

One  
Weave  
at a  
Time



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# INTRODUCTION

**In general terms, weaving is when two materials are intertwined together. It is used to make cloth and other related products. During the process we use thread, also known as yarn. Weaving is done by two sets of yarn passed over and under each other.**

**Weavers use natural fibres like silk, wool and cotton and synthetic fibres such as nylon and rayon but thin flexible strips of almost any material can be weaved!**

**People learned to weave thousands of years ago using grass and tree bark.**

**Weaving plays an important part in the manufacture of screens and metal fences also. Crafts men also use it to weave hats and baskets.**

**In our lives today, weaving is often done on high sped looms. It has varied a lot since it first started. Though most people don't know it, weaving is a big part of our lives. Look through this book to get an insight into the world of weaving.**

**The authors of this book, the students of grade 7 D, year 2010-11, of The Heritage School Gurgaon, have made an attempt to bring together all that goes into weaving a piece of cloth and also putting it all together to make a finished product which in this case is the bag.**

**Throughout the Project, The Heritage School Gurgaon worked in collaboration with Disha India Centre for Experiential Learning, which helped in the concept, planning and execution of the project.**

## **ACKNOWLEDGEMENT**

**Lots of love and appreciation for all our teachers and everyone who helped make this book possible. A huge thank you to Auro sir for teaching all of us how to weave in the first place.**

**We could have never made it without our teachers. They taught us everything about weaving.**

**Another huge thanks to our teacher Ms. Meenu Tomar for pushing us to our best potential and for putting in so much of energy into this project.**

**Without all their patience and support we could have never done it.**

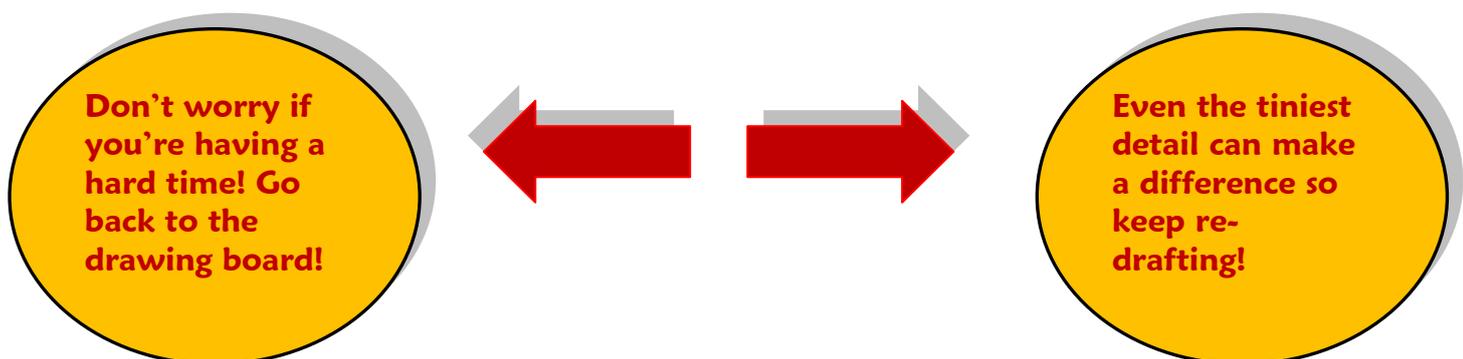
**This book would not have been possible without the conceptualization and constant guidance from Mr. Parminder Singh of Disha India Centre for Experiential Learning.**

## Planning

**What is the most important part of doing anything?**

**Yes, it is planning. You have to set a target, design steps and make a plan that works for you! Go over what you have to do and figure out how you will do it. Improvisation is a great thing but a lot of the times you need to keep re-assessing what you had in mind.**

**Don't worry if you get it wrong a couple of times just get up and strategize! That's what we did throughout the project. Look at what our plan of action was:**



## This is the format we used for planning our project

<b>Project</b>	<b>Project facilitator</b>
<b>Team and team members</b>	



<b>The final product</b>	
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Who is the audience? What is the purpose?
How will we go about it? What steps will we take?

Field work required:- (Try to think of the places you will need to go to complete your project)	Service:- (How will you be contributing to the people around you?)
Arts and exhibitions:- ( When and how will you present you work?)	Experts help required:- (Do you need someone with experience to help you out?)

