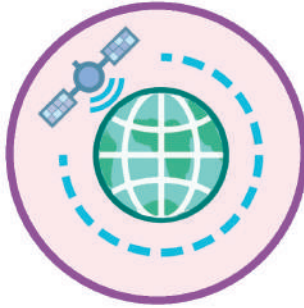# Digital Technology

Class Seven

National Curriculum and Textbook Board, Bangladesh

বঙ্গবন্ধু হাইটেক সিটি, কালিয়াকৈর

শেখ হাসিনা সফটওয়্যার টেকনোলজি পার্ক, যশোর

হাইটেক পার্ক আইটি সংক্রান্ত সকল সামগ্রী তৈরি, আমদানি ও রপ্তানি করার সব ধরনের সুবিধা সম্বলিত প্রযুক্তিভিত্তিক শিল্পায়ন। বঙ্গবন্ধু হাইটেক সিটি, শেখ হাসিনা সফটওয়্যার টেকনোলজি পার্ক, জনতা টাওয়ার টেকনোলজি পার্কসহ সারাদেশে বিভিন্ন জেলায় আরও হাইটেক পার্ক নির্মাণাধীন রয়েছে। তরুণদের কর্মসংস্থান এবং হার্ডওয়্যার ও সফটওয়্যার শিল্পের উত্তরণ ও বিকাশই হাইটেক পার্ক স্থাপনের উদ্দেশ্য। দেশ-বিদেশের নামকরা শিল্পপ্রতিষ্ঠানগুলো এসব পার্কে তাদের কারখানা প্রতিষ্ঠা করবে। দেশের তরুণরা এসব কারখানায় কাজ করার ও শেখার সুযোগ পাবে। ফলে তারা প্রয়োজনীয় প্রশিক্ষণ এবং গবেষণা করে নতুন নতুন শিল্প গড়ে তুলতে পারবে।

Digital Technology

Class VII

Experimental Version

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Preface

In this ever-changing world, the concept of livelihood is altering every moment. The advancement of technology, in accordance with knowledge and skill, has accelerated the pace of change. There is no alternative to adapting to this fast changing world. The reason is, the development of technology is at its zenith compared to any time in the human history. In the fourth industrial revolution era, the advancement of artificial intelligence has brought a drastic change in our employment and lifestyles and this will make the relationship among people more and more intimate. Varied employment opportunities will be created in near future which we cannot even predict at this moment. We need to take preparation right now so that we can adapt ourselves to that upcoming future.

Although a huge economic development has taken place throughout the world, the problems of climate change, air pollution, migrations and ethnic violence have become much more intense than before. The epidemics like COVID 19 has appeared and obstructed the normal lifestyle and economic growth of the world. Different challenges and opportunities have been added to our daily life.

Standing on the verge of these challenges and possibilities, implementation of sustainable and effective solutions is required for the transformation of our large population into a resource. It entails global citizens with knowledge, skill, values, vision, positive attitude, sensitivity, capability to adapt, humanity and patriotism. Amidst all these, Bangladesh has graduated into a developing nation from the underdeveloped periphery and is continuously trying to achieve the desired goals in order to become a developed country by 2041. Education is one of the pivotal instruments to attain the goals and there is no alternative to the modernization of our education system. Developing an effective and updated curriculum has become crucial for this modernization.

Developing and revising the curriculum is a regular and vital activity of National Curriculum and Textbook Board. The last revision of the curriculum was done in 2012. Since then, a lot of time has passed. The necessity of curriculum revision and development has emerged. For this purpose, various research and technical exercises were conducted under the supervision of NCTB during the year 2017 to 2019 to analyze the prevalent situation of education and assess the learning needs. Based on the researches and technical exercises, a competency-based incessant curriculum from K-12 has been developed to create a competent generation to survive in the new world situation.

