

# Re-designing the NCERT Textbooks

Communication Design Project 3 Report

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**IDC** School of Design  
आभिकल्प विद्यालय

## Approval Sheet

This Communication Design project entitled  
“Re-designing of NCERT Textbook” by Jinal Shah, Roll  
no. 216450016 is approved in partial fulfilment of the  
requirements for a Master of Design Degree in  
Communication Design.

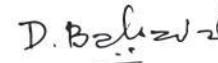
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Date: 12 May 2023

IDC School of Design,  
Indian Institute of Technology, Bombay.

## Declaration

I declare that this written submission represents my ideas in my own words and where other's ideas or words have been included. I have adequately cited and referenced the sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission.

I understand that any violation of the above will be cause for disciplinary action by the institute. And can also evoke penal action from the sources which have thus not been appropriately cited or from whom proper permission has not been needed.

Jinal Shah 216450016  
Communication Design



Date - 12 May 2023



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## Acknowledgement

I'd like to express my deepest gratitude to **Prof. Ravi Poovaiah** for his guidance and support throughout the project, as well as to all the professors for their feedback during their presentations. I am also grateful to **Prof. Mandar Rane** for useful guidance and insights during our stage presentations.

I am thankful to my parents and friends for encouraging me and supporting me throughout my project.

Jinal Shah 216450016  
Communication Design  
Date - 12 May 2023

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## Preface

*Can a small butterfly flapping its wings cause a big difference in society?*

At the start one might feel that a very small change does not make a huge difference. But as time goes, the seemingly small change makes a very small difference. And then it slowly leads to bigger differences. The theory of the butterfly effect is what gives us the hope that any small attempt by us will carry the potential to eventually impact society.

My final project for the semester is inspired by the current scenario in the education system of the country. And I have utilised this opportunity to bring a small change in this seemingly vast system.

## How I came to deciding on the topic

### 1. An observation that struck me

Some time back I asked my 12 year old sister “Jiya, do you know what photosynthesis is?” To which she didn't respond immediately, but rather typed photosynthesis on youtube and handed the phone to me.

Now there is nothing wrong with what happened here. But the fact that I was sitting right beside her and saw her academic science textbook in front of her. There was not only a chapter of photosynthesis in her textbook, but also a detailed explanation on the topic. Yes, these were the emotions 😳 😰 😞 😞 😞 that I felt when I saw her going straight to the internet for something that is available to her in a much easier, reliable way.



### 2. A casual conversation that took a turn for the better

I was sitting in my Hostel mess and chatting with my batchmates as usual. One day, I asked my friend Karishma, who studies M.Tech and works as an intern in the Edutech department in IITB about anything new and unique they are doing at internships nowadays? I came to know about a guy who's designing a VR based system for school children to learn diagrams better.

The gist of the conversation included a lot of emphasis on children, changing society and its impact on learning and some new ideas that are implemented for better learning.

This conversation was a big motivation for me to come to a decision that I will use my last chance of learning in IDC for something that can benefit education and youth of our country.

### **3. My previous attempt at making the subject of History interesting**

In my previous semester, I came across the problems school children face when learning history. Hence, I spent the time learning about teaching patterns, learning patterns, textbook learning, understanding the basics of history and why it is taught in a certain way.

I ended up making a Project 2 on redesigning a particular topic of history in the form of storytelling. Hence, 'textbooks and problems children face when learning from them' was something constantly in the back of my mind.

### **4. I was provided with steady guidance**

During my 1st meeting with my guide Prof. Ravi Poovaiah, we discussed our observations and point of views on the current scenario in education, textbook learning and changes in the system after the pandemic.

Here I understood the impact of small changes in the education system and it acted as a kickstarter to an in-depth study for my project



## My study on the current scenario

### 1. Learning about NCERT

India has a unique education system with several national, international, and state education boards. Indian education boards are initiating amendments to cater to the different requirements of the children. Educational choices nowadays aren't only about choosing the best school or stream but rather determining from the different education boards.

#### List of Education Boards in India

Here is the list of different types of boards in India:

1. State Boards
2. Central Board of Secondary Education (CBSE)
3. Council for the Indian School Certificate Examinations (CISCE)
4. National Institute of Open Schooling (NIOS)
5. International Baccalaureate (IB)
6. Cambridge International Examinations (CIE)

The CBSE is a national education board of India for public and private schools, administered by the Union Government of India. It is among the most popular education boards in India, with over 24,000 schools in India and approximately 240 schools in 26 foreign countries affiliated with CBSE.



- a. **The NCERT Logo :** Three intertwined white swans in the NCERT logo represent the three aspects of Knowledge - Research and Development, Training and Extension. The motto has been taken from the Isavasya upanishad which means "Life through eternal learning". They strongly believe in the motive of Education for all, to all.
- b. **Why NCERT? :** With the highest amount of reach from the urban to rural areas of the country, NCERT is a giant in itself.
- c. **About curriculum :** Books cover all basics and fundamentals of each and every topic for all subjects to help the students in understanding the concepts easily and quickly.
- d. **Importance of NCERT :** Books are enough not only for board exams but also for the competitive exams like JEE mains and other exams.

## 2. Finding resources online

### 2.1. A youtube video on why students don't read textbooks

- In brief Prof.Heimler talks about
- Procrastination and how it affects productivity
- Explaining the root cause of procrastination, which is fear of failure and success, and gave tips to overcome that.
- There needs to be something at stake for children to prioritise it.
- The benefits of textbook reading should be listed and shown successful examples.
- Demonstration is the key to influence
- Making a connection of Why they are reading and what is expected of them to do.
- Distraction is the key problem of learning and consistency
- There are many easier and accessible ways of learning



TOP 5 REASONS Students DON'T Read Textbooks (and what to do about it...)



Heimler's History Te...  
4.57K subscribers

Subscribe

176 Share

### 2.2. Interviews by toppers from national competitive exams

- The effective method of textbook reading.
- I noticed their reading patterns and how they focus on certain topics.
- Different students have different opinions.
- They clearly stated the importance of reading textbooks and its advantages.
- Focus on how the competitive exams are designed.



CHETANYA MITTAL  
AIR 4 AIIMS 2019

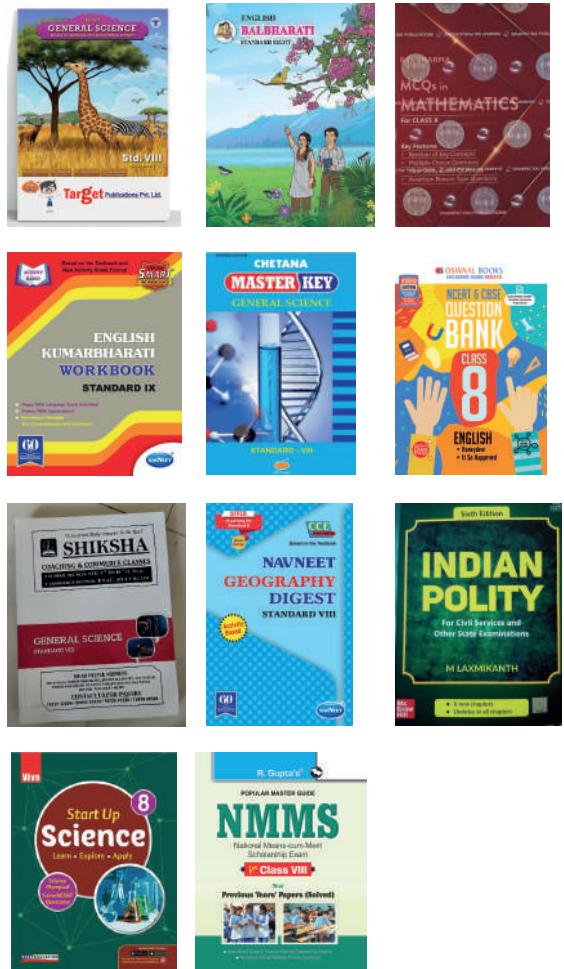


BHAVIK BANSAL  
AIR 1 AIIMS 2019

### 3. Understanding the overall learning resources

There are multiple resources available for a student to learn effectively. Mainly, there are 2 categories.

#### A. Book resources



#### B. Online videos, tutorial, articles, classes etc

A screenshot of a digital platform. On the left, a video thumbnail for 'Class 8th SCIENCE (Book : Science - NCERT)' by 'Magnet Brains' is shown. On the right, another video thumbnail for 'ENGLISH SOCIAL SCIENCE Lets Crack SST - Battle of Champ Resources - AA37' by 'Alisha' is shown. Below the thumbnails, text indicates the class ended on May 19, 2023.

A screenshot of the Byju's Tuition Centre website. It features the Byju's logo and the text 'Now in your neighbourhood'. It mentions '300+ Centres | 140+ Cities' and a 'Click to Book a FREE Session' button. A person is standing in front of a purple building labeled 'BYJU'S TUITION CENTRE'.

#### 4. Reading papers and articles

**Paper name** - Why University Students Don't Read: What Professors Can Do To Increase Compliance

**Author name** - Mary E. Hoeft

University of Wisconsin-Barron County,

mary.hoeft@uwc.edu



Mary E. Hoeft  
University of Wisconsin-Barron County

##### Basic summarisation of the paper in points -

1. The students had too much to read
2. Their schedules don't allow them time for extensive reading.
3. Their social life leaves them with too little time to read.
4. After a point, the ratio between the time needed to read and the time left to read increases to a point of no return.
5. No one likes last moment continuous reading.
6. Students can do anything as long as they put their mind into it.

**Insights that I received** - The factors that can influence students into textbook reading are

Respect for teachers

Taking tests and quizzes

Impact of constant reminders

The strength of the class

Impact of peer reading

The image shows the cover of the International Journal for the Scholarship of Teaching and Learning, Volume 6, Number 2, July 2012. The cover features the journal's logo (ijSOTL) and title. Below the title, it says "Volume 6 | Number 2" and "Article 11". The article title is "Why University Students Don't Read: What Professors Can Do To Increase Compliance" by Mary E. Hoeft, with her affiliation "University of Wisconsin-Barron County" and email "mary.hoeft@uwc.edu". At the bottom, there is a "Recommended Citation" section with the same details as the cover.

## 5. A fun study

**An unconventional way of finding out opinions** - I took a chance and went on some websites where people have the freedom to talk about whatever they want, like **Quora** and **Reddit**. My motive was to understand reviews from parents, teachers, current students, Ex students, shop owners and other anonymous people. And to my surprise, this step turned out to be fun and interesting.

*Even if this study includes a mixed type of personalities, I am not taking the insights as my actual base. It is a part of my secondary research. But my insights will be based on tutorials, articles and papers read by certified individuals and my users approved by my guide.*

### **Demerits -**

Usually one is more comfortable with hard books and revision etc are easier from hard copies than online ones. Difficult to add relevant content from other sources.

**NCERT are just bare minimum.** you cant top exams just by studying them. but they are absolutely necessary in giving an in-depth understanding to the student.

Merits - Could be read anywhere and one need not carry books

Online notes could be made

Easily available

Each line in the NCERTs convey not just one but multiple concepts. You just need to broaden your horizons to understand it. The present NCERTs have even tried to indulge its readers into various activities under the head "TEST YOURSELF". Not just that they have even placed some very interesting facts under the head "DO YOU KNOW". This shows that the authors are trying hard for you to not be just a mere reader of their work but also actively participate in the knowledge gaining process!

Just take a look at NCERTs through an open mind and you'll witness it for yourself.

If you take a look at the authors of the particular book and maybe google them you will come to know that a few handful of the most brilliant authors , each with an in-depth knowledge of that particular subject have come forward to write the book!

NCERT books are the best but how would you explain the cramped content? **The useless facts?** The absence of many important points? **The structure???**

Now if only they **could make the diagrams legible....** The labeling are either too small or the diagrams are superimposed on themselves- double vision, remember? I won't talk about the bindings because it has been mentioned already by other people.

Overall, I'm still convinced that the writers and editors of NCERT English books have really f\*\*\*ed up. Because the content is badly organized, there is zero useful information and there are only thousands of **examples that are not even relevant.**

Almost no concept is to the point, and the content just beats the bush. They just ask the question at the end of the para like- "how?" "Why?" "Find out yourself" etc.

though ncert are great books and create a much greater understanding of the subject, the reason why students hate it(may be) is that it **doesnt cover whole topic in full sense.**

student HAS to refer some other book to create further better understanding

**The content is completely unstructured and unorganized.** It's like these guys had published the first draft that they prepared of their penned down notes.

**The content is incoherent.**

**LACK OF ADEQUATE GRAPHICAL REPRESENTATION-** This is absolutely inexcusable, IT IS GEOGRAPHY THAT I AM TALKING ABOUT! You want us to study the world climate distribution without a map's illustration, simply by creating an image in our minds based on your pathetic attempt at a description?

Let me tell you, **the writing style is dryer than a piece of stale dry bread.** The letters and words are arranged or should I say squished together in such a way that you would have a headache after reading 5 pages. I once thought that I was having double vision when I could not make out what was printed on the paper- if you could call that **dusty, rough and smelly material 'paper'.**

I used the Miro board  miro to collect and organise data as it is easier to use and consumes less time.

## Primary study

**Listing the user group** - The basic user group of my study is divided into 4 parts

1. Students
  - a. School students
  - b. Ex-students
2. Parents of students
3. School teachers
4. Tuition teachers

**Method of interview** - I personally met each and every individual after asking for an appointed time. I had a basic set of questionnaires prepared to understand more about their learning procedures, habits, what helps them learn better and the difficulties faced.

*I took notes, clicked pictures and sometimes even recorded audio with permission from the interviewees.*

**Group 1 - Current school children** - As our Project 3 actually started during February end, a lot of school students had their final exams going on. Hence, asking for appointments and getting their time was the 1st Challenge I faced. So I turned towards school children of family, friends, children in our buildings and tuitions going on in neighbouring apartments. Luckily I had a friend in a group class held in our area and I got access to the children for a while.



**What went well** - because of a variety of children (primary users), I was introduced to many aspects of learning and textbook reading. From components that aid learning in the modern world to their own methods of learning. I also learned that children after the pandemic got a lot equipped with technology and Interfaces.