**Now that your plan is  
done you are ready to  
go! What are you  
waiting for?**



## WORKING AS A TEAM

When you work in a team it always works out well, because people are there to support you and guide you if you are ever wrong. The best part was when our whole team started working together and being considerate. We realized that if we wanted to get the job done well, we had to be considerate, understand each other and go with the flow of things. It was all for one and one for all.

All our group members were given responsibilities, a few of us were doing the guidebook and a few were doing the weaving. Whenever someone wasn't weaving they were doing the guidebook. It was very, very well planned and organized. One thing all of us discovered about ourselves was that we love being creative and weaving is a great way to express that creativity. Patience is very important when it comes to weaving. You have to completely focus on what you are doing, sometimes you might get it wrong and weave the wrong pattern but that is the part when you have to be very patient and keep on trying again and again.

The best part was when everyone started really getting used to working with each other. We had become used to each other's ways and learnt how to cooperate with one another. It was really good knowing that our guidebook and weaving was going great and all our hard work was starting to pay off.

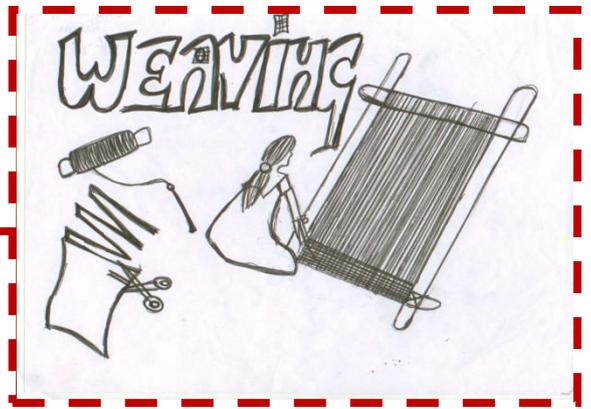
At the end of our project we all walked away feeling like we really had accomplished something, because no matter how many ups and downs we had we kept trying, never gave up. And if you do the same maybe you'll feel the same.

Working with other people can be a huge asset because they are always there when



**Remember two heads  
are better than one!**





## What is weaving?

Weaving is the process of making cloth, rugs, blankets, and other products by crossing two sets of threads over and under each other. Weavers use threads spun from natural fibres like cotton, silk, and wool and synthetic fibres such as nylon and Orlon. But thin, narrow strips of almost any flexible material can be woven. People learned to weave thousands of years ago using natural grasses, leafstalks, palm leaves, and thin strips of wood.

Today weaving ranks as a major industry in many countries. Weaving is often completed on high speed looms. But weaving is not limited to cloth and textile products. Weaving plays an important part in the manufacture of screens, metal fences, and rubber tire cord. Craft workers also use varied fibres to weave baskets and hats.

## Types of Weaves

### Plain Weave

Most simple and most common type of construction, inexpensive to produce, durable, flat, tight surface is conducive to printing and other finishes. The simplest of all patterns is the plain weave. Each weft yarn goes alternately over and under one warp yarn. Each warp yarn goes alternately over and under each weft yarn. Some examples of plain weave fabrics are crepe, taffeta, organdy and muslin. The plain weave may also have variations including the following:

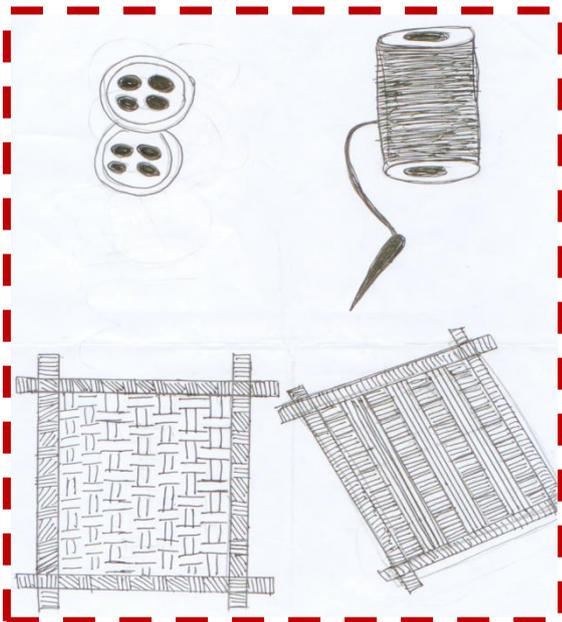
**Ahana-** I learnt a lot from this project. I learnt how to weave, the parts of the weaving machine, how to stitch a bag and how to look at it from a weavers angle.