In the light of the competency based curriculum, the textbooks have been prepared for all streams (General, Madrasah and Vocational) of learners for grade VII. The authentic experience driven contents of this textbook were developed in such a way that teaching learning becomes comprehensible and full of merriment. This will connect textbooks with various life related phenomenon and events that are constantly taking place around us. We hope that learning will be profound and life-long now.

Issues like gender, ethnicity, religion, caste, the disadvantaged and students with special needs have been taken into special consideration while developing the textbook. I would like to thank all who have put their best efforts in writing, editing, illustrating and publishing the textbook.

If any one finds any errors or inconsistencies in this experimental version and has any suggestions for improving its quality, we kindly ask them to let us know.

Professor Md. Farhadul Islam
Chairman
National Curriculum and Textbook Board, Bangladesh

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Open words to dear students

Dear student,

You are really lucky, because you are growing up at a time when new technologies are being invented all around, which are making our lives easier and also transforming it. This period is called the period of technological revolution. Technology is the material that makes human work easier. Electric fans to keep the house cool, printing machines to produce many books in a short time, wheels and vehicles to reach a place quickly, etc are instances of technology. There are many possibilities ahead of you. As new technologies make our lives easier, so also we need to know how to use them. Not only that, technology has to be used to solve various problems of life. In this way, technology has opened the doors to various possibilities in our life, and so we need to understand technology more deeply without fearing it.

Some of you may think, you don't have computer and internet at home, then how can you understand technology! Let me tell you, the electric lamp that is in the house or school, or the mobile phone that your family member has, these are also technology. If you are interested in technology, if you want to explore, technology does not have to be in your hand at once. So this book is designed for you in a slightly different way, here you will get qualified through real experience of how technology works and how to solve life problems with it, even if technology is not at hand. Knowing and experiencing is not only in the classroom, but you have the opportunity to experience on the way to and from school, on the playground, around the school and at home. So work together to learn and experience with everyone around you.

You shall not compete with your friends; rather, through cooperation, everyone will know together. Our school, society, country will prosper only when we all prosper together, all contribute together.

Good luck to you!

Information in Digital Age

Session- 1 : Find answers to six questions

Well, do children or adults have more problems in their lives? In fact, both children and adults face different problems every day. In most cases, the adults solve our bigger problems. How will it be if we, the children, try to solve some the bigger problems? With the help of the present-day digital technology, we can solve many problems only by information. We learned about information and its sources in Grade VI. We will try to delve into information in Grade VII in order to get advantage of it.

But first, let us read a story-

Shishir's father has bought new shoes for Shishir. Shishir and his younger sister Trina will go on a trip to Sreemangal with their parents tomorrow. Shishir is very happy because after a long time they are going on a long trip. On top of that, he has got a gift of new olive coloured shoes. He was thinking tomorrow he would have to wake up early and fell asleep on bed with the shoes on. He woke up in the middle of the night hearing the squeaking sounds of a mouse. Shishir has a mouse in his reading room which suddenly darts to and fro. He saw the mouse sitting still on the bed in front of his new shoes!

Digital Technology

Shishir calls the mouse 'Comet'. He has not seen Comet for over a week and now here is Comet, sitting on his bed. Shishir was very annoyed. He was completely taken aback when Comet said, 'So, you're going to Sreemangal?' Feeling a bit scared, Shishir put his feet under the quilt. But Comet kept sitting like that there. His astonishment went sky-high when his new shoes spoke from under the quilt, 'Oh yes, are you coming along? If you want, Shishir can hide you inside his water bottle, can't you, Shishir? Shishir could not say a word in fear. He tried to shake the shoes off his feet...

Now we will try to find some things from this story. Each story, event or information has 6 primary things called 5W1H – Who, What, Where, When, Why and How. We will try to find out if the story has answers to these six questions. One example is given below. We will find the rest from the story.

Who?	1. Shishir	2.	3.
What?	1. Was Sleeping	2.	3.
When?	1. At night	2.	3.
Where?	1. On his bed	2.	3.
Why?	1. He has to get up early	2.	3.
How?	1. Wearing his shoes	2.	3.

