of this section?



Use the key points on slide 61 to revise what an average is and clear any doubts the participants might have.

Introduction to Business

This module helps you introduce the idea of business to the participants.

Before starting the module, check whether all the participants understand their role as CRP-EPs. If they have doubts clarify them.



Ask questions to participants to see whether they have understood what TEAM is.



Ask them a few questions to assess their expectations from the course.

This module introduces business to the participants in eight sections. The following table summarises the sections and the topics covered. The corresponding Slide Numbers in the Classroom Teaching Aid are shown against each section. The pages in the Participant Handbook that explain the same topics are shown in the last column.

Sections	Topics	Page Nos in this Manual	Slide Numbers
1	What is business?	60-61	3
2	Types of businesses	62-63	5-8
3	Fluctuations in businesses	64-65	10-11
4	Primary objectives of a business	66-69	13-21
5	Business viability framework	70-77	23-35
6	To do or not to do a business	78-79	37-41
7	Introduction to financial statements	80-82	43-48
8	Examples of common businesses	83-87	50-57

Section 1

What is Business?



This section helps you introduce the concept of what a business is to the participants. Most of the participants are new to the subject. Therefore, they may have different notions about what 'business' means. In this classroom session, through questions, presentation of the slides, discussions, and clarifications, you help them understand what a business is. By the end of the session, the participants should also have an idea on 'what is not a business' too.

What will you say at the start of this section?



Ask the participants what they understood by the word 'business'.

Ask the participants to name a few businesses that they know. Note down the businesses that they cite on the blackboard.

Ask the question whether farming is a business. Also ask for the reason.



How Will You Teach This Section?

After raising questions and noting down the responses of the participants, start displaying the slides.

Go to slide number 3.

'Business is a recurring economic activity of selling goods and services after making'

or buying them with an aim of making profits'

Five main features of a business, as summarised in the slide are as given below.

1. Business is a recurring economic activity
2. It involves selling goods or services
3. It involves investment of money
4. It has a focus on profits
5. It involves taking risks

Discuss these five features of business.



- ❑ That business is a recurring economic activity. This means that it keeps happening continuously.
- ❑ Any business involves selling of something. There can be no business without selling something.
- ❑ The business also needs to either make what it is selling or it needs to buy them from somewhere.
- ❑ It can be about selling goods or services or both.
- ❑ No business can be started without an investment of money.
- ❑ These activities are done for making profits.
- ❑ As a business involves putting in your money and trying to sell goods or services, it involves some risks. There is a chance that we may not be able to sell what we produce and make profits. In that case we may lose the money that we have put in. Also gone will be the time and effort that we put in. This is the risk in a business.

Call the attention of the participants to the responses written on the board while starting the session. Ask whether they still found those responses right.

Ask the participants for examples on economic activities that are not businesses. Ask them again whether farming is a business. Encourage the participants to engage in a discussion. Note down the points raised on the board.

At the end of the discussion, clarify that farming is a business when it is done to sell the produce. If it is done only for own consumption, there is no selling of produce. And therefore it is not a business.



When farming is done for own consumption without selling the produce, it is an example of an economic activity which is not a business.

How Will You Conclude The Section?

Say that the single point that makes an economic activity a business is the involvement of sales. There are economic activities that are not businesses.

In the next section, we look at the most common types of businesses.

Section 2

Types of Businesses



We have seen in the first section that businesses involves selling of goods or services. There can be businesses that make products and sell products. There can be businesses that buy products and sell products. There can be those that sell services. Some businesses may sell both products and services.

In short, there can be different types of businesses. In this section, we look at the different types in more detail

What will you say at the start of this section?



Ask the participants about the different types of businesses that they have seen.

Note down their responses on the blackboard.

If participants suggest economic activities that are not businesses, write them down too.



How Will You Teach This Section?

Continue the slide show. Go to slides 5 to 8 and explain three types of businesses.

1. Trading is a type of business involving buying and selling of goods; a kirana store is an example.
2. Production is a type of business where things are made and sold; papad-making business is an example.
3. Service is a type of business which provides services; a beauty parlour is an example.

The following are examples of businesses in trading type.

1. Hawking: Buying and selling of bangles, cosmetics, ready-mades and vegetables.
2. Shop-based trading where a typical shop sells groceries of different types, vegetables, firewood, coal or footwear.
3. Buying grains from farmers and selling it to wholesalers.

The following are examples of businesses involving in production.

1. Dhabas and tea shops, where snacks and tea/coffee are made and sold.
2. Pickle-making, where pickle is made using raw materials such as mangoes and lemons.
3. Papad-making, where papads are made from flour.

The following are few examples of businesses in services type.

1. Tailoring, where a customer brings a cloth and the business stitches clothes from it. It could also mend clothes.
2. Mobile repair shops.
3. Beauty parlour, where services like make-up is provided.

Call the attention of the participants to the responses that you had written on the board at the beginning of the session.



Ask the participants to categorise the businesses written on the blackboard into three types.



- For instance, a tea shop may make tea and sell; but also buy biscuits and sell.
- A tailor shop may sell ready-made garments in addition to stitching cloths.
- A caterer may make some of the food items; they may also buy food products and use them also.

How Will You Conclude This Section?

Clarify that we classify businesses into types for easy understanding.



In reality, businesses may not fall exactly in these types.

Section 3

Fluctuations in Businesses



We have seen that a business is a recurring economic activity. This means that it runs continuously. In reality, a business may not run the same way throughout the year. It is possible that there are variations even within a month, a week, and even a day. In this section, you help the participants understand the nature of fluctuations of raw materials and customers demand for products/services in business.

What will you say at the start of this section?



Call the participants' attention to common types of businesses. You can use the businesses already written on the blackboard for this.

Remind the participants that business is a recurring economic activity.

Ask them whether businesses run the same way throughout the year, a season, month, or a day.



Ask the participants whether they can think of businesses that do well during

- Particular periods in a year
- Particular seasons
- Particular hours in a day



Note down the responses on the blackboard.

How Will You Teach This Section?

Now you may present the slides numbered 10 and 11. These slides talk about the fluctuations in businesses.



There are two main reasons that cause fluctuations in businesses:

1. Customers want products or services during a certain period
 - ¤ Decorative lamps are in demand during festivals
 - ¤ A tea shop is likely to be more crowded in the morning than in the afternoon.
 - ¤ People are likely to buy woollen clothes at the beginning of the winter season, and also during the season; but not in summer.
2. Raw material for the business is available only during a certain period
 - ¤ Mangoes are available as raw material usually during early summer for a mango pickle business.

In the earlier section, we saw three main types of businesses-production, service, and trading. Any of these can be seasonal in nature.

We will call such fluctuating businesses as seasonal businesses.

How Will You Conclude This Section?

In the case of seasonal businesses, we must pay special attention to the customers and the raw material supply.

Call the attention of the participants to the responses that had been noted down on the blackboard.



Ask the participants questions on the reasons for fluctuations in business

Ask them for examples of businesses that fluctuate owing to customer preferences.



Ask them for examples of businesses that fluctuate because of patterns in raw material availability.

Revise points related to customer or raw material wherever needed.



Section 4

Primary Objectives of a Business



In the earlier section, we have seen that starting a business involves investing money, time and effort. There is a risk that a person takes when she starts a business. Therefore, one should be convinced about why they are doing the business. This means that one needs to be clear about the objective of starting a business. In this section, we look at the nature of the objective.

What will you say at the start of this section?



Ask the participants why people do business?

Explain that there are risks involved in running a business.

Ask the participants about the primary objective of businesses.



Note down the responses on the blackboard.

How Will You Teach This Section?



Go to slide number 13. From this slide till slide number 21, you will be explaining the objective of a business to the participants.

The first slide in this section (slides 13) explain why it is important to make the objective of the business clear.

When we start a business, we are investing time and money. We are taking risks. There is a chance of us failing in the business. If we fail, we lose our money; the time we spent as well as the efforts we made also go in vain.

Therefore, running a business is a serious activity. When we start a business, we should be convinced that we want to do it. We can be convinced only if we feel the profit we will make is worth the time and effort we will spend on the business.

Not only that we set the objective; the objective has to be clear and specific. The process of setting up clear and specific objectives are explained in the slides numbered 14 to 16.

- The objective of a business is to make profits so that it is worth doing it.
- The objective has to be specific. This means the objective must say how much profit the business wishes to make over a given period.

Call the attention of the participants to the following examples on setting the objective for a business.

Someone says "Will make some profit"	This is not specific. What does 'some profit' mean? How much?
The person corrects it to "Will make Rs 10,000 profit".	This is better; at least the amount is clear now. Yet it is not specific enough. Rs 10,000 over what period? A month? A year?
The person revises the statement to "Will make Rs 10,000 profit this month"	Now we are clear about what the person actually wants. The target is to make Rs 10,000 profit over a period of one month. This is specific, therefore, acceptable as a business objective.

Emphasise the point: Other than being specific, the objective needs to be realistic.



Ask the participants: What does it mean when we say realistic?



Ask a participant to come to the blackboard and write a realistic objective for a business that she would like to start.



Ask others to comment on what would be an unrealistic objective.



Explain that the objective must be possible for the business owner to achieve with reasonable efforts. Then it becomes realistic.



Explain the examples:

Will make Rs 10,000 profit in this month by selling only one soap.	This statement is specific. It is possible but not realistic.
Will make Rs 100 crores profit this month by selling a lot of soaps.	This is also specific. It is possible but not realistic.
Will make Rs 10,000 profit this month by selling soaps.	It is specific and realistic enough to be acceptable.

Even a specific objective may be difficult to achieve. That is where difficult to achieve. That is where the objective has to be realistic too.



Call the attention of the participants to the initial responses noted down on the board. Encourage the participants to compare their responses to what they have understood now about the objective of business.

Summarise the key points:

- ❑ The objective of a business is to make profits
- ❑ The objective that we set for a business should be specific and realistic

Once a business sets its objectives, how do we know that it would be able to achieve it? This aspect is treated in the subsequent section. However, it is important that we understand some limitations within which a business has to operate.

Once an objective is set, the business cannot resort to any means to achieve it. There are ‘ethical and legal aspects’ that we have to consider.



Ask the participants whether they think there are things that a business should not do? What are they?



Start presenting slide number 17 to 20. The last slide in this section, numbered 21, summarises the contents of the section.

Explain the importance of being ethical in business.

There is a danger that business owners may get carried away by the primary objective. Once they taste success, i.e. once they see profits coming in, they may be tempted to do the following to increase profits.

1. Employ child labour to reduce costs
2. Adulterate products
3. Sell defective products

An ethical business looks at greater good for the society. In fact, being unethical may work against

the business itself. Unethical practices can lead to gains over a short period. But in the long run, customers may choose not to buy from the business when they discover the unethical practices.

A business that indulges in unethical practices will suffer from many issues. Such a business will eventually get a bad name in the society for following bad practices. It will naturally affect the way customers look at the business. Their preferences will shift and competition will move ahead of that business.

Ask the participants about their understanding on ethics in business. Is it something that the entrepreneur can decided on?

Or, are there norms or laws covering some of these?



Ask the participants what they understand by 'law'.

Law often guides business owners with ethics. For example, child labour is illegal in India. A law-abiding business owner will not employ child labour. Therefore, he/she does not have to confront the ethical dilemma of whether to employ child labour and increase profits or to focus on the right thing to do.

A business that follows all the laws is already ethical in many ways.

Therefore, it is better to ensure that the business follows all the laws concerned with it.

Ask the participants about the problems that unethical practices can cause to a business.



Note down the responses.



How Will You Conclude This Section?



Go to slide 21.

The message of the section is that a business should be driven by the objective of making profits. However, it should not be at the cost of ethical behaviour.

Ask participants questions on what they understood about

- ❑ Business profits
- ❑ Business ethics
- ❑ Law



Once a business sets a clear, specific, and realistic objective, how do we know whether it will be able to meet the objective? If a business is capable of meeting its objective while being ethical and legal, we say that it is a 'viable' business. The 'viability' of a business depends on a number of factors. This is what we are going to handle in the next section.

Section 5

Business Viability Framework



We have seen that business is a recurring economic activity that needs to make profits continuously. The ability of any business to make profits continuously depends on a set of factors. In this section, we try to look at these factors together in a logical way.

What will you say at the start of this section?



Recall the concept of objective of business. What are specific and realistic objectives?



Note down the responses on the blackboard.

We have to meet business objectives by operating within certain laws and maintaining ethical practices. But how do we make sure that the business would be able to meet its objectives?

How Will You Teach This Section?



Start this session by showing the introduction to business viability and definition of business viability on slide 23.

A business is said to be viable if the profits that we get from it are worth the effort and money we put in. Before starting a business, we should assess whether it would be viable. This is applicable to an existing business too.

A business is viable only if the profits that we get from it are worth the efforts and money that we put in.

Go to Slide 24



There are five aspects that one must consider to understand if the business will be viable or not.

1. Customers and Competition
2. Capabilities
3. Costs and Profits
4. Capital
5. Environment of the business

Let us summarise them into 4C+E so that it is easy to remember. Now let us look at each of them briefly.

Remembering the five key aspects that we need to consider the viability of a business as 4C+E may be easy.

In 4C+E, the 4Cs stand for

1. Customers and competition
2. Capabilities
3. Costs and Profits
4. Capital

And 'E' stands for 'Environment of the business'

These factors are applicable for production, trading and services.

The First of the C_s: Customers and Competition

Ask the participants about their understanding of customers.

- ❑ Who are customers in a business?
- ❑ Why are customers important?
- ❑ Are customers the same as consumers?



Go to slide 25.



Customers are those who pay money directly to the business for its products or services. These are different from consumers who are those who consume/enjoy the product or service offered by the business.

A business first needs to identify its potential customers. Once the customers are identified, the next task is to understand what their needs are. Any business has to satisfy the needs of its customers to be viable.



Ask the participants about what they understood by competition.

- ❑ What does competition mean for a business?
- ❑ Who is a competitor?



Go to slide 26.

Competitors are any other business that sells the same or similar products or services as ours. For any business, there is always competition. It may either be there already or someone may start it any time.



Ask the participants to discuss the following illustration. What do they think about the way competition is depicted in here?



Ask the participants to form two groups each doing similar businesses. Let there be two or four groups according to the batch size.

Two groups become competitors in a similar business. Say, making and selling of soaps.

Ask each group to plan their businesses in such a way that they emerge more successful than the other. Each group can be given ten minutes each.

Let the teams make presentations on their plans. Each team can be given three minutes each.

Discuss the plans in the class.

What we sell to our customers must be at least as good as or better than what our competitors sell.

The Second C: Capabilities of Our Business

For a business to become successful it needs to do certain things well. A business may find some difficulties in doing them. The success of the business would naturally depend on what it 'can do'.

Ask the participants what all would 'capabilities' include.



Note down the points on the blackboard.

Go to slide 27.

Capabilities are about what a business 'can do'. These include

- ❑ Skills
- ❑ Equipment
- ❑ Available time

Capabilities consist of skills, equipments and time available to work in the business.

Time is very critical. It is an aspect where most of the small businesses can go wrong. If they try to do many things within the time available, there is a chance that they may not be able to run the business properly. And in most cases, these entrepreneurs may also have to attend to household duties.

The Third C: Costs and Profits

Ask the participants what they understood by 'costs'. Ask them to cite examples.



Note the examples down on the blackboard.

Ask them for an example of a common business. What would be the costs for the business? Is the concept of 'cost' the same for businesses and everyday transactions?

Divide the participants into two groups. Let them discuss the differences, if any, between the concept of cost in everyday transactions and that in business. Give five minutes each for discussions.



Let the groups present what they discussed in the groups.

Understanding Costs

Go to slide 28.

Explain, 'Cost' in business has a different meaning than what we use it for in everyday transactions.



Cost of a business includes

1. Money spent on making, buying, or selling its products
2. Interest paid on loans borrowed to run the business

Some costs that we consider in everyday use are not costs in the case of a business.

The following are NOT costs for a business.

1. Money spent on repaying loan
2. Money spent on buying productive assets (land, equipment etc.)

On the other hand, the interest paid on a loan taken by the business is a cost. Money spent on buying productive assets in investment is part of the capital that we put into a business.

Cost in business is the money spent on making or selling its products or services and paying interest on the loans that the business has availed.

Now that we have seen what 'cost' in business is, we categorize Costs into two types to analyse how the business is performing (slide 29).

1. Direct Costs
2. Indirect Costs

Direct Costs include the money spent specifically for the production of goods or services. Raw material cost and labour cost are example. These are costs that can be directly attributed to the products or services.

Indirect Costs include money spent on running the business, but on activities not directly related to the production of goods and services. Salary paid to the accountant, rent, interest paid on loans are example. These are costs that cannot be attributed directly to a specific product or service.



Ask participants to discuss the costs for conducting a training programme for SVEP CRP-EP. Which are the direct costs? Which are the indirect costs?



Tell the participants that this is not the only way in which we can categorize costs. Later in the course, we will also look at another useful categorization called Fixed costs and Variable costs.

Understanding Revenue



In order to introduce the concept of 'revenue', ask participants about their understanding of how businesses make money. How do they meet the costs? How do businesses make profit?



Go to slide 30.

Revenue is the money that a business earns by selling its products or services. Revenue is also called 'Sales'. This is the only own source of money for the business with which it could meet its

running costs. We have to be careful in understanding the revenue of a business.

The following are NOT Revenues:

- ☒ The money borrowed for running a business.
 - ☒ Capital investment by the owner.
 - ☒ Money received through selling of productive assets (building, machinery)
-

Revenue is only that money which a business earns by selling its products or services.

Give the participants an example of a common business. The entrepreneur has borrowed some money to run the business for a week. With that money, she bought some raw materials. Is that money part of revenue?



A tea shop owner had two kettles to make tea. She decided to sell one of the kettles to get money for buying tea powder and sugar. Is the money she got by selling the kettle revenue for the tea shop?

Understanding Profit



Recall the objective of business from the last section. Profit is the objective of business.



Ask the participants what is profit.



Note down the responses on the blackboard.

Go to slide 31.

We have seen that revenue is the money that a business earns by selling its products or services. We have also understood that costs are the money that a business spends to produce its goods or services. Now, profit is the gain that the business makes after deducting all the costs from its revenue. Let us say, profit is what remains after deducting total costs from total revenue.

Profit can be calculated for different periods of time as per our requirement. It can be monthly, quarterly (once in three months), half yearly, or annually (for a year). It is important that while calculating profit for a specific period, we include only the revenue and cost of that particular period.

Profit can be defined as follows

$$\text{Profits} = \text{Revenue (Sales)} - \text{Costs}$$

There are two types of profits that we usually consider in businesses that we deal with

(Slide 32):



- ☒ Gross Profit, and
- ☒ Net Profit

Gross Profit is the difference between Revenue and Direct Costs for a specific period.

$$\text{Gross Profit} = \text{Revenue} - \text{Direct Costs}$$

Net Profit is what we get by deducting Indirect Costs from Gross Profit.

$$\text{Net Profit} = \text{Gross Profit} - \text{Indirect Costs}$$



Go to slide 33.

Profitability is a measure used to assess the performance of a business during a specific period. Profitability, as a percentage number, tells us how many rupees out of 100 rupees revenue is the profit.

$$\text{Profitability} = (\text{Profit} \div \text{Revenue}) \times 100$$

Profitability is defined as the relationship between profit and revenue (sales) expressed as a percentage.

An Example:

A certain business has made a profit of Rs 16,000 and his total revenue was Rs 80,000, what was the profitability of his business?

Total Revenue = 80,000

Profit = 16,000

$$\text{Profitability} = (16,000 \div 80,000) \times 100 = 20\%$$

We will discuss these in details later

The Fourth Capital



Ask the participants about the money needed to set up a business.



Consider a common example. Say, a tea shop.

Ask the participants to list the components for which one has to put in money, for starting the tea shop.

Let one of the participants write down the responses on the blackboard.

Do participants see anything common among the items listed out? Are all of them similar?



Go to slide 34.

Capital is the total amount of money needed by the business. A business would need investment of money in acquiring the productive assets (such as land and equipment) and setting it up. Then the business would also need money for meeting its expenses for producing goods and services.

The money that a business requires for acquiring its productive assets is called Fixed Capital.

The money that a business requires for running its day to day operations is called Working Capital.

Productive assets include land, machinery, buildings, storage etc. Day to day operations of a business include buying raw materials, paying wages, salaries etc.

Capital in a business consists of Fixed Capital and Working Capital.

After the 4 Cs, Now 'E', Environment of the Business

Start the topic by explaining slide 35.



There are a number of external factors that influence a business. These factors, taken together are called 'Business Environment'.

Some key factors in the business environment that influence small and rural businesses are

1. Laws and policies

2. Technologies available

3. Availability of suppliers

4. Availability of skills

5. Availability of capital

Encourage participants to discuss all the above factors in detail.



Let them discuss based on their experience.

It is important that we are aware of the laws and policies in existence while setting up or running a business. Law may permit certain things while prohibit some others. There may be legal standards that the products or services of a business have to meet. We should also be aware of the availability of key factors that would be required by the business. And finally, we have to be sure about the availability of capital; or the means of mobilising the capital required for the business.

It is important to note that adhering to laws and norms may result in higher costs for the business. Some other external factors may affect the revenues by increasing or decreasing sales of products/services. It is therefore very important for the CRP-EP and the entrepreneur to be clearly aware of such factors.

How Will You Conclude This Section?

We have considered five factors that determine the viability of a business in this section. We will study each of these factors in more detail later.

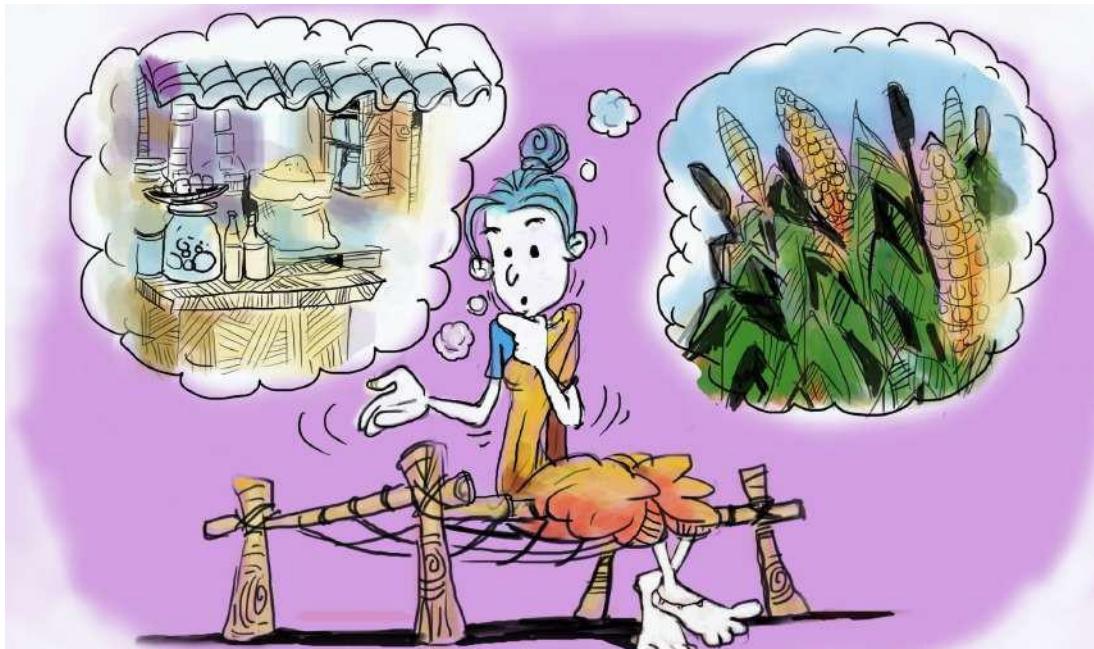
Advise the participants to remember these factors as '4C+E'.