**Rib weave:** The filling yarns are larger in diameter than the warp yarns. A rib weave produces fabrics in which fewer yarns per square centimetre are visible on the surface.

**Matt Weave or Basket weave:** Here, two or more yarns are used in both the warp and filling direction. These groups of yarns are woven as one, producing a basket effect.

### Basket Weave

A variation of the plain weave usually basket or checkerboard pattern. Contrasting colours are often used. Inexpensive, less durable than plain weave. Basket weave is the amplification in height and width of plain weave. Two or more yarns have to be lifted or lowered over or under two or more picks for each plain weave point. When the groups of yarns are equal, the basket weave is termed regular, otherwise it is termed irregular.



**Ananya** - Throughout the project we faced quite a few challenges but managed to overcome most of them. The biggest challenge I faced was every day when I weaved. I twisted the threads so many times I think I broke a record. Once I accidentally wove the thread wrong for 15 minutes without realizing but it's okay because when you do something new you are bound to make mistakes!

## The parts of a weaving loom

Weaving looms can range from quite simple to very complex. Looms have been used to produce cloth for thousands of years, and while technology has improved the loom, the basic strategies and practices remain much the same. Understanding the parts of the loom can help you learn to weave or simply learn a bit more about how weaving works.

### Warp Beam

1. The warp beam is a beam that holds the warp, or vertical threads, on the loom. Depending on the loom, this can be a simple beam or a more complex arrangement allowing for easier warping of the loom.

### Heddles

2. Heddles are made of cord or wire, and are attached to the shaft of the loom. The warp threads pass through the heddles, separating the warp threads to allow the weft threads to pass between them easily.

### Harnesses

3. The more harnesses or shafts a loom has, the more design possibilities you will have. Most larger looms have four harnesses, and table looms often only one; however, looms of up to 16 harnesses are available.

### Shuttle

4. The shuttle is a bobbin which holds the weft yarns. The shuttle is passed or thrown back and forth to create the weft of the fabric.

### Beater and Reed

5. The beater of the loom presses the newly created weft thread against the already woven fabric using a reed. This process is called battening.

## Different Types of Looms

### Hand Looms

The first and original loom was vertically twist-weighted types, where threads are hung from a wooden piece or branch or affixed to the floor or ground. The weft threads are manually shoved into position or pushed through a rod that also becomes the shuttle. Raising and lowering each warp thread one by one is needed in the beginning. It is done by inserting a piece of rod to create a shack, the gap between warp threads in order for the woof to easily traverse the whole warp right away.

**Ishna-** My favorite part of the project was when we had to design the manual. I liked it because I was in charge of designing the cover page! It was also fun when we collected information and presented it in front of the class. :D

## Ground Looms

Horizontal ground looms permit the warp threads to be chained between a couple of rows of dowels. The weaver needs to bend forward to perform the task easily. Thus, pit looms with warp chained over a ditch are invented to let the weaver have his or her legs positioned below and levelled with the loom.

## Back strap Looms

They are well recognized for their portability. The one end of this loom type is secured around the waist of the weaver and the other end is attached around a fixed thing like door, stake, or tree. Pressure applied can be customized by just bending back.

**Satrajit-** There is one thing which I would take away with me for life and EVER forget is Weaving.

## Frame Looms

Frame looms almost have the similar mechanisms that ground looms hold. The loom was made of rods and panels fastened at the right angles to construct a form similar to a box to make it more handy and manageable. This type of loom is being utilized even until now due to its economy and portability.

Slow but we wove the cloth right,  
We kept on changing the patterns  
From checks to stripes.  
We went home with pictures in our heads,  
Of weaving looms shuttles and pieces of thread.



## History of weaving

The origin and development of woven cloth is closely tied to the history of mankind. Thousands of years ago we developed the skills necessary to turn the raw materials around us into cloth for clothing and shelter.

Weaving, the lacing together of threads and yarns to form cloth has developed over thousands of years of discovery and experimentation. Coarse fabric, made from grasses and leaves, was the first step toward the development of the textiles we use today.

0,000 to 30,000 years ago early man developed the first string by twisting together handfuls of plant fibres. Preparing thin bundles of plant material and stretching them out while twisting them together produced a fine string or thread.



Woah!

The ability to produce string and thread was the starting place for the development of weaving, spinning, and sewing.

Stone Age Man's early experiments with string and thread lead to the first woven textiles. Threads and strings of different sizes were knotted and laced together to make many useful articles.