If we have answers to these six questions while presenting any information, we will have a complete idea about it. We receive more information each moment than ever because of technological advancement. But not all of this information is true. If we mistakenly believe any false information, we can get into any sort of troubles. So, before we believe in an information or share it with others, we have to make sure it is correct. The 5W1H rule is very important in verifying the correctness of information. When we share information with someone we have to ensure that the information has all the answers of 5W1H.

Preparation for next day:

Put your pen at the centre of each of the six circles below. Your friend will rotate the book. You will drag your pen towards any way. In this way you will get six words or phrases from the six circles. You will use these six words or phrases to write the remaining part of the story 'Shishir and His Shoes' as you wish. You just need to note that these six words or phrases should be in your story. Similarly, you will help your classmate next to you to get their six words.

Circle 1: Cat, Friend, Driver, Uncle, Bablu Bhai, Mita Apa

Circle 2: Checked clock, Had rice, Brusehd teeth, Ran away, was rebuked

Circle 3: Aft er 4 years, In the morning, Yesterday, 1st of January, Next Friday, Next Year

Circle 4: At home, At school, In the river, In Sylhet, In the car, In the Moon

Circle 5: School is closed, Is scared, Mother said, Father still awake, I'm OK

Circle 6: By cycling, Asks question, Boards a car, With permission, Slowly, By Swimming`

In the box below, I will write the six words or phrases I have found from the six circles above.

Who? -	Where? -
What? -	Why? -
When? -	How? -

Shishir could not say a word in fear. He tried to shake the shoes off his feet...

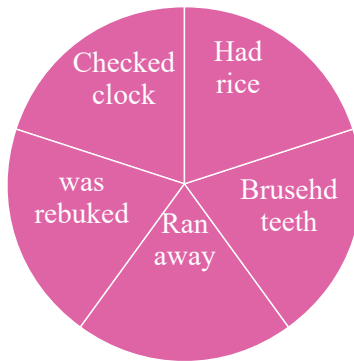..

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**Take a separate sheet to complete the story if this page does not have any space left. We can attach that sheet to this page by glue.

Session- 2: Finding a problem by open speech

By writing a story, we have already learned how to represent any information, story or incident precisely through 5W1H. Our future life will be information based. So, it is very important to understand correctly and present information. Today we will present a problem thoroughly through the 5W1H and an open speech.

Forming groups : We will divide our class into 10 groups. Each group will prepare a speech about a separate topic. One from each group will deliver the speech in the classroom.

Selecting a topic: The teacher will provide us with 10 recent topics. We will discuss among ourselves and prepare a speech on the given topic. If we have a different important topic in our mind, we can still discuss that with our teacher and pick it as the topic of our speech.

Preparing script for speech: We will prepare a script for the speech based on the discussion of the topic among our group. We have to keep in mind that our speech should have a total picture of the problem. In this case, we will check if our script has the answers of 5W1H.

After the speech, forming groups and identifying problems: We will identify a recent problem around us. We will gather information about the reason behind the problem and find out which 'behavioural change' will solve it. We have to work in a groups.

So we have three tasks –

☑ Selecting a recent problem;

☑ Finding the cause of the problem by gathering information;

☑ Finding out what behavioural change of ours might solve the problem.

We will gather information in two ways –

☑ Collecting information from our friends, elder siblings, guardians, teachers and neighbours through a survey;

☑ Collecting information from media like newspapers, television, radio and the internet.

So, we have to select a problem that is familiar to most people around us and information about it is available in the media. We may as well select problems from the topics of our open speeches.

Topic selection:

Name of our group	
Topic we will work on	
Names of our group members	

Session-3 Looking for reasons behind a problem and its solutions through a survey

We will try to determine the cause and the proper solution to our selected problem. We will make an awareness raising content on the solutions of the problem that we find out and present it at a seminar. But first of all, we need to understand what survey is.