We will discuss these in details later.

Section 6

To Do or Not to Do Business?



We have seen that a business is said to be viable if the profits made are worth the efforts and money that we put in. But how do we know that starting and running a business is the best option that we have? How do we know whether it is better than the other options that we have?

We will use a concept called 'Opportunity Cost' to answer this question.

What will you say at the start of this section?



Ask the participants about occasions when they have to make a choice from among multiple options. Encourage them to discuss how they take a decision in such situations.

How Will You Teach This Section?



As we are introducing a new concept here, start the session by presenting Slide 37. The slide provides a definition and explanation of opportunity cost.

Opportunity Cost can be defined as 'how much money would you make, if you do something else instead of this business'.



Go on explaining the slides up to slide number 40.

For example, you have Rs 12,000 and you have two choices:

- ❑ Use the money to start a business, or

- ¶ Put it in a fixed deposit at 10% interest per year and work on NREGA for 10 days every month.

Show slide 38.



If you choose the second option, then you earn Rs 100 per month in interest from the bank. At the current rate, you will get Rs 1800 from NREGA for ten days' work.

So, your total income for the month is Rs 1900. This is your opportunity cost per month.

- ❑ You may start the business only if you expect to make more than Rs 1900 a month.
- ❑ But you should also look at the risk involved in the business. The income from interest on fixed deposit and the income from NREGA are certain. However, income from business is uncertain; there is a risk.

Show slide 39.



Suppose, after considering opportunity cost, you have started a small tea shop. You have to be there at the tea shop from 6 am till noon and then again from 4 to 10 pm. The rest of your time is spent on farming. You make Rs 10,000 every month from the teashop.

Harvest is coming up and it would require you to spend long hours in the morning and evening in the farm. Should you shut the tea shop during harvest and spend adequate time at the field?

This is a decision you have to take; a choice that you have to make. Again, it is opportunity cost that is to be considered here.

Show slide 40.



During harvest, it may make sense to shut the shop and be at the farm. But you may have to consider the following.

- ❑ How much will you lose during the time when the shop is shut?
- ❑ How much will you additionally gain if you spend extra hours on the farm during harvest?
- ❑ If someone else runs the shop, how much time you need to spend to teach that person?

Opportunity Cost should be considered not just while starting a business but also while running it. In the case of small and rural businesses, especially in seasonal businesses, one keeps encountering situations when one has to make choices based on considerations of opportunity cost.

Summarise opportunity cost by displaying slide 41.



Before we take any business decisions (such as starting, running or expanding a business), we must consider opportunity cost of that decision

Opportunity cost is the amount of money we let go if we take up the business and do not take other opportunities

How Will You Conclude This Section?

The word 'cost' in the term 'opportunity cost' should not be taken literally (like we understand the cost in 4C+E). It is important that the participants understand the concept of opportunity cost to help entrepreneurs choose the option that would give them the most money. Entrepreneurs

should be able to earn this money for a reasonably long time.

Section 7

Introduction to Financial Statements



We have seen the factors that determine the viability of businesses. We have decided to remember them as 4C+E. Out of the 4Cs in the expression 4C+E, two Cs are about costs and capital. Both are financial in nature. We also know that the business has to make profits consistently. For this, we need to keep the financial information of the business. Financial statements help us do this.

What will you say at the start of this section?



Ask the participants, if any of them has recently done a health check-up for themselves or someone in their family.



Encourage the participant who has responded to explain why she got the check-up done.

Why do we get a health check-up done? A health check-up gives us 'results' that tell our performance against key health indicators. Doctors read them and tell us about the health of our body.

Similarly, financial statements tell us about the health of a business.



Slide 43 introduces these.

How Will You Teach This Section?

There are three statements that together tell us about the health of a business. These are

- ❑ Profit and loss statement
- ❑ Cash flow statement
- ❑ Balance sheet

Ask the participants whether they have seen any of these statements anywhere.



Some of them might have seen them as part of their education or training.

May be a few might have worked in some organisation and are familiar with them.



Encourage them to explain the statements that they have seen.

The Profit and Loss Statement

Profit and Loss Statement (P&L) shows how much profit or loss a business has made over a specific period of time. The period is typically taken as a month or one year. Slide 44.

In order to create a Profit and Loss Statement, we need the data on the revenues and costs in the business.

Profit and Loss Statement is the summary of all the revenues that a business has made and costs that it has incurred during a specified period of time.

Cash Flow Statement

The Cash Flow Statement helps us understand the cash situation of a business for a specific period of time. The period is typically taken as a month or one year. Slide 45.

Cash Flow Statement shows the following.

- ❑ Opening Cash Balance
- ❑ Cash Inflows for the period
- ❑ Cash outflows for the period
- ❑ Closing Cash Balance

Opening Cash Balance is the cash that the business has with it at the beginning of the specific period for which we are working out the cash flow. There would be Cash Inflows and Outflows during the period. Cash Inflows are the money that the business gets. These include revenues as well as other inflows such as borrowed money. Outflows are the money that the business pays out. These include direct and indirect costs as well as others such as repayment of loans. Closing Cash Balance is the amount of cash that the business has with it at the time of closure of the period.

An Important Formula:

Closing Cash Balance = Opening Cash Balance + Cash Inflows - Cash Outflows

Balance

Go to slide 46.



Cash and Profits: Are they the same?

When we talk about cash in a business, we have to be careful. We should know that cash and profits are not the same.

Cash is the money that a business has. It could be in the form of currency notes and coins or it could also be in the bank in a deposit. But cash and profit are different. It is possible for a business to have cash but no profits. Similarly a business may have made profits yet may not have cash

with it. To understand this, we need to look at two concepts called accounts receivables and accounts payable.



Go to slide 47.

Receivables and Payables

Money owed to the business is accounts receivable.

- ❑ This is typically the money that customers have not paid for the products or services that they have bought.

Money owed by the business to others is accounts payable.

- ❑ This is typically the money that the business has not paid to its raw material suppliers.



Go to slide 48.

Balance Sheet - Financial State of a Business

The Balance Sheet is like snap shot of the business on a particular date. It is similar to a photograph that shows how things are at a moment. It is the summary of all that the business owns (assets) and all that it owes to others (liabilities).

-
- ❑ Balance Sheet is as of a particular date.
 - ❑ Profit and Loss Statement is for a particular period.
-

A Balance Sheet shows the balance amounts of various types of transactions in the business such as cash, accounts payable, accounts receivable. We have already seen what accounts payable and accounts receivable are.

How Will You Conclude This Section?

Each of the three financial statements explained in this section gives us information on the different aspects of the financial situation of the business. These statements are interconnected. We will understand how to use these statements to make business decisions in detail in future modules.

For now, it is important that we start linking the concepts that we have understood here to practical situations. This is possible by considering some real businesses. We will do this in the subsequent section.



We will discuss these in details later. We will have 3 modules covering each of the financial statements in part B

Section 8

Examples of Common Businesses



The concepts that we learn in TEAM are not easy to understand. The best way to understand these concepts is by applying them in real life situations. We do not have real business situations in classrooms. Therefore, we will use common businesses as examples for applying these concepts and understanding them better.

What will you say at the start of this section?

Call the attention of the participants to the business types that they had identified earlier in the session.



Can the participants suggest concepts that can be directly applied to businesses identified?



How Will You Teach This Section?

Go to Slide 50.

The purpose of the section is to define a few businesses, so that the participants can understand TEAM concepts by trying to apply them to these businesses.

Once we define these businesses in every module, we will

- ❑ Take up a concept
- ❑ Discuss how to apply it to one of the sample businesses that we have defined
- ❑ We shall apply the concepts to the common businesses during exercises



Sample Business 1: Ramu's Tasty Tea Shop – Production Business (Slide 51)

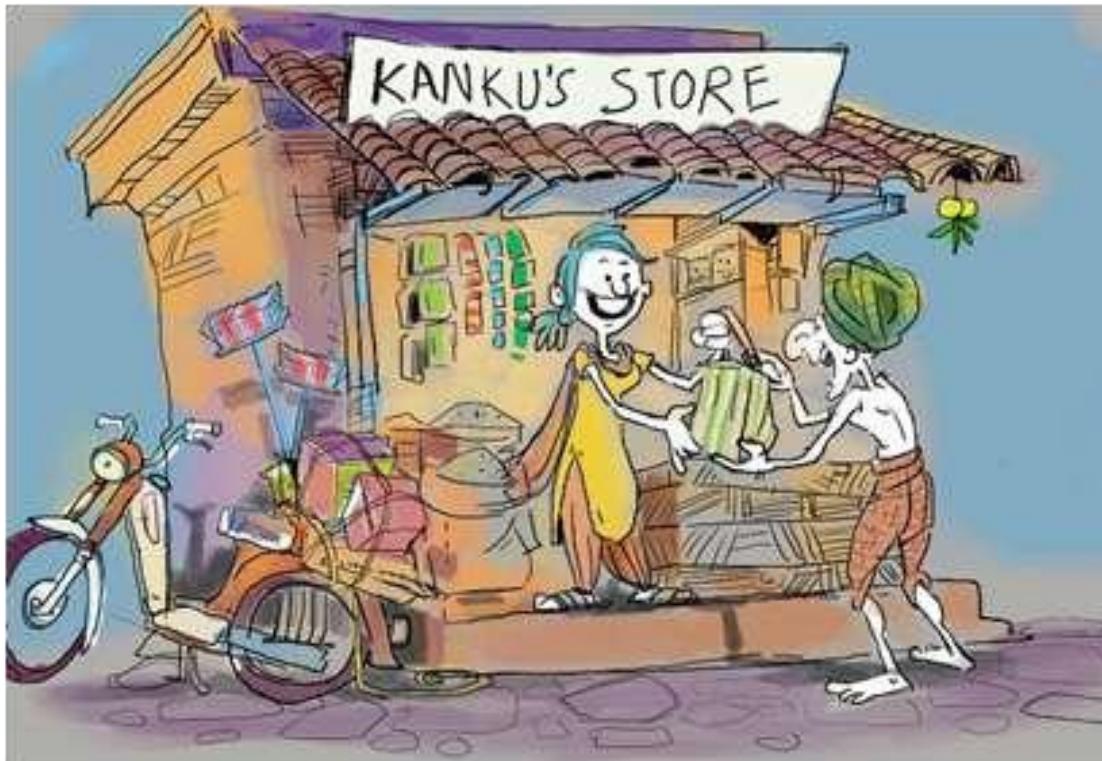


- ❑ Ramu's 'Tasty Tea Shop' is set up on the highway.
- ❑ Ramu owns the shop and works at the shop.
- ❑ He makes tea, coffee, and snacks and sells them to travellers on the highway.

Sample Business 2: Namita's Beauty Parlour – Service business (Slide 52)



- ❑ Namita wants to start a beauty parlour in her village.
- ❑ There are many women in the village who would like to do make-up for occasions such as weddings and festivals.
- ❑ Namita has learnt how to do make-up from her aunt who lives in Mumbai.



Sample Business 3: Kanku's General Store – Trading business (Slide 53)

- ❑ Kanku has a shop in the market for which she pays a monthly rent.
- ❑ She buys items such as rice, dal, soap, paste, bulbs etc. from the wholesale market in the city.
- ❑ She takes these items to her shop in the village and then sells them to the local people.

Sample Business 4: Sundari's Garments – Service and Trading business (Slide 54)



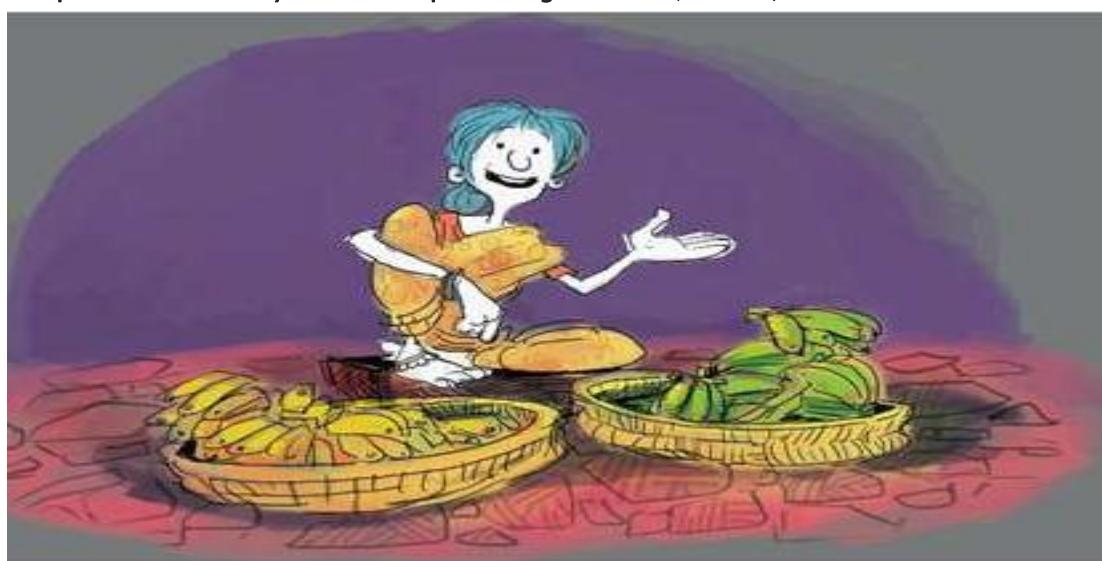
- ❑ This business is run by Sundari.
- ❑ Her business stitches salwar kurtas and skirts for women and school girls.
 - The customer buys cloth and brings it to the shop.
 - The business buys threads, buttons etc., and stitches the clothes as per the customer's measurements.
- ❑ The business also buys some readymade items such as handkerchiefs and night gowns which it sells to the customers

Sample Business 5: Leena's Pickle- Production business (Slide 55)



- ❑ Leena has a pickle business. She makes pickles of mangoes, lemon and mixed varieties.
- ❑ For example, at the start of the mango season, she plucks mangoes from her trees and buys other raw materials. She spends about a month in making pickle, putting it in bottles, sealing and labeling them.
- ❑ She sells pickles loose and in bottles throughout the year.
- ❑ She sometimes makes jam also.

Sample Business 6: Maya's Fruit Shop- Trading business (Slide 56)



- ❑ Maya runs a fruit business in the market.
- ❑ She runs the business from a rented shop for which she pays a monthly rent.
- ❑ She pays herself a wage for working in the shop
- ❑ She buys fruits from the wholesale dealer and sells to customers at the shop
- ❑ Currently she is buying and selling only bananas but might expand to other vegetables and fruits in the future

Sample Business 7: Anjali's soaps – Production business (Slide 57)

- ❑ Anjali wants to set up a small business which will make and sell soaps
- ❑ She is the only person working in the shop. She has done a basic course on making soaps
- ❑ She is planning to buy raw material locally, make soaps and then sell them

How Will You Conclude This Section?

- ❑ Conclude the session by telling the participants that the sample businesses will be used throughout the course for understanding the concepts better.
- ❑ Ask them to take a look at the illustrations of the businesses and comment.



Understanding Customers



In the last module, we have introduced '4C+E' as the basis for understanding the viability of a business.



We will start this class by checking whether the participants remember the '4C+E' concepts by asking some of them to list the 4C's and E.

We will list the '4C+E' concepts and explain each in one or two sentences for all the participants before moving on to the first slide of the module.

This module introduces the first C of '4C+E' – 'Customers and Competition' to the participants in seven sections. The following table summarises the sections and the topics covered.

The first and second column shows the order of the sections and topic covered in each section. The next column shows page numbers corresponding to each section in this chapter. The corresponding slide Numbers in the Classroom Teaching Aid are shown against each section. The pages in the Participant Handbook that have materials linked to the topic are also shown.

Sections	Topics	Page Nos in this Manual	Slide Numbers
1	Customers and their types	89-92	3-9
2	Customer needs	93-95	11-18
3	Profiling customers	96-97	20 - 22
4	Quality of products/services offered	98-104	24 -29
5	Competitors	105-108	31 – 36
6	Assignment	109	38
7	Selecting products/services for business	110-111	40 - 42
8	Creating customer communication for the business	112-116	44 - 55

Section 1

Customers and their types



This section helps you introduce the concept of ‘customer’ to the participants. Most of the participants are new to the subject. Therefore, they may not be clear about what ‘customer’ means. In this section, we will help the participants understand who a customer is and the different types of customers.

What will you say at the start of this section?

Ask participants to name different people associated with a business. Note this down on the board.



Ensure that the following categories are covered – Owners/Entrepreneurs, Workers, Customers, Suppliers, Debtors, Creditors etc.

Ask the participants what they understand by the word ‘customer’ and how they are different from the others mentioned above.



How Will You Teach This Section?

After raising the question and noting down the responses of the participants, start displaying the slides.



Use slide 3 to revise the 4C+E framework. Point out that customers are the

first C in 4C+E framework.



Now, we use slide 4 to explain who a customer is.

'Customers are those who pay money directly to business in exchange for its products or services'.



We should point out the highlighted words and explain their meaning.

We need to make the participants understand the difference between a customer and others from the definition. For this, we show from the slide that a customer need not always be the ultimate user of the products or service of the business. This is because a business can also sell its products to a customer who may give the product to someone else for using.

We now use the examples in the next two slides to clearly bring out the difference between the customer and the user.



Show slide 5.

Who is the customer at Ramu's Tasty Tea Shop?

Ramu owns a small tea shop which sells tea and snacks. We have seen this in the last module. One day a small girl comes to Ramu's tasty tea shop along with her mother to buy a chocolate. On reaching the shop, the mother buys the chocolate and after paying for it, gives the chocolate to the girl.

Who is the 'customer' in this situation? Is it the girl or her mother?

As we have seen above in the definition of customer, we explain to the participants that since it is the mother and not the child who pays the money directly to the business for the chocolate, we call the mother as the customer in this case and the girl as the user of the product.



The above example was that of a production business. Let us now see the example of a trading business.

Who is the customer at Kanku's General Store?

We have seen Kanku's General Store in the previous module. A small boy with his father comes to Kanku's General store. The father buys and pays for the notebook but it is for the boy. Who is the 'customer' in this situation? Is it the boy or his father?

We call the father the "customer" even though the boy will use the notebook.



Show slide 6.

Now we will see the example of a service business.

Who is the customer at Namita's Beauty Parlour?

A bride visits Namita's beauty parlour to do her bridal make-up for her wedding. Her mother pays for it.

Who is the 'customer' in this situation? Is it the bride or her mother?

We call the mother the "customer" even though the bride is the one getting the make-up.



Show picture seen in last module on introduction to business of father buying coconuts for wife and child on scooter as example.

We need to make the participants understand that the customer may be an existing customer or

he or she could be a potential customer.

Customer types

Now that the participants can say who a customer is, we can introduce them to types of customers.

Ask the participants about the different kinds of customers they have seen in their business or any business that they know about. Make sure you take only one or two simple business for this such as tea shop or beauty parlour.



We can now show them slide 7 and tell them that such customers may be separated into different types by considering various factors shown on the slide such as:

- Age
- Gender
- Education
- Place of residence
- Place of work
- Income level

Separating customers into customer types make it easier to study them rather than studying each and every customer individually.

Ask the participants to identify the different types of customers for the factors mentioned in the slide 7. Ask them to name some more factors.

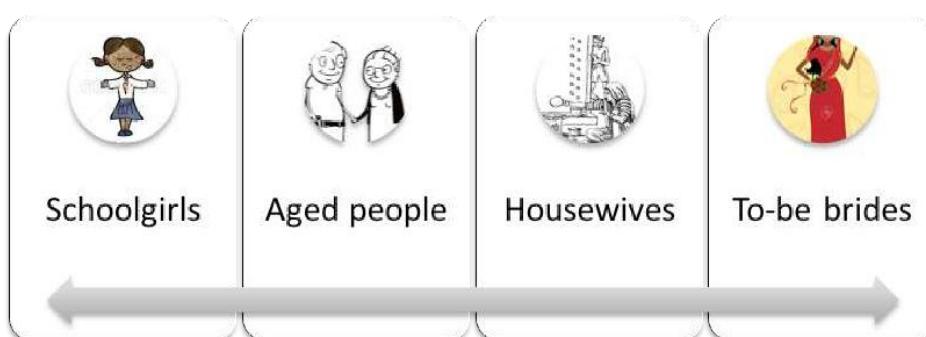


Ask them to notice that customers of different types have different needs and different preferences, which is shown as a keypoint. Tell them that this will be discussed in the next section.



To make the participants understand how to identify different types of customers of a business, we can show them the next slide (slide 8) on Namita's ladies beauty parlour, a service business and show them the different customer types that come to the parlour. Also point out some differences between the different customer types.

Customer Types at Namita's parlour



Point out the factors that have been used for separating the customers into different types such as gender, age, place of residence, place of work, occupation and occasion.

Let us now see this for the example of a production business – Leena’s pickle.

These could be:

1. Schools
2. Hotels
3. Households



Show slide 9.

Let us now see this for the example of a trading business – Maya’s fruit shop.

These could be:

1. Schools
2. Households
3. Passerby



Ask the participants about different types of customer they have seen for a particular business and the factors used for separating the customer into different types. This is optional - If the above examples were insufficient for understanding. Can use example of general store or garment shop.

What will you say at the end of this section?



Repeat the following main concepts.

1. Customers are those who pay money directly to business in exchange for its products or services
2. Separating customers into customer types make it easier to study them



Ask a few questions on the concepts covered in the session.

We now understand how to identify a customer and how to separate them into different types.

We also noticed through different examples that customers of different types seem to have different needs. Let us study this in more detail now.

Section 2

Customer needs



In the first section, we saw who customers of a business are. We also saw that businesses have different type of customers who are different from each other. In the example of Namita's beauty parlour in the last section, we saw how different customer types differ in their needs and expectations from the business.



We will see the concept of customer needs in more detail in this section.

What will you say at the start of this section?

Unless we understand needs of the customers correctly, we will not understand the customers fully. This is what we will discuss now in this section.

How Will You Teach This Section?

While showing the first slide in the section (slide 11), we start by telling the participants that we need to understand needs of not only existing customers of the business but also potential customers. This is because only when we understand the needs of potential customer we will be able to offer right products and services to them.



To make the participants understand how to identify the needs of different types of customers of a business, let us take the case of Leena's pickle business- a production business in slide 12.

Ask the participants to identify the needs of the three different types of customers of the business, namely schools, local hotels and regular households.





We need to point out the difference in the needs of the three types of customers clearly as shown below. We also need to tell them how this example shows that 'needs' can vary from customer to customer.

Needs of types of customers in Leena's pickle business

Schools	Hotels	Regular households
<ul style="list-style-type: none"><input checked="" type="checkbox"/> They will want less spicy pickle for students<input checked="" type="checkbox"/> They will want in large quantities without packing	<ul style="list-style-type: none"><input checked="" type="checkbox"/> They will want a guaranteed supply in loose (and large) quantity	<ul style="list-style-type: none"><input checked="" type="checkbox"/> They would like the pickles to be tasty and should not get spoilt at least for a month or so



Let us now see this for the example of a trading business

Show slide 13.

- Here are possible types of customers at Maya's fruit shop and their need

Schools	Households	Passerby
<ul style="list-style-type: none"><input checked="" type="checkbox"/> Will want in large quantities to be distributed amongst children	<ul style="list-style-type: none"><input checked="" type="checkbox"/> Will want in bunches of 10-15 for eating at home	<ul style="list-style-type: none"><input checked="" type="checkbox"/> Will want 1-2 to eat while passing by

Let us now see this for the example of a service business. Show slide 14.