**What needed to improve** - because of too much of a variety in school students, the insights I received were varied and distributed among the std. 6th to std. 10th. They had a lot of similarities and equal amounts of differences too. It was difficult for me to figure out patterns and problems.

Here's a peek into my interview process.



**Group 2** - My batch of Ex-students also intersected with Parents of school children, Tuition teachers, School teachers and my batchmates from IITB. I took a lot of interviews while travelling and finding people inside campus.



What went well - As majority of my adult interviewees (above the 15 yrs) were literate, I got a lot of insight about syllabus from 40 years ago till 2022. Also, a lot of parents and teachers gave me insights that I didn't get while interacting with school children.



What needed improvement - Again, as my users were from different backgrounds, qualifications, professions and age, the task of finding the middle ground was a bit difficult.

**Group 3** - The non users. The parents of students who are still in schools, parents of students who have completed studies. People who haven't studied from textbooks, local book dealers and people who have long since completed their studies.



What went well - Talking to this group was a lil bit different. Because the majority of them are not end users or don't use or buy a textbook themselves, they didn't have much to say on the studies, subjects or learning. But I did get some unique insights on perspectives that one might overlook otherwise.

## \* SCHOOL / TUITION TEACHERS

### 1. Tuition teacher

Name - Rupal

Age - 45 yrs

Gender - Female

Occupation - Full time tuition Teacher

students - std 5<sup>th</sup> - 10<sup>th</sup>

boards - All boards

6. I & Board, ISCE board both of them the proper syllabus, book, portion, marking of the textbooks.

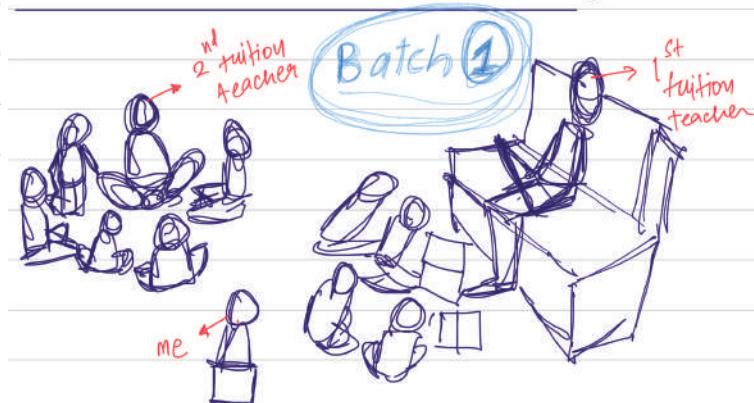
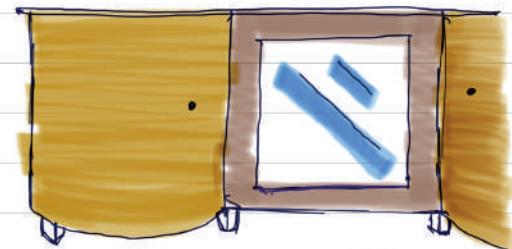
exams & marking systems.

7. NCERT kids are the majority here. I have total 3 batches only for CBSE board. And the portion is same for a long time anyways.

8. This cupboard is completely filled with <sup>by th.</sup> inference books. Almost all CBSE board have 9 & 10

### \* Points from interview -

1. All my parents of students have a goal.
2. They want their kid to be the topper
3. Its been more than 10 yrs of teaching
4. I know what exact syllabus is imp. for all the boards.
5. SSC board is the most predictable. All mugup mugup. The kids have to byheart even maths questions to get marks.
6. I've seen SSC board teachers cutting marks if even a single step is missed..



**Going to School & students**

\* students → ① majority students are homeschooled. Tuition  
  
 5<sup>th</sup> std → ② Schools provide books & worksheets.

6<sup>th</sup> std → ① majority homeschooled books, worksheet.  
 ② students tend to ignore the fun characters.

7<sup>th</sup> std → ① some students attend classes / tuition.

**more problems with the textbook**

8<sup>th</sup> std → ① Position start to change  
 → children get more mature  
 - a lot of children already understand design & its working.  
 - they don't prioritize textbooks.  
 - textbooks have a very bad image if they don't touch it much.

**Internet**  
**other books**  
**peer learning** They rarely do all exercise questions except maths, physics, etc.

Summarization of insights after completion of interviews -

## Teachers

### School/tuition

<b>Trust</b> Students don't question the authority	<b>Experience</b> Overcoming the image of a textbook <b>Image issues</b> Its been years since we've been teaching the CBSE kids from other books.	
Maths and science books skip steps and only show final answers	We ourselves ask the students to refer from other books	For math's, we don't even look at textbooks, R. D. Sharma is the best.
<b>Habitual Influence</b> Students don't complete the given reading at home	<b>Problems in the Textbook</b> Students don't complete the given reading at home	We are used to the way the CBSE books are right now
In a way, it is very easy to find out pointers because of years of practice.	<b>Stake</b> Our students are mostly focused on gaining maximum marks in the exams	<b>Priorities</b> I've noticed that marks are more important than gaining knowledge

## Parents

## Students

Students find textbooks bare minimum

A lot of other books have better information

The book is a mess. I have to personally go through the whole chapter before teaching my child

NCERT Textbooks have half information and its very confusing

We teach our kids ourselves.

A lot of distractions in the textbook itself

It is better if the answers to the questions are given in the textbook itself

I don't like my child always googling the stuff he doesn't understand

Lack of satisfaction

Distractions

Unsupported questions

Reading is a big task

Other study material are from the exam perspective

Reading textbooks is boring

NCERT textbooks are boring and repetitive

There is chunni, munni, bujho, paheli, unnecessary emojis etc.

I don't know why half of the things are included in the textbook

They don't mention definitions, explanations, examples, etc. we have to figure it out on our own

The diagrams in science are distorted and difficult to point out.

Random images are given and other images are not

Boring, Ambiguous visuals

Boring

Feeling of unnecessary information

Bad paper/print quality

## Why students don't study from textbooks

80%

20%

Because today there are multiple sources of information and knowledge, the quick easy and interactive method wins

Majority students study because they need to appear for the exams

There are a lot of problems with the current NCERT Textbooks

Online classes

Youtube tutorials

Videos and experiments

More amenities such as recorded lectures, long distance learning

Different kinds of methods and hacks

And nearly a 3/4 of them rely on more than 1 source for their studies

Students need more at stake or a purpose to read textbooks

Every student has their own way of studying

A lot of external factors influence a student's decision to learn from the textbooks

Content

Structure

Visual

Build quality

Image of the book is not as good as other reference books

## Summarising the guidance I receive during Stage 1 Presentation

After presenting my initial study, interviews, primary, secondary research and basic insights, I received approval to move forward in the same direction.

**1. What is alright for now** - Study and research on the problems in the education system. I need to analyse the major factors and focus on catering only 1 single issue at a time. And if the insights point towards an opportunity to redesign the textbooks, then it should be my priority.

**2. What to focus on** - A design solution that can narrow down the scope of intervention. After selecting the main problem, I need to find out the standard and subjects to start the project

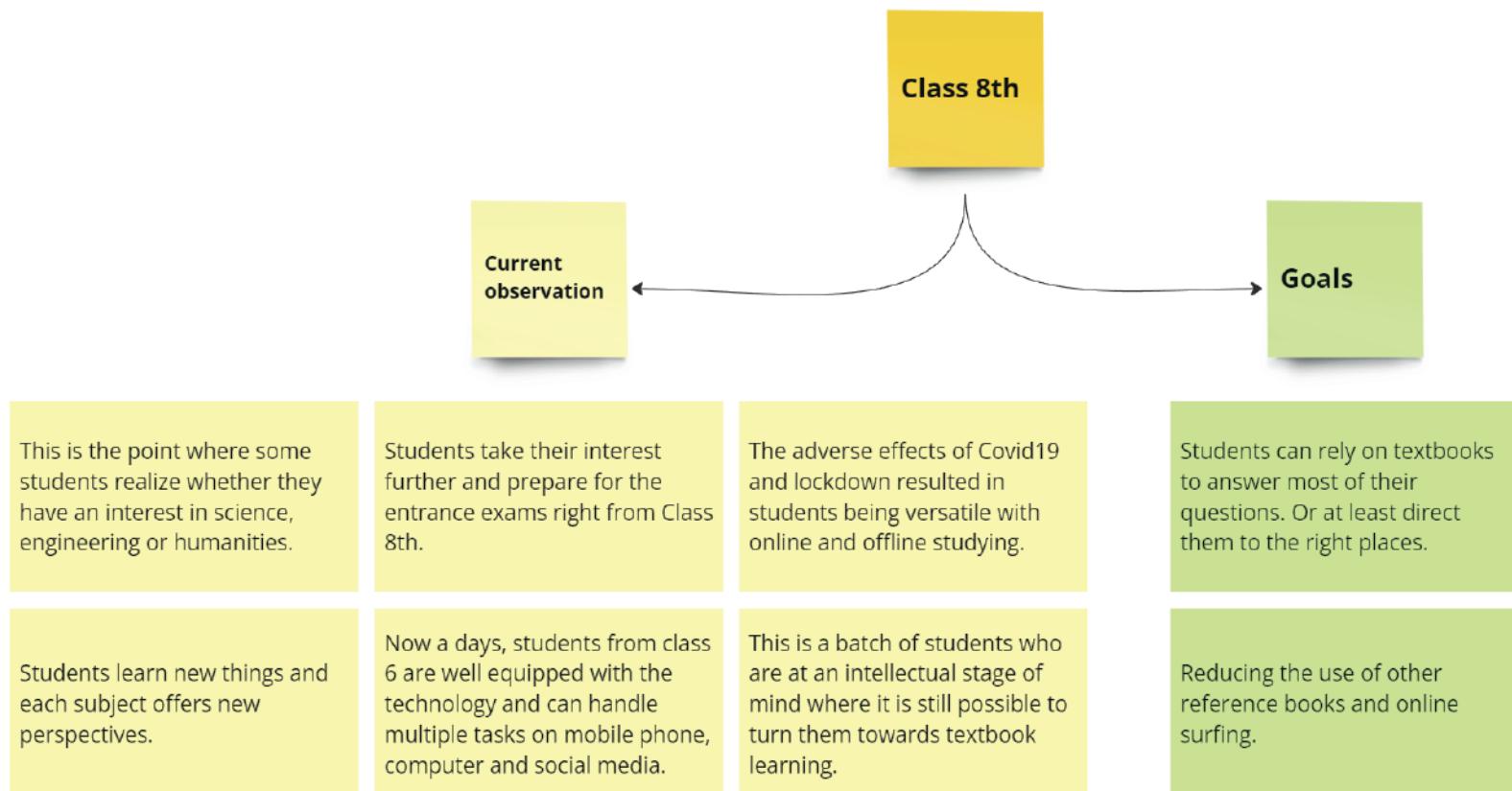
**3. Know the rules first** - Read the NCERT guidelines properly and understand the priorities to follow.

**4. Think in detail** about the problems and the possible solutions you will come up with. Move ahead each step while proper testing.

## My decision to choose standard and subject

**I read books from standard 6 - 8 :** After the completion of the Stage 1 presentation, I had an important decision to make. That was the selection of a particular standard to work with. Hence, I did the most basic activity. I sat and went through all the subjects of all the standard from std. 6 to 10. After understanding the bifurcation of topics across standards and gradual maturity of the topics, I found std. 8th very interesting and fun to work with.

After considering the following factors,  
I chose std.8th to work with.

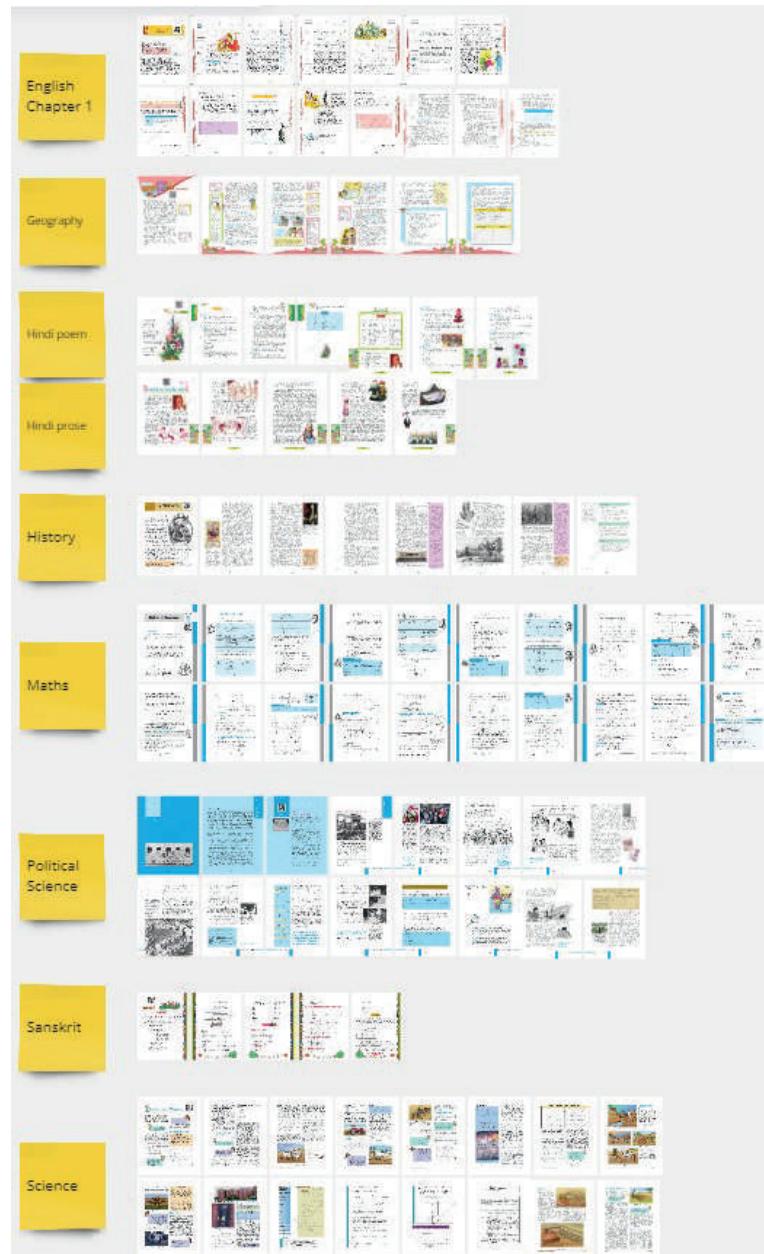


My steps towards understanding the textbooks of std.8 thoroughly.