Let's assume I want to study a problem or gather information about it. My problem is – 'Studying whether the habit of reading books has increased or decreased among the secondary school students'. Now I want to study the reason behind the increase or decrease in reading books among the students. Survey can be a way to find the answer. I can ask the secondary level students, their guardians as well as teachers to find out the reasons.

It means, survey is a strategy or method to find out the opinions, attitude and behaviours of the people familiar with or related to a problem through a series of questions.

Question types in a survey:

There can be several types of questions in a survey. We will learn about two types of questions. And we will prepare a survey questionnaire in order to find out the cause and solution for our selected problem.

1. Descriptive

2. Multiple choice

Let's understand the types of survey questions with the help of some examples.

Descriptive question -

Question: What do you think should be done to make secondary level students interested to read books?

Answer: ………………………..................

………………………………………….....

Multiple choice questions -

Question: Do you regularly read any (story or other) books other than textbooks?

a. Yes   b. No   c. Sometimes

We will keep in mind the solution that we are trying to find is a change in our behaviour. For example, if the problem is wasting water, my solution can be, 'turning the tap off while brushing teeth'. Or if the problem is 'felling trees' then the solution might be 'planting five trees for every newborn'. So we will select a problem that can be solved through our behavioural changes.

Let me prepare survey questions in order to find the cause and solution for the problem selected for my group –

Now together in the group, we will prepare at least 10 questions for our survey, keeping in mind the two types of questions above. We can write down the questions in the box below when we are done. If we need extra page, we will write the questions on our notebooks. Then we will cut paper in the size of the book and attach it here with glue or pin.

Digital Technology

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

When the questionnaire is prepared, we will convert it to an online survey like an online survey form. There are plenty of survey websites and applications in the internet that we can use. We can use the school's computer as a group with the help of our teacher to do this. When the form is ready, we will send it to 20 people to fill up. These 20 people will be related to our selected problems.

If a group does not have access to internet at home or school, they will write the questions clearly on a piece of paper. As we will send it to 20 people, we need 20 copies of the questionnaire. So, we will divide the work among the group.

What free tools we can use to prepare the online survey are given below:

1. Google Forms

2. Survey Monkey

3. Microsoft Form

How an online form looks like:

1. By clicking on the Name of the Form we can give a title to the form.

2. We will write a short description in the Form Description field.

3. We will put our own or our guardian's or teacher's email address in the Email field. Filled up forms will be submitted in this email.

4. We will create a question by clicking on Untitled Question. Some forms might have a '+' sign. We can add one after another question by clicking that.

5. By clicking on the □ triangle we can add instruction of what type of question it is. If it is a Multiple Choice Question or a Descriptive or Short Answer one.

6. If it is a Multiple Choice Question, then we have to add options. After adding an option, pressing enter will let us write another option.

7. Required means that the answer to this question is a must. Besides, '*' star sign also means the same.

8. After creating the form, I will send it to the recipients, from whom I want information, by clicking 'Send'. For this, I need to know their email addresses.

Session 4 - Can the cause and solution of our problem be found elsewhere?

We learned in Class VI that there are mainly two types of sources of information – human and non-human. We are currently gathering information from human sources (information from people). You have certainly created the online form and sent it to 20 people already. Alternatively, you may have written down the questions and are surveying 20 people. Now we will search in non-human sources if we can find any information regarding our problem.

Mass media is the main of the most reliable non-human sources of information. We have certainly heard the name 'mass media; before, haven't we? Mass media can be of different kinds subject to the types of broadcast –

1. Print media - newspaper, magazines, books, etc.
2. Electronic media - radio, television, etc.
3. Internet or new media - websites, news portal, online TV, etc.