- Here are possible types of customers at Namita's Beauty Parlour and their needs

Aged people	Housewives	Bridal makeup
<ul style="list-style-type: none"><input checked="" type="checkbox"/> Want value for money<input checked="" type="checkbox"/> No timing preferences	<ul style="list-style-type: none"><input checked="" type="checkbox"/> Want value for money<input checked="" type="checkbox"/> Will want Namita to do a house-visit	<ul style="list-style-type: none"><input checked="" type="checkbox"/> Want the best of what's available



Now ask the participants what they can say about the needs of the different types of customers who are likely to come to Ramu's Tasty tea shop such as bus passengers, workers and school children? Will these be different or the same? If so, how are their needs different? Can they think of any other types of customers that come to the tea-shop?



Once again, we need to point out from the responses of the participants that needs are different for different customer types.



We ask some of the participants to explain the differences in needs of the different customer types in Namita's beauty parlour discussed in the last section.

Identifying the essential needs

Now that we have understood how to identify the needs of the customers, we need to point out to the participants that while some needs maybe essential, some are not.

We show the next slide (slide 15) to the participants. We tell them how identifying the essential needs will help us to narrow the focus of the business to only those needs which are essential.



All products/services of a business must meet the essential needs of the customers

We can now give the example in slide 16 of Rupa, a customer of Kanku's General Store – a trading business, to make the participants understand the difference between essential needs and needs that are not essential.



Rupa is a customer who wants to buy a cover for her mobile phone. As far as Rupa is concerned, the mobile cover must be within her budget. This is an essential need for Rupa since she may not buy the mobile cover if it is not within her budget.

At the same time, Rupa may want the mobile cover in brown colour. But this is not an essential need since she may still buy the mobile cover even if it is not available in brown color.

Show slide 17.



Let us now see the example of a production business.

Ganesh is a customer of Leena's Pickles. Ganesh wants to the pickle in a small bottle. This is essential for Ganesh. He wants mango pickle (Even though he wants mango pickle, it is not essential that he gets that since he is OK with any variety including lime pickles since all of Leena's pickles are good)

Let us see another example of a service business now.

Laxmi is a customer of Namita's Beauty parlour. Laxmi wants Namita to come home because she cannot leave her 3 children at home (So this is essential) She is willing to pay a slightly higher price (So being within the budget is not an essential need)

We should also point out to the participant through these examples that understanding the customer's essential needs will help us to better design the product/service. This is also shown as a keypoint in slide 15.



Let us now try to apply what we have learnt to the Sundari's Garments case in slide 18.

Ask the participants if they can think of different types of customers for Sundari's Garments. What are the essential needs of these customers? What are the products/services that will satisfy the essential needs?



What will you say at the end of this section?

So far we have seen how to identify the different customer types of the business and their needs.

As a CRP-EP, you will need to help the entrepreneur identify the essential needs of the customers of their business. This step, as we will see will be very critical when we plan for a business.



Section 3

Profiling customers

In the last section, we have seen how customer needs are important in understanding the customer. But this is not enough. We will see the concept of profiling the customer in this section that will help us understand more about the customer.

What will you say at the start of this section?

We have so far seen how to identify the types of customers and their needs. To fully understand the customer, we also need to understand the behavior of the customer. We will look at this now.

How Will You Teach This Section?

We will start the session by showing the participants the definition of profiling on the slide 20 and define this as understanding the customer's existing behaviors, preferences and attitudes towards the product or service that the business is selling.

It must be pointed out that profiling also includes understanding the customer types and customer needs of the business that we have seen in the previous two sections.

Thus, the business should profile its customers to understand them better. Given as a keypoint on slide 20.



Now we will have a group exercise with the class to increase participants' understanding of profiling customers. For this we will divide the class into two groups and give them two separate cases. The exercise is explained on slide 21.

The first group will be given the case of Sundari garments, which produces and sells garments to other shops. The second group will be given the case of a tent-house and mike renting business. Now the groups need to advise the owners of their respective business. This needs to be done by profiling the customers of the business by identifying and detailing their types, needs and behavior.

What will you say at the end of this section?



To conclude this section, we will repeat the key concepts discussed till now – Customers, Customer types, Customer needs, Essential needs and Customer profiling.

Ask a few questions on the concepts covered in the session.



Then, we will show the key points slide (Slide 22) and highlight some key points from the sections covered till now as seen below:

1. The first key point is the answer to why we need to understand the customer. It is because we should not assume whatever we make will get sold without understanding the type, needs and behavior of the customer.
2. The second point is a recap of essential needs of the customer.
3. We also need to tell the participants that understanding the customer needs and preferences are not a one-time thing. It can change over time. This makes it important to understand the changes constantly by interacting with the customer.

Mention that understanding the customer, their needs and their behavior will help business decide which products/services it should offer. We will see this in the next section.

Section 4

Quality of products/services offered



In this section, we will ensure the participants get a clear understanding about what quality means, different kinds of quality standards and the steps in quality management.

What will you say at the start of this section?

We have reviewed how important it is for a business to understand customer needs and deciding which product or service should be offered by our business.

One thing which is critical no matter what we decide to offer our customers - is that the product or service is of the right quality. But how do we know what right quality is? We will learn that in this section.

How Will You Teach This Section?

What is Quality?



Before showing slide “What is Quality?”, explain the following case. Ask participants the questions given below on what is good quality and what is bad quality?



Once you have heard a few responses, show the slide 24.

Leena thought she could make pickles out of 100 kg of mangoes over the next three days. She went to the market to buy raw mangoes. However, she did not buy mangoes and went back. When asked, she said that she did not

buy as the mangoes were of ‘poor quality’.



What does Leena mean here by ‘poor quality’? How does she decide whether a particular lot of mangoes are of good quality or poor quality?

In this case, Leena must have had her own view on the quality of the mangoes that she would need. She insists on certain level of quality because otherwise she will not be able to make ‘good quality’ pickles that her customers would like to buy.

All of us have our views of quality. We use the concept in everyday life.

- When we go to buy dal, we insist that it should not contain pieces of stones or stones or impurities.
- When we buy fabric, we check whether it is colour-fast. We will not buy a fabric which loses its colour in three or four washes. Therefore, we may want the fabric to be colour-fast. Or quality fabric here means the type of fabric that does not lose its colour quickly.
- When we buy bread, we may prefer wheat bread because we feel that wheat bread is better in quality than white bread.
- While buying tea from a shop, we would have a tea of good quality. Here it could mean the right mix of tea, milk, and sugar, and also that it is served hot and hygienically.

Give the following situation to the participants before explaining the key point on slide 24.



Let us look at another situation. You go to a shop to buy soap. The shop has three types of soap bars: one costs Rs 10 per bar, another costs Rs 30 and a third one costs Rs 50. Which one would you buy? Will you consider the soap bar that costs Rs 50 per piece to be of the best quality among the three? Or the one that costs Rs 10 per bar of poor quality because it is the cheapest

Some aspects of quality are absolute; some others such as in the situation seen above can be subjective or price-related. Different buyers may perceive quality differently.



Now let us show the next slide (slide 25) and try to define quality from what we have seen so far.

In a business, what matters is how the customer perceives product or service. Therefore, it is important to define quality from the perspective of the customer.

Quality is defined as the extent to which a product or service meets the requirements from the customer’s point of view.

Customers may not be able to exactly assess the quality of certain products or services. Therefore, there are chances of customers getting cheated. There may be businesses that resort to unethical ways of promoting their product where they package and sell poor quality products.

A good quality product meets or exceeds the customer expectations consistently. A customer may define quality in the product in several ways. For example,

- ☒ Is the product safe and healthy?
- ☒ How long will the product last?
- ☒ Is the product hygienically made?



Ask the participants to suggest what could be the meaning of quality in the context of Ramu's Tasty Tea Shop? Marked in yellow as point of discussion in slide 25.



After listening to a few participants, share the below considerations for Ramu's tea shop.

Here, if we are thinking of the quality of tea, there are some absolute parameters of quality that Ramu has to meet. In order to meet these parameters, he may have to ensure that he uses tea, milk, and sugar of 'good quality'. He may also have to ensure that the tea is served hot, and hygienically.

In addition, Ramu will have to consider the specific requirements of customers too. Some customers may need 'strong tea', some may need tea without sugar. He has to meet the quality requirements of each customer.



Ask the students on why they think quality is important.



Show the next slide (slide 26) on importance of quality and explain the following.

Maintaining and improving the quality of products or services is necessary for the sustenance and growth of any business. Any compromise on quality may lead to the following situations:

- ☐ Products may fail to meet legal and certification requirements
- ☐ Products may remain unsold
- ☐ Business may end up with a dubious reputation for poor quality
- ☐ Costs may increase
 - Costs of reworking or repairing products
 - Costs of replacements or refunds
 - Cost of taking back unsold stock from retailers
 - Cost of offering discounts to clear off unsold stock

Any repetition of the above situations would eventually threaten the very existence of a business



Now show the slide 27 on quality standards and discuss the three types of quality standards mentioned in it.

- ☐ Functionality-related
 - Examples:
 - ☐ Food products: Good taste
 - ☐ Soap bars: Does not dissolve too easily in water
- ☐ Attractiveness
 - Examples:
 - ☐ Food products: A nice smell
 - ☐ Soap bars: A nice smell
- ☐ Safety-related: These standards are often regulated by law and certification requirements.
 - Examples:

- ☒ Food products: Standards for ensuring hygienic processing, those for ruling out the possibility of adulteration.
- ☒ Soap bars: Standards to ensure that harmful chemicals that may cause irritation to the skin are not used in making soap bars.

Next we look at the four steps in quality management and show slide 28 for this.



1. Define quality standards: Here we set the quality parameters that we want to achieve in our business. Legal standards are to be mandatorily met. Functional and aesthetic standards are to be set by the business.
2. Define quality processes: These are pre-defined steps which when executed will help the business achieve the quality standards that has been defined. The Quality process has to cover all the operations of the business.
3. Conduct quality checks: These are to ensure that the business processes are executed as per the defined standards. In case of any deviation from standard processes, which may result in poor quality, immediate steps will need to be taken for correction.
4. Improve quality over time: The business should continuously strive for steadily improving the quality of its products and services.

Ask the students to apply these steps in quality management in the context of Sundari Garments.



Ensure that the below points for each step are covered.



Quality Management in Sundari Garments



Define quality standards

A business such as Sundari Garments will have problems including additional costs if the following occur:

☒ Customers return the stitched material for redoing some parts

☒ There is a difference in size. Stitched clothes do not fit

☒ Customers are unhappy with the style in which the garment has been stitched

☒ Customers are unhappy with the accessories such as buttons and hooks used

- ☒ Customers return readymade garments that they bought
- ☒ Customers complain that the readymade clothes bought from the shop lose colour during the first few times they are washed

Any occurrence of the above problems would indicate that Sundari Garments is not following any quality management.

Can we set the quality standards for Sundari Garments? The business should have its customers satisfied. This would mean that the products and services meet their expectations.

Based on this, we can set a few quality standards for Sunadri Garments.

For this, we have to consider each problem and see what the reasons behind those are.

Problems	Reasons	Solutions
Customers return the stitched material for redoing some parts	Clothes are not stitched perfectly	Stitching has to be perfect
Difference in size; stitched clothes not fitting	Measurement not taken properly or recorded properly; clothes not stitched exactly to the measurement	Measurement to be taken and recorded properly; cloths to be stitched to measurement
Customers are unhappy with the style in which the garment has been stitched	Stitched in 1980 style	Use more contemporary style
Customers not happy with the accessories such as buttons and hooks used	Poor quality accessories	Ensure quality of accessories while buying
Customers return readymade garments that they bought	Defective pieces	Ensure defective pieces are not bought from wholesaler

Customers complain that the readymade clothes bought from the shop lose colour during the first few times they are washed	Readymade garments not colour- fast	Ensure the pieces bought are colour fast
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Based on the above, we can define the following quality standards:

1. Not more than, say, two pieces of stitched clothes are returned in a month
- 2 Not more than two cases are reported with fitting problems
3. No complaints are reported in a month about poor stitching quality
4. No complaint is reported on the quality of accessories
5. No sold pieces are returned in a month
6. No complaints are reported about garments losing colour

Defining quality processes

Now that the quality standards are defined, quality processes are to be defined.

Let us see how the processes can be defined for achieving the above set of standards.

Sl. No	Standards	Processes
1	Not more than, say, two pieces of stitched clothes are returned in a month	Identification of common problems in stitching and efforts to rectify them.
2	Not more than two cases are reported with fitting problems	Measurements are taken properly and stitching done exactly to the measurement.
3	No complaints are reported in a month about the style	Ensure the customer mentions what style she needs.
4	No complaint is reported on the quality of accessories	Purchase of better quality accessories.
5	No sold pieces are returned in a month	Defective pieces rejected during purchase; each piece to be manually checked for defects.
6	No complaints are reported about garments losing colour	Ensuring purchase of colour fast garments.

Conduct quality checks

Next step is to conduct quality checks. Quality checks should be done on a regular basis to ensure that the processes listed above are followed. For

example, every time accessories are bought, the quality has to be checked. Similarly, quality of readymade garments should be checked at the time of purchase.

The last step is to improve quality over time. Sundari Garments has fixed quality standards that are measurable. For instance, in the first two standards, two cases of deviation are allowed:

1. Not more than, say, two pieces of stitched clothes are returned in a month
2. Not more than two cases are reported with fitting problems

Improve quality over time

Clearly, the way for improvement is to reduce the number of pieces returned as well as the number of complaints to zero. In the second month, a target for reducing these from two to one can be attempted. Further, attempts can be made to improve the processes further so that the number of pieces returned as well as the number of complaints reach zero.

Once these are achieved, the business will benefit by having more satisfied customers and this could lead to increased sales.

What will you say at the end of this section?



Use key points on slide 29 given below to recap main concepts discussed in the section.

- ❑ Producing good quality products and delivering good quality services are important for meeting customer expectations
- ❑ Quality includes product safety, functionality, and aesthetics (look and feel)
- ❑ Quality must be delivered consistently

Section 5 Competitors



In the last three sections, we have seen the concept of customers. This section introduces the concept of competitors in detail.

What will you say at the start of this section?

The business needs to be aware of what other businesses are offering products and services to the same customer. Hence the business needs to plan how it can be better than the competing businesses. We will look at this in detail now.

How Will You Teach This Section?

After raising the question about who a competitor is and noting down the responses of the participants, start displaying the slides.



We use slide 31 to explain who a competitor is.

'Competitors' are those businesses which sell the same or similar products/services as your business.



After we show the definition to the participants, we ask them 'Does the business have to worry if it does not have competitors today?'

Then explain the second bullet point on the slide which points out that if a business does not have an existing competitor today, it does not mean the business has no competitor. It is possible that in the future, a new business will compete with that business by selling similar products and services.

To deal with this threat and survive in the market, a business must sell products and services to the customer that are at least as good as or better than its competitors. This is shown in the keypoint slide.



Ask the participants to share from their experience different improvements that can be made to a business. Take the example of a general store.



Note down the answers and club them on the board.

We now show, in the next slide (slide 32), different improvements which a business can make so as to make its products/services better than that of its competition.

Improvements To be better than competitors	1. Lowering the price of products/services
	2. Offering better quality of products/service
	3. Offering greater range of products
	4. Offering better experience for the customer

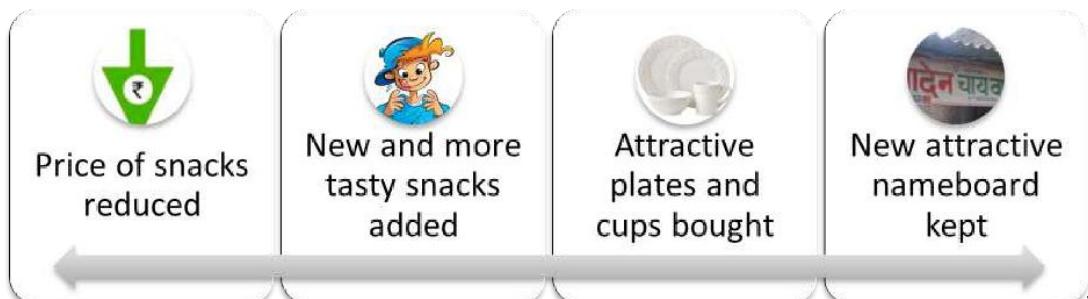
Thus, this shows that there are many ways to be better than the competition but we must choose what works best for our business. This is shown as a keypoint.

To make the participants understand how different improvements can be made to a business to make its products/service better than the competition, let us take the case of Ramu's Tasty Teashop, a production business which is on slide 33.



Ask the participants to identify such improvements that can be made to the business.

We now show them slide 33 and discuss the improvements that can be made at Ramu's Tasty Teashop.





We will now ask the participants to discuss the possible effects of these improvements on costs, revenue and profits.

We need to make sure the following points have been discussed.

These improvements might result in more customers visiting the shop and increased sales. But, at the same time, the business also has to pay for new cups and plates or for new board or a new cook. This could have a positive or negative effect on the profits of the business since there is an effect on both the costs and the revenue of the business.

Let us now look at the example of a trading business – Kanku's General Store on slide 34.

Here are some ways in which Kanku's General store can be better than competitors

1. Kanku can take orders on her mobile phone
2. Kanku takes special orders from customers before she visits a large market in the nearby city

These improvements can make Kanku's General store better than its competitors.

Let us now look at the example of a service and trading business – Sundari's Garments on slide 34.

1. Sundari can stitch a dress for a customer based on the picture of the dress brought by the customer
2. Sundari can make an urgent delivery within two days for an extra charge

These improvements can make Sundari Garments better than its competitors.

How to choose improvements?

In the next slide i.e. slide 35, we explain to the participants that they need to realize that every improvement has not only benefits but also costs associated with it as seen in the example. These are costs such as to create a product/service as well as costs to communicate this with customers.

This makes it important to choose only those improvements that are valuable to the target customer type.

How will the business know which improvements are important to the target customer?

To answer this question, we need to ask the participants to go back to the learnings from the earlier slides on 'Understanding the customer needs'. As we saw before, one essential area of understanding the customer is to identify the customer's needs, especially their essential needs. The business needs to make those improvements that address at least the essential needs.



On slide 36, we discuss two key points from the section. The two key points cover the need to choose from different improvements to make the business better than competition and the need to match competitors for essential needs.

Give additional example to explain how meeting needs that are not essential can help business make it better than competition, if necessary.



Give the example of customer Rupa who wants to buy a mobile cover seen in section 2 on customer needs. If the business offers mobile cover within the customer's budget, it is as good as any of its competitors. But if the business provides the exact color the customer wants, then that makes it better than the competition.

What will you say at the end of this section?

Finally, we need to remind the participants that a business may be better than its competitors today but that does not guarantee that they will not catch up with the business in the future. So we have to keep watching our competitors.

Section 6 Assignment

What will you say at the start of this section?

We will now do an assignment on slide 38 to see how well we have understood the concepts related to Customers and Competitors.

How Will You Teach This Section?

Each group chooses one business

From the list of businesses from sample businesses in 'Introduction to Business'

For each business, the group needs to:

(Mention that a good way to understand customers is to assume that you are starting a business. When we start a business, we don't have any customers but we do have potential customers.) Identify the different kinds of potential customers.



Now identify essential needs for the types of customers you have identified

- Identify which products/services you will offer
- Discuss how your product/service can be better than competition

Ask them to write their findings on a chart paper and present them



Provide comments on the presentations made by each group.

What will you say at the end of this section?

Depending on the quality of the presentations, you may have to highlight/repeat the key points discussed so far.

Section 7

Selecting products/services for business

This section introduces the participants to decisions about products/services of the business.

What will you say at the start of this section?

Ideally we should understand the customer, their needs, their behavior and their competitors before we decide on the products and services. But sometimes, we have already decided products or services based on what we can do. In such cases also, it is necessary to understand the customer, their needs and their competitors before we finalize the products and services. We will examine how to do this in this section.

How Will You Teach This Section?

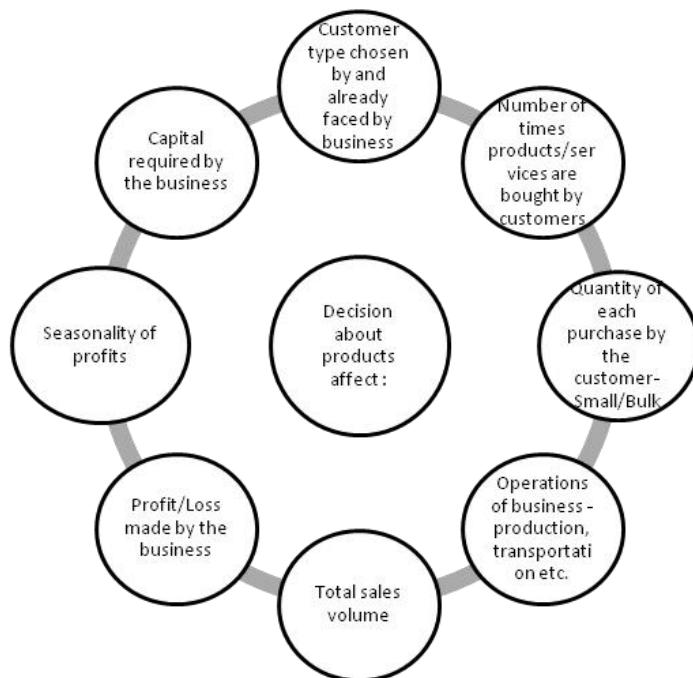
One of the most important decisions that a business makes is about which type of products (or services) to sell because it affects various important aspects of the business.



Before showing the participants what these aspects are, we need to make the following clear to them.

Sometimes for our products, we should search for customers who are interested in those products/services. Sometimes, for the customers we have found, we need to create products/services.

The decision about products affects the following: (as mentioned in slide 40 and 41)





We can ask the participants to list out some instances in day-to-day life in which a business has changed their products/services from what it was earlier.

Tell them these are examples of decisions about the products/services taken by the entrepreneur which usually has an effect on the factors mentioned above. Such decisions hence determine the business viability through these factors. This is mentioned in the key point.

Therefore, before making product/services decisions, a business must do a lot of thinking and only sell those types of products/services that meet certain criteria that we have discussed so far. These are mentioned in the next slide (slide 42).

Product selection criteria

Therefore, we can summarize with slide 42 that a product/service must be chosen so that:

- It meets essential needs of target customers
- It is better than competition in meeting at least some needs
- The business is capable of producing or buying such product/services
- It must help business be profitable consistently year after year

What will you say at the end of this section?

One can go from products to customer or from customer to products but it is important to understand the customer, their needs, their behavior and their customers in all these cases.

Section 8

Creating customer communication for the business



We saw in the last section the different things to keep in mind while producing or selecting products/services for the business. But producing the right products/services is not enough, we need to inform the potential customers about them. We will see this in detail in this section.

What will you say at the start of this section?

Once the products/services are made, the business must inform potential customers about them. Communication is the way in which we do this.

We will see this in more detail now.

How Will You Teach This Section?

From the first slide of this section (slide 44), we define ‘communication’ as the process of information being transferred from the sender (such as a business) to the receiver (such as a customer).

In the context of business, communication is the process by which the business transfers the information related to the features of the product or service to the customer.



Let us explain the following class exercise to introduce communication in business from slide 45.

Group 1 : You are from Ramu's Tasty Tea Shop. It is May and you feel that customers will want cold drinks. So you decide to sell nimbu pani, buttermilk, etc.

- Group 2 : You are from Leena's pickle business. You are making a pickle that has good medicinal properties. You want to increase sales to schools and have a meeting with school canteen committee.

- Group 3: You are from Namita's beauty parlour. You have just completed a course on new hairstyles. You want to increase your sales to brides and housewives.

Ask the participants to use the paper, sketch pens, photos from magazines to create a poster or a leaflet communicate your message.



This will help participants understand what communicating a product is about before we go into the details.

In the next slide i.e. slide 46, we discuss some key points regarding communication.