I skimmed through all the subjects again and wrote down my own problems, insights and ideas to increase textbook reading within the students.

## Step 1 to redesign

I had decided that my project will revolve around redesigning the textbooks of standard 8. It has been a lot of years since I was an eight standard student. Also, my board of study was SSC. Hence, I had very little to no knowledge about the problems of the textbook. When I personally read the textbooks, most of the content was what I already knew as a teenager. Hence, my attention was more on the size, page, font and design side. And I noticed that it needs changes in various parts.



**Chapter names**

Chapter no., Name and QR code is constant	No matter what the subject, there is a lot of negative space in the heading areas.	In some chapters it is used for attention grabbing.	We can use it as an opportunity
---	--	---	---------------------------------

A lot of elements which are different from one another

**Attention grabbing elements**

I found out that a lot of efforts are put in to make the appearance of a textbook less intimidating and more friendly. But slowly it becomes more overpowering and distracts a user from understanding the text.

# Colored boxes

**In simple points, highlight the**

**All important points and notes should have a specific placement.**

**The important points should be attention grabbing but not disturbing**

**Exercises**

1. Answer the following questions:

- What are resources distributed unequally over the earth?
- What is resource conservation?
- Why are human engineers important?
- What is sustainable development?

2. Tick the correct answer.

- Which one of the following does NOT make substance a resource?
  - water
  - value
  - quantity
- Which one of the following is a human made resource?
  - minerals in mining process
  - oil
  - rain
  - biogas
- Complete the statement.

Renewable resources are:

- those which have limited stock
- made by human beings
- derived from non-living things

**Activity**

\*Resource point markings  
R/R points not score

**WHAT HAVE WE DISCUSSED?**

- Rational numbers are closed under the operation of addition, subtraction and multiplication.
- The operations addition and multiplication are:
  - commutative for rational numbers
  - associative for rational numbers
- The rational number 0 is the additive identity for rational numbers.
- The rational number 1 is the multiplicative identity for rational numbers.
- The additive inverse of the rational number  $\frac{a}{b}$  is  $-\frac{a}{b}$  and vice-versa.
- The reciprocal or multiplicative inverse of the rational number  $\frac{a}{b}$  is  $\frac{b}{a}$  if  $\frac{b}{a} \neq 0$ .
- Distributivity of rational numbers: For all rational numbers  $a, b$  and  $c$ ,  
 $(ab + ac) = a(b + c)$  and  $(a + b)c = ac + bc$ .
- Rational numbers can be represented on a number line.
- Reviewing living irrational numbers there are countless irrational numbers. The idea of mean helps in finding irrational numbers between two rational numbers.

**Six Principles of Sustainable Development**

- Respect and care for all forms of life
- Improve the quality of human life
- Conserve the earth's vitality and diversity
- Minimize the depletion of natural resources
- Develop a positive attitude and practices towards the environment
- Take responsibility to care for their own environment

**Source 1**

**Not fit for human consumption!**

Newspapers provide amounts of the movements in different parts of the country. Here is a report of a recent news item.

More than 2000 policemen in Delhi refused to take their salaries for 10 days, claiming at a press conference their low salaries and艰苦的生活 were unacceptable to them. From the Police Lines website.

In the news spread

In the other police stations, demands have also referred to take their salaries. One of the workers said, "The food supplied to us is not fit for human consumption. Even cattle would not eat such food and die, which we have to eat."

— Martin Luther

This book is to be neither an accusation nor a confession, and least of all an adventure; for death is not an adventure to those who stand prepared to face it. It will try simply to tell of a generation of men who, even though they may have escaped hell, were destroyed by the sea.

— Ernest Hemingway, author of All Quiet on the Western Front

**Let's imagine**

Imagine that you are a historian wanting to find out about how people live in a changed in a remote tribal area after modernization. List the different ways in which you would find information on this.

**1 The Best Christmas Present in the World**

**Source 2**

**Glossary**

**Stock of Resources**

It is the amount of resources available for use.

**Let's do**

Find out a few renewable resources and mention how their stock may get affected by misuse.

**Let's do**

Make a list of the human-made resources that you can observe around you.

**Do you know?**

**Human Resource**

refers to the members of a community and abilities mental and physical of the people in a place. There are differing views regarding treatment of humans as a resource, one cannot deny the fact that it is the ability of humans that help in transforming the physical material into a valuable resource.

**TRY THESE**

Complete the following table:

Numbers	Addition	Subtraction	Multiplication	Division
Rational numbers	Yes	Yes	Yes	No
Irrationals	Yes	Yes	Yes	Yes
Whole numbers	Yes	Yes	Yes	Yes
Natural numbers	Yes	No	Yes	Yes

**Activity**

Look at Sources 1 and 2. Do you find any differences in the nature of reporting? Explain what you observe.

**Do you know which events the dates below refer to?**

- 4 July 1776
- 17 December 1903
- 6 August 1945
- 30 January 1948
- 12 April 1961
- 20 July 1969

The answers are on page 23.

No matter what the elements are, whether they represent activity or glossary, important information or keywords, everything is put inside a box and placed at the sides.

The table design can be standardized and improved

## Tables

Table 1.1 : Differences between Fertiliser and Manure

S. No.	Fertiliser	Manure
1.	Fertiliser is a man-made inorganic salt.	Manure is a natural substance obtained by the decomposition of cattle dung and plant residues.
2.	Fertiliser is prepared in factories.	Manure can be prepared in the fields.
3.	Fertiliser does not provide any humus to the soil.	Manure provides a lot of humus to the soil.
4.	Fertilisers are very rich in plant nutrients like nitrogen, phosphorus and potassium.	Manure is relatively less rich in plant nutrients.

determiner	modifier 1 (opinion, feeling)	modifier 2 (size, shape, age)	modifier 3 (colour)	modifier 4 (material)	head word
a/an/ the	nice/lazy/ beautiful	tall/ round/ old/young	red/white/ light/dark	silk/cotton/ woollen	woman/ man/ table/chair

4. The table below contains a list of nouns and some adjectives. Use as many adjectives as you can to describe each noun. You might come up with some funny descriptions!

शब्दार्थ	
मृदुल	कोमल
पात	पता
गत	शरीर
निहित	सोचा हुआ
प्रत्यूष	प्रातःकल
वंदालम	नीद में अलमाया हुआ
लालसा	कुछ पाने की चाह, अभिलाषा, इच्छा

Operation	Numbers	Remarks
Addition	$0+5=5$ , a whole number $4+7=\dots$ Is it a whole number? In general, $a+b$ is a whole number for any two whole numbers $a$ and $b$ .	Whole numbers are closed under addition.
Subtraction	$5-7=-2$ , which is not a whole number.	Whole numbers are not closed under subtraction.
Multiplication	$0\times 3=0$ , a whole number $3\times 7=\dots$ Is it a whole number? In general, if $a$ and $b$ are any two whole numbers, their product $ab$ is a whole number.	Whole numbers are closed under multiplication.
Division	$5\div 8=\frac{5}{8}$ , which is not a whole number.	Whole numbers are not closed under division.

मातृसंघ	-	.....	+	.....
अल्पसंघ	-	.....	+	.....
सर्वमंत्र	-	.....	+	.....
देवमंत्र	-	.....	+	.....
महाभास्माकुटि:	-	.....	+	.....
विपद्यानामावेद	-	.....	+	.....

Let us recap the reasons why the Constitution plays an important role in democratic societies by recalling the constitutive roles that you have read about through these examples.

Example	Constitutive rules
The present of <i>Hindu</i> adopted a new Constitution after the success of the people's movement for democracy.	It lays down ideals that define the kind of country that we want to live in.
Sarita, the class monitor, angrily points on Arun, his classmate.	
The girls do not have to play basketball because the boys are majority in class.	
Sarathika decides to revise her chapters instead of watching TV.	

Nouns	Adjectives
elephant	circular, striped, enormous, multicoloured,
face	round, cheerful, wild, blue, red, chubby,
building	large, medium-sized, cold
water	

શાસ્ત્રવિજ્ઞાન			
નિયમો	લાભ કરી, અધ્યોત્તમા	સંકેતિ	બધા કરી હું, કલા કિયા
દોષાની	- મિનીની લાગ	ભાગન	- એ દોષ, તાતી,
અધૃતી	- અસોથી, માટ્ટુણ	કૃતિશી	- પ્રાર્થિત, પુરુષે
દોષિણ	- વિશેષ રીત પૂરી રહ્ય આપ	ન રિચ્ય કર.	- પ્રાર્થિત, પ્રાર્થિત
વિશેષાક	- વિશેષ વિશેષ કરી જાય	સ્થાન	- એ વિશેષ વિશેષ કરી જાય
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	- અધૃત વિશેષ કરી જાય	સ્થાન	- એ વિશેષ વિશેષ કરી જાય
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કાંઈકારી	- કાંઈ સુધી	યોગદાન	- કાંઈ, તાતી તો જાણ કે
દોષિણ	- પુરુષ ને સંપરી	સ્વરૂપી	- જોં જોં જાણ કે
અંગોદી	- વિશેષ, વિશેષ રીત	પ્રાર્થિત	- એ વિશેષ વિશેષ કરી જાય
આધ્યાત્મિક	માફ, પૂર્ણ		એ દેખણે કે એસ વિશે

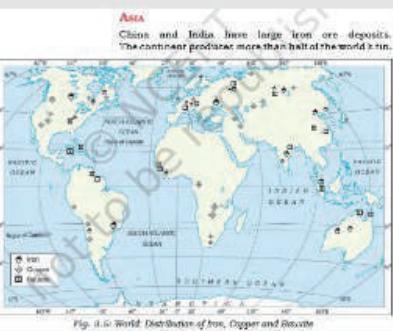
## Side notes

A lot of  
information  
for the side  
bars

Even  
information  
about the image  
used and blank  
spaces

The image displays several pages from a primary school English textbook. The top left page features a reading comprehension section titled 'Comprehension Check' with questions about a story. The top right page shows a 'How, When and Where' box with a QR code and a 'Lot's unique' box. The middle left page contains a 'Crosses & Businesses' activity. The bottom left page is a math worksheet on 'Relational numbers' and 'Addition'. The bottom right page is a 'Hindi Indian Constitution' section with a photo of the Indian Parliament and a crossword puzzle.

# Maps



The figure is a map of the world illustrating the global distribution of Iron, Copper, and Nickel resources. It features a legend in the bottom right corner identifying symbols for railroads (red line), processing facilities (blue square), coastlines (blue line), limestone (green circle), and iron (orange circle). Major resource deposits are shown in green, while processing facilities are indicated by blue squares. Rail networks are depicted as red lines connecting various points across continents.



The map illustrates the industrial layout of Jamshedpur. The city is bounded by the Mahanadi River to the west and the Deonarika River to the east. Key landmarks include the Steel Plant, Tata Steel Works, and the Tata Iron & Steel Company (TISCO) complex. Major roads are shown in orange, and expressways in red. A north arrow is present in the top right corner.

6. Write down the names of the Indian States, which share borders with the following neighbouring nations:

  - (a) Bangladesh
  - (b) Bhutan
  - (c) Nepal



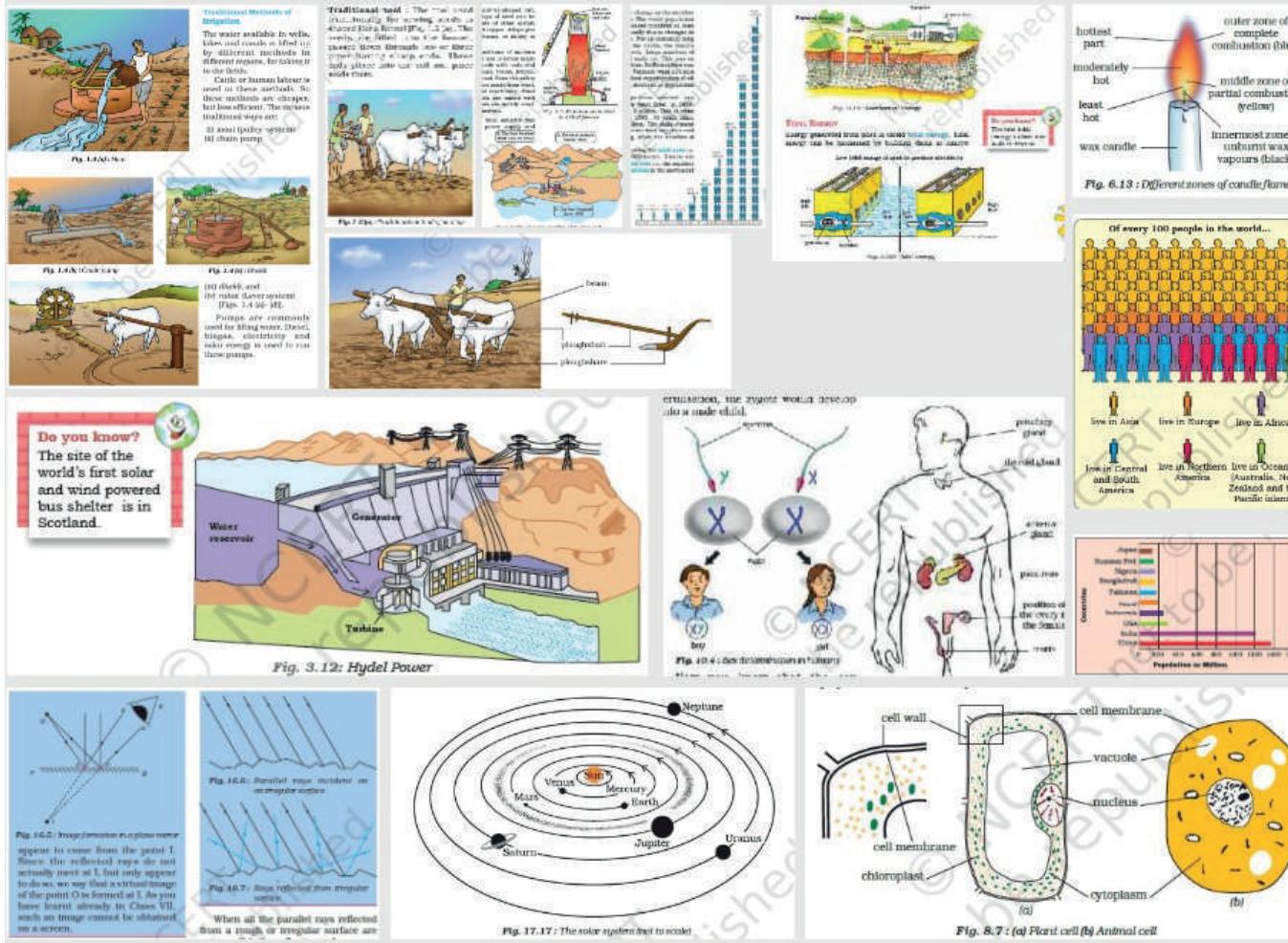
Very rarely maps are used in the books. But their placement is in the exact middle of the text area. These maps lack proper guidelines to figure out the area.