Finger weaving, the lacing and knotting together of threads by hand, is still used today by many weavers.

During the early Neolithic Era simple weaving looms were developed. Simple weaving looms are man made tools to hold the warp (vertical) threads snugly in order allowing the weaver to insert the weft threads.

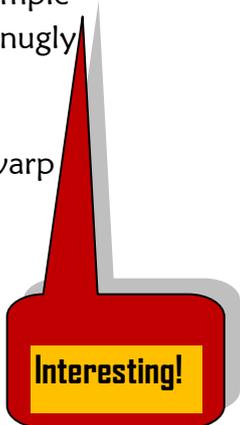
The two early weaving looms are the horizontal ground loom and the warp weighted loom.

Some looms used in the Neolithic era were:-

The Horizontal Ground Loom

The Horizontal Ground Loom

The Draw Loom



Interesting!

Cloth weaving during the middle ages developed swiftly. Weavers developed many clever changes to the original frame looms and shed loom systems.

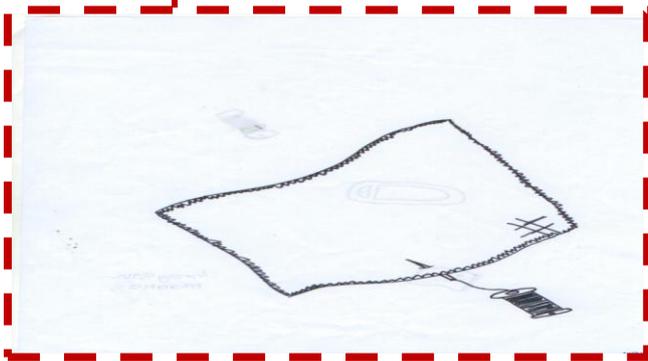
By the 11th century many of the weaving patterns used today had been invented. Skilled weavers developed highly specialized cloth.

During this time the task of weaving cloth began slowly to move away from the family unit into specialized work places.

Cloth weaving became a mechanized industry with the development of steam and water powered looms. The invention of the fly shuttle removed the need to have a weaver place the weft (vertical) thread into the warp (horizontal threads) by hand

**Always try new things. You never know what you will like! If I had discarded the idea of weaving before I even tried then I wouldn't have made those amazing bags!**

**Weaving finished, a great success,  
But we left the weaving room a huge mess!  
We thought we were finished and we could rest  
But we had no clue what was up next!**



# DESIGNING A BAG

## How to make a bag?????

I had a marvellous time designing the bag!  
-Kriti

### MATERIALS REQUIRED

Cloth, Needle & thread/Stitching Machine,

#### Step 1 →

Cutting the cloth will be our first step. You will cut the cloth and you will get about 5 pieces if you are making a square or rectangle shaped bag and 3 pieces if a circle shaped bag. (For help refer to the drawing below).

#### Step 2 →

Now you have to stitch all the pieces together as shown below.

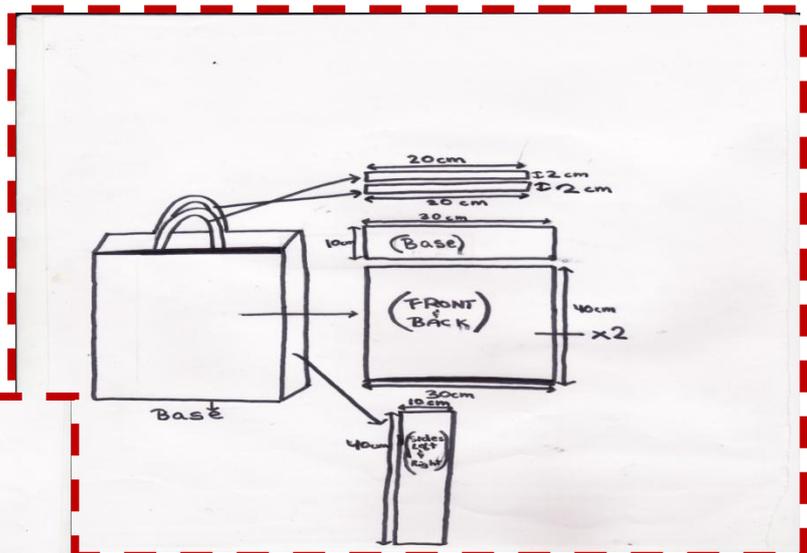
#### Step 3 →

Attach the handles.