We must remember that just like there is competition for products, there will also be competition when it comes to communication. To stand-out amongst many communications, we must carefully select the message we communicate, and ensure that the communication is attractive and eye-catching.

Show some examples of eye-catching communications from the class exercise.



Also, just as there is a cost with improving products, there is a cost associated with communication to the customer

Ask the participants to mention what they think could be the possible costs of communication.



After listening to their answers, point out that costs could be in the form of time, effort and money. Therefore, it is very important to choose the right communication activity. This is especially true for a new business for which affordability is often the more important criterion. Given as key point.

Three steps for effective communication

Now that we have made sure the participants understand what communication means for a business, we move on to the next part of the section on effective communication.

We quickly list out the three steps on slide 47 and move on to the first step.



Steps 1 – Deciding on the objective

(Move to slide 49 for explaining this)



Explain to the participants that the most important part of a marketing communication is the objective of that communication or the reason why the business is investing time and money in the communication.

If the communication is answering this question clearly, then this means that the business is able to fulfill the first step in making an effective marketing communication.

Take the example of a school canteen. A stall in an exhibition has various products for sale such as tea, coffee, cold drink, snacks, sweets etc. It can use posters and leaflets to communicate with those who are coming to the exhibition about these products.



If the objective of the marketing communication is to increase sales of cold drinks in June, ask the participants to describe what kind of communication can be used? Ask them whether this will be different if the objective is to increase awareness of health benefits of milk and increase sales of milk? If so, why should it be different?



After listening to the answers, explain to the participants that the communication in the poster or leaflets will vary depending on the objective of the communication.

Therefore, the posters for the two different things in the above example will also be different. If the posters are made not keeping in mind the objective, it means that the objective of the communication is not clear and not communicated through the poster.

If the objective of a communication is not clear, we should first spend time thinking about it and deciding the objective. Given in key point.

Step 2 - Understanding the “target audience”



(Move to slide 51)

The audience for the communication consists of all the people whom we want the communication to reach. The target audience for the communication could be either all the target customer types for a product or business or some of them.

But if we are not clear about whom we want the target audience to be, we cannot have an effective marketing communication. This is because such a marketing communication could lead to some or all of the following:

Wrong activity	Wrong style/design	Wrong benefit
<ul style="list-style-type: none">☒ If we use wrong way to communicate: Potential and existing customers may not notice our communication☒ Even if communication maybe noticed by somebody, it will be completely ineffective if the receivers are those who are not a targeted customer type and are those who are unlikely to be a customer of the business.	<ul style="list-style-type: none">☒ If we talk about wrong benefit: They may not understand it or be able to relate to it☒ If the target customers are not able to understand the communication, then the purpose of the communication is not served and it is ineffective.	<ul style="list-style-type: none">☒ If we use wrong style or design to communicate then they may not like it

What we need to know about the target audience?

Just as in the case of product selection, the communication also needs to address certain needs of the target audience related to the product or service.

Therefore, after showing the second slide on ‘Understanding target audience’(slide 52), we need to elaborate the questions in the slide in the following way:



- i) We need to know the essential needs of the target audience related to the product/service first.
- ii) We need to know whether the competition satisfies those essential needs. In case the competition also satisfies those needs, we need to know the non-essential needs of the target audience that are being met by the business which makes it better than the competition.
- iii) We also need to know what message is most likely to bring about the kind of response we want.

The key point in the slide highlights points 2 and 3 above as we need to think about how to get the response that we want.

Step 3 - Decide on Communication Medium (slide 54)

The final step in making an effective marketing communication is to decide on the communication medium which is also the most visible aspect of the communication.

Before showing the next slide on different communication mediums,

Ask the participants to give some examples of communication mediums that they have seen elsewhere.



Then show the options for communication given in slide 54 such as Demo,



Leaflet, Poster, Getting satisfied customers to refer us to others, getting locally influential person to recommend product, articles in newspapers, etc.

Ensure that none of the options have been missed out by the participants during the discussion.



Each of these mediums takes a lot of effort and costs money. Hence, it is very important to choose the right communication activity. This is the cost of communication.

Checklist for the content in a Poster/Leaflet

Now that we have seen some of the basic steps needed for making an effective communication, let us see what are some of the essentials in the content that is put in a communication medium like a poster or leaflet.

Show slide 55.



The message content should contain the following sections:

1. Most important message (In addition to this, you can consider 2 minor messages)
2. A “call to action” (what do you want the target audience to do?)

3. Items required by law (e.g. weight, calories, expiry date, etc.)
4. Mention who you are, and contact details

We should keep in mind literacy levels of audience while deciding between pictures and words. This is part of the second step in effective communication, which is 'Understanding the target audience and determining the message'

What will you say at the end of this section?

Just because the business has products and services, it cannot expect customers to come and buy them. The business must make them aware of products and services. Customer communication is crucial in making this happen.



Ask the participants to recollect the three steps for effective communication once again before the end of the section.

The steps needed to make an effective marketing communication are:

1. Deciding on the objective
 2. Understanding the target audience and determining the message
 3. Designing and sending the communication
-



Ask them if any concepts in the module are not clear to them.



Run through the key concepts discussed in this module

If they have any doubts, clear them.

Now that we have seen the first C of 4C+E which is Customers and Competitors, we will turn our attention to the next C, which is Capabilities.

Making Products, Buying Products and Getting Ready to Provide Services

In the last module, we have discussed about customers and tried to understand their needs and behavior. Based on the needs and behavior, we decided how to select the products/services to be made. In this module, we look at how to make or buy these products and get ready to provide these services.

We will start this class by asking the students to recollect the criteria for selecting the products/services discussed in the last module. We will also ask the different ways in which the decision about products affect the business.



After we have recapped the points on this, we will move on to the first section.



This module introduces how to make or buy products and get ready to provide services to the participants in four sections. The following table summarises the sections and the topics covered.

The first and second column shows the order of the sections and topics covered in each section. The next column shows page numbers corresponding to each section in this chapter. The corresponding slide Numbers in the Classroom Teaching Aid are shown against each section. The pages in the Participant Handbook that have material linked to the topic are also shown.

Sections	Topics	Page Nos in this Manual	Slide Numbers
1	Introduction	118	3-4
2	Scheduling tasks in the business	119 –130	6-23
3	Planning inventory, capacity and supplier credit policy	131 – 134	25-36
4	Capabilities of the business	135 - 139	38-47

Section 1

Introduction

This section introduces the module to the participants. It gives the participants an idea about the key questions regarding this making or buying products and getting ready to provide services that will be answered in the rest of the module.

What will you say at the start of this section?



Show slide 3.

In the last module, we have understood customers of a business. We looked at their types and their needs. We have also looked at how we should be better than competitors. Finally, we looked at how to decide the product or the service that the customers want and which the business sells. Let us now look at how these products/services are made, bought or are made ready to be provided before we are ready to price it and sell it.

How Will You Teach This Section?



Show slide 4.

Tell the participants that answering the following questions help us understand how to make products and services.

1. Sequencing tasks in the business
2. Planning inventory, capacity and supplier credit policy
3. Using capabilities (skills, equipment, and time) for making/buying products and for getting ready to provide services

We will try to answer these questions in the rest of the module.

What will you say at the end of this section?

Answering these questions will help us understand the concept of inventory, which we will see in the rest of the module. Understanding inventory will allow us to understand how to ensure supply of products or services to our customers. But for us to do that, we need to look at what flow of tasks occur in a business before the products or services are finally delivered to the customer.

Section 2

Scheduling tasks in the business

Scheduling and Sequencing of production/services activities



This section explains about the different tasks in a business and their significance.

What will you say at the start of this section?

Show slide 6.



What we saw in the last section were the steps in making or buying products and getting ready to provide services. But any business will also need to do a few things before that and also afterwards.

How Will You Teach This Section?

When we think of all the tasks of a business together including the steps we have seen in the last section, they represent the “Operations” of a business.

All businesses, irrespective of whether they are a production, service, or trading business, have operations.

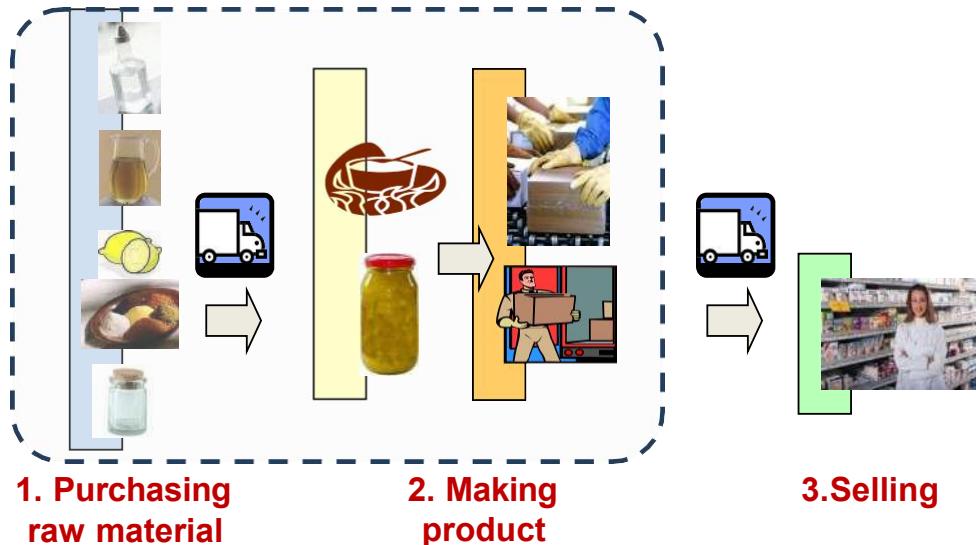
Let's look at the tasks or operations of the three types of businesses now.

Show slide 7.





Let us first look at a production business – Leena's Pickle business.



As we can see in the above diagram, there are a variety of tasks involved in pickle business. These have been broadly categorized into purchase of raw material task, making product task and selling task.

Let us see some of these tasks from the first two categories i.e. purchase of raw materials and making products that Leena is likely to take to make mango pickles.



Ask participants to think and say what the tasks could be.



Then show slide 8 and 9.

1. Purchasing raw material

- Leena goes to the wholesale market
- She buys 200 small bottles each with a capacity of 0.5 kg of pickles.
- She also buys 10 kgs of oil and spices.
- She plucks 140 kgs of raw mangoes from her orchard
- She transports the raw mangoes and other raw materials in a tempo to her home

2. Making product

- She washes, cuts and dries the raw mangoes
- Mixes the cut pieces well with salt and chilli powder
- Fills the mixture in large glass bottles which she already had from last year.
- Adds oil to the large bottles as preservative and tightly closes the lids
- Keeps the large bottles in the sun and shakes them once a day
- After 30 days, fills 200 small bottles with the pickles from the large bottles and leaves the remaining in large bottles for selling in loose quantities



Ask the follow question and explore answers from the students

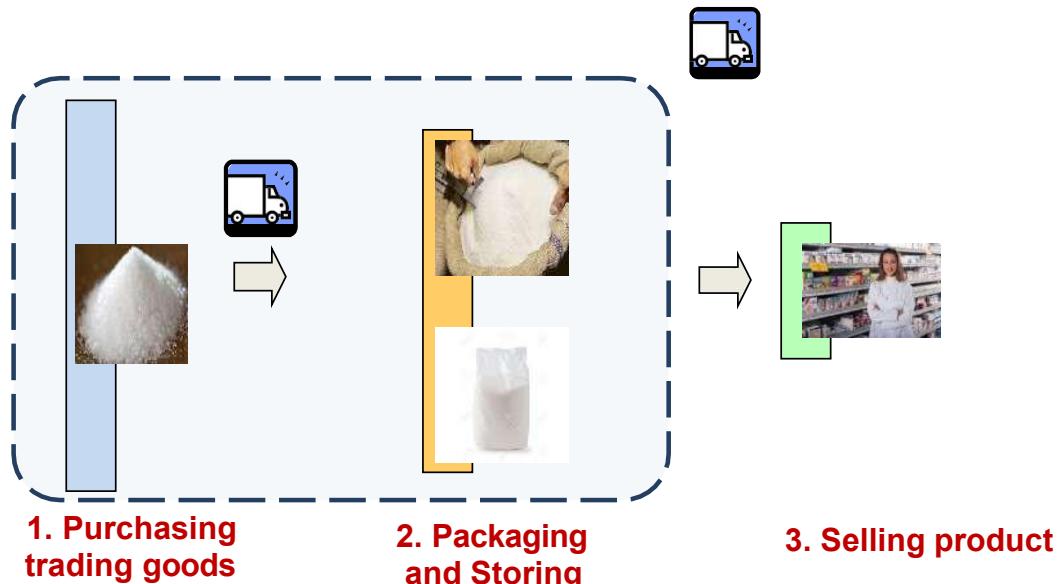
How does the business know what quantities of different raw materials needs to be purchased?



We will use these tasks later in the module to understand capabilities of a production business (the skill, equipment and the time needed)

Let us now look at a trading business – Kanku's General store.

Show slide 10.



As we can see in the above diagram, there are a variety of tasks involved in Kanku's General store business. These have been broadly categorized into purchasing trading goods tasks, packaging and storing tasks and selling tasks.

Please point out to the participants that in the case of trading business, the raw materials will be called as trading goods.



Let us see some of these tasks from the first two categories i.e. excluding selling that Kanku is likely to take.

Ask participants to think and say what the tasks could be.



Then show slide 11.



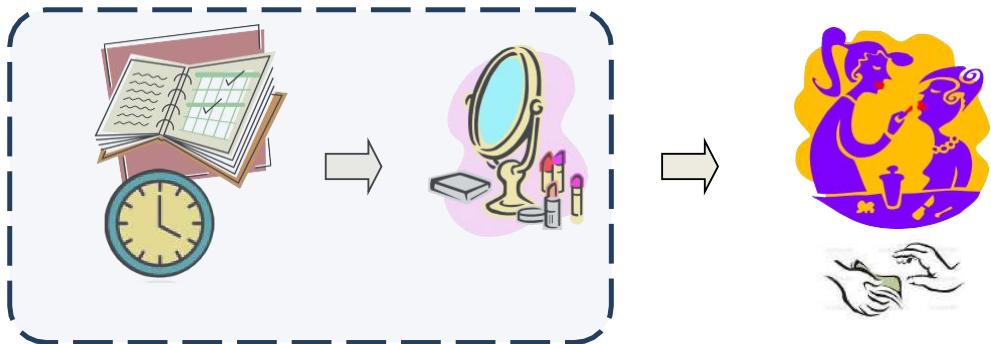
1. Purchasing trading goods
 - a. Kanku takes a bus to go to the wholesale market
 - b. She goes to the shop in the wholesale market
 - c. She buys a bag of 10 kgs of sugar along with a few other things
 - d. She takes the bus back to her village
2. Packaging and storing
 - a. She empties the sugar into a storage box
 - b. She keeps ready empty packets to put the sugar in at the time of sale

We will use these tasks later in the module to understand capabilities of trading business (the skill, equipment and the time needed)

Let us now look at a service business – Namita's Beauty Parlour.



Show slide 12.



1. Capacity planning (including a, b, c)

2. Purchasing raw materials

3. Sales and Delivery of service

As we can see in the above diagram, there are a variety of tasks involved in Namita's Beauty Parlour business. These have been broadly categorized into capacity planning, purchasing raw materials, and sales and delivery tasks.

Let us see some of these tasks from the first two categories i.e. excluding sales and delivery of service that Namita is likely to take.



Ask participants to think and say what the tasks could be.



Then show slide 13 and 14.

In a pickle business, Leena is able to make the entire quantity of pickle once. She then is able to sell it to the customers as and when needed.

Unfortunately, Namita will not be able to do this in her business since it is a service business.

Therefore, we will see how she has to plan her tasks.

1. Capacity Planning

Capacity planning is about deciding what services we want to offer and to how many people we want to serve?

- First she realizes it will take about one hour to serve one customer
- She knows she can spend four hours in a day on the business. But, she wants to work for only 3 days in a week.

c. Based on the previous two steps, she knows that she can serve 12 customers per week

2. Purchasing raw material

Based on the capacity planning, the business has to purchase the correct amount of materials and arrange workers needed to provide the services.

- a. Namita asks her aunt to send her the issues of this month's fashion magazines
- b. She goes through the fashion magazines and selects 4 beauty preparations such as hairstyles, make-up etc.
- c. She assumes that out of the 12 customers, 3 customers on an average will use each beauty preparation
- d. She makes a list of items needed
- e. She takes a bus to go to the main market and buys the material on her list
- f. She comes back and stores the material in her parlour

Ask the participants to once again repeat the tasks for getting services ready in Namita's beauty parlour.



Ask the following question in the slide and explore answers from the students



How does the business know how to set its capacity?



We will use these tasks later in the module to understand capabilities of a service business (the skill, equipment and the time needed)

It is very important for a business owner to be clear about how the products of the business are made/bought or services made ready to be provided. This is because it is one of the most important tasks of any business.

Understanding how products or services are made helps in identifying capabilities (skills, equipment, and time) needed for the business to produce/buy these products or services.



Along with the different tasks, how these tasks are scheduled is also equally important, as we have seen while listing out the tasks for different types of businesses.

Scheduling is about deciding what to do when. Put in other words, it involves deciding a sequence of operations. A business has to 'schedule' different tasks in such a way that it is able to meet its 'targets'.

This means deciding on which task should be done at which point of time, which task would follow another, and the overall scheduling of tasks.

In the examples we have seen, targets could be:

1. Making 200 small bottles of 0.5 kgs and 50 kgs of loose quantity of mango pickle
2. Getting 10 kgs sugar ready on Sunday to be sold during the week in loose in packets
3. Doing beauty preparation for 12 customers in a week

It is, therefore, a good idea for each business owner to think about scheduling required in the business.

Incorrect scheduling may lead to delays, wastage and wrong results.

For example, adding oil to the entire jar of pickle instead of bottles may save time. But if there is some problem with the oil then the whole jar will spoil. But if we pour oil after putting the pickle in bottles then we can reduce spoilage

Thus,

- ❑ The right scheduling leads to achievement of desired results
- ❑ Incorrect scheduling leads to failure, wastage, or delays

So, we must arrange operations in the right order to achieve the set results. But where do we start? How does a business decide on the first operation to start with?



Now let us see some types of scheduling. Move on to the next slide (slide 16)

Forecast Based Scheduling

We have seen that scheduling is done in keeping with specific business situations. Suppose we have a business that makes a product like soaps. Assume that our customer needs a particular number of this product. We also know 'when' the customer wants the products. How can we do the scheduling of operations for soap production in this case?

Here we know that the customer wants a particular number of soaps at a specific time. So, the immediate need of the business is to make the product available.

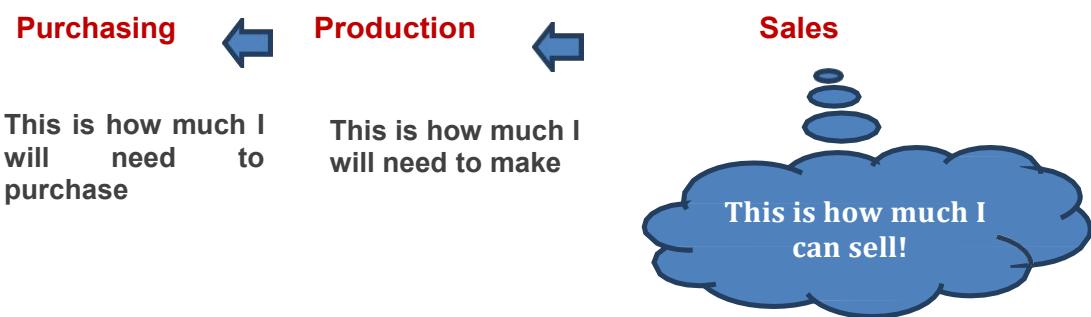
When we know how much the customer needs, it helps us decide how much to make, and which in turn helps us decide how much raw material I should buy.

For this, we have to schedule the operations needed for making the product in such a way that we deliver the correct quantities of soaps at the required time.

This type of scheduling is called forecast based scheduling. How much product the customer needs and when the customer needs it will drive all the operations of operations for the business. The starting point of the sequence of operations is 1) which product? 2) how much? 3) when?

In most products and services business, we follow forecast based scheduling.

Use the following illustration to highlight the different stages in forecast based scheduling starting with sales.



Ask the participants to note the direction of the arrows in the illustration.



Forecast based scheduling helps in matching the production outputs to the demand.

Explain this keypoint on the slide to the participants as given below.



The ideal situation is when we know how much quantity to produce; or when the customer has placed orders for the product. Usually, we may have to assess the demand based on past experience and given situation.

At the end of slides for Forecast Based Scheduling, highlight that this is necessary when business is driven by customer demand (customer ordering set of clothes, based on which cloth is ordered).

Availability Based Scheduling

Is forecast based scheduling possible for Leena's Mango Pickle business? Suppose Leena gets an order for 25 kg of mango pickle in August, when mangoes are not available. Obviously, Leena cannot deliver the product then. In Leena's case, the entire operations of the business has to be scheduled as per the availability of raw materials.



This type of scheduling is called 'Availability based scheduling'.

Now show slide 17.



In availability based scheduling, we typically have only a certain amount of raw material or time available to work. The sequencing of operations is based on resources becoming available.

For example, taking the example of rice or wheat. The demand for these items will be throughout the year. But, availability of these items or water and labor for its production will be only during specific seasons. In such cases, we use 'Availability-based scheduling.'

Until and unless these resources become available, no operations can be scheduled. In other words, the specific situation for scheduling here is the availability of resources. The starting point of the sequence of operations for availability based scheduling is 1) which resource? 2) when is it available? 3) how much of it is available? Based on these three considerations, the business can commit to making products or delivering services.

These kind of situations are common for businesses that are based on agricultural produce. Seasonality of produce is the very nature of agricultural production.

- ❑ Mangoes are available in summer
- ❑ Tomatoes are available in winter
- ❑ Rice and wheat are grown usually twice a year; so there could be two harvest seasons

In the case of Leena's Mango Pickles, demand for pickles (finished goods) may be there throughout the year. However, she has to do the scheduling according to the season when mangoes are available. Similar is the case with tomatoes, rice, wheat, lemon, and other agricultural produces. Business has to do availability based scheduling in these cases.

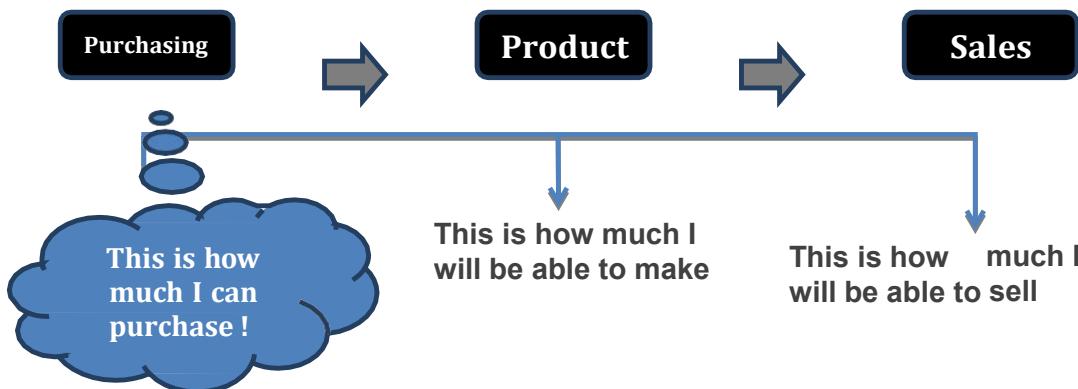


Show slide 18

In Availability Based Scheduling, it is the availability of resources that govern how much to produce and how to sequence the operations.