# Images



The biggest and the most glaring problem with images in the textbook is their placements, their association with the intended text and image names.

## Infographics



## Page numbers

The design  
of page  
numbers to  
reach faster

The image displays a collection of pages from an NCERT textbook for Class 8, illustrating the new design for page numbers. The pages are arranged in a grid-like structure.

- Top Left:** A yellow sticky note with the text "The design of page numbers to reach faster".
- Top Row:** Two pages from the Science section. The left page is titled "MATERIALS : METALS AND NON-METALS" and has a page number of 45. The right page is titled "SCIENCE" and has a page number of 46.
- Middle Row:** Two pages from the Science section. Both pages feature a central illustration of a traffic light. The left page is titled "विद्युत में परेप्ट/19" and has a page number of 27. The right page is titled "वृक्ष/18" and has a page number of 28. Both pages have the text "क्रान्ति" and "अका हुआ" at the bottom.
- Bottom Row:** Two pages from the Social and Political Life section. The left page is titled "Chapter 8: Why Do We Need a Parliament?" and has a page number of 31. The right page is titled "Social and Political Life" and has a page number of 34.
- Bottom Left:** A page from the English section titled "Honeydew" with a page number of 10. It contains the text: "something wonderful has just happened that I must tell".
- Bottom Right:** A page from the Mathematics section with a page number of 38. It contains the text: "FROM TRADE TO TERRITORY" and "11".
- Bottom Center:** A page from the English section titled "The Best Christmas Present in the World" with a page number of 11.
- Bottom Far Right:** A page from the Mathematics section titled "UNDERSTANDING QUADRILATERALS" with a page number of 39.

## Headings and subheadings

There needs to be uniformity and a system that follows through the hierarchy.

### Comprehension Check

1. Who had a wife like mother and where?
2. Why were the ladies in their wives from the neighbouring town?
3. What does the story tell us about Chaitanya's desire to have three wives?
4. Chaitanya's request was turned down by the king. What is the reason?
5. How do you think Chaitanya came back from the king after the attack and defeat?

### Before you read

There are some dates or periods of time in the history of the world that are so significant that everyone knows and remembers them. The story you will read mentions one such date and event: a war between the British and the Germans in 1914. Can you guess which year it was?

### Activity

Resources are generally classified into natural, human made and human.

#### TYPES OF RESOURCES

Resources are generally classified into natural, human made and human.  
**Natural Resources.**  
Resources that are drawn from Nature and used without much modification are called **natural resources**. The air we breathe, the water in our rivers and lakes, the soils, minerals are all natural resources. Many of these resources are free gifts of nature and can be used directly. In some cases, tools and technology may be needed to use a natural resource in the best possible way.

## EXERCISE 1.2

1. Represent these numbers on the number line. (i)  $\frac{7}{4}$  (ii)  $-\frac{5}{6}$
2. Represent  $-\frac{2}{11}, -\frac{5}{11}, -\frac{9}{11}$  on the number line.
3. Write five rational numbers which are smaller than 2.

### TRY THESE

Write the rational number for each point labelled with a letter.



### 1.4 Rational Numbers between Two Rational Numbers

Can you tell the natural numbers between 1 and 5? They are 2, 3 and 4.  
How many natural numbers are there between 7 and 9? There is one and it is 8.

### Exercise

1. Name the following resources:
  - (a) Air we breathe
  - (b) Water in rivers and lakes
  - (c) Soil and minerals
  - (d) Air we breathe, water we drink
  - (e) What is renewable?
  - (f) What is non-renewable?

2. Think the correct answer:

3. Name the following resources:
  - (a) Air we breathe
  - (b) Water in rivers and lakes
  - (c) Soil and minerals
  - (d) Air we breathe, water we drink
  - (e) What is renewable?
  - (f) What is non-renewable?

4. Think the correct answer:

5. Think the correct answer:

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## Original Chapter of English Std.8 & Stage 2 Presentation

My 2nd step was to give my thinking an attempt. So I downloaded the first textbook from the NCERT website and started to make changes as per requirement.



### Before you read

*There are some dates or periods of time in the history of the world that are so significant that everyone knows and remembers them. The story you will read mentions one such date and event: a war between the British and the Germans in 1914. Can you guess which war it was?*

*Do you know which events the dates below refer to?*

- (a) 4 July 1776
- (b) 17 December 1903
- (c) 6 August 1945
- (d) 30 January 1948
- (e) 12 April 1961
- (f) 20 July 1969

*The answers are on page 23.*

### I

I spotted it in a junk shop in Bridport, a roll-top desk. The man said it was early nineteenth century, and oak. I had wanted one, but they were far too expensive. This one was in a bad condition, the roll-top in several pieces, one leg clumsily mended, scorch marks all down one side. It was going for very little money. I thought I could restore it. It would be a risk, a challenge, but I had to have it. I paid the man and brought it back to my workroom at the back of the garage. I began work on it on Christmas Eve.

I removed the roll-top completely and pulled out the drawers. The veneer had lifted almost everywhere — it

**spotted it:**  
saw it; found it  
(informal)

**scorch marks:**  
burn marks

**was going for:**  
was selling for  
(informal)

**restore:**  
(here) repair

**veneer:**  
a thin layer of  
plastic or  
decorative  
wood on  
furniture or  
cheap wood

### 1. The best Christmas present in the world

#### Before you read

There are some dates or periods of time in the history of the world that are so significant that everyone knows and remembers them. The story you will read mentions one such date and event: a war between the British and the Germans in 1914. Can you guess which war it was?

#### Do you know which events the dates below refer to? The answers are on page 23

- (a) 4 July 1776
- (b) 17 December 1903
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- (e) 12 April 1961
- (f) 20 July 1969

#### Part one

I **spotted** it in a junk shop in Bridport, a roll-top desk. The man said it was early nineteenth century, and oak. I had wanted one, but they were far too expensive. This one was in a bad condition, the roll-top in several pieces, one leg clumsily mended, **scorch marks** all down one side. It **was going for** very little money. I thought I could **restore** it. It would be a risk, a challenge, but I had to have it. I paid the man and brought it back to my workshop at the back of the garage. I began work on it on Christmas Eve. I removed the roll-top completely and pulled out the drawers. The **veneer** had lifted almost everywhere — it looked like water damage to me. Both fire and water had clearly **taken their toll on** this desk. The last drawer was **stuck fast**. I tried all I could to ease it out gently. In the end I used brute force. I struck it



sharply with the side of my fist and the drawer flew open to reveal a shallow space underneath, a secret drawer. There was something in there. I reached in and took out a small black tin box. Sellotaped to the top of it was a piece of lined note paper, and written on it in shaky handwriting: "Jim's last letter, received January 25, 1915. To be buried with me when the time comes." I knew as I did it that it was wrong of me to open the box, but curiosity got the better of my **scruples**. It usually does. Inside the box there was an envelope. The address read: "Mrs Jim Macpherson, 12 Copper Beeches, Bridport, Dorset." I took out the letter and unfolded it. It was written in pencil and dated at the top  
— "December 26, 1914".

**spotted** it: saw it; found it (informal)  
**scorch marks**: burn marks

**rwas going for**: was selling for (informal)  
**estore**: (here) repair

**veneer**: a thin layer of plastic or decorative wood on furniture of cheap wood

**taken their toll on**: damaged

**stuck fast**: shut tight

**scruples**: feelings that make you hesitate to do something wrong

#### Comprehension Check

1. What did the author find in a junk shop?
2. What did he find in a secret drawer? Who do you think had put it in there?



#### Part two

Dearest Connie,  
I write to you in a much happier frame of mind because something wonderful has just happened that I must tell you about at once. We were all **standing to** in our **trenches** yesterday morning, Christmas morning. It was crisp and quiet all about, as beautiful a morning as I've ever seen, as cold and frosty as a Christmas morning should be. I should like to be able to tell you that we began it. But the truth, I'm ashamed to say, is that Fritz began it. First someone saw a white flag waving from the trenches opposite. Then they were calling out to us from across no man's land, "Happy Christmas, Tommy! Happy Christmas!" When we had got over the surprise, some of us shouted back, "Same to you, **Fritz!** Same to you!" I thought that would be that. We all did. But then suddenly one of them was up there in his grey greatcoat and waving a white flag. "Don't shoot, lads!" someone shouted. And no one did. Then there was another Fritz up on the parapet, and another. "Keep your heads down," I told the men, "it's a trick." But it wasn't. One of the Germans was waving a bottle above his head. "It is Christmas Day, **Tommy**. We have **schmapps**. We have sausage. We meet you? Yes?" By this time there were dozens of them walking

grey-coated men drifting back towards their trenches. That night, back in our **digouts**, we heard them singing a carol, and singing it quite beautifully. It was Stille Nacht, Silent Night. Our boys gave them a rousing chorus of White Shepherds Watched. We exchanged carols for a while and then we all fell silent. We had had our time of peace and goodwill, a time I will treasure as long as I live. Dearest Connie, by Christmas time next year, this war will be nothing but a distant and terrible memory. I know from all that happened today how much both armies long for peace. We shall be together again soon, I'm sure of it. Your loving, Jim.

*standing to: taking up positions*

*trenches: long deep ditches in the ground where soldiers hide from the enemy*

*Fritz: (here), a name for a German soldier (Fritz is a common German name)*

*Tommy: a common English name, used here to refer to British soldiers*

*that would be that: that was all; that was the end of the matter*

*schnaps (pronounced, sh-naps): a German drink made from grain*

*cello: a musical instrument like a large violin*

*marzipan: a sweet covering on a cake made from sugar, eggs and almonds*

*digout: a shelter for soldiers made by digging a hole in the ground and covering it*

#### Comprehension Check

- Who had written the letter, to whom, and when?
- Why was the letter written — what was the wonderful thing that had happened?
- What jobs did Hans Wolf and Jim Macpherson have when they were not soldiers?

- Had Hans Wolf ever been to Dorset? Why did he say he knew it?
- Do you think Jim Macpherson came back from the war? How do you know this?

#### Part three



I folded the letter again and slipped it carefully back into its envelope. I kept awake all night. By morning I knew what I had to do. I drove into Bridport, just a few miles away. I asked a boy walking his dog where Copper Beeches was. House number 12 turned out to be nothing but a **burned-out** shell, the roof gaping, the windows **boarded-up**. I knocked at the house next door and asked if anyone knew the whereabouts of a Mrs Macpherson. Oh yes, said the old man in his slippers, he knew her well. A lovely old lady, he told me, a bit muddle-headed, but at her age she was entitled to be, wasn't she? A hundred and one years old. She had been in the house when it caught fire. No one really knew how the fire had started, but it could well have been candles.

She used candles rather than electricity, because she always thought electricity was too expensive. The fireman had got her out just in time. She was in a nursing home now, he told me, Burlington House, on the Dorchester road, on the other side of town. I found Burlington House Nursing Home easily enough. There were paper chains up in the hallway and a lighted Christmas tree stood in the corner with a lopsided angel on top. I said I was a friend who came to visit Mrs Macpherson to bring her a Christmas present. I could see through into the dining room where everyone was wearing a paper hat and singing. The matron had a hat on too and seemed happy enough to see me. She even offered me a mince pie. She walked me along the corridor. "Mrs Macpherson is not in with the others," she told me. "She's rather confused today so we thought it best if she had a good rest. She has no family you know, no one visits. So I'm sure she'll be only too pleased to see you." She took me into a conservatory with wicker chairs and potted plants all around and left me. The old lady was sitting in a wheelchair, her hands folded in her lap. She had silver white hair pinned into a wispy bun. She was gazing out at the garden. "Hello," I said. She turned and looked up at me vacantly. "Happy Christmas, Connie," I went on. "I found this, I think it's yours." As I was speaking her eyes never left my face. I opened the tin box and gave it to her. That was the moment her eyes **lit up** with recognition and her face became **suffused with** a sudden glow of happiness. I explained about the desk, about how I had found it, but I don't think she was listening. For a while she said nothing, but stroked the

letter tenderly with her fingertips. Suddenly she reached out and took my hand. Her eyes were filled with tears. "You told me you'd come home by Christmas, dearest," she said. "And here you are, the best Christmas present in the world. Come closer, Jim dear, sit down." I sat down beside her, and she kissed my cheek. "I read your letter so often Jim, every day. I wanted to hear your voice in my head. It always made me feel you were with me. And now you are. Now you're back you can read it to me yourself. Would you do that for me, Jim dear? I just want to hear your voice again. I'd love that so much. And then perhaps we'll have some tea. I've made you a nice Christmas cake, marzipan all around. I know how much you love marzipan."