How would it be if we play a game today? We can see the three types of mass media above. Each has their own characteristics. Our teacher will mention one characteristic in one sentence and throw a ball at one of us. The one who will catch the ball will name the media the teacher has given characteristic of. We all will play the game standing. We will sit down if the answer is correct and keep standing if wrong and pass the ball to the teacher. (The characteristics are given in the Teacher's Guide)
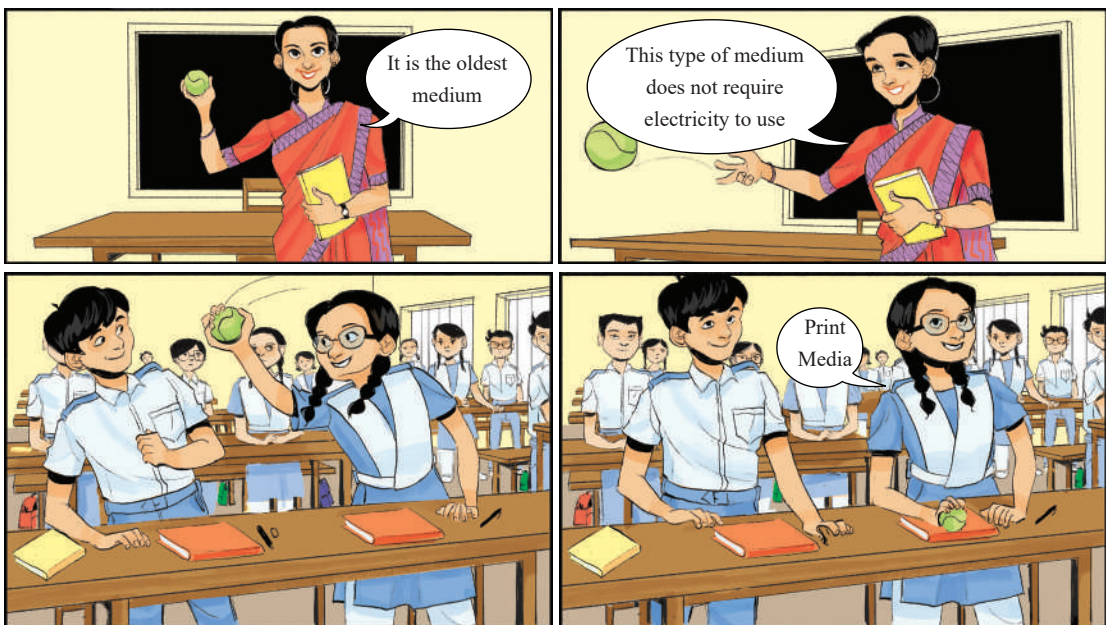
Now we will try to find out if any media has any information about our problem. We can use one or two types of media mentioned above while searching for the information. Our teacher will give us newspapers or books and we will see if we can find out more information there. The teacher may also help us search for information on the internet. In this case we will tell our teacher the keywords to search for our problem.

If any school does not have access to newspapers, magazines, books, radio, television or internet, we will look for the information related to our problem in our or other classes' books of history and social science, science, life and livelihood, art and culture, Bangla, etc.

While gathering information from non-human sources, we have to keep in mind the following:

1. What is the date of publication for that information? (Because of time, today's apparently true information might be proved false tomorrow. For example, Bangladesh has 7 divisions. It was true until 2014 but not for 2015 because Mymensingh was announced as the new division in 2015.

2. We will try as much as possible to take the most recent information.

3. We will not jump to conclusions by just reading the news headlines. We have to read the whole article.

4. (If we have internet access) After viewing the news we will search with the same keyword to verify if other news media are reporting the same news.

5. Just by seeing the logo of a newspaper or TV channel, we will not believe that it belongs to them. We will visit their websites to verify it.

6. I will visit the website of the organisation from which I need information. I will notice if the hyperlink is correct. For example, the hyperlink of Bangladesh Curriculum and Textbook Board is http://www.nctb.gov.bd. Sometimes if someone wants to spread wrong information in the name of Textbook Board, they may create a fake website similar to the real one. In that case, the hyperlink will look little different. One or two characters of that link will be different such as n in place of c, d in place of b, i in place of o which is not noticed easily. So, it is important to verify the link before taking any information.