Unlike in the case of Forecast Based Scheduling where the quantity of products demanded or likely to be demanded by the customers govern the sequence of operations.

Use the following illustration to highlight the different stages in availability based scheduling starting with purchasing.



Ask the participants to note the direction of the arrows in the illustration.

1. We first assess how much raw materials we can purchase or how much labour we can hire or how much working capital we can mobilize.
2. Based on this, we make the purchase plan and execute it. Production is based on how much resources are available.
3. How much we can sell will depend on the above; and also on the demand for the product too to some extent.



For Availability Based Scheduling, highlight that this is necessary when business is driven by availability of resources needed to make a product or service (Availability of mangoes as per season and harvest determining availability to make jam or pickle).

It should be explained clearly to the participants that even in the case of availability based

scheduling, some bit of forecasting is still needed.

Let us look at the examples for scheduling in the case of a production business, a trading and a service business.

Show slide 19.

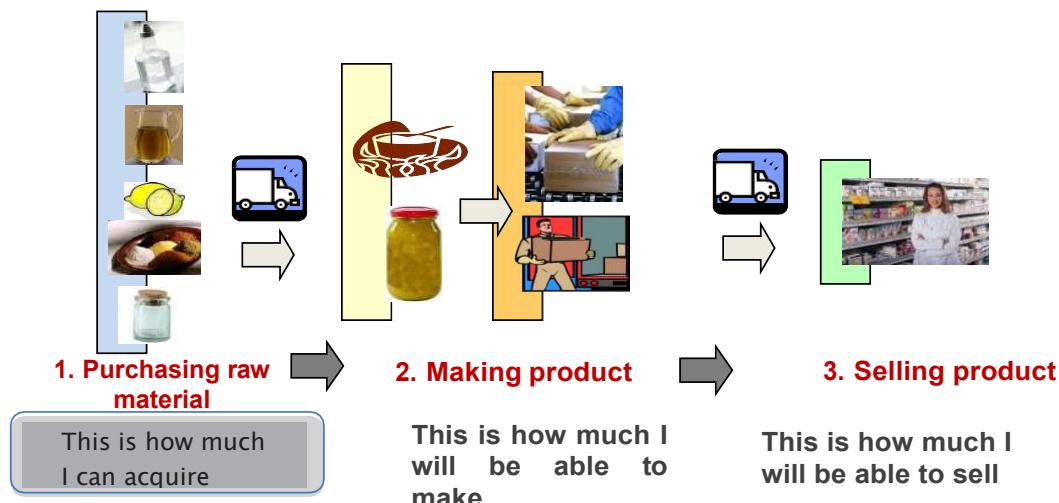


Let us start with the case of Leena's pickle business – a production business.

Ask the participants whether Leena's Pickle business have forecast based or availability based scheduling?



As we have seen before Leena has limited raw material i.e. mangoes in certain seasons, so she should use availability based scheduling.



Discuss the above illustration and point out how Leena is limited by how much she can acquire. This decides how she will produce and sell.



Leena will still need to forecast how many bottles of pickles she can sell although the deciding element is the availability of raw materials, labor etc.

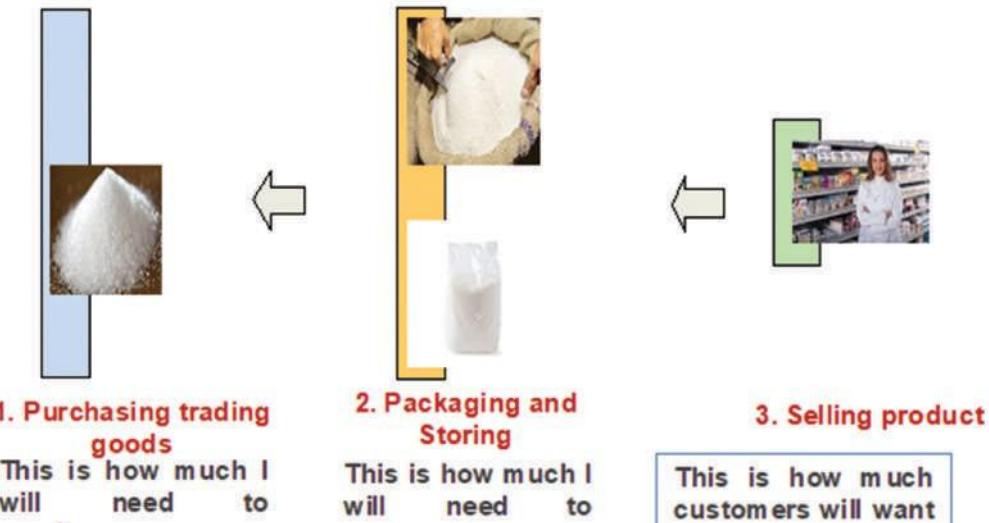
Show slide 20.



Let us now look at the case of Kanku's General store – a trading business.

Ask the participants whether Kanku's General store will have forecast based or availability based scheduling?





Discuss the above illustration and point out how Kanku is limited by how much her customers want to buy. This decides how she will purchase and pack/store.

As we have seen before, since Kanku knows how much the customers will need, she should use forecast based scheduling.

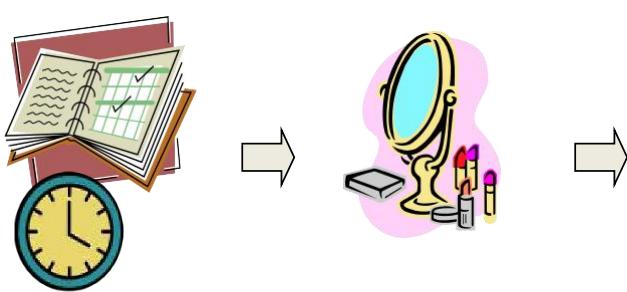


Show slide 21.

Let us start with the case of Namita's beauty parlour – a service business.



Ask the participants whether Namita's beauty parlour will have forecast based or availability based scheduling?



1. Capacity planning(including a, b, c)

This is how much capacity I have to service customers

2. Purchasing raw materials

This is how much I will be able to purchase

Sales and Delivery of service
This is how many I will be able to provide service to

Discuss the above illustration and point out how Namita is limited by how much capacity she has, in terms of time etc. This decides how she will be able to purchase and how many customers she can provide services to.



As we have seen before, since Namita has limited capacity, for example – time, to serve customers, she should use availability based scheduling.

What will you say at the end of this section?

Revise the key tasks of a production business, trading and service business by asking the participants.



Summarize the tasks shown in the pictures below.



Operations overview of a trading business

Remind the participants that for a trading business, products are bought, then packed, stored and sold instead of being made.



Emphasize that it is important for a business to plan how much material and workers are needed to make a product or provide a service. Equally important is the demand of the customers. This is where the two kinds of scheduling comes in.



Revise the two types of scheduling using following key points on slide 22.

- Forecast Based Scheduling helps to prepare the business to meet the customer's needs. The deciding factor here is what the customer needs.
- In 'Availability based' Scheduling availability of raw materials and labor decide how much a business may be able to make and sell to the customers. The deciding factor here is the availability of raw materials and labor.



Also convey the following key point on slide 23 to the participants.

Although one of the two types of scheduling might be more suitable to a particular business depending on the specific tasks of the business, both forecast based and availability based scheduling can be applicable for production, trading and service businesses.

We have seen that knowing about scheduling brings us to a crucial point on capacity building. Ensuring that the business has the right capacity to meet its needs will help our business generate profits consistently.

We will look at capacity more closely now.

Section 3

Planning inventory, capacity and supplier credit policy



What will you say at the start of this section?

Show slide 25.



We have now understood the tasks involved in different types of businesses and how they need to be scheduled.

All of these cost money and we have limited money. Therefore, we have to manage the available money properly to ensure smooth running of the business.

Inventory is one area which we need to manage well so that money becomes available for other things in business. We will learn about inventory in this section.

How Will You Teach This Section?

Lets look at the 3 businesses:

1. Namita had to decide how much raw materials were needed for beauty preparation
2. Kanku had to decide how many small packets of sugar she needed to keep ready
3. Leena had to decide how many small bottles of pickles she needed to keep ready for selling

Namita's raw material, Kanku's small packets of sugar and Leena's small bottles of pickle are examples of inventory.

Inventory is the materials that we keep for the business.

There are three types of inventory in businesses. Let us see what they are.



Show slide 26.

- ☐ Raw Materials are those things which are used to make products
- ☐ Things that are sold to the customer are called Finished Goods.
- ☐ When Raw Material is being converted into the finished goods, the things are called (Work-In-Progress)(WIP)



Remind the participants using the key point on slide 26 that any of the three types of Inventory is also called as Stock.

Let us look at these three types of inventories in the three types of businesses we have seen so far.

Let's first look at Leena's pickle – a production business.

Leena looks at her target sales based on forecast based scheduling and she decides how much of the following inventory she needs to keep:

- ☐ Finished Goods – Pickles in small bottles, Pickles sold in loose quantity
- ☐ Work In Progress – Cut mangoes, Oil and spice mix
- ☐ Raw Materials – Oil, raw mangoes, spices

Let's now look at Kanku's General store – a trading business.

- ☐ Kanku looks at her target sales based on forecast based scheduling and decides how much of the following inventory he needs to keep:
- ☐ Finished Goods –Rice, wheat, sugar sold in loose in small packets
- ☐ Work In Progress - None
- ☐ Trading goods– Loose

The raw material good in the case of a trading business is the actual good being traded and later sold to the customer. We will call this trading goods.

In this case, we can see that Kanku has no work in progress inventory. This is common for most trading businesses.

Let's now look at Namita's beauty parlour – a service business.

Namita looks at her capacity based on availability based scheduling and decides how much of the following inventory she needs to keep:

- ☐ Finished Goods/service – Facial, Haircut
- ☐ Work In Progress – Facial mix
- ☐ Raw Materials – Dye ingredients, Shampoo, Soaps, Cream



We will now give the exercise on slide 30 to the participants to see how they apply the learning on inventory on a business of their choice.

Ask the participants to identify finished goods, work-in-progress and raw material inventory for a business of their choice.

Choose a few participants to present to the class.

Highlight the following key point on the slide that in most of the businesses we deal with, the inventory is likely to be either raw material or finished goods.

Show slide 31.



Deciding the level of inventory needed in the business

In each of the three examples we saw, the owners had to put their own money to buy bottles, sugar, raw materials for beauty preparation etc.

Hence, we say that the business's money is locked in the inventory.

The most common way in which money can get locked up is in inventory. Money is only released when inventory is sold. In order to manage a business well, we have to ensure that we are not locking money up unnecessarily in inventory that we cannot sell. Every business must try to reduce the amount of money locked in the inventory

This will depend on three types of costs with respect to inventory.

We will now explain the costs associated with inventory by showing slide 32.



Businesses spend money on inventory in three ways:

1. To buy inventory
2. To transport inventory
3. To store inventory including damages, wastages etc.

Depending on the three types of costs, businesses must decide how much raw material, WIP and finished goods it must keep.

Shown as key point in slide 32.



While running a business, at different points in time, we will need to balance these considerations. We can reduce the costs by having lesser inventory but we also need to ensure that we do not have too less inventory that prevents us from delivering products and services.

Ask the participants to recap what they have learnt about inventory so in brief.



We will then use the key points on slide 33 to conclude by talking about the 3 kinds of inventory - raw materials, work in progress and finished goods.



We also need to point out that in the type of businesses we usually handle, our concern is most likely to be with the stock of raw materials and finished goods. Work-in-progress inventory is typically very small in value.

Inventory is important to ensure that the right level of materials is available to deliver our products or services to our customers. However, as we have seen, there is an impact on business if inventory is more than required - representing locked money or less than necessary - leading to less sales.

Impact of inventory on customer responsiveness

When we have the right type and quantity of products we can meet customer needs quickly. This is called customer responsiveness. For good customer responsiveness, the business should have adequate products in the required quantity to meet the customer demand.

But when we try to do this, for any business, there are three things that are in conflict with each other

1. Inventory cost
2. Production cost
3. Customer Responsiveness

For example:

1. If a business reduces inventory, then customer responsiveness reduces
2. If the business buys only that quantity of raw material that it needs for the day, it will increase the cost of transportation and hence the production cost per unit will go up

Every business must try for high levels of customer responsiveness but this is possible only when the business has adequate inventory. But, that means businesses money will be locked in the inventory. To reduce the money of the business locked in the inventory, the business must negotiate and take credit from its raw-material suppliers.

A business has to thus balance all these 3 considerations by carefully deciding what to do with inventory.



Emphasize this using the key point and explaining the following situations.

In short,

- ☐ If we do not have enough raw materials, production will suffer
- ☐ If we have too much raw materials, money gets held up
- ☐ If we do not have enough finished products, customer responsiveness suffers
- ☐ If we have too much finished products, again, money gets held up

Taking Credit from Suppliers and Controlling price



Show slide 36.

We have seen that the business can negotiate and take credit from its raw-material suppliers to reduce the money of the business locked in the inventory.

To achieve that, the business can do one of the following things:

1. Ask the supplier if he is willing to accept payment later
2. Ask the supplier to reduce the price per unit but offer to pay money quickly

The first will help the business use its money for a longer period while the second one will help the business reduce its costs.



What will you say at the end of this section?

Ask the participants to recap the 3 ways in which inventory impact customer responsiveness. Also ask them to list two ways in which business can reduce the money locked in the inventory by negotiating with supplier.

Section 4

Capabilities of the business



What will you say at the start of this section?

Show slide 38.



Capability is the third C in the 4C+E model. Understanding capability will allow us to determine what resources will be needed to ensure our business runs smoothly and generates profits.

How Will You Teach This Section?

Show slide 39 and use it to explain



How capabilities from 4C+E is linked to our three businesses:

1. Namita needed to know the fashion styles
2. Leena needed large bottles to mix the cut mangoes with spices and oil
3. Kanku needed 6 hours to go to the market to buy sugar and come back

Tell the participants that these are collectively known as capabilities.

A business needs capabilities to make its products or deliver its services and to become successful.



We saw in the chapter on ‘Introduction to business’ that capabilities include skills, equipment, and time that people can put into the business.

Capabilities define what a business is able to do.

Let us look at the capabilities of Leena’s pickles – a production business.



Show slide 40.



Ask the participants what could be the capabilities of Leena’s pickle.



Then explain the following on slide 40.

Skills	Leena should know how to make pickles well
Equipment	She needs jars, spoons, knife etc.
Time and effort	She should be able to give 3-4 hours for making pickles everyday

Let us look at the capabilities of Kanku’s General store – a trading business.



Show slide 41.



Ask the participants what could be the capabilities of Kanku’s General store.

1. Skills – Kanku should know how to handle money and where each item is kept
2. Equipment – He needs shelves, large boxes etc.
3. Time & effort – He should be able to give 3-4 hours in the morning and 5-6 hours in the evening.



Ask the participants what could be the capabilities of Maya’s Fruit shop given as a question on the slide.

Discuss the following after the participants have given their answer.

Skills	Maya should know how to negotiate with suppliers and customers
Equipment	She needs a weighing balance
Time and effort	She should be able to give 5-6 hours a day

Let us look at the capabilities of Namita's Beauty parlour – a service business.

Show slide 42.



Ask the participants what could be the capabilities of Namita's Beauty parlour.



1. Skills – Namita should know latest beauty preparation
2. Equipment – She needs scissors, chairs, combs etc.
3. Time & effort – She should be able to give 3-4 hours everyday

Now that we have seen examples of capabilities for different businesses, let us see how to check whether our business has the relevant capabilities and if not, what the business needs to do.

We will begin by looking at skills.

Show slide 43.



If we don't have the necessary skills then, what are the options?

1. We can learn them quickly or
2. Employ a skilled person

In Namita's beauty parlour, for example,

1. Namita must already know latest beauty preparation Or
2. She needs to learn quickly Or
3. Hire someone who knows latest beauty preparations

Let us look at equipments now.

Show slide 44.



Equipment can help our business to make things quickly and easily. So they increase our capability
A business can consider:

- Renting the equipment or
- Buying the equipment

For example, If Leena plans to make pickles every year, she should buy the large glass bottles. Else, she should borrow such large bottle from neighbours by paying them a small amount.

Let us now see when we should choose to buy an equipment and when we should rent an equipment.



Show slide 45.

How does one decide whether to buy equipment or rent them?

In the early stages of a business, it is better to rent equipment (vehicle, machine, office etc.) rather than to buy. The money required in renting is much less than buying so it reduces the risk in the beginning. This is because the business might not have the lump sum required to buy an equipment at the beginning.



Highlight the following key point from the slide:

During the early stage of the business, it is often better to take on a recurring cost of renting rather than a lump sum cost of buying the equipment

Once business is successful, it can buy a new or used equipment. This will help in reducing regular costs involved in paying rent for the equipment.

The last type of capability we will look at is time and effort.



Show slide 46.

Business is successful only when the owners spend time and also make sincere efforts for that time.

If we do not give the required time and effort to the business, it affects our profits.

In Kanku's General store, for example, if Kanku doesn't have time:

- Kanku should consider employing somebody
- Since Kanku has to spend 6 hours to purchase, she can do it once in a month but then inventory costs will go up.
- She can hire a person to do this by paying money
- She can plan such that she makes 6 hours on a particular day of the week



Show slide 47.



We will now give the exercise on slide 47 to the participants to see how they apply the learning on capabilities in a business.

For Namita's beauty parlour and Kanku's General Store: (Each group can choose one of the two businesses)

- Identify all capabilities (skills, equipments, and time & efforts) required
- Write your findings on a chart paper



Present your findings to the group

When groups present their findings from class exercise, also try to bring out impact on business due to lack of availability of these factors on the business.

What will you say at the end of this section?

As a business owner, it is important to note that in each of the aspects of capability (Skill, equipment and time/effort), there needs to be a careful consideration on whether these are present in the business or not. Even if these are not, is it possible to acquire them from outside. In such cases, availability and cost of these aspects is something that should help us decide whether we can make and sell a particular product or service. But fundamentally, if skills, equipments and time & effort aren't available, it may raise questions on our ability to run the business.

Pricing Products and Services

In the last module, we have seen how the business makes products/services. Price of these products or services made and sold by the business is a very important factor that determines the profit made by the business. A wrong price can lead to lower profits. Higher prices can result in lower amount of product/service being sold; lower price will result in lower revenue. In the 4C+E framework, price thus connects directly with Costs & Profit. In this module we will see how the CRP-EP can help a business set the right price for its products/services.



We will start this class by asking the participants about prices of different products or services commonly seen. Take one such product and ask the participants what they think is the basis for setting the price.



Write some of these points on the board.

This module introduces the concept of pricing for products and services to the participants in four sections. The following table summarises the sections and the topics covered.

The first and second column shows the order of the sections and topic covered in each section. The next column shows page numbers corresponding to each section in this chapter. The corresponding slide Numbers in the Classroom Teaching Aid are shown against each section. The pages in the Participant Handbook that have material linked to the topic are also shown.

Sections	Topics	Page Nos in this Manual	Slide Numbers
1	Definition of terms used	141-142	3 - 5
2	Steps in pricing	143-147	7 – 16
3	Verifying the price	148-151	18 – 25
4	Discounts	152-154	26 - 32

Section 1

Definition of terms used



This section introduces various common terms associated with pricing of products and services. This will help the participants to better understand the other sections in this module.

What will you say at the start of this section?

To begin with, we will once again refresh the 4C+E framework in the class.

Ask the participants which of the C's we have seen so far and what is the next C.



Now show slide 3 and tell them we will look at the third C – Cost and Profits in this module.



How Will You Teach This Section?

Before we show slides 4 and 5 which introduces the different terms, we will ask the participants their understanding of the various terms and write some of these down on the board.





Now show slide 4 and 5 explaining each term as you go while moving from slide to slide. When defining the terms from the slide, we will point out what was missing in the earlier definitions. We will also point out important parts of the correct definition.

The process of deciding on the price at which a business would sell its product or service is called 'Pricing'. For any business, the revenue that it generates depends on the price and the number of products or services that it is able to sell. Therefore, price of the product is critical for any business.

Pricing – Definition

Pricing is the process of deciding on the price at which a business should sell its product or service.

Before getting on to the price setting process, let us make sure that we understand a few important concepts carefully. This will be useful in appreciating the process.

What is Price?

- ❑ Price is the amount of money that a customer has to pay for a product or service.

The next concept we need to understand here is 'Cost'. What is cost?

- ❑ Cost is the amount of money it takes to produce the product or service

Is it the same as price? Alternatively, can a business sell its products or services at the cost that it has incurred in making or offering them? Intuition tells us that the business cannot do that. Why? Because if a business sells the products or services at the cost, it cannot make profits. So, it has to sell the products and services above the cost.

What is Profit?

- ❑ Profit is what a business earns over and above the cost of producing products or services
- ❑ Profit is Revenue (Sales) minus total costs.

What is Revenue?

- ❑ Revenue is the money earned by the business by selling products or services.
-

Key Concepts in understanding Pricing

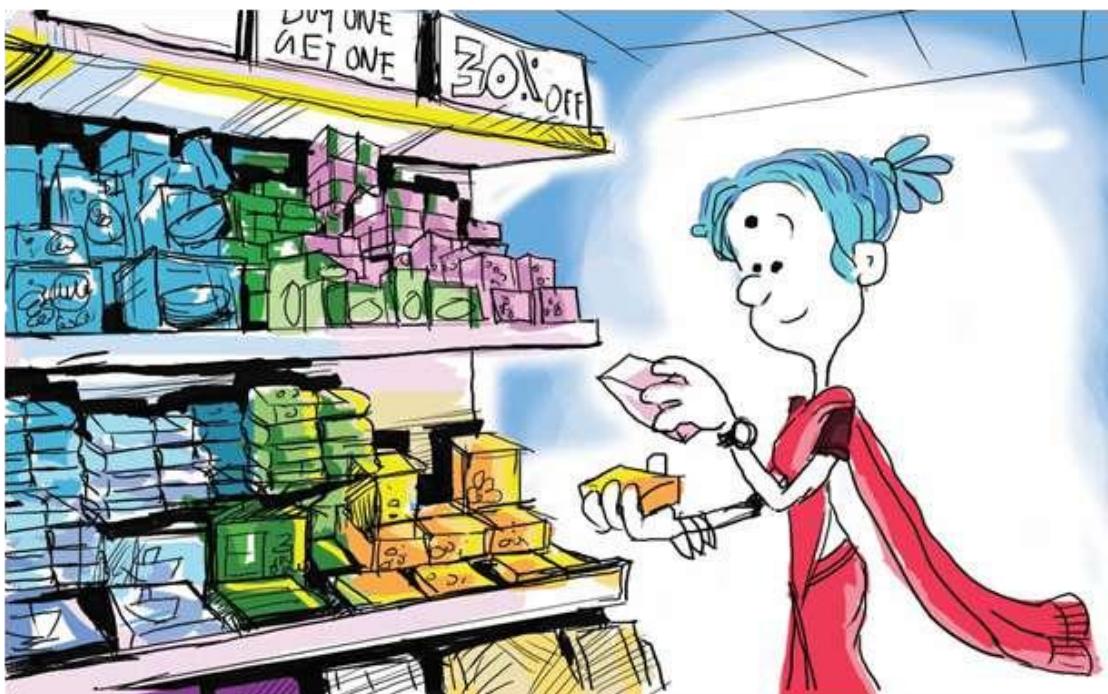
- ❑ Price is the amount of money that a customer has to pay for a product or service
 - ❑ Cost is the amount of money it takes to produce the product or service
 - ❑ Revenue is the money earned by the business by selling products or services.
 - ❑ Profit is Revenue (Sales) minus total costs.
-

What will you say at the end of this section?

It is important to use the terms like price and cost correctly. In common usage, they may be used inter-changeably, but the CRP-EP should be able to use the right word to mean the right thing.