*burned out: destroyed by fire*

*boarded-up: covered with wooden boards*

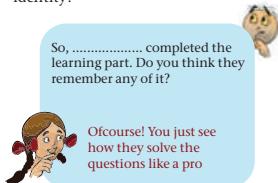
*muddleheaded: confused*

*lit up: became bright with happiness, excitement*

*suffused with: (glow of happiness) spread all over her face*

#### Comprehension Check

- Who did Connie Macpherson think her visitor was?
- Which sentence in the text shows that the visitor did not try to hide his identity?



Ofcourse! You just see how they solve the questions like a pro

#### Working with the text (understanding, knowledge, analysis)

1. For how long do you think Connie had kept Jim's letter?  
Give reasons for your answer.
2. Why do you think the desk had been sold, and when?
3. Why do Jim and Hans think that games or sports are good ways of resolving conflicts? Do you agree?
4. Do you think the soldiers of the two armies are like each other, or different from each other? Find evidence from the story to support your answer.
5. Mention the various ways in which the British and the German soldiers become friends and find things in common at Christmas.
6. What is Connie's Christmas present? Why is it "the best Christmas present in the world"?
7. Do you think the title of this story is suitable for it? Can you think of any other title(s)?

#### Working with the Language (skills, interpretation, practise)

1. Look at these sentences from the story.  
'I spotted it in a junk shop in Bridport... The man said it was made in the early nineteenth century... This one was in a bad condition...'

The italicised verbs are in the past tense. They tell us what happened in the past, before now.  
(i) Read the passage below and underline the verbs in the past tense.

A man got on the train and sat down. The compartment was empty except for one lady. She took her gloves off. A few hours later the police arrested the man. They held him for 24 hours and then freed him.

##### Now look at these sentences.

The veneer had lifted almost everywhere. Both fire and water had taken their toll on this desk.

##### Notice the verb forms had lifted, had taken (their toll).

The author found and bought the desk in the past. The desk was damaged before the author found it and bought it. Fire and water *had damaged* the desk before the author *found it* and *bought it*.



We use verb forms like had damaged for an event in the 'earlier past'. If there are two events in the past, we use the 'had...' form for the event that occurred first in the past.

We also use the past perfect tense to show that something was wished for, or expected before a particular time in the past. For example, I had always wanted one...

##### Discuss with your partner the difference in meaning in the sentences below.

1. When I reached the station, the train left.
2. When I reached the station, the train had left.

#### (ii) Fill in the blanks using the correct form of the verbs in brackets.

My little sister is very naughty. When she \_\_\_\_\_ (come) back from school yesterday, she had \_\_\_\_\_ (tear) her dress. We \_\_\_\_\_ (ask) her how it had \_\_\_\_\_ (happen). She \_\_\_\_\_ (say) she \_\_\_\_\_ (have, quarrel) with a boy. She \_\_\_\_\_ (have, beat) him in a race and he \_\_\_\_\_ (have, try) to push her. She \_\_\_\_\_ (have, tell) the teacher and so he \_\_\_\_\_ (have, chase) her, and she \_\_\_\_\_ (have, fall) down and \_\_\_\_\_ (have, tear) her dress.

#### (iii) Underline the verbs and arrange them in two columns, Past and Earlier past.

- (a) My friends set out to see the caves in the next town, but I stayed at home, because I had seen them already.
- (b) When they arrived at the station, their train had left. They came back home, but by that time I had gone out to see a movie!
- (c) So they sat outside and ate the lunch I had packed for them.
- (d) By the time I returned, they had fallen asleep!

Past	Earlier past

#### 2. Dictionary work

By the end of the journey, we had run out of drinking water.

Look at the verb run out of in this sentence. It is a phrasal verb: it has two parts, a verb and a preposition or an adverb. Phrasal verbs often have meanings that are different from the meanings of their parts. Find these phrasal verbs in the story. Write down the sentences in which they occur. Consult a dictionary and write down the meaning that you think matches the meaning of the phrasal verb in the sentence. *burn out, light up, look on, run out, keep out*

#### 3. Noun phrase

Read the following sentence.

I took out a small *black tin* box.



The phrase in italics is a noun phrase.

It has the noun — box — as the head word, and three adjectives preceding it.

Notice the order in which the adjectives occur — size (small), colour (black) and material (tin) of which it is made.

We rarely use more than four adjectives before a noun and there is no rigid order in which they are used, though there is a preferred order of modifiers/adjectives in a noun phrase, as given below.

**(ii) Fill in the blanks using the correct form of the verbs in brackets.**

My little sister is very naughty. When she \_\_\_\_\_ (come) back from school yesterday, she had \_\_\_\_\_ (tear) her dress. We \_\_\_\_\_ (ask) her how it had \_\_\_\_\_ (happen). She \_\_\_\_\_ (say) she \_\_\_\_\_ (have, quarrel) with a boy. She \_\_\_\_\_ (have, beat) him in a race and he \_\_\_\_\_ (have, try) to push her. She \_\_\_\_\_ (have, tell) the teacher and so he \_\_\_\_\_ (have, chase) her, and she \_\_\_\_\_ (have, fall) down and \_\_\_\_\_ (have, tear) her dress.

**(iii) Underline the verbs and arrange them in two columns, Past and Earlier past.**

- My friends set out to see the caves in the next town, but I stayed at home, because I had seen them already.
- When they arrived at the station, their train had left. They came back home, but by that time I had gone out to see a movie!
- So they sat outside and ate the lunch I had packed for them.
- By the time I returned, they had fallen asleep!

Determiner	Modifier 1 opinions, feeling	Modifier 2 size, shape, age	Modifier 3 colour	Modifier 4 material	Head word
a/an//the	nice, lazy, beautiful	tall, round, old, young	Red, white, light, dark	Silk, cotton, wollen	woman/ man, table/ chair

**4. The table below contains a list of nouns and some adjectives. Use as many adjectives as you can to describe each noun. You might come up with some funny descriptions!**

*Nouns:* elephant, face, building, water  
*Adjective:* circular, striped, enormous, multicoloured, round, cheerful, wild, blue, red, chubby, large, medium-sized, cold etc.

**Speaking**  
(skills, practise, presentation, listening)

- In groups discuss whether wars are a good way to end conflicts between countries. Then present your arguments to the whole class.
- What kind of presents do you like and why? What are the things you keep in mind when you buy presents for others? Discuss with your partner.  
(For example, you might buy a book because it can be read and re-read over a period of time.)

**Writing**  
(imagination, practise, skill, delivery)

- Imagine that you are Jim. You have returned to your town after the war. In your diary record how you feel about the changes you see and the events that occur in your town. You could begin like this -

*25 December, 1919  
It's Christmas today, but the town looks.....*

- Or  
Suppose you are the visitor. You are in a dilemma. You don't know whether to disclose your identity and disappoint the old lady or let her believe that her dear Jim has come back. Write a letter to a friend highlighting your anxiety, fears and feelings.

- Given below is the outline of a story. Construct the story using the outline.

A young, newly married doctor \_\_\_\_\_ freedom fighter \_\_\_\_\_ exiled to the Andaman and Nicobar Islands by the British \_\_\_\_\_ infamous Cellular Jail \_\_\_\_\_ prisoners tortured \_\_\_\_\_ revolt by inmates \_\_\_\_\_ doctor hanged \_\_\_\_\_ wife waits for his return \_\_\_\_\_ becomes old \_\_\_\_\_ continues to wait with hope and faith.



"War is the greatest plague that can afflict humanity; it destroys religion, it destroys states, it destroys families."

— Martin Luther (10 November 1483 - 18 February 1546)



This book is to be neither an accusation nor a confession, and least of all an adventure, for death is not an adventure to those who stand face to face with it. It will try simply to tell of a generation of men who, even though they may have escaped shells, were destroyed by the war.

— Erich Maria Remarque, author of All Quiet on the Western Front

## And I failed at it

The 1st attempt was not acceptable. By the time I was done completing my study on the topic, studying the textbooks and understanding the problems, I was near my 2nd Jury presentation. And hence, I made a mistake. The mistake was over-confidence. As I had a thought in my head with a lot of students telling me how bad the design of NCERT textbooks were, I wanted to do something very different.

I read the textbooks and without any trying testing, directly went ahead and made a version of rough design that was in my mind. And at that time, anything that was a little better than the original seemed to be great. This went on till the day of the presentation.

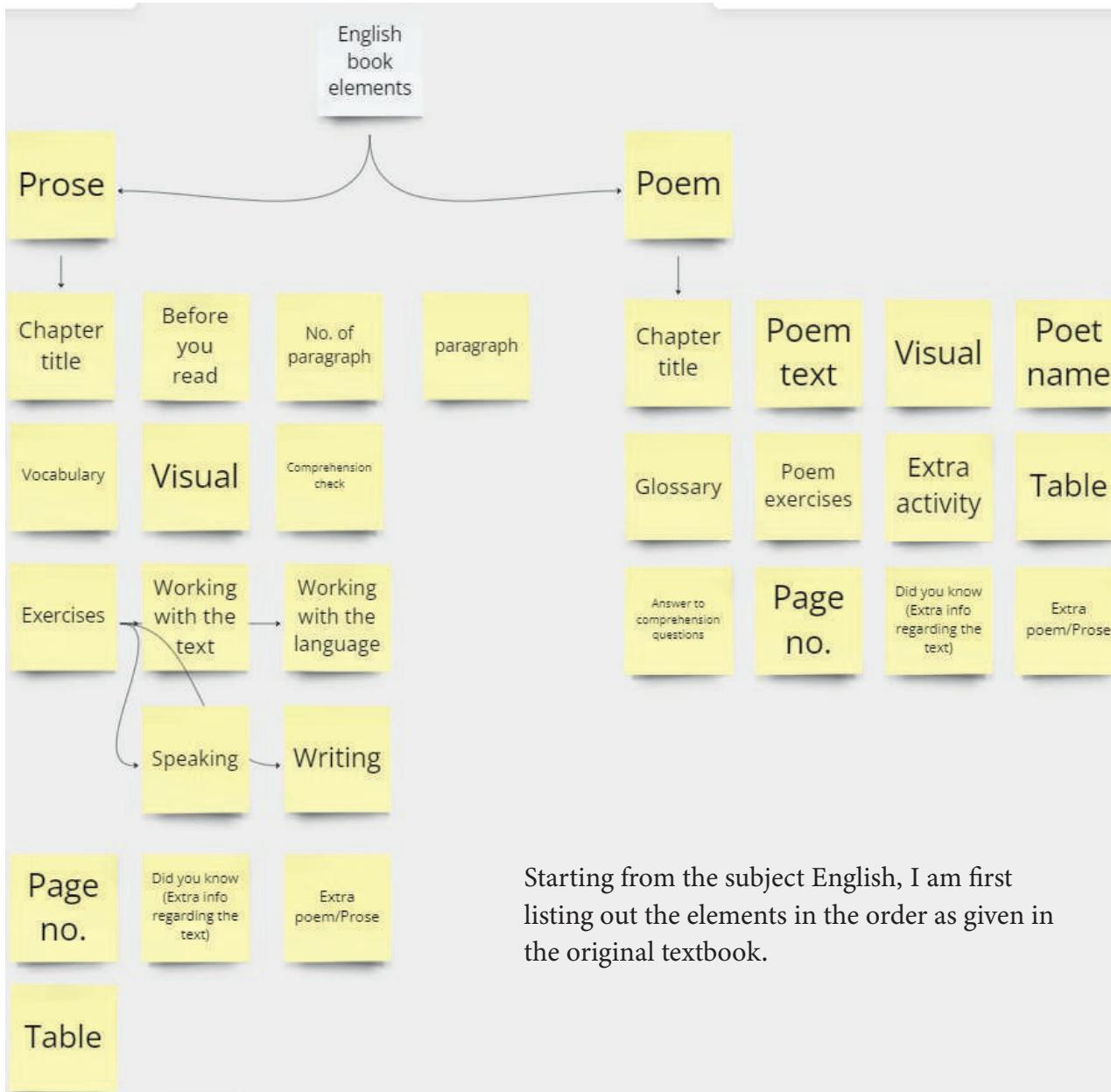
During the presentation, I faced a lot of questions regarding the typography, choosing of the layout, subject, grid etc. that's when I realised that in terms of functionality, the original textbook design performs better than the re-designed one by me.

This happened because I focused mostly on the aesthetic appearance and the functionality was compromised. Hence, I was advised to sit with the textbooks again and understand what the priorities are for each subject.

## What I learned from the failure

- 1. Functionality before appearance** - Not everything is about appearance. In design, functionality is what matters the most. Even if the redesigned book looks appealing, if it does not help a student/user to learn better and easily, the design is of no use.
2. My 2nd learning was that if I don't **set parameters** that my design needs to fulfil, I won't be able to progress in the correct direction.
3. **Referencing isn't a bad thing.** But completely ignoring references might be a bad thing. I did not go through the study and work done by other designers earlier. This step would've saved me a lot of time and stopped me from making mistakes.

So, now my immediate step was understanding a book as a book. Knowing the way it will be handled, ratio and proportions, and understanding the importance of each element in the book.