It was great to see how the bag turned out!  
-Arusha

Your bag is ready!!!

You can even experiment with new ideas like this



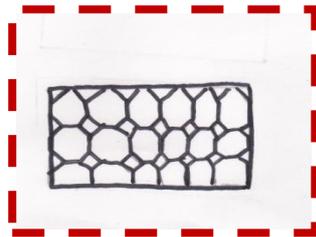
# Patterns!

There are many kinds of patterns. We worked on a few of them as you can see below...

## 1. Honey comb

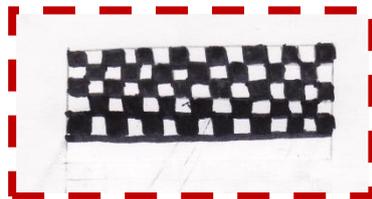
This design is based on the bee's house a "HONEY COMB".

Pattern code on the weaving machine: 1,2,1,2,1,2,1,2,1,3,4,3,4,3,4,3,4,3.



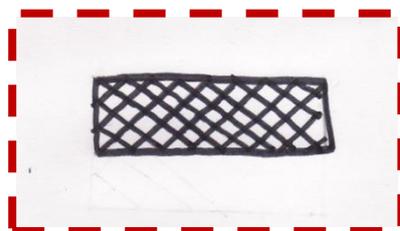
## 2. Checks

This design must be familiar to you these are the famous checks. Pattern code on the weaving machine: 1,3,2,4,1,3,2,4.



## 3. Diamonds

This is the diamonds design. Pattern code on the weaving machine: 2,3,1,4,2,3,1,4.



## 4. Wave

This design is basically curves in a row. Pattern code: 1,2,2,3,3,4,4,1.

## Pointers!

Designing bags looks like an easy job but it's not. You may design the bag without facing any problem but the final outcome might not be what you expect. If you keep a few things in mind your bag will come out to be amazing. You don't want to work really hard and make a mistake right at the end do you?

Let us tell you a few things to keep in mind →

Keep the size of decorations like buttons, beads etc. Like the size of the bag. The last thing you want to do is make the buttons too small for the bag!

Keep the colour of the accessories matching with the colour of the bag

Do not put too many accessories that might not give the bag the look you want.

Do not put things on the borders it might make the bag look fussy.

Once you have designed the bag and started do not change the design it may cause margin problems which makes the bag look imperfect.

So keep these things in mind and start to **design!!!!**



## FREQUENTLY ASKED QUESTIONS

How?

### 1) When did weaving originate?

Weaving started a long time ago when people first interlaced materials. They did not start with cloth. It started with leaves and tree bark. It originated around 6000 B.C.

### 2) Where did weaving start?

There was no particular place where weaving started but it became quite popular in West Asia.

### 3) Who invented the weaving loom? Where?

In 1801 the first ever weaving loom was invented by Joseph Marie Jacquard. He invented it in France.

When?

### 4) What are the different parts of a weaving loom?

These are some parts of a weaving loom

**Warp Beam** - The warp beam is a beam that holds the warp, or vertical threads, on the loom.

**Heddles** - Heddles are made of cord or wire, and are attached to the shaft of the loom.

**Harnesses** - The more harnesses or shafts a loom has, the more design possibilities you will have.

**Shuttle** - The shuttle is a bobbin which holds the weft yarns.

Who?

### 5) What are some different types of weaving machines?

These are some looms

- a) Back strap loom
- b) Warp weighted loom
- c) Draw loom
- d) Hand loom
- e) Power loom

Where?

### 6) How is weaving useful in our day to day life?

Weaving now does not play as big a part in our day to day lives as it used to but we use it very often. We use it to make rugs, mats and bags.

### 7) In which parts of the world is weaving important?

Weaving is now used in all parts of the world to make different items but it started in parts of what are now called Asia, parts of Europe and the American subcontinent.

### 8) How many different patterns can you make?

Once you begin to weave there are innumerable patterns you can make. You could use all sorts of different combinations to arrive at a different pattern.

### 9) Is it possible to weave without a loom?

Yes, of course! Weaving is a process that has been taking place long, long before the loom was invented.

### 10) Are there any famous weavers?

Even though weaving plays a big part in our lives it is not very well known to the world. There are however a few well known weavers like Teotitlán del Valle and Maximo Laura. Who knows maybe you will be one **someday too!**

Questions, question  
and more questions!  
Where are all the  
answers?

HERE!