Section 2

Steps in pricing



In the last section, we got an idea about the main terms related to pricing. We will now move on to the sections that will help us understand more in detail about pricing for a business. In this section, we will look at the various considerations we need to look at and steps needed for setting the price.

What will you say at the start of this section?

We will now look at the steps involved in setting the price for a product/service.

How Will You Teach This Section?

Before showing slide 7, ask the participants the following questions.

- ❑ At what price can the business sell its product or service?
- ❑ At what price will customers buy its product or service over those of others?



After listening to a few answers, explain the following by showing slide 7.



To answer these questions, a business must know about other products or services that are similar in the market.

- ❑ What are the other options that customers have while considering a product or service? These other options are called ‘competition’ for any business.



Highlight linkages to A – 2a – Understanding Customers (customer needs, competitors) module while referring to competition

What are the products or services that the business must compete with to win over customers?

The second question the business must address is whether the price would be affordable for the customers. If the customers feel that the price is too high, beyond their affordability, they would not buy the product or service.

Once the business knows its competitors' prices and has reached a judgement on whether the customers can afford it, it must check whether the price makes sense for the business. What does it mean? It means that the price that a business fixes for a product or service must help it generate the required level of profit.

To summarise, while setting the price of products or services, a business has to consider three things.

1. Competitor prices
2. Affordability for the customers
3. Target profit for business

Considering these three aspects and setting the price for products or services is a task that has to be executed very carefully. A business cannot afford to go wrong in this. If the price is too high, customers may go for other products. If the price is too low, the business may fail to generate profit.

Three things that a business has to consider while setting the price of its products and services:

- ❑ Competitor prices
 - ❑ Affordability for the customers
 - ❑ Target profit for the business
-

A business will be able to sell its products or services at the right price, attract customers, and encourage them to prefer its products or services over that of its competitors', while it makes a reasonable level of profit. Then, the question is, what is the right price? How can a business set the right price?

In this section, we will learn the steps for setting the right price.



Highlight linkages to A3 – Understanding Customers (customer needs, competitors) module while discussing the steps.

Steps for Setting the Price

A business has to follow a process, involving certain steps, for setting the price of its products or services.

Show slide 8.



Step 1: Determine prices of similar products or services which are typically bought by the target customers. When a business plans to make a product or service, it is always for a set of 'target customers'. These are the customers that the business targets to sell its products or services. In a market, these target customers might be already using these products or services. The business needs to first get an idea about such products and services and the prices at which they sell at the market place.

Step 2: Check whether target customers consider the business's product or service to be better, the same, or worse than those of its competitors. This definitely takes some effort, the business may have to introduce its product or service to customers and assess their responses. This is the most critical aspect in pricing as the success of product or service in the market would depend on the perception of the customers and what price they would attribute to the product or service.

Step 3: Set a price for the product or service relative to a competitor product. Here the business may have to go by the customer perception mentioned above. It can fix the price,

- a) Higher than that of the competing product or service if customers believe its product or service is better.
- b) Lower than that of the competing product or service if customers believe its product or service is worse.
- c) Equal to the price of the competing product or service if customers believe that the products or services are the same or similar in quality and use.

We will now use the example of Anjali Neem Soaps given in slide 9 to explain how to apply the above steps to the participants.



Anjali Neem Soaps

Anjali owns a small business that makes neem soaps. Can we help her to decide on at what price she should sell her soaps?

As we have already seen, Step 1 is to determine prices of similar products or services which are typically bought by the target customers. How can Anjali do that?

Show slide 10.



There are so many varieties and brands of soaps available in the market. It does not make sense for her to compare her soap with every other soap available in the market. It is not even practical to do that as there are too many of them. So, she has to be selective.

Which are the soaps that are similar to her neem soap? Or who are the customers likely to buy a similar soap? Which are the soaps that they are buying at present? In other words, Anjali has to assess which are the competing products to her neem soap.

Anjali went to the market and looked at the soaps that are available there. She saw the following products.

Category of soaps	Brand and Product	Retail Price for weight (MRP)
Neem soaps	Gandhi Ashram Neem	Rs. 45
	Margo Neem	Rs. 30
Other herbal or handmade	Gulhar Coconut	Rs. 63
	Krishna Eco Soaps	Rs. 60
National brands	Lux Rose	Rs. 15
	Lux regular	Rs. 12
Local brand	Raj mahal	Rs. 10

Show slide 11.



From among the soaps she saw at the market place, which are the ones that she has to compare her soap with, from a customer's perspective? Should she compare only with other neem soaps, which are Gandhi Ashram Neem and Margo Neem? Or should she include other soaps that are similar, such as Coconut soaps and eco-soaps? Or local brands? Should she consider national brands, which appeared to be priced lower than neem soaps and similar products?

Show slide 12.



Let us go back to Step 1 again to help Anjali out here. Step 1 is to determine prices of similar products or services which are typically bought by the target customers. Once she does that, she has to check whether target customers consider her neem soap to be better, at the same level, or worse than the competitors'.

Show slide 13.



This is comparing the quality perception of potential customers. Anjali identifies five customers who are regular buyers of neem soaps. These five people tell her that her soap was similar to 'Gandhi Ashram Neem Soap' in terms of quality. However, they usually never buy that soap because it was too expensive. They say her soap was also similar to 'Margo Neem', but that the shape and packing were not so nice with Anjali's soap.

Ask the participants whether price of Anjali's soap should be similar to Gandhi Ashram (Rs. 45) or Margo soap (Rs. 30)?



What price should Anjali set and why?

Show slide 14.



By now, Anjali has completed the first two steps.

Ask a participant to explain in brief what the first two steps were.



Show slide 15.



Based on the third step, the price should not be as high as Gandhi Ashram or Margo neem.

So she decides to sell her neem soap at Rs 25 per piece.

Is this a good idea? What all should Anjali think about, now that she has set the price?

Highlight the key point on the slide that although we have seen an example for setting the price of a product, the same steps apply for setting the price of a service as well



What will you say at the end of this section?

Use key points slide 16 to once again revise all three steps briefly.



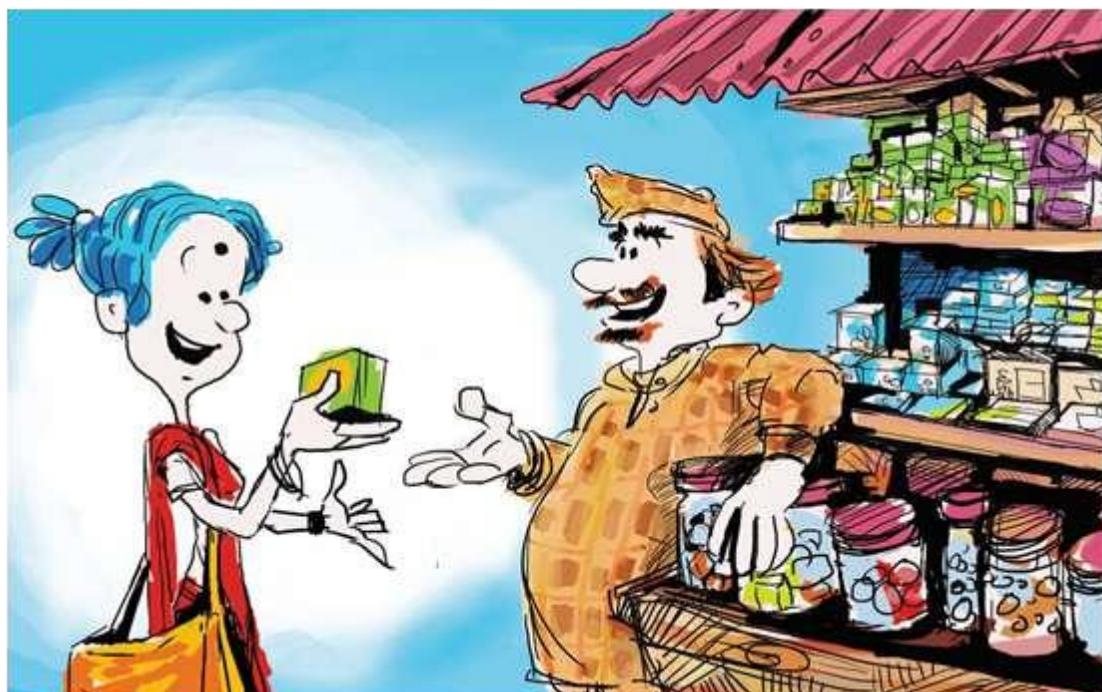
Setting the price for the product/service is a very important step for the business. The CRP-EP should be able to help the business in doing this properly. It is important to ensure that the information about customers, competitor prices etc., used in setting the price is verified and checked thoroughly. The CRP-EP should never forget that setting the wrong price for the product/service can lead to failure of the business.

Refer to tool – “Setting the price for products/services in Participant Handbook” for steps in setting the price for products/services of a business.



Section 3

Verifying the price



In the last section, we saw the key steps and considerations necessary for setting the price. We will now look at how to verify this price from various points of views such as from that of the customer and the business.

What will you say at the start of this section?

It is very important for the business, and hence the CRP-EP, to verify that the price set for the product/service is the right price. The price has to be right from the customer's point of view, which means there will be pressure to set a lower price. At the same time, the price has to be right to ensure that the business makes the targeted profit. We will see now, what the steps needed to verify the price are.

How Will You Teach This Section?



We will introduce the checklist on slide 18 for verifying the price.

This checklist would help the business in ensuring that they are on the right track. The checklist is for verifying the pricing process, based on affordability and profitability. Affordability matters to the customer, while profitability of the business would depend on the pricing.
Checklist

1. Affordability (for customers)
 - a. Can your customers afford to pay the price that you have fixed for your product or service?
 - b. Can they afford to buy the product or avail the service at the set price on a regular basis or occasionally?
2. Profitability (of the business)
 - a. Is the business profitable at the price that you have set?
 - b. In case the profits are low or if the business is incurring losses at the price that you have set
 - I. Either, you have to reduce the cost of production
 - II. Or increase price after improving product features / quality
3. If you choose to change product features or quality and the price, then repeat steps 1 to 3.

In order to help Anjali assess whether her pricing was right, let us go through this checklist. What does the checklist say? It talks about affordability and profitability.

Let us show slide 19 to check affordability in the case of Anjali soaps.



Affordability is about customers; whether they would be able to pay the price that Anjali has fixed for her neem soap. Or is it too high that the customers may opt other products. She has to do further checks to have a reasonable assessment of affordability.

Checking affordability - through retailer

(On slide 19)



Anjali decides to speak to a retailer again. The nearest kirana store owner tells Anjali that most people prefer buying soaps in the price range of Rs 10-15. Among neem soaps, 'Margo neem', priced at Rs 30 a piece, sells the best. Sometimes people buy 'Gandhi Ashram neem soap, which is priced at Rs 45 per piece. The shop owner also tells her that nobody buys soaps priced above Rs 50.

Checking affordability - through customers

(On slide 20)



Is it enough talking to the kirana shop owner? She has got what his experience is in selling soaps. It is very useful information. However, Anjali needs to speak to a few customers too to understand what they think about neem soaps.

Anjali speaks to a few customers who buy soap from the kirana store that she went to, and also a few others who were seen at a couple of other stores. The customers confirmed the opinion of the first kirana shop owner that they never really bought Gandhi Gram neem soap as it was expensive. They said they bought Margo neem soap often. A few other customers told her that they bought Lux or Menaka soaps and never opted for neem soaps as they found them expensive.

Based on her discussions with the kirana shop owner and a few customers, Anjali could reach the following conclusions.

1. People who buy neem soap were willing to pay a higher price than the prices at which soaps belonging to national brands were sold.
2. However, among neem soaps, customers preferred relatively cheaper ones.
3. People find her soap to be comparable with Margo neem soap; however, the finish and packing was not as good as that of Margo neem. This means that the customers saw her soap

as reasonably good, but perceived it as ‘inferior’ in some ways to Margo neem soap.

- As Margo neem soap is sold at Rs 30 per piece, Anjali can conclude here that the price of Rs 25 per piece that she set for her neem soap was reasonable. In other words, it passed the test of 'affordability'.

Checking profitability



Now we will see the item on the checklist, which is checking profitability on slide 21.

Can Anjali now go ahead with the price that she has set? Our Checklist says 'no'. She has to check one more aspect. That aspect is very critical for her business to run and grow. It is profitability.



Link to the discussion of profitability in A1b – Introduction to Business.

The question is, what does the price of Rs 25 per piece mean to the profits that Anjali can generate from her business? Will the business be profitable? Or will it make losses and close down?

In order to answer this question, Anjali should have an idea of how much profit she wants to generate over a period, or by selling a given number of soap pieces. Then she has to see whether she would still be able to reach the 'target profit' that she has set for her business.

Anjali sits down and does some calculations. She looked at the raw materials that she bought for producing the first lot of neem soaps in the first month. She calculates all the costs including the interest she has to pay on the amount that she had borrowed. She also calculates the total revenue that she can generate by selling the first lot of soaps at Rs 25 per piece.

She finds that the profit she could generate was Rs 4500 in the month. She compares this with the target profit that she had set, which was Rs 5000 per month.

What should Anjali do now?



Ask a few participants this question and tell them that we will see in the next slide.

What if, for the set price, profits are not enough?



(On slide 22)

A business may set the prices for its products or services using the process that has been outlined above and using the checklist; but still it may not be sufficient. The business must check what profits it is able to make at that price. As indicated in the checklist for price setting, if the profits are low, the business has two options.

- Either reduce the cost of the product or service
- Or increase the price after improving the quality / features of the product or service.



Let us now look at these two options in detail.

Reduce the cost of the product or service



(slide 23)

Anjali decides to take a closer look at the expenses first, as she knows reducing cost of production

was the first thing to try out. She finds that she could reduce the cost by changing the plastic cover to paper packing. She also locates some wastage that she had neglected while using the raw

materials. She makes an effort to reduce the loss of raw materials.

Then Anjali calculates the gains that she would have through these two steps. She finds that she would be able to meet her target profit of Rs 5000.

So, Anjali has now answered the question on profitability in the Checklist. Has she been right in doing so? Or did she have any other option?

Increase the price after improving the quality / features of the product or service.

(slide 24)



In some cases, the business may be able to improve the quality or features of the product or services and charge a higher price. However, this is not easy. Convincing customers about the improved quality of the product or service is difficult. There is also the risk of customers leaving if price is increased. Therefore, it is better to focus on cost reduction, as the first step to enhance profitability.

Often, it is better to focus on cost reduction to increase the profitability of a business.
It is better to look for possibility of cost reduction before trying to increase the price.

Thus, Anjali could have chosen this option to improve the quality or features of the product or service and charge a higher price to enhance profitability. Remember, some of the people she had spoken to had said that her soap was comparable to Margo neem soap. They also had said that Margo had better appearance and packing. Margo soap was sold at Rs 30 per piece. The question that Anjali has to answer here is will the customers prefer her neem soap over Margo, if she improves the quality of her soap and sells it at Rs 30? Or can she improve it even more than Margo and charge Rs 35 perhaps?

What will you say at the end of this section?

Revise the keypoints related to the checklist given on slide 25 to conclude the section.



Setting the price for a product/service is not a one-time exercise. The business should continuously review the price, in light of the changes in competitor situation and/or features of the product. It is also important to keep track of the price in line with the changes in costs of the product/service and the effect of such changes on the profitability of the business. The CRP-EP should have necessary ability to support the business in doing this.

Section 4

Discounts



What will you say at the start of this section?

Sometimes the business will need to reduce the price for its product/services in order to attract more customers.



Ask question “Under what conditions will the business have to reduce its prices?”.



Refer to the answers given by participants and lead the discussion to the concept of discounts as a temporary reduction in price to attract more customers.

How Will You Teach This Section?



Before showing slide 27,



Ask participants what is their understanding about discounts. Ask them to share some

instances when they have got a discount.

We will now see what is the definition of discounts in slide 27.



Discounts are temporary reductions in price of products or services offered with the objective of increasing the sales volumes. Discounts should be offered only for a limited period of time; otherwise it would become equivalent to price reduction, which may affect the profitability of the business.

We typically come across discount offers on products or services for certain events (Diwali), for certain customer categories (Regular Customers), for specific periods (Till 31st July), or for a particular stock of products (Till the Current Stocks Last).

Another way of offering a discount is to sell two products at the price of one, three products at the rate of two etc.; this is called quantity discount. It could also be in such a way as to offer a discount to customers who take more quantity.

Offering a product free with another product is also a form of discount. Another way to offer a discount, called product bundle pricing, is when a business offers a few products together at a price lower than the combined price of the individual products in the bundle.

Discounts and free items: When do we usually use them?

(Slide 28)



Businesses use discounts for effecting short term increase in revenue. The following are some of the purposes for which businesses use discount.

- ☐ To enhance sales during festival seasons
- ☐ For selling products that are about to cross their expiry date or get spoiled
- ☐ On items that are going out of fashion
- ☐ Seasonal products
- ☐ For clearing off excess stocks (for releasing working capital caught up in stocks)

Businesses also offer discounts to make customers try new products or services. For instance, discounts may be offered at the time of launching a new business, product, or service.

It is also a means to keep long term customers happy over a period of time.

Now we will ask the participants to workout the following example on slides 29. We will now examine the difference between giving discounts vs free items using this example



Consider Kanku's general store which sells Neema soap for Rs. 12, and buys for Rs. 9.

What is the maximum discount that the store can give if it does not want to make a loss?



The answer is Rs. 3 per soap.

Kanku's general store wants to give a discount or free item to customers who buys Neema soap.

The shopkeeper wants to decide between a Rs. 2 discount and a free shampoo sachet free worth Rs. 2. The shop-keeper bought sachets in bulk for Rs. 1.60 each.



Ask the participants to workout what should the shopkeeper do?



After listening to the answers of the participants, show slide 30 to discuss the answer.

From shopkeeper perspective, the profit per bar of soap, if she gives a discount of Rs. 2
 $= \text{Price} - \text{Cost} = 12 - 9 - 2 = 1$

The profit per bar of soap, if she gives a free sachet with MRP of Rs. 2 but cost of Rs 1.6
 $= \text{Price} - \text{Cost} = 12 - 9 - 1.6 = 1.4$

Thus, we can see that the profit is more when she gives the free sachet rather than the discount of Rs. 2.

It may be better for the business to offer free items instead of discounts.

Discounts: How much to give?



(Slide 31)

Ideally, discounts or free items on offer should be such that the business still makes a profit. However, there could be exceptions. Businesses may decide to sell products at prices lower than the cost to save further losses. A shop selling vegetables at a low price as they might get spoilt, and a shop wanting to offer a discount on products that are going out of fashion are examples.

Discount is a Cost

Any discount offered is a cost to the business. Therefore, it is important to keep proper

records of the discounts offered, and also of the free items given.



We will discuss the below keypoints on slide 32 to conclude the section on discounts.

- Discounts should be offered for short periods of time; avoid them becoming a permanent feature.
- Ideally, discounts or free amounts should be such that the business still makes a profit.
- Generally it is better for a business to offer free items instead of discounts.

What will you say at the end of this section?

It must be remembered that any step taken to increase sales of product/services, either by giving discounts or giving free products will have direct effect on the profits and profitability of the business. Such a step should be taken very judiciously. The CRP-EP should be able to advise the business on this matter, after understanding the effects of discounts on the profits and help the business to take a decision on the amount of discount and for how long it is given.

Selling Products and Services

Remember, the third 'C' in '4C+E' is 'Costs and Profits'. We saw that profits are equal to Revenues minus Costs. Revenue is the money that we collect from the customers. We get revenue because we sell products or services to the customers.

In this module we look at 'Selling Products and Services'.

Sections	Topics	Page Nos in this Manual	Slide Numbers
1	Marketing and sales in a business	156 - 157	3-4
2	Main tasks of sales person	158 – 159	6
3	Typical sales methods used by businesses	160 – 165	8-21
4	Summary	166	23-25
5	Selling effectively	167 – 169	27-31
6	Giving credit in the business	170 - 174	33-42

Section 1

Marketing and Sales in Businesses



This section helps in defining 'marketing' and 'sales' and in appreciating the difference between them.

What will you say at the start of this section?



Ask the participants what they understood by the term 'marketing'.

Also ask what they understood by the term 'sales'.

Ask the participants to discuss whether there is any difference between 'sales' and 'marketing'.

Marketing and sales are two different functions in a business. Now let us see the difference between the two.

How Will You Teach This Section?



Show slide 3.

Now let us explain the two terms, 'marketing' and 'sales'.

Marketing is about thinking of a right product or service based on customer needs and then

generating interest about it.

Sales is about contacting potential customers, convincing them to buy the product or service, and then collecting money once they have bought it.



Show slide 4.



Marketing and sales are often done by the same person in small businesses.

Show the above picture to indicate this.



As the kind of work done to generate sales is quite different, we are covering this as a separate topic.

What will you say at the end of this section?

Earlier we looked at marketing related concepts such as understanding customers, customer communication etc.

Recall ‘customer communication’ covered in the module ‘Understanding Customers’.



Explain to the participants that ‘customer communication’ is part of marketing.



Now we will look some concepts related to Sales.

Recall from ‘Introduction to Businesses’, selling is what distinguishes a business from other economic activities.



Business is a recurring economic activity which involves selling products or services. So, if we are

not able to sell, then the business has no meaning.

Section 2

Main Tasks of the Salesperson



What will you say at the start of this section?



Ask the participants the following question:

- What are the responsibilities of a sales person?

Responsibilities of persons engaged in selling products or services are not limited to sales alone. In this section, we will see the different responsibilities that the sales team of a business have to handle.

How Will You Teach This Section?



What are the responsibilities of a sales person, other than sales itself?



After listening to the participants, show slide 6 and explain the following.

Sales persons handle the following responsibilities as part of their regular work.

1. Contacting and / or visiting potential customers and convincing them to buy: Sales persons have to keep regular contacts with the customers. This is important in convincing them to buy the products or services. Every time when a new feature or change is introduced in the product or service, the sales persons have to communicate it to the customers.

2. Collecting payment for products sold and follow up on payments due: Businesses may sell against cash or on credit. It is the responsibility of the sales persons to collect the payment for the products or services sold. In the case of credit sales, they have to follow up with the customers to get the payment. If retailers or resellers are involved, the responsibilities would include following up with them also.
3. Getting feedback from customers on products/services: Sales persons should regularly get feedback from customers on the products or services. This is critical in keeping the customers. When customers raise complaints about a product, for instance, the sales persons have to report it to the production team.
4. Getting information about competitor activities: A business has to compete against other businesses selling similar products. Therefore, it is necessary to keep a watch on competitor products and activities. It is the responsibility of the sales team to collect information on competitors.
5. Building a long-term relationship with customers (consumers, resellers etc.): Keeping good relationship with customers is important to maintain sales. Here customers include consumers as well as other players involved in the sales process such as retailers, resellers etc.
6. Keeping records of how much was sold, when, and to whom: Keeping updated records of the sales is an important function of the sales persons. Every transaction should be entered in proper records for monitoring of sales.

What will you say at the end of this section?

Making profits consistently is important for a business. This is possible only when customers consistently buy products or services from the business. All responsibilities we saw will help businesses sell products and services consistently.

Section 3

Typical Sales Methods Used by Businesses



What will you say at the start of this section?



Recall '4C+E'.



What was the first C in 4C+E?

In the first 'C' of the four 'Cs' in '4C+E' we saw different types of customers. It may require different ways of selling products or services for different customers. In this section, we will see these methods.

How Will You Teach This Section?



Ask the participants on the sales method that they are aware of.



Following are the typical sales methods used by small businesses shown in slide 8.

1. Directly to consumers – home visits (door to door sales): This is a common method of sales

- for small businesses. Sales persons visits houses directly and make door to door sales.
2. Directly to consumers – own outlet: Selling happens directly to customers in this case also; but the seller is stationed at own shop and does the selling.