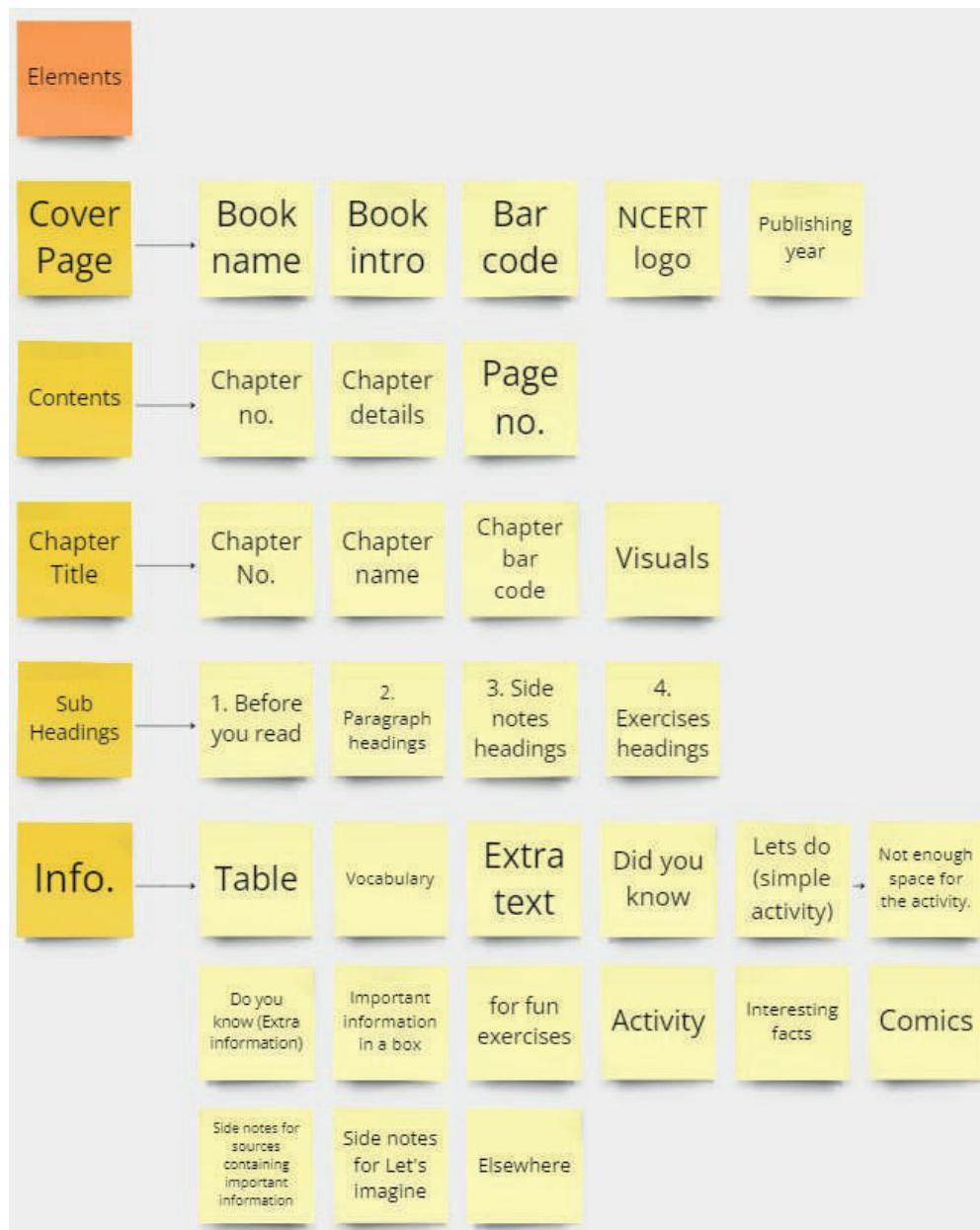
Starting from the subject English, I am first listing out the elements in the order as given in the original textbook.

Geography book elements	Chapter title	paragraph	Vocabulary	Lets do (simple activity)	Not enough space for the activity.
Glossary	Do you know (Extra information)	Important information in a box	for fun exercises	Activity	
Interesting facts	Visuals	Comics	Exercises	Page no.	

Political Science book elements	Chapter title	Visuals	Text	Page no.
Paragraph headings	Important at the side	Activity at the side	Glossary	

History book elements	Chapter title	Visuals	Page no.	Glossary
Paragraph headings	Detail information about the visuals	Activity	Did you know?	
Side notes for sources containing important information	Side notes for Let's imagine	Exercises	Elsewhere	

Science	Chapter title	Paheli and Bujho conversations	Text	Paragraph headings
Important in between the text	Visuals	Diagrams	Elaborate activities	
Keywords at the side	A para on what have you learnt	Extra activities and projects	Did you know	



After understanding what the elements represent and their organisation, I had a thorough discussion with my guide. We discussed some design ideas and I was guided further.

<b>1. System design</b>	The chapter title area can include space for students to unleash their creativity	There should be a proper system for finding a chapter and page numbers	There should be a system for all the subheadings for the chapters	Finding glossary should be very easy to locate
<b>2. Advantages</b>	All the Questions are given right before the text or topic.	A student will know that there are multiple questions from this particular text	The informational boxes should be differentiated by the content it provides	The informational boxes should have importance and placement hierarchy
<b>3. Ease</b>	Finding anything in a textbook should be very easy	Application of signs, symbols and icons		
<b>4. Acceptance</b>	Characters should be versatile and inclusive to different body types and race of students	Adding fill in the blanks in character's dialogues. Students can write their name there.	Adding a digital read aloud feature for the textbook	
<b>5. Image</b>	To make the students remember topics effortlessly, we can alter the way we name the headings	Examples -	Headings of "Did you know" can be changed to "You're smart if you already know this"	"Extra info" in History textbooks can be converted into a Gossip section

## Deciding the hierarchy of the elements for effective learning:

### 1. English -

**1. Chapter title :** This is a major part of the chapter that gives the user a glimpse of what the following chapter will be about. Elements in the Chapter title -

- a. Chapter no. - As a user navigates through pages, the chapter no. is what they need to find first and then proceed further.
- b. Chapter name - In the title, the name of the chapter plays a very important part. It gives the information of the upcoming chapter in a single sentence.
- c. QR code - The QR code in each and every chapter is necessary as it can be used to access more information on the chapter.

**2. Subtitle** - There are two parts in some of the English chapters. Part one is 'Comprehension' and part two is 'Poem'. There needs to be a proper distinction between the start and end of each part.

Example -

Part 1 - Comprehension, Part 2 - Poem

**3. Before you read** - This part explains the content of the following in a little more than the title and also instructs the user to read, listen, solve, discuss or remember the given information. As default, its placement is right after the title before the start of the comprehension.

Even if we do not give it a catchy appearance according to the visual design, the users will still read it before the chapter because of its placement.

### 4 Comprehension -

- 1. Comprehension no. - As per my study, there are multiple parts of a literature piece that is divided into comprehensions.
- 2. Comprehension text - The prose of English literature
- 3. Meanings - A very important part of the subject that actually helps students learn the language in more detail and adds an edge to their language skills.
- 4. Comprehension check - A small exercise of the brain that stimulated the user to think and come to a reason that answers the question.

*Ideation : If we let the students know that the answers to the questions are right in the paragraph. If they have read it properly, they can easily solve the following questions.*

*We can also show the level of difficulty to make students take solving it as a challenge.*

### 5. Exercises

- 1. Working with the text - These questions challenge a user's reading, understanding, analysing and reasoning capabilities.

2. Working with the language - these questions challenge a user's understanding and implementation capabilities.
3. Speaking - This set of exercises challenge a user's analysing, filtering information, speaking and conversation capabilities. Having an open discussion is a very good way to increase confidence between the users.
4. Writing - These exercises challenge a user's imaginative skills. As long as the user has read the glossary properly and can formulate sentences without grammatical errors, they can solve these exercises.

**6. A box of extra information related to the comprehension /poem** - It can be a verse, a short story, a dialogue, a monologue and other informative text.

## Part 2

1. Heading of the poem
2. A short paragraph that explains the gist of the poem, or a small instance that inspired the poem or something the user should know about before they read the poem. Its main aim is to make the understanding of the poem easier.
3. The poem - a structure of the poem in original form.
4. The author's name
5. Visual
6. Glossary
7. Exercise - A mix of questions that challenge a user's attentiveness and understanding of the poem.
8. A box of extra information related to the comprehension /poem - It can be a verse, a short story, a dialogue, a monologue and other informative text.

## 2. Geography -

### Chapter hierarchy -

- 1. Chapter title :** This is a major part of the chapter that gives the user a glimpse of what the following chapter will be about. Elements in the Chapter title -
  - a. Chapter no. - As a user navigates through pages, the chapter no. is what they need to find first and then proceed further.
  - b. Chapter name - In the title, the name of the chapter plays a very important part. It gives the information of the upcoming chapter in a single sentence.
  - c. QR code - The QR code in each and every chapter is necessary as it can be used to access more information on the chapter.

**2. Intro paragraph** - A paragraph explaining the meaning of the topic in a more practical way with real life examples.

**3. An activity** that is related to the paragraph text before it.

### 4. Explanation of the chapter

### 5. Glossary

**6. Activity 2** - Activity after the end of the topic 1 and before the start of another topic

## **7. Characters and dialogues**

**8. Do you know** - You're smart if you know certain information related to the chapter.

**9. Important information in a box** - This box contains text, images, match, dates and other information related to the topic.

**10. Exercises** - Possible questions that are asked in the exams. The answers to these questions are there in the chapter. One needs to find them on their own or with the help of their teacher.

**11. Fun Exercises** - Exercises that do not have a lot of weightage according to the exam point of view.

## **3. History -**

### **Chapter hierarchy -**

**1. Chapter title** : This is a major part of the chapter that gives the user a glimpse of what the following chapter will be about. Elements in the Chapter title -

- a. Chapter no. - As a user navigates through pages, the chapter no. is what they need to find first and then proceed further.
- b. Chapter name - In the title, the name of the chapter plays a very important part. It gives the information of the upcoming chapter in a single sentence.

c. QR code - The QR code in each and every chapter is necessary as it can be used to access more information on the chapter.

## **2. Subtitle/Heading of the text**

3. Visual

4. Image information

5. Extra information related to the chapter and the image.

6. Motive can be to keep the user interested and attentive.

7. Activity related to the text above it.

8. Sources from where the detail of information can be gained

9. Let's imagine - a small task that stimulates the user into thinking in detail about the topic.

10. Exercises

#### **4. Political Science -**

##### **Chapter hierarchy -**

- 1. Chapter title :** This is a major part of the chapter that gives the user a glimpse of what the following chapter will be about. Elements in the Chapter title -
  - a. Chapter no. - As a user navigates through pages, the chapter no. is what they need to find first and then proceed further.
  - b. Chapter name - In the title, the name of the chapter plays a very important part. It gives the information of the upcoming chapter in a single sentence.
  - c. QR code - The QR code in each and every chapter is necessary as it can be used to access more information on the chapter.
3. Chapter text
4. Visual related to the chapter
5. Glossary
6. Extra information at the side.
7. Important information in a box
8. Activity that instructs the user to read, discuss, study, find out or write on a certain topic.
9. Exercises

#### **5. Science -**

##### **Chapter hierarchy -**

- 1. Chapter title :** This is a major part of the chapter that gives the user a glimpse of what the following chapter will be about. Elements in the Chapter title -
  - a. Chapter no. - As a user navigates through pages, the chapter no. is what they need to find first and then proceed further.
  - b. Chapter name - In the title, the name of the chapter plays a very important part. It gives the information of the upcoming chapter in a single sentence.
  - c. QR code - The QR code in each and every chapter is necessary as it can be used to access more information on the chapter.
2. Chapter text
3. Visual
4. Glossary
5. Bujho and Paheli dialogues
6. Activities
7. Keywords
8. Summary of everything learnt in detail
9. Exercises

**Understanding the target audience** - Our target audience is divided into 3 main categories.

**Category 1** is the largest and the most important part of the Project. It consists of students of standard 8, who study in a CBSE board in English medium all over India. Their numbers may account to multiple lakhs in numbers. The target audience may differ according to their age, culture, religion, upbringing, attention span, memory and learning skills.

**Average age - 14-15 years.**

According to my study, children from age 14 have the ability for more complex thoughts. They start expressing their ability and feelings and also can judge a situation using analytical reasoning. (prevention, n.d.)

Because of pandemics such as Covid throughout the world, a lot of students were forced to study and attend schools from their home. They have come to slowly understand how to use devices like a mobile phone/laptop/desktop/tablet ect. These students understand the signs, symbols, icons and marks to use the devices effectively. Hence, it acted as a boost of development in the understanding of the students.

**Category 2** belongs to the 2nd largest category of target audience as it consists of parents who teach their kids



themselves and parents who do not. They may also be different according to the region/part of India they belong to.

**Category 3** consists of School and tuition teachers who use the textbook and other reference book to transfer the given knowledge to the students.

**Process to understand what grid will enhance the learning process.**

Size of the current NCERT Textbook of class 8

**Book measurements -**

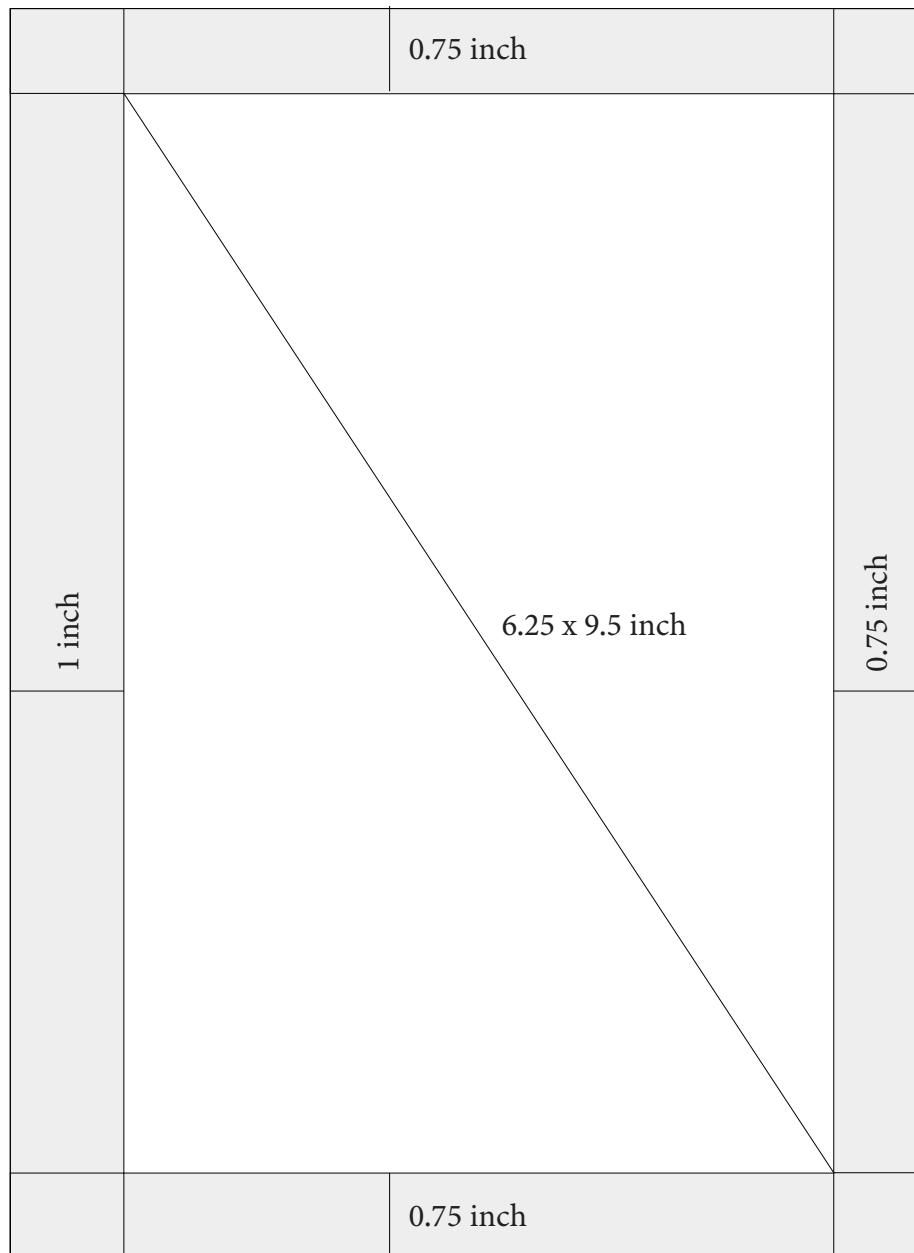
thickness of the book = 0.4"  
width x height = 8"x11"