3. Selling to retailers or shops: In this case, the sale is through the retail shops; there is no direct sales to the customers

(Ask participants to think about the challenges for a small business to sell through retail shops. Provide Neem soaps as an example; compare direct to home sales and sales through retail shops).



4. Selling to wholesalers: Here the business sells its products to wholesalers, who in turn sell them to retailers. Customers buy the products from retailers.

5. Selling directly to institutions or other businesses: There are businesses that sell their products or services to institutions or other businesses. (Ask participants to name a few businesses that sell to institutions or other businesses).



6. Selling through exhibitions/fairs: Fairs and exhibitions offer opportunities for small businesses where they can display their products and sell.

Show slide 9.



Classroom Discussion

Leena's pickles had started with two flavours – mixed vegetable and lemon. In two years, the business grew to have ten varieties of pickles. Currently the sales is through home visits. The owner is thinking of renting a small shop in the neighbourhood.

Is this the right decision? Why or why not?

Discussion Points

Ensure the following points (slide 10) are covered while discussing with the participants.



- ❑ If Leena's pickles rents a shop and start business from there, how will people come to know about the shop?
- ❑ Even after coming to know about the shop, how many people will travel to the shop just to buy pickles?
- ❑ If it is only a pickle shop, it will need to carry many varieties (and brands) of pickle.
- ❑ Consumers like to choose from different brands even if the same company makes many products.
 - o Even large companies with hundreds of products (Eg: Britannia, Nestle) do not have own outlets. Why?
- ❑ Cost of rent or buying a shop is high.
- ❑ Expertise – Does the owner want to focus on managing a retail shop or managing a pickle business?

Show slide 11.



Classroom Discussion

Consider Leena's Pickle once more. Apart from home visits (door to door sales) and renting a small shop, the owner is also considering selling his products to a wholesaler who can sell the product in a large city nearby.



What would you advise Leena's Pickles to do?

Discussion Points



Ensure the following points (slide 12) are covered while discussing with the participants.



In the case of Leena's pickles, three options are presented: door to door sales, sales from own shop, and selling to a wholesaler.

Let the participants discuss the three options.

- ☒ Home visits require high effort, low number of consumers met compared to selling through a retailer.
- ☒ In the case of own outlet, people have to be informed about the shop, rent has to be paid; people from far away areas will not travel to a shop with just a few products and only a single brand (except for buying large items like motorcycles, cars etc.).
- ☒ In the case of wholesaler a margin has to be given, but it may be possible to sell greater volumes in one transaction.



In Slide 8, we saw six sales methods used by small businesses.



Go through these again in slide 13.

Each method has its own advantages and disadvantages.



These are shown in slide 14–21 and summarized below.

Let us now compare these methods.

Sales Method	Advantages	Disadvantages
Ⓐ Direct to home (door to door sales)	<ul style="list-style-type: none"> Ⓐ Business can get feedback about product features and price directly from users Ⓐ Customer relationship can be managed directly 	<ul style="list-style-type: none"> Ⓐ Requires a lot of effort and cost Ⓐ Salesperson can carry only limited variety and quantity of products Ⓐ Can reach out only to a limited number of households Ⓐ In larger cities, home visits are becoming difficult with increasing security provided for buildings
Ⓑ Own outlet	<ul style="list-style-type: none"> Ⓐ Business can get feedback about product features and price directly from users Ⓐ Customer experience easily managed Ⓐ Builds loyalty for the brand / business Ⓐ Saves effort of contacting each customer directly 	<ul style="list-style-type: none"> Ⓐ Needs to attract people to the shop Ⓐ Attracting adequate customers could be difficult Ⓐ Rents may be high and could reduce profits significantly Ⓐ Range of products would be smaller than that of retailers
Ⓒ Selling to retailers	<ul style="list-style-type: none"> Ⓐ Can reach many more consumers than what a business can directly do Ⓐ Instead of managing relationship and orders from many customers, the business can focus on managing a few retailers 	<ul style="list-style-type: none"> Ⓐ Have to give retailer a margin Ⓐ Have to meet special needs of retailers Ⓐ Attractive packaging would be necessary Ⓐ Strong outer packaging would be necessary for transporting to retail shops Ⓐ On-time delivery is to be ensured Ⓐ Requirement to take back defective or unsold products or not getting payment for unsold items Ⓐ Can operate on cash basis when selling directly to consumers; but retailers will demand credit

<input type="checkbox"/> Selling to institutions or other businesses, wholesalers	<ul style="list-style-type: none"> <input type="checkbox"/> They buy in bulk <input type="checkbox"/> Due to bulk purchase, transactions are fewer in number and of large amounts <input type="checkbox"/> In some cases, business can save on packaging and money spent on communications for awareness building <input type="checkbox"/> Often, they buy the same products repeatedly 	<ul style="list-style-type: none"> <input type="checkbox"/> Making a sale may require multiple visits <input type="checkbox"/> Often required to deal with multiple people <input type="checkbox"/> Typically, institutions would not be willing to pay more for quality <input type="checkbox"/> Price per unit typically lower (total profit may or may not be lower) <input type="checkbox"/> Business may become dependent on a few buyers (What happens if they cancel order at the last minute?) <input type="checkbox"/> Will require credit, payment for which may get delayed
<input type="checkbox"/> Exhibitions or fairs	<ul style="list-style-type: none"> <input type="checkbox"/> Easy to reach large number of customers <input type="checkbox"/> Are often a good means of promotion and building awareness <input type="checkbox"/> Better to participate in exhibitions in areas where we can supply stock later, thus get repeat customers 	<ul style="list-style-type: none"> <input type="checkbox"/> Unpredictable sales volume, hence do not know how much to produce <input type="checkbox"/> May need to hire storage space in city where the fair or exhibition is being held, and incur transportation cost for stock which may not get sold <input type="checkbox"/> Since storage, transport and promotion costs are high, business may end up in loss <input type="checkbox"/> Participation in some of these exhibitions may be free, but some may charge a fee



What will you say at the end of this section?

Ask the participants which sales method they would recommend to the entrepreneurs that they serve and why?



It is important to note that not all methods are applicable to all businesses. A business has to choose the appropriate method or methods depending on the customer type it wants to focus on.

Section 4

Summary

What will you say at the start of this section?

This section summarizes the three main things we have seen so far in this module.
Let us see them below.

How Will You Teach This Section?

We have seen the main tasks of a sales persons, and the different sales methods that businesses use. Now lets us summarise them.



Ask the participants to repeat these and then show the key point slides. (Slides 23-25).

Main tasks of a sales person (Slide 23)

1. Contact and/or visit potential customers and convince them to buy
2. Collect payments and follow up on overdue payments
3. Get feedback from customers on products/services
4. Get information about competitor activities
5. Build a long-term relationship with customers
6. Keep records of how much was sold, when, and to whom

There are six methods of selling, each with its own advantages and disadvantages: (Slide 24)

1. Directly to consumers – home visits (door to door sales)
2. Directly to consumers – own outlet
3. Selling to retailers or shops
4. Selling directly to institutions or business users
5. Selling to wholesalers
6. Selling through exhibitions / fairs

A business must choose the best method based on (Slide 25)

1. The nature of its products/services,
2. Where the target customer segment prefers to buy from,
3. The minimal impact on the cost of selling, storage, transportation, and
4. Maximize revenues, profits, and profitability

What will you say at the end of this section?

Now that we have seen some aspects of selling, let us look more deeply into what are the

requirements for a business to sell effectively.

Section 5

Selling Effectively



What will you say at the start of this section?

Businesses cannot hope that its products and services will be sold on its own. Businesses must make plans to sell them; they should implement the plans effectively.

In this section we will see what goes into sales planning.

How Will You Teach This Section?

Being a new topic, you can straight away start with the slides (27 onwards).



Every business must have a sales plan. Let us see what is a sales plan.
It is a plan that specifies

- How much of which product/ service should be sold, and
- To which types of customers as well as which specific customers, and
- The timetable of doing so

Sales targets are about the quantity of products or services that a business plans to sell over a specific period of time. Ability to achieve the sales target would depend on the capacity of the business to sell, which is known as sales capacity.

A sales-plan matches sales target with sales capacity. The plan reveals whether the business has sufficient, excess, or insufficient capacity.

A sales plan must, thus, consider:

- Production capacity ("How many kgs of mango pickle can Leena make in a month?")
OR
- Service delivery capacity ("How many customers can Namita service in her beauty parlour?")

Following is a checklist on how to conduct effective sales visits.



Show slide 28.

1. Always be polite and friendly
2. Build a personal bond
3. Mention how customers want your product, and why they like it
4. Explain how your product is better than competition
5. If customer doesn't give any orders, understand why
6. Closing – if sale is done, finalise quantity, price etc. If not, leave a hook for future follow-up
7. Always write down credit given to each customer

Now we look at the importance of building a long-term relationship with customers.



Show slide 29 and 30 for this.



Repeated purchases by customers are achieved through building long term relationships with them. Therefore, building such relationships is an important activity for sales persons. This can be done by gaining trust and making customers feel important.

Tips for building long terms relationships

1. Visit regularly, even if they do not buy anything initially
2. Build trust
 - Reliability on delivery timing and quantities
 - Give them accurate information about delivery times, pricing, etc.

- Give early warnings about deadlines that will be missed etc.
3. Make them feel important
 4. Give important customers priority over less important customers; offer favourable terms; Need not be pricing but preference should be given for products, faster delivery etc.
 5. Ensure someone senior visits them occasionally
 6. Ask their opinion about important decisions you are about to make; but be careful not to create the impression that you will definitely do what they say

Summarise the points on sales plans and building customer relationships using key point on slide 31.



- ❑ Building long-term relationships with customers is critical
- ❑ Building long-term relationships requires
 - a) Visiting regularly,
 - b) Gaining their trust, and
 - c) Making them feel important
- ❑ Good businesses focus on building customer references and referrals over time

What will you say at the end of this section?

Consistent profits can be made only by selling products or services consistently. It may not be possible to find new customers all the time. Successful businesses often sell products and services repeatedly to the same customers. This requires businesses to build strong and long term relationships with customers.

Section 6

Giving Credit in Business



How Will You Start This Section?

Not all customers all the time can pay on the spot. So it is important for the business to decide how much credit to give, when to give and to give it to whom. We will discuss the terms of credit for the customer in this section.

How Will You Teach This Section?



Ask the participants whether they buy things ever on credit.

Also ask whether they would sell on credit if they are running their own business.



Show slide 33.

Tell the participants that for any business, the best approach is to avoid giving credit to customers. But, it is not always possible since customers expect it and without it, they may buy from competitors.

Therefore, if a business decided to give credit, a business should

1. Set a credit policy. (We will soon see what goes into credit policy in the module itself)
2. Track credit and ensure timely payment
3. Understand impact of credit on working capital required. A business should have a credit policy. Why? Why not negotiate terms and conditions on a case to case basis with each customer?

We will now see what are the decisions involved in setting a credit policy.

Show slide 34 and explain the following:



A credit policy should clearly state

1. Which customer types we will give credit to, and which ones we won't
2. Credit amount limits for each customer type
3. Credit duration for each customer type
4. Penalties or consequences of delayed payment
5. In addition, it should also mention what is the maximum amount of sales (for our entire business) that we want to allow in credit; this should be monitored regularly

Thus, the credit policy should be clear on whom to give credit, how much, and for how long. We will see these now.

Now we will see why a business needs to set credit policy. Ask the participants why can't the business negotiate terms and conditions case by case for each customer.

Show slide 35 and explain the following reasons for why a business needs to set credit policy.



- ☒ To avoid losing money to customers who may not pay back
- ☒ To avoid giving credit to customers who take too long to pay back
- ☒ To avoid giving away too much of our money to customers as credit, money which we need to run our business
- ☒ To save time

Whom to give credit to?

Decision on whom to give credit should be based on a set of factors.

Show slide 36 and explain the following factors:



1. Repayment ability of customer – how do we know if customer will have money to pay later?
2. Long-time customers versus new customers?
3. Customers who buy in bulk versus those who buy small quantity?
4. Customers who buy often versus those who buy occasionally?



Explain the key point on slide 36 as follows.

The right answer on whom to give credit may be different for different businesses. Therefore, it is important to think about this before the business starts giving credit.

How much credit to give?



Show slide 37.

- ❑ The next decision is on how much credit to give. Again, there is no standard answer to this. One has to decide based on the nature of the business and one's ability to give credit.
- ❑ What is a "normal practice" in our type of business?
- ❑ How much credit do my competitors give to this type of customer?
- ❑ How much can we afford to give? (will we have enough money left for working capital?)

Note that the decision on how much credit to give can be dictated by the circumstances also i.e. based on what is "normal" and your ability to give credit.

For instance, if a business starts selling through a new retailer, you may have to give stock on 'consignment'. This means that the business has to send the products in a lot; the retailer may pay only after selling the products in the consignment.

How long the credit is to be given?



Show slide 38.

The next question is for how long the business can afford to give credit. The decision should be based on what is 'normal' to your business and also the ability of the business to wait for payment. One needs to ask the following questions.

- ❑ What is "normal" in our type of business?
- ❑ What do our competitors do?
- ❑ How long can we afford to wait? (how long will our working capital last for paying our day-to-day costs?)

Once again, this should be decided based on what is "normal" and also your ability to wait for payment



Show slide 39.

It is not enough to have a credit policy in place; the business should communicate the terms of credit to the customer at the time of giving credit.

Every business owner must do the following things mentioned in slide 39 at the time of giving credit to customers.

- A. Clearly state credit terms and conditions at time of purchase
- B. Immediately write down in credit register, before you forget

1. Name of customer
2. Amount given
3. Date on which credit was given
4. Repayment date
5. Penalty on non-payment
6. Date of previous reminder

Tell the participants that even after doing all these, one should be prepared to handle payment delays.

Now we will see what to do in case of payment delays?

Discuss the following points in slide 40.



Also tell the participants that it is a good idea to follow this sequence in case of payment delays.

1. Negotiate some immediate payment, even if partial
2. Contact regularly
3. Stop future delivery of products, until past payments are made
4. Revise credit policy for the customer, the customer type or the whole business, if appropriate
5. Remind customer of penalties and consequences

Discuss the following examples in the class and ask participants the following questions in the examples.



Example 1: There is a consumer who buys provisions from your shop, who has not repaid credit in 3 months. What will you do?

Example 2: Your largest bulk buyer has not repaid credit in 3 months. What will you do?

Summarise the key points of the section given in slides 41 and 42.



Set credit policy to avoid making mistakes (key points – 1)

1. Credit policy should include decisions regarding:

1. Whom to give credit
2. Credit amount limit for each type of customer
3. Credit duration for each type of customer
4. It should also mention what is the maximum amount of sales that business wants to allow in credit

2. Track customer credit in separate register

As discussed in key points - 2, in case of non-payment, business should:

1. Negotiate some immediate payment, even if partial

2. Contact regularly
3. Stop future delivery of products, until past payments are made
4. Revise credit policy for the customer, the customer type or the whole business, if appropriate
5. Reminder customer of penalties and consequences

What will you say at the end of this section?

While giving credit to customers is often necessary, the business must be careful about whom to give credit, how much, and for how long.

Keeping Records in Business

In the previous modules, we have tried to understand what a business is and various key aspects of a business such as its customers and its products/services. This module teaches us how to correctly and accurately capture the information related to the business by keeping various records.

This is necessary for preparing the financial statements and making other calculations related to the business which will be taught in the modules in Part B.



Ask the participants to share their experiences in writing the records of any business.



Ask them a few questions to assess their expectations from the module.



This module introduces the different records kept in a business in five sections. The following table summarises the sections and the topics covered.

The first and second column shows the order of the sections and topic covered in each section. The next column shows page numbers corresponding to each section in this chapter. The corresponding slide Numbers in the Classroom Teaching Aid are shown against each section. The pages in the Participant Handbook that have material linked to the topic are also shown.

Sections	Topics	Page Nos in this Manual	Slide Numbers
1	Use of business information	176 -178	3 – 4
2	Record keeping for SVEP businesses	179 - 181	6 – 11
3	Primary records in a business	182 - 188	13 – 32
4	Performance Tracking (PT) Sheet	189 - 190	34 - 38
5	Exercise	191- 192	40
6	Annexures	193 - 196	-

Now let us move on to the first section - 'Use of business information'

Section 1

Use of Business Information



This section helps you introduce the concept of record keeping to the participants. This section provides an overview for the rest of the module by explaining the need for keeping records. By the end of this section, the participants should be clear about the need and benefits of record keeping for business.

What will you say at the start of this section?



We have seen in the ‘Introduction to business’ module, how information about the operations of the business is necessary to ensure that it consistently makes profit.

In the context of SVEP, the information about the business is also used by others who support the starting and running of the business, such as the government agencies. In this module, we will look at the various aspects of maintaining records in a business so that the necessary information is available as and when needed.

In this section, we will see what is the need for business information and what are its various uses.

How Will You Teach This Section?

Let us now give the participants a few small cases to help them understand the need for business information.



We show them slide 3 for this.



Ask them to identify the problem in the situations given in the slide (Also shown below). Ask them what can be done to solve the problems.

Ramu goes to the wholesale market to buy raw material for the next week. He does not know how much of raw materials to buy.

Kanku has 50 eggs. She sold 15 eggs on credit to a nearby hotel. She did not get any cash in her hand today. She complains her business is running on losses and yet cannot explain how much people owe her.

Namita needs a loan to buy two chairs for her beauty parlour. The bank manager needs details of her monthly revenue to sanction a loan for the business.

is doing and take important decisions.

This information needed to run a business and understand how well it is doing is called 'business information'.



What is the use of business information?

Before we go to the next slide,

We will ask the participants to list some of the people/agencies to whom business information might be useful and how it might be useful to them.

Ensure that the three categories and the uses mentioned below are covered.
Show slide 4 and 5.



Entrepreneur – The Entrepreneur, being the key person responsible for running the business, needs to get correct and accurate information about the business:

- 1) To help understand the strengths and weaknesses of the enterprise
- 2) To help analyze and improve performance of the business
- 3) To make business decisions
- 4) To help raise money for the business

Banks and Financial institutions – Banks and financial institutions play an important role in providing capital necessary for running the business.

When dealing with this part, ensure a discussion on the importance of proper records and proper information on the credit worthiness of the business/entrepreneur.



Business information is required by these institutions:

- 1) To help decide whether to provide loans to businesses
- 2) To help decide how much finance to provide to the business
- 3) To assess ability of business to make interest payments and loan repayments

Supporting agencies – Various agencies such as Self-Help Groups (SHGs), Village Organization (VOs), Cluster-Level Federations (CLFs) and government departments such as State Rural Livelihood Missions (SRLMs) provide key services to the enterprise such as training and handholding support to ensure that the enterprise runs smoothly. Typically, such agencies require business information for:

- 1) To monitor the health of the business
- 2) To create enterprise related policies
- 3) To assess the performance of their field staff
- 4) To plan enterprise related activities

What will you say at the end of this section?



Ask the question “Is the CRP–EP a user of the information about the business? If so, how?”.



Summarize the responses by elaborating the point that all persons associated with the business – the entrepreneur, the CRP–EP, the SRLM and the SHGs and VOs have use of the information.

Section 2

Record Keeping for SVEP Businesses



In the last section, we got a clear idea about the need for keeping records and its benefits. In this section, we will look at the process of keeping records for SVEP businesses in more detail.

What will you say at the start of this section?

In this section, we will look at the various kinds of records that are to be kept in a SVEP business and the process of keeping these records.

How Will You Teach This Section?

We will start by defining to the participants what record keeping is.

Record keeping is the process by which all key information about a business is correctly recorded in a way that is convenient to record and easy to understand.

What are the different records used for recording business information?

Ask the participants whether it is necessary for keeping different records and if so, why?

After listening to a few participants, explain the following.

A business performs various kinds of activities. Because of the diverse nature of activities taking place in a business, it may not be appropriate to capture all this information about activities at one place. Therefore, we use different kinds of records to capture this information.

We will now show the table in slides 7 and 8 and describe each of these



records in brief. Each of these records will be dealt with in detail in the next section.

Business Information	Records
Captures first-time information about business such as name, location, type, capital invested etc.	Business Profile Sheet
Captures periodic changes in what business owns (assets) and what it owes others (liabilities)	Capital and Assets Register
Used to write down about the daily transactions of business including income and expenditure	Day-book
Used to write down details about the daily changes in stock quantity and value	Stock Register
Used to aggregate value of transactions for a period of time from Capital and Assets Register, Day-book and Stock Register	Performance Tracking (PT) Sheet
Gives periodic information related to profit/loss, cash position and current financial state of the business prepared from other records	
Link the 'financial statements' part to the discussion in Introduction to Business module.	Financial statements - Profit & Loss Statement, Cash Flow Statement, and Balance sheet



Process of Record Keeping

Business information is ideally recorded from the very commencement of the business and covers all major transactions throughout the life of the business. Now that we have introduced the different records kept in a business, we will briefly explain the process of record keeping.



We will see this in detail in the next section when we explain each of the records. We will now show the participants slide 9 on the process of record keeping and briefly explain the following.

Step 1 - Collect one-time details of the business. This will be done in the Business Profile Sheet

Step 2 - Maintain the Day-book and Stock Register

Step 3 - Update the Capital and Assets Register

Step 4 - Input aggregate information from the Day-book and Stock Register in the PT Sheet

Step 5 and Step 6 - Prepare Financial Statements and do comparative analysis of financial information



Explain to the students that the steps from 2 to 6 will be repeated at regular intervals in a cyclical manner.

How often do we update the records?

The records of a business are useful only if they are updated regularly based on the nature of activities we are trying to record. Since different activities repeat in different intervals, the number of times the records have to be updated are also different.



We will show them the following table on slide 10 and explain how often each record is updated.

Records	How often to update?
Business Profile Sheet	Start of business
Capital and Assets Register	Periodically
Day-book	Daily
Stock Register*	Daily
PT Sheet	Periodically
Profit and Loss Statement	Periodically
Cash Flow Statement	Periodically
Balance Sheet	Periodically

The records that have to be updated periodically will differ from business to business. It might be updated weekly for some businesses while it maybe monthly or once in six months for other businesses.

Who updates the records?

The entrepreneur might need to seek the support of others such as CRP-EPs for keeping some of the records. But only the entrepreneur should maintain daily records of the business.

DO's and DON'Ts of Record Keeping

Ask the participants to share from their own experience at an SHG or at a shop or at any office, how records need to be kept.



Business information needs to be recorded in the correct way to make use of it. Therefore, we should be careful about the following while keeping records.

Make sure the following DO's and DON'Ts are covered after the discussion is over by showing slide 11.



Also highlight the points that are unique for 'business' records such as the first point in DO's and the first point in DON'Ts.