**Margin** - To properly open the book without breaking the text, a margin of minimum 1" is required from the centre.

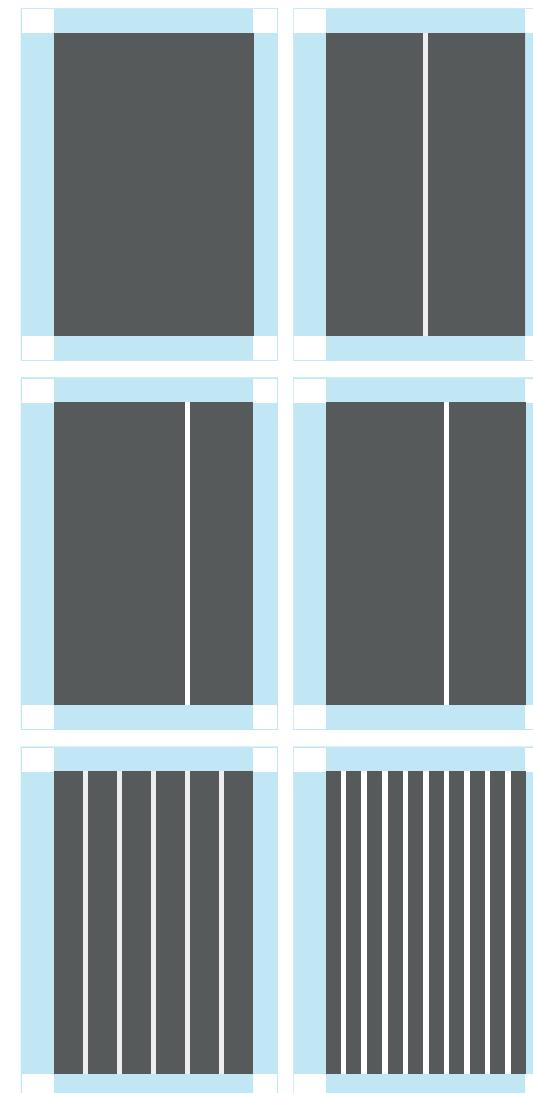
But the margin can be minimised on other 3 sides to optimize the space for content. To save the content from printing errors, the optimum size of the margin can vary from 0.5" - 0.75".

**Gutter space** - The gutter space is 0.2" to ensure that there is identifiable space between the columns but not too small that it creates a hindrance in the reading processs.





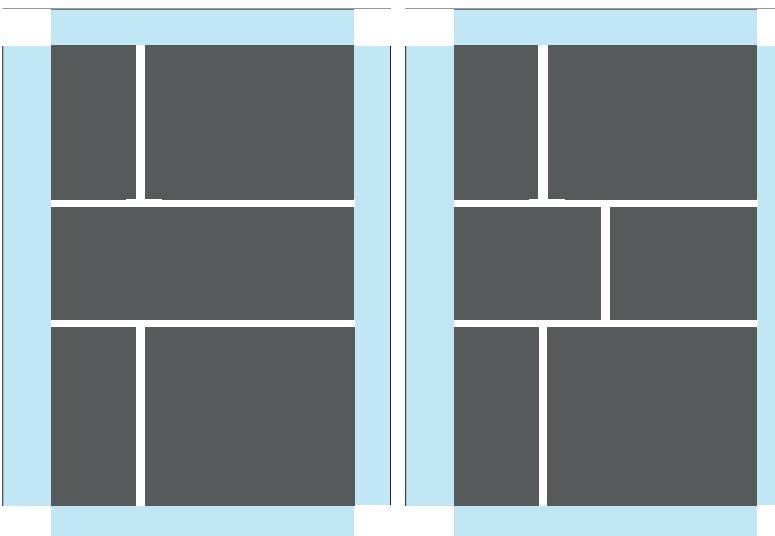
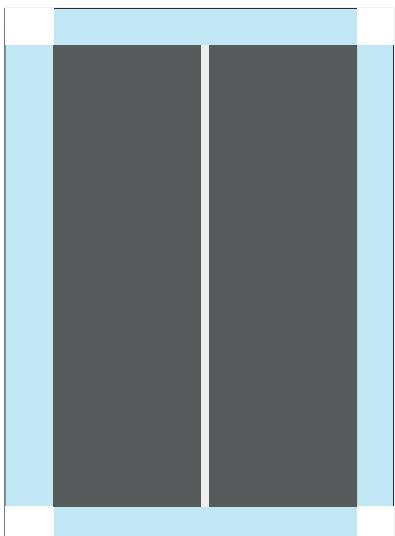
Marking the margin and the content area as per the optimum size and understanding the possible grids.



We clearly saw earlier that the rigid grid system of two column through out the textbook does not work in the case of glossary, activities and key words.



There needs to be a flexible grid system to ensure that the content hierarchy is followed and the space is used in the best way possible.



Finalising the font/fonts that enhance the reading experience of the user and minimizes the strain on the eyes.

Current font used - Bookman (Body copy)

Font size 13

Other fonts used - A lot of various decorative fonts used in titles, subtitles, pictures and dialogues.

Lorep Lorep Lorep Lorep Lorep Lorep

Bookman Regular 54.8pt

Lorep

Stone serif 55pt

Lorep

Minion Variable 62pt

Lorep

EB Garamond 66.4pt

Lorep

Sabon 61.5

Lorep

Libre Baskerville 51.8pt

Lorep

## Stone serif

I spotted it in a junk shop in Bridport, a roll-top desk. The man said it was early nineteenth century, and oak. I had wanted one, but they were far too expensive. This one was in a bad condition, the roll-top in several pieces, one leg clumsily mended, scorch marks all down one side. It was going for very little money. I thought I could restore it. It would be a risk, a challenge, but I had to have it. I paid the man and brought it back to my workroom at the back of the garage. I began work on it on Christmas Eve. I removed the roll-top completely and pulled out the drawers..

---

Using two different fonts with the same point height, leading and the same amount of content to figure out the best out of the two.

With an evenly distribute dgrey tone, the Stone serif font is bigger in its X-height that ensures better readability and it also consumes relatively less space than Bookman.

Hence, Stone serif is the font suitable for the body copy text in the redesigned textbook.

## Bookman

I spotted it in a junk shop in Bridport, a roll-top desk. The man said it was early nineteenth century, and oak. I had wanted one, but they were far too expensive. This one was in a bad condition, the roll-top in several pieces, one leg clumsily mended, scorch marks all down one side. It was going for very little money. I thought I could restore it. It would be a risk, a challenge, but I had to have it. I paid the man and brought it back to my workroom at the back of the garage. I began work on it on Christmas Eve. I removed the roll-top completely and pulled out the drawers.

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### Deciding the colors -

There are specific colors for the textbooks.

English - 

Geography - 

History - 

Political Science - 

Science - 

My observation - All the subjects have the common background of a white paper. The color similar to cerulean blue and black is a recurring color. All the glossary in the textbooks is in the same color.

Pros of having too much color variation -

1. Students find it interesting to look at.
2. Colors act as the best medium to grab attention.

Cons of having too much color variation -

1. It might be confusing to find one specific text.
2. As colors act as a medium to grab attention, it might distract the user from reading a text effectively.
3. Specific colors have a specific impact on the brain.

Conclusion - Hence, it is advisable to use colors accordingly.

### Redesigning the redesign

My 2nd attempt at redesigning. This time, I started with 3 subjects. English, History and Political science.

## Part A - Comprehension "The Best Christmas Present in the World"

### Part 1



I **spotted it** in a junk shop in Bridport, a roll-top desk. The man said it was early nineteenth century, and oak. I had wanted one, but they were far too expensive. This one was in a bad condition, the roll-top in several pieces, one leg clumsily mended, **scorch marks** all down one side. It **was going for** very little money. I thought I could **restore** it. It would be a risk, a challenge, but I had to have it. I paid the man and brought it back to my workshop at the back of the garage.

I began work on it on Christmas Eve. I removed the roll-top completely and pulled out the drawers. The **veneer** had lifted almost everywhere — it looked like water damage to me. Both fire and water had clearly **taken their toll on** this desk. The last drawer was **stuck fast**. I tried all I could to ease it out gently. In the end I used brute force. I struck it sharply with the side of my fist and the drawer flew open to reveal a shallow space

09

#### Before you read

There are some dates or periods of time in the history of the world that are so significant that everyone knows and remembers them. The story you will read mentions one such date and event: a war between the British and the Germans in 1914. Can you guess which war it was?

Do you know which events the dates below refer to?

- (a) 4 July 1776
- (b) 17 December 1903
- (c) 6 August 1945
- (d) 30 January 1948
- (e) 12 April 1961
- (f) 20 July 1969

(Answers are on page 23)

#remember #knowledge

#### Glossary

**spotted it:** saw it; found it (informal)  
**scorch marks:** burn marks  
**was going for:** was selling for (informal)  
**restore:** (here) repair  
**veneer:** a thin layer of plastic or decorative wood on furniture of cheap wood  
**taken their toll on:** damaged  
**stuck fast:** shut tight

underneath, a secret drawer. There was something in there. I reached in and took out a small black tin box. Sello-taped to the top of it was a piece of lined note paper, and written on it in shaky handwriting: "Jim's last letter, received January 25, 1915. To be buried with me when the time comes."

I knew as I did it that it was wrong of me to open the box, but curiosity got the better of my **scruples**. It usually does. Inside the box there was an envelope. The address read: "Mrs Jim Macpherson, 12 Copper Beeches, Bridport, Dorset." I took out the letter and unfolded it. It was written in pencil and dated at the top

— "December 26, 1914".

#### Comprehension Check

1. What did the author find in a junk shop?
2. What did he find in a secret drawer?  
Who do you think had put it in there?

#easy #warmup #attention

### Part two

Dearest Connie,  
I write to you in a much happier frame of mind because something wonderful has just happened that I must tell you about at once. We were all **standing to** in our **trenches** yesterday morning, Christmas morning. It was crisp and quiet all about, as beautiful a morning as I've ever seen, as cold and frosty as a Christmas morning should be. I should like to be able to tell you that we began it. But the truth, I'm ashamed to say, is that Fritz began it. First someone saw a white flag waving from the trenches opposite. Then they were calling out to us from across no man's land, "Happy Christmas, Tommy! Happy Christmas!" When we had got over the surprise, some of us shouted back, "Same to you, **Fritz!** Same to you!" I thought that would be that. We all did. But then suddenly one of them was up there in his grey greatcoat

The best Christmas present in the world 10

and waving a white flag. "Don't shoot, lads!" someone shouted. And no one did. Then there was another Fritz up on the parapet, and another. "Keep your heads down," I told the men, "it's a trick." But it wasn't. One of the Germans was waving a bottle above his head. "It is Christmas Day, *Tommy*. We have *schnapps*. We have sausage. We meet you? Yes?" By this time there were dozens of them walking towards us across no man's land and not a rifle between them.

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09

• Glossary

*Tommy*: a common English name, used here to refer to British soldiers  
*that would be that*: that was all; that was the end of the matter  
*schnapps* (pronounced, sh-naps): a German drink made from grain  
*cello*: a musical instrument like a large violin

And we talked, Connie, how we talked. He spoke almost perfect English. But it turned out that he had never set foot in Dorset, never even been to England. He had learned all he knew of England from school, and from reading books in English. His favourite writer was Thomas Hardy, his favourite book Far from the Madding Crowd. So out there in no man's land we talked of Bathsheba and Gabriel Oak and Sergeant Troy and Dorset. He had a wife and one son, born just six months ago.

As I looked about me there were huddles of khaki and grey everywhere, all over no man's land, smoking, laughing, talking, drinking, eating. Hans Wolf and I shared what was left of your wonderful Christmas cake, Connie. He thought the *marzipan* was the best he had ever tasted. I agreed. We agreed about everything, and he was my enemy.

There never was a Christmas party like it, Connie. Then someone, I don't know who, brought out a football. Greatcoats were dumped in piles to make goalposts, and the next thing we knew it was Tommy against Fritz out in the middle of no man's land. Hans Wolf and I looked on and cheered, clapping our hands and stamping our feet, to keep out the cold as much as anything. There was a moment when I noticed our breaths mingling in the air between us.

He saw it too and smiled. "Jim Macpherson," he said after a while, "I think this is how we should resolve this war. A football match. No one dies in football match. No children are orphaned. No wives become widows." "I'd prefer cricket," I told him. "Then we Tommies could be sure of winning, probably." We laughed at that, and together we watched the game. Sad to say, Connie, Fritz won, two goals to one. But as Hans Wolf generously said, our goal was wider than theirs, so it wasn't quite fair.

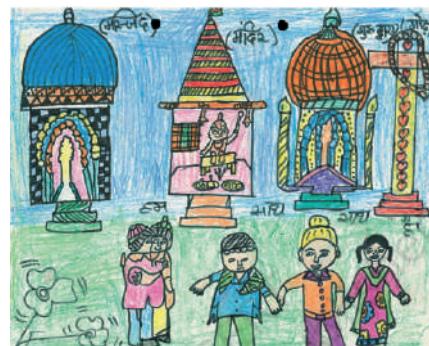
The time came, and all too soon, when the game was finished, the schnapps and the rum and the sausage had long since run out, and we knew it was all over. I wished

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religion. Therefore, the tyranny of the majority and the violation of Fundamental Rights that can result is one reason why it is important to separate the State and religion in democratic societies.

Another reason that it is important to separate religion from the State in democratic societies is because we also need to protect the freedom of individuals to exit from their religion, embrace another religion or have the freedom to interpret religious teachings differently. To understand this point better, let us take the practice of untouchability.

You might feel that you dislike this practice within Hinduism and therefore, you want to try and reform it. However, if State power were in the hands of those Hindus who support untouchability, then do you think that you would have an easy task to try and change this? Even if you were part of the dominant religious group, you might face a lot of resistance from fellow members of your community. These members who have control of State power might say that there is only one interpretation of Hinduism and that you do not have the freedom to interpret this differently.



#### Glossary

*Freedom to interpret: The independence that all persons shall have to understand things in their own way. In the context of this chapter, it refers to a person's liberty to develop their own understanding and meaning of the religion they practise.*

#### Activity

Discuss in class: Can there be different views within the same religion?

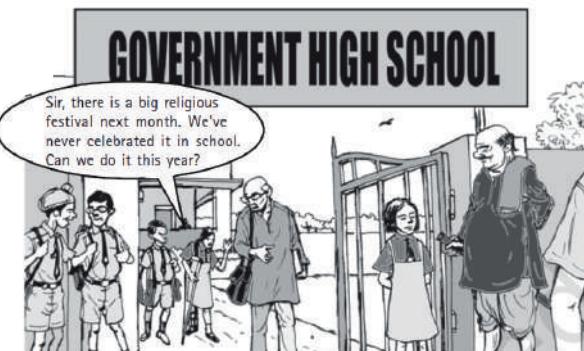
#### What is Indian Secularism?

The Indian Constitution mandates that the Indian State be secular. According to the Constitution, only a secular State can realise its objectives to ensure the following:

1. That one religious community does another.
2. That some members do not dominate other members of the same religious community.
3. That the State does not enforce any particular religion nor take away the religious freedom of individuals.

The Indian State works in various ways to prevent the above domination. First, it uses a strategy of distancing itself from religion. The Indian State is not ruled by a religious group and nor does it support any one religion. In India, government spaces like law courts, police stations, government schools and offices are not supposed to display or promote any one religion.

■ In a government school in Seemapur, students want to celebrate a religious festival.





**Fig. 12 – The Vat-Beater** ♦The indigo worker here is standing with the paddle that was used to stir the solution in the vat. These workers had to remain in waist-deep water for over eight hours to beat the indigo solution.

#### The “Blue Rebellion” and After

In March 1859 thousands of ryots in Bengal refused to grow indigo. As the rebellion spread, ryots refused to pay rents to the planters, and attacked indigo factories armed with swords and spears, bows and arrows. Women turned up to fight with pots, pans and kitchen implements.

Those who worked for the planters were socially boycotted, and the gomasthas – agents of planters – who came to collect rent were beaten up. Ryots swore they would no longer take advances to sow indigo nor be bullied by the planters’ lathiyals – the lathi-wielding strongmen maintained by the planters.

Why did the indigo peasants decide that they would no longer remain silent? What gave them the power to rebel? Clearly, the indigo system was intensely oppressive. But those who are oppressed do not always rise up in rebellion. They do so only at times.

◀ **Fig. 11** – Women usually carried the indigo plant to the vats.

◀ **Fig. 13** – The indigo is ready for sale Here you can see the last stage of the production – workers stamping and cutting the indigo pulp that has been pressed and moulded. In the background you can see a worker carrying away the blocks for drying.

#### A song from an indigo-producing village

*In moments of struggle people often sing songs to inspire each other and to build a sense of collective unity. Such songs give us a glimpse of their feelings. During the indigo rebellion many such songs could be heard in the villages of flower Bengal. Here is one such song: The long lathis wielded by the planter of Mollahati / now lie in a cluster The babs of Kolkata have sailed down / to see the great fight This time the raiyats are all ready, / they will no longer be beaten in silence They will no longer give up their life / without fighting the lathiya.*

“I would rather beg than sow indigo”

*Hadji Mulla, an indigo cultivator of Chandpore, Thana Hardi, was interviewed by the members of the Indigo Commission on Tuesday, 5 June 1860. This is what he said in answer to some of the questions W.S. Seton Karr, President of the Indigo Commission: Are you now willing to sow indigo; and if not on what fresh terms would you be willing to do it? Hadji Mulla: I am not willing to sow, and I don't know that any fresh terms would satisfy me.*

*Mr Sale: Would you not be willing to sow at a rupee a bundle? Hadji Mulla: No I would not; rather than sow indigo I will go to another country; I would rather beg than sow indigo.*

▲ **Indigo Commission Report, Vol. II, Minutes of Evidence, p. 67**

In 1859, the indigo ryots felt that they had the support of the local zamindars and village headmen in their rebellion against the planters. In many villages, headmen who had been forced to sign indigo contracts, mobilised the indigo peasants and fought pitched battles with the lathiya.

In other places even the zamindars went around villages urging the ryots to resist the planters. These zamindars were unhappy with the increasing power of the planters and angry at being forced by the planters to give them land on long leases. The indigo peasants also imagined that the British government would support them in their struggle against the planters. After the Revolt of 1857 the British government was particularly worried about the possibility of another popular rebellion.

When the news spread of a simmering revolt in the indigo districts, the Lieutenant Governor toured the region in the winter of 1859. The ryots saw the tour as a sign of government sympathy for their plight. When in Barasat, the magistrate Ashley Eden issued a notice stating that ryots would not be compelled to accept indigo contracts, word went around that Queen Victoria had declared that indigo need not be sown.

Eden was trying to placate the peasants and control an explosive situation, but his action was read as support for the rebellion. As the rebellion spread, intellectuals from Calcutta rushed to the indigo districts. They wrote of the misery of the ryots, the tyranny of the planters, and the horrors of the indigo system.

Worried by the rebellion, the government brought in the military to protect the planters from assault, and set up the Indigo Commission to enquire into the system of indigo production. The Commission held the planters guilty, and criticised them for the coercive methods they used with indigo cultivators. It declared that indigo production was not profitable for ryots.

**Problems in user testing** - This project started around the end of February. And it started gearing up in March.

Because the initial part of the study was on students, I had hit a block. In the month of March-April, a lot of schools have their final exams going on. And later they start their summer holidays. So finding proper users for my study was a bit hard. But at the start the target audience were students from secondary grades so it wasn't difficult to gather a good number. But after narrowing down and redesigning for a specific target users, I faced problems in the testing part. A lot of students were on vacation, others had gone to their native place etc. hence, I was able to get hold of less than 25 students for testing. In the end, the actual no. that showed up was even less. Hence, the testing for the last stage of the final product is still quite less.

### **How do I plan to overcome it**

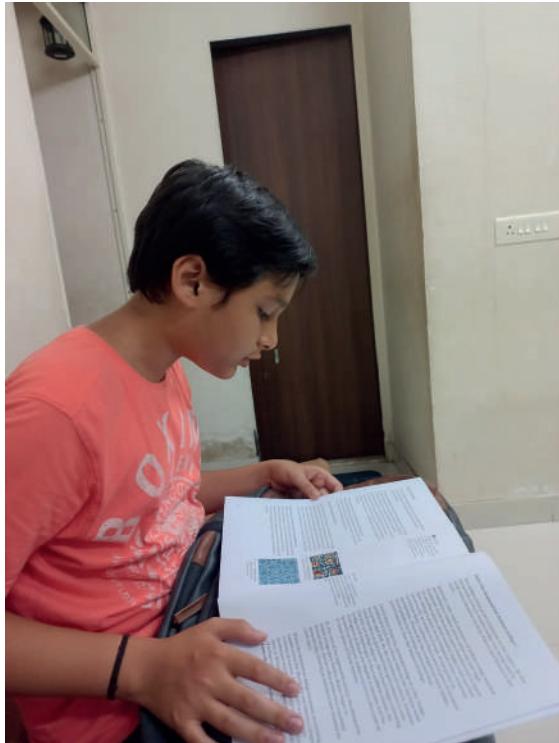
I plan to use my remaining time in the campus and before joining for my job to work on this project even more. Especially the final thorough testing part.

### **A big mistake**

Before my guide discussion, I completed 3 chapters from 3 different subjects and ran to the testing part. The problem with print and publication design is "**Everything looks perfect on the screen**".

I asked the students of standard 8 that I knew for an appointment and asked them to read the chapters. Because I had contacts with a few students and some of my cousins in Higher secondary, I ran the 2nd test for my design.





During the testing I noticed that the students are having some kind of a problem in switching from one page to another. Firstly, the size of the textbook is big when its closed (almost an A4). But when they study, the book opens and the size of the product used becomes almost an A3.

I observed them studying from their and my redesigned textbook simultaneously. And below are my observations -

1. They operated their own textbooks and navigated through them with a lot of ease.
2. When reading from my designed book, they had a slight problem in switching pages.
3. The use of hashtags everywhere was too much and then they kept the actual text aside getting distracted.
4. While coming to images of political science and History, the placement of the image information affected their viewing experience a lot. In my case, the information was placed at the end of the image. Hence, the users saw the image 1st, then read its information and then came back to view the image.
5. The icons used before the side elements for the sake of directing the eye sight, occupied more time than it should.

Hence, there needs to be changes in the visual hierarchy of a lot of things and the book needs to be redesigned again.

● Immediate changes that need to be done.

1. The grid orientation of the book needs to be changed.
2. There should be at least some attention grabbing soothing elements so that the students don't get bored of a rigid looking formal textbook.
3. There can be a benefit if students know that there can be potential questions asked in a paragraph so that they read it with extra attention.
4. Removal of hashtags for now. Using it for extreme important cases.
5. There should be a certain identification mark for exercises area to be found easily.
6. Change the placement for image information, making it less confusing.
7. The spacing matters the most. So the headings should be closer to the para below them and not to the para above them.
8. The paragraph breaks should be closer to each other so that it does not affect the reading process.

The next page is my 3rd and the latest attempt at re-designing. I am saying “Latest” and not the last because it really isn’t the last one.

Attempt - 3

Subject - English

Testing - Currently on going

(when this project report is being made)

underneath, a secret drawer. There was something in there. I reached in and took out a small black tin box. Sello-taped to the top of it was a piece of lined note paper, and written on it in shaky handwriting: "Jim's last letter, received January 25, 1915. To be buried with me when the time comes."

I knew as I did it that it was wrong of me to open the box, but curiosity got the better of my **scruples**. It usually does. Inside the box there was an envelope. The address read: "Mrs Jim Macpherson, 12 Copper Beeches, Bridport, Dorset." I took out the letter and unfolded it. It was written in pencil and dated at the top

— "December 26, 1914".

#### Comprehension Check

1. What did the author find in a junk shop?
2. What did he find in a secret drawer?  
Who do you think had put it in there?

#easy #warmup #attention

#### Part two

Dearest Connie,  
I write to you in a much happier frame of mind because something wonderful has just happened that I must tell you about at once. We were all **standing to** in our **trenches** yesterday morning, Christmas morning. It was crisp and quiet all about, as beautiful a morning as I've ever seen, as cold and frosty as a Christmas morning should be. I should like to be able to tell you that we began it. But the truth, I'm ashamed to say, is that Fritz began it. First someone saw a white flag waving from the trenches opposite. Then they were calling out to us from across no man's land, "Happy Christmas, Tommy! Happy Christmas!" When we had got over the surprise, some of us shouted back, "Same to you, **Fritz!** Same to you!" I thought that would be that. We all did. But then suddenly one of them was up there in his grey greatcoat

• **standing to:** taking up positions  
**trenches:** long deep ditches in the ground where soldiers hide from the enemy  
**Fritz:** (here), a name for a German soldier (Fritz is a common German name)

and waving a white flag. "Don't shoot, lads!" someone shouted. And no one did. Then there was another Fritz up on the parapet, and another. "Keep your heads down," I told the men, "it's a trick." But it wasn't. One of the Germans was waving a bottle above his head. "It is Christmas Day, **Tommy.** We have **schnapps.** We have sausage. We meet you? Yes?" By this time there were dozens of them walking towards us across no man's land and not a rifle between them.

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A glimpse of the final prototype

### **What's ongoing right now?**

Because the latest redesigned book was completed a little behind the timeline, the user testing is currently ongoing. And I and my guide are trying our best to solve the problem of testing on a small no. of users.

### **What to expect further?**

This project holds a very important place in my heart. It not only gave me a chance to reminisce about my school days but also opened my eyes to the vast education system across India. Hence, I regret that I was able to contribute only a little to this opportunity. I wish to use my extra time in the campus and outside to complete the testing of redesigned chapters and complete the redesign of the remaining chapters that I wasn't able to complete in this span of time.

### **What did I learn from this project?**

1. The first thing of all, it was a very big opportunity to work under the guidance of Prof.Ravi Poovaiah, on a topic so well researched by him. I understand now the importance of small details and how it can make a big impact on society.
2. Secondly, as this was my very 1st publishing design/redesign project, hence I learned some lessons the hard way. I learned that my design should be judged when I have it in print in my hand and can be better with proper testing.
- 3 Third, I was so in love with my basic shallow ideas earlier that I failed to recognise the importance of functionality and accessibility. From now onwards, these three things will be with me forever. Even when I continue to work on this project or not.

Lastly, I am extremely grateful that I made mistakes and learned how to overcome them. This learning process was the best so far.

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