DO's

1. Records of business should be kept safely in a separate register
2. Records should be kept regularly
3. Records should be written legibly and clearly

DON'Ts

1. Information not related to the business should NOT be recorded in records of business
2. Misleading or incorrect information should NOT be recorded in records of business

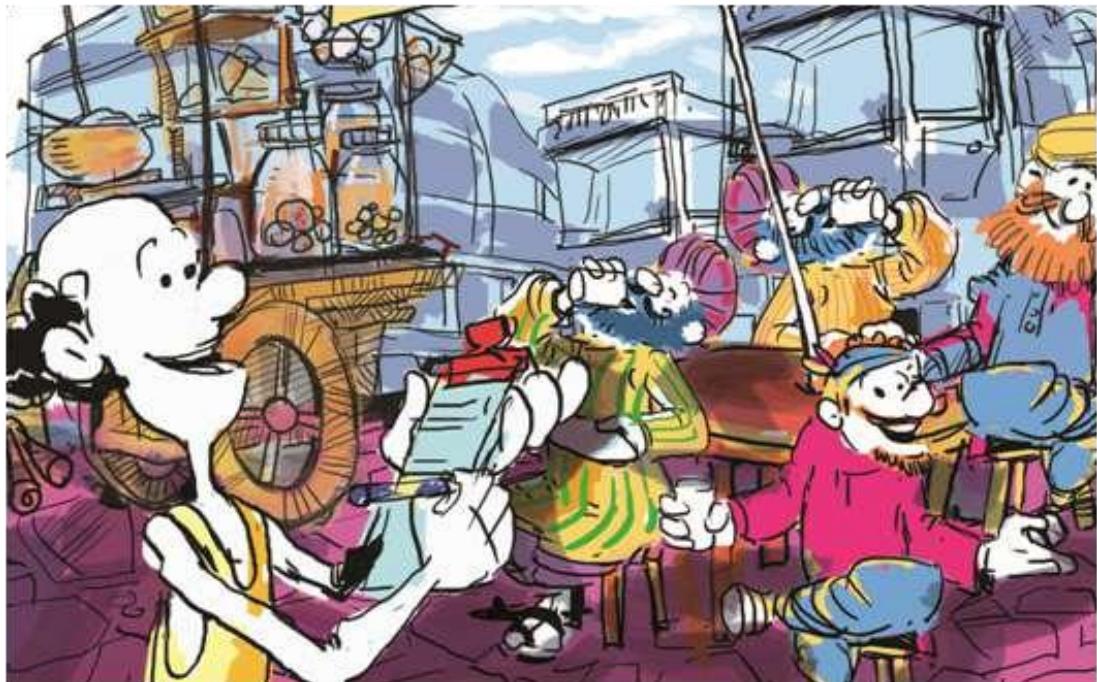
If records of the business are not kept in a separate register, it can get mixed up with records of other businesses or personal/household transaction records

What will you say at the end of this section?

We now understand the different kinds of records to be kept in a business. The last two steps - preparing financial statements and doing comparative analysis of financial information - will be dealt in detail in later modules of TEAM. The earlier steps, we will examine in detail in later sections.

Section 3

PRIMARY RECORDS IN A BUSINESS



In this section, we will look at four primary records of the business discussed in the last section in more detail.

What will you say at the start of this section?

In this section, we will look at the Business Profile Sheet, Day-book, Capital-register and Stock-register - four basic records to be maintained in every SVEP business. At the end of this section, the CRP-EP should be familiar with the four records and how they are to be filled and maintained.

How Will You Teach This Section?

Business Profile Sheet



We will show slide 13 and explain the following about Business Profile Sheet.

The first step in record keeping involves collecting the basic details of the business on the 'Business Profile Sheet'. This format is used for collecting information of the business for the first time, which forms a base for further record keeping.

It may happen that businesses have not been maintaining records from the commencement of their business. For such business, the 'Business Profile Sheet' is to be filled from the time the business realizes the need to keep records.

The Business Profile Sheet records basic details of the owner/s, location and type of business. It also records details related to what the business owns and what it owes others.



Show the Business Profile Sheet to the participants and ask the participants

how the information collected in it can be useful. Discuss what is the purpose

of collecting this information.

The information in the Business Profile Sheet can be used to group businesses based on business type, location, investment range etc. and compare between various categories.

Give some examples of this.

The format for the Business Profile Sheet is provided at the end of the module.

Day-book

We will show the next slide (slide 14) on Day-book and explain the following about Day-book.

The Day-book is one of the most important records kept by the business as it is used for recording information regarding all the key daily activities of the business.

It records all key income and expense information of the business Eg: Purchases, Sales etc. This information is used in preparing financial statements for the business, which in turn helps in making important analysis and decisions on the business.

Now show the participants the following example of a Day-book register maintained by an entrepreneur on the field on slide 15:

Since businesses are of various kinds and have various kinds of income and expenditure, the Day-book format for different types of business also varies with the type of business.

Now let us ask the participants to take a look at the Day-book format of Kanku's General Store and Tasty Teashop and list out what are the similarities and differences in these formats.

Day-book format for Kanku's General Store

A	B	C	D	E	F	G	H
Date	Cash Sales	Credit Sales	Amount Received from Debtors	Cash added to the Business	Cash Purchase	Credit Purchase	Amount Paid to Creditors

I	J	K	L	M	N	O
Advance Paid to Suppliers	Transportation Expense	Wages to Workers	Other Expenses (Eg - Rent, Electricity, Promotion, etc.)	Cash Withdrawal by the Owner for Personal Use	Loan Amount Repaid	Interest Amount Paid

Day-book format for Tasty Teashop

A	B	C	D	E	F	G	H
---	---	---	---	---	---	---	---



Date	Cash Sales	Credit Sales	Amount Received from Debtors	Cash added to the Business	Cash Purchase	Credit Purchase	Amount Paid to Creditors

I	J	K	L	M	N
Fuel	Wages to Workers	Other Expenses			
(Eg - Rent, Electricity, Promotion, etc.)	Cash Withdrawal by the Owner for Personal Use	Loan Amount Repaid	Interest Amount Paid		

* A glossary of the terms used in the Day-book is given at the end of the module



Now show the participants the third Day-book format of Namita's beauty parlour (slide 20 and slide 21) and ask them if they can spot any other difference.



Explain how the beauty parlour being a service business has transactions different from that of the other two businesses, one of which was a trading and the other a production business.

Day-book format for Namita's Beauty parlour

A	B	C	D	E	F	G	H
Date	Cash Sales	Credit Sales	Amount Received from Debtors	Cash added to the Business	Purchases	Wages to Workers	Other Expenses (Eg - Rent, Electricity, Promotion, etc.)

I	J	K
Cash Withdrawal by the Owner for Personal Use	Loan Amount Repaid	Interest Amount Paid

Since the entrepreneur often maintains the Day-book herself, its format is modified according to what is convenient to the entrepreneur. This means writing in the language comfortable to the entrepreneur or even using symbols in place of text to help the entrepreneur identify the income-expense categories easily. Given as keypoint.

Example of recording transactions in the Day-book for Ramu's Tasty Teashop

The following are the transactions (shown in slide 22) that took place in Ramu's Tasty Tea shop on January 1st.



Ask the participants to assume that they are the owner and fill in the Day-book for these transactions.

Bought Milk on credit	Rs. 120
Bought fuel(coal)	Rs. 100
Transportation	Rs. 100
Bought other raw materials (Purchased raw materials)	Rs. 750
Sold Tea	Rs. 350
Sold Samosas	Rs. 900
Sold Kachori	Rs. 800
Sold snacks on credit	Rs. 300
Paid interest on loan	Rs. 100
Loan repaid (Part of loan that is repaid back to the lender)	Rs. 200
Paid wages to helper	Rs. 250
Amount repaid by debtors (Amount that is repaid by customers who had bought goods on credit)	Rs. 100
Removed cash for paying children's fees (Cash withdrawn from business for personal use)	Rs. 500

Day-book format for Tasty Teashop

A	B	C	D	E	F	G	H
Date	Cash Sales	Credit Sales	Amount Received from Debtors	Cash added to the Business	Cash Purchase	Credit Purchase	Amount Paid to Creditors
1st January	350+900+800	300	100		750	120	

I	J	K	L	M	N
Fuel	Wages to Workers	Other Expenses			
(Eg - Rent, Electricity, Promotion,etc.)	Cash Withdrawal by the Owner for Personal Use	Loan Amount Repaid	Interest Amount Paid		
100	250	100	500	200	100

If Ramu wants to know how much is the sale of tea and how much is the sale of snacks, ask the participants whether this format will help you get the solution?



If not, what needs to be done and why ?

Then show slide 23.



Many of the businesses that you support will be making/buying and selling more than one product/service. These businesses may need information for each product/service separately.

The CRP-EP should then create separate columns in the Day-book for the different product/service.

Cash sales/Credit sales for different product/services sold.

Cash purchase/Credit purchase/Advance paid to suppliers for different raw materials.



Now ask the participants to do the exercise for Ramu's Tasty Tea shop once again but with separate columns for different products/services.



Show solution to Ramus exercise with split and point out the columns marked in yellow.

A	B	C	D	E	F	G	H		
Date	Cash sales of Tea	Cash sales of Snacks	Credit sales of Tea	Credit sales of snacks	Amount Received from Debtors	Cash added to the Business	Cash Purchase	Credit Purchase	Amount Paid to Creditors
1st January	350	900+800	0	300	100		750	120	

I	J	K	L	M	N
Fuel	Wages to Workers	Other Expenses (Eg - Rent, Electricity, Promotion, etc.)	Cash Withdrawal by the Owner for Personal Use	Loan Amount Repaid	Interest Amount Paid
100	250	100	500	200	100

Similarly, the day-book can be modified to get information for different raw materials used by the business as shown below.

A	B	C	D	E	F	G	H				
Date	Cash sales of Tea	Cash sales of Snacks	Credit sales of Tea	Credit sales of snacks	Amount Received from Debtors	Cash added to the Business	Cash Purchase of milk	Cash Purchase of tea	Credit Purchase of milk	Credit Purchase of tea	Amount Paid to Creditors
1st January	350+ 900+ 800		300		100		0	750	120	0	

I	J	K	L	M	N
Fuel	Wages to Workers	Other Expenses (Eg - Rent, Electricity, Promotion, etc.)	Cash Withdrawal by the Owner for Personal Use	Loan Amount Repaid	Interest Amount Paid
100	250	100	500	200	100

This needs to be done with care.

Capital and Assets Register



We now show slide 24 and explain the following about Capital and Assets Register.

The Capital and Assets Register is used for updating the information recorded in the Business Profile Sheet. It shows changes in what business owns (assets) and what it owes others (liabilities) mentioned in the Business Profile Sheet.

Unlike the Business Profile Sheet, the Capital and Assets Register is maintained periodically and it is a good idea to review it once every month. It is updated at regular intervals based on when such changes take place in the business.

Format for Capital and Assets Register

Discuss each item in the format for Capital and Assets Register given below. Give examples of how you can use this data such as calculating the amount of new loan taken during the period, and how much security deposit is paid or returned.



Particulars	Time period (From date - To date)
Owners Investment	
Purchase of fixed asset	
Sale of fixed asset	
Security deposit paid	
Security deposit returned	
Loans taken in the period	
Source of loan	
Capital withdrawal (in case an owner resigns)	

* A glossary of the terms used in the Capital and Assets Register is given at the end of the book

Example of recording transactions in the Capital and Assets Register at Ramu's Tasty Teashop

Now give the participants the following example of Ramu's Tasty Teashop in slide 25 and ask them to fill the Capital and Assets Register for the shop in the format showed on slide 26.



Ramu purchased tables and chairs to put outside the shop for Rs. 1,500 and took a loan for Rs. 10,000 from the SHG between the 1st and 15th of January. Ask them to record the transactions in the Capital and Assets Register.

Capital and Assets Register for Tasty Teashop between 1-15 Jan 2016

(The answer for this exercise is given in slide 27. Show this after the participants have worked out the exercise themselves)



Particulars	01-15 January 2016
Purchase of fixed asset	1,500
Sale of fixed asset	
Security deposit paid	
Security deposit returned	
Loans taken in the period	10,000
Source of loan	SHG
Capital withdrawal (in case an owner resigns)	

Stock Register



We now show slide 28 on Stock Register and explain the following.

The Stock Register is the part of the Day-book that is used for recording daily changes to stock. The Stock Register need not be maintained for the following type of businesses:

- Businesses with little or no stock
- Businesses where manual counting of stock is easier

Communicate to the participants that Stock Register needs to be maintained for all other businesses.



The following is an example of a Stock Register maintained by an entrepreneur given on slide 29:

* A glossary of the terms used in the Stock Register is given at the end of the module

Example of recording transactions in the Stock Register at Sundari's Garments Shop



Now give the participants the following example of Sundari's Garments Shop in slide 30 and ask them to fill the Stock Register for the shop in the format given on slide 31.

On 2nd January 2016, Sundari's Garments Shop bought 10 sarees worth Rs. 2,500. The shop also sold a saree worth Rs. 200 for Rs. 400 on the same day. How would you record these transactions in the Capital and Assets Register?

Stock Register for Sundari's Garment Shop



(The answer for this exercise is given in slide 32. Show this after the participants have worked out the exercise themselves)

A	B	C	D	E	F	G
Date	Item/s	Quantity purchased	Total Purchases (Rs.)	Sales Quantity	Total cost of the item/s sold (Rs.)	Total sales (Rs.)
2/1/2016	Saree	10	2500		-	-
2/1/2016	Saree	-	-	1	200	400

What will you say at the end of this section?

It is important for the CRP-EP to know what each record is and how they are to be maintained. Continuous practice is needed to ensure that the CRP-EP helps the entrepreneur to keep proper records of the business. Ask the question "What happens if the records are not maintained in a small business or are not maintained correctly?". Use the answers to stress the point about importance of proper business information for the entrepreneur, for banks etc.

Section 4

Performance Tracking (PT) Sheet



In this section, we will learn about a tool called PT sheet which will help consolidate the information from records above and help us in analyzing this information.

What will you say at the start of this section?

The information kept in the four records, while important by themselves, require to be put together for us to make sense of the performance of a business. A doctor would take different measures individually - blood sugar level, BP, heart-rate etc. Her diagnosis will be based on the connection between these different measures. Similarly, the CRP-EP and the entrepreneur should be able to make the connections between the various types of information available in the records kept by the business.

In this section, we will see how information from the different records can be put together in a simpler form to make judgements about the performance of the business.

How Will You Teach This Section?

PT sheet

We will show slide 34 and explain the following about the PT Sheet.



The PT sheet helps us to consolidate the large number of transactions in the Day-book at one place. This will help in preparing the financial statements more easily.

Let us now see the format of the PT sheet.

Ask the students how they can use this information for making decisions



regarding the business.



Give them a few examples by comparing information in the PT sheet for two different periods.

Format of a PT Sheet (show slides 35 and 36)

PT sheet for period from – to --	Detail of transactions	Amount
Particulars	Detail of transactions	Amount
Cash Sales		Rs.
Credit Sales		Rs.
Raw material purchased in cash		Rs.
Raw material purchased on credit		Rs.
Total amount withdrawn by the owner(s) for personal use		Rs.
Total cost of item/s sold		Rs.
Total amount paid to workers		Rs.
Total Transportation cost		Rs.
Other expenses incurred		Rs.
Advance paid to suppliers		Rs.
Amount paid by debtors		Rs.
Amount paid to suppliers		Rs.
Cash added to the business		Rs.
Loan amount repaid		Rs.
Interest amount paid		Rs.
Purchase of fixed asset		Rs.
Sale of fixed asset		Rs.
Security deposit paid		Rs.
Security deposit returned		Rs.
Loans taken in the period		Rs.
Capital withdrawal (in case an owner resigns)		Rs.
Stock/Inventory		Rs.

What will you say at the end of this section?



Show slide 37.

The PT Sheet helps us put together information from various records. It is still only one glimpse of the information about the business. The CRP-EP and the entrepreneur will be able to use the PT sheet to get a preliminary idea about the business performance. This can be done by comparing the PT sheet from the previous period to the current period to see how various parameters have changed. More analysis of the PT sheet along with the other records needs to be done to get more comprehensive information about the business. This information will be used to make the financial statements. We will see them in much greater detail as part of the next round of TEAM.



Show slide 38.

Discuss the process of record keeping introduced in the beginning of the module once again. Go through each of the steps covered so far which has been highlighted in grey on the slide. Tell them that two more steps are still remaining, namely preparation of financial statements and thorough analysis of the financial information from the records and financial statements.

Section 5 Exercise

This section will give the participants a feel of keeping records in reality for a business and involves application of all the sections about record keeping.

What will you say at the start of this section?

The exercise is aimed at helping the CRP-EP understand how different records in a business are filled and used. It is therefore necessary for each CRP-EP to do this assignment on her/his own.

How Will You Teach This Section?

Introduce the following exercise in slide 40 and formats to be used in the assignment.



Ask the participants to read carefully the case of Sundari's Garment Store given below with transactions for the period January 1st to 5th and prepare the following:

- Capital and Assets Register
- Stock Register
- Day-book
- PT Sheet

Sundari started a Garments business in September 2015 by taking a loan of Rs. 1,00,000. She constructed a building for the shop for Rs. 50,000.

The following were the transactions that took place in Sundari's shop from 01-05 January 2016:

01 January 2016

Sold a saree worth Rs. 125 on credit for Rs. 150

Sold a frock worth Rs. 80 on credit for Rs. 100

02 January 2016

Purchased goods worth Rs. 7000

Spent Rs. 160 on auto for going and coming back from market

Rs. 300 cash was withdrawn for buying books for her daughter by Sundari

Paid Rs. 50 interest on loan

Repaid Rs. 1000 on loan taken

03 January 2016

Sold suit worth Rs. 170 for Rs. 300 out of which Rs. 50 was paid in cash and rest on credit

Sold leggings worth Rs. 130 for Rs. 150 out of which Rs. 50 was paid in cash and rest on credit

Customer returned Rs. 100 for saree she had brought on credit

04 January 2016

Sold frock worth Rs. 80 for Rs. 100 paid fully in cash
Sold dress worth Rs. 70 on credit for Rs. 120
Sold baby dress worth Rs. 40 for Rs. 50 paid fully in cash
Sold dress worth Rs. 170 for Rs. 200 paid fully in cash
Rs. 400 cash was withdrawn for buying vegetables for the house by Sundari

05 January 2016

Sold towel worth Rs. 80 for Rs. 100 paid fully in cash
Sold saree worth Rs. 125 for Rs. 150 paid fully in cash
Rs. 300 cash withdrawn for paying house electricity bill
Customer returned Rs. 150 for dress she had brought on credit
Sundari took a new loan from her SHG for Rs. 5000 to buy more furniture for the shop
Bought a shelf for Rs. 1500 by paying cash



After the CRP-EP has completed, provide detailed feedback to each. Show the solution for this separately.

What will you say at the end of this section?

Repeat the points about importance of business information and the need for keeping proper records. CRP-EP should start using the formats for businesses that they are already working with/ will be working in the near future. Often people will ask why it is necessary for a small business to maintain such elaborate records. The CRP-EP should be able to convince such persons about the need for maintaining records.

Section 6

Annexures

Format for Business Profile Sheet

1	Name of the business _____					
2	What kind of business does your business engage in? (Business Category)					
3	When did you start the business?(date / month / year) _____ / _____ / _____					
4	When did MEC intervene in your business for the first time? (date / month / year) _____ / _____ / _____					
5	Mention details of the.....(No.) entrepreneur(s) involved in the business					
	Name of the entrepreneur	Male/ Female	Caste	Aadhar Card Number	Phone number	NREGS Worker (Y/N)
	Phone numbers of contact person/s:			1) 2)		
6	Mention details of the place of the business					
	a	Name of the village OR town			_____	
	b	Name of the block			_____	
	c	Name of the district			_____	
7	Mention details of the SHG/WLF/GPLF enterprise is associated with					
	a	Name of the SHG			_____	
	b	Name of the WLF			_____	
	c	Name of the GPLF			_____	
8	How do you sell your product OR service OR goods (trading)? (<i>you can select more than one option, if applicable</i>)					
	a	From a fixed shop OR building	<input type="checkbox"/>	b	From a movable shop	<input type="checkbox"/>

			<i>In the main market</i>	<i>In the smaller market (other than the main market)</i>	<i>Is the only business in the area</i>
		<i>National Highway</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<i>State Highway OR Major Road</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<i>Major Road</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<i>Village Road</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<i>Lane</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c	Sell directly to bulk buyer (Wholesale)	<input type="checkbox"/>		
	d	Sell in haat / mela / exhibition	<input type="checkbox"/>		
9	Give details of the fixed assets (machinery, equipment, building, utensils, furniture, livestock, etc.) purchased for the business				
	Date of Purchase	Name of the Asset		Number	Total Cost (Rs.)
				Total	
10	How much money was initially invested in the business?			Rs. _____	
11	What were the sources of investment?				
	<input type="checkbox"/>			Own Contribution	
	<input type="checkbox"/>			SHG Loan	
	<input type="checkbox"/>			Loan from Family Members	
	<input type="checkbox"/>			Bank Loan	
	<input type="checkbox"/>			Loan from Govt. Department	
	<input type="checkbox"/>			Loan from Moneylenders	
	<input type="checkbox"/>			Others (Grants etc.)	
12	What were the sources of loan taken?				
	Source	When did you take the loan (month / year)	Loan amount taken (Rs.)	For how many months is the loan taken	Balance amount to be repaid
	Bank <input type="checkbox"/> Bank and Branch Name _____				
	SHG / VO <input type="checkbox"/> Informal Sources <input type="checkbox"/>				

Glossary of Terms used in Day-book, Capital and Assets Register, and Stock Register

Terms used in Day-book

Terms	Meaning
Time Period	Time period for which records are / data is being aggregated. Applicable for production, service, and trading businesses
Cash Sales	Sales made in cash for the business. Applicable for production, service, and trading businesses
Credit Sales	Sales made on credit for the business. Applicable for production, service, and trading businesses
Cash Purchases	Raw material purchased in cash. Applicable for production, service, and trading businesses
Credit Purchases	Raw material purchased on credit. Applicable for production, service, and trading businesses
Fuel	Amount spent on purchase of fuel such as firewood, coal, gas cylinder, kerosene, etc. Applicable for production, service, and trading businesses
Cash withdrawn for personal use	Amount withdrawn by the owner(s) for personal use (example – paying school fee for children, buying vegetables for the house from the market, salaries or wages withdrawn by owner etc.) from the business. Applicable for production, service, and trading businesses
Repairs and Maintenance	Amount spent on repair and maintenance of fixed assets. Applicable for production, service, and trading businesses
Wages to Workers	Amount paid to workers as wages or salary. Applicable for production, service, and trading businesses
Transportation	Transportation cost incurred for business purposes. Applicable for production, service, and trading businesses
Other expenses	Expenses such as rent, electricity (which are not included other heads) incurred. Applicable for production, service, and trading businesses
Amount paid by Debtors	Amount received from customers against credit sales made to them. Applicable for production, service, and trading businesses
Amount paid to Suppliers	Amount paid to suppliers against credit purchases made from them. Applicable for production, service, and trading businesses
Advance paid to Suppliers	Amount paid to suppliers as advance. Applicable for production, service, and trading businesses
Advance received from Customers	Advance received from customers as advance. Applicable for production, service, and trading businesses
Cash added to the Business	Money added to the business by the owner. Applicable for production, service, and trading businesses
Loan amount repaid	Loan amount repaid by the owner. Interest is not included in the amount
Interest amount paid	Interest amount paid on the loan

Terms used in Capital and Assets Register

Terms	Meaning
Purchase of Fixed Assets	Amount spent on purchase of fixed assets for the business during the mentioned period
Sale of Fixed Assets	Amount received on sale of fixed assets which were used for the business during the mentioned period
Security Deposit Paid	One-time deposit paid by the owner to the landlord for rent of the premises used for business during the mentioned period. This security deposit is refundable when the owner vacates the rented premises
Security Deposit Returned	In case security deposit is returned by the landlord to the business in the mentioned period, the amount returned has to be recorded here
Loan taken	New loan(s) taken during the mentioned period
Source of loan	Source from which the loan has been taken - SHG, Bank, Family, Moneylender, etc.
Capital Withdrawn (incase an owner resigns)	This column is relevant for group businesses. It will only be filled when an owner from the group resigns and withdraws her share of the investment

Terms used in Stock Register

Terms	Meaning
Date	Date on which the transaction is being recorded
Item/s	Name of the item purchased or sold
Purchase Quantity	Total number of units purchased
Total Purchases	Total cost of items purchased
Sales Quantity	Total number of units sold
Total cost of the item/s sold	Total cost of item/s sold



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