Preparation for next session

In the classroom today, we tried to find some non-human sources of information about our group's selected topic. After we go home, we will try to find more information from non-human sources. We will write the information we have found below. If we need extra sheet, we will write on notebook and stick that with glue between these pages.

Session 5 : Organising information to find out solutions to a problem

We have collected information from both human and non-human sources. But the pieces of information are disjointed or some random numbers and texts. These are not enough to reach a decision. So we will analyse these to find the main information.

For example, if our problem is 'the habit/practice of reading books has decreased among the secondary school students' and our survey question is, 'do you read any books other than textbooks? a) Yes b) No'. Now I have to analyse what percentage of people said 'Yes' and what percentage of people said 'No'.

We surely did tally maths, didn't we? Now we will find out using tally how many have said 'yes' and how many have 'no'. Then we will convert the number into percentage.

Example:

Question: Do you read any books other than textbooks = a) Yes b) No

- 5 people answered 'Yes'
- 15 people answered 'No'
- Total respondents - 20

Converting 'Yes' answers into percentage = 5 x 100 / 20 = 25%

Converting 'No' answers into percentage = 15 x 100 / 20 = 75%

So, we have reached a decision that 75% of secondary students do not read books other than textbooks.

We counted 20 answers today, so it was easy find the answer by counting fingers through tally. But if we have to find out survey of 100 or 1000 people? For analysing large survey results there are computer software or spreadsheets.

We have to use codes to make the computer or software understand our language. Suppose the code for yes is 'A' and the code for no is 'B'. If we can write the correct formula then even the complex calculations will be done instantly. Let's find out how it works by observing the table below.

The cells from left to right are called rows.

Cells from top to bottom are called columns.

And the small rooms created between the columns and rows are called cells. Here the small blue cell is called C5. Can you say why it is called C5?

Answer: … …. …. … … … … … … … … … … … … … …

1	A	B	C	D	E
2	1st respondent	A		5	A
3	2nd respondent	B		15	B
4	3rd respondent	B			
5	4th respondent	B			
6	5th respondent	B			
7	6th respondent	A			
8	7th respondent	B			

We will write the answers from our first question in rows of column B. The answers of the second questions will be in column C. We will write all the answers in a similar fashion. Then we will write the formula in the rightmost column. If we have access to computers at school or home, we can practice and see how this works by inserting different formulas. This will come in handy when we become adults.

In this way, we can find the percentage of answers to all the 'multiple choice' questions.

We will organise the descriptive questions, but we cannot turn those into numbers. Then how can those be organised! We will find out if all the answers to those questions have similarities or dissimilarities. Then we will write those together. For example,

'Why do you think the habit of reading books has decreased among the secondary school students?'

For respondents in reply to this question said 'many students are unable to buy storybooks because of price hike. So they cannot grow a reading habit. That is why many more libraries need to be set up'. On the other hand, two respondents said 'pressure of studies at school is so much that students do not get enough time to read books'. But another one had a different opinion. S/he said 'addiction to video games has reduced to reading habit'.

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Let's organise our information in percentage and description in groups. We will add the information found in non-human sources similarly.

Preparation for next session

After organising the information in groups we will write down the collected information in our notebooks. We will prepare individual reports based on it.

How the reports can be prepared: (either by typing or written)

♦ Introduction

♦ Reason to select the problem

♦ How information was collected

♦ Collected information

♦ Decision we have reached - a) cause of the problem b) Solution of the problem

♦ How we will apply the solution

*** After completing the report, we will read it out to our guardian and then submit it to our teacher the next day.

Session 6: Storing the information

Have we prepared our reports or work is still on? We can take little more time if needed. Meanwhile we will try to understand a new thing. That is storing information. Storing means 'to save' or preserve, doesn't it? Have we read how information was stored in the past in the history books?

Information was stored by carving into stones, writing in codes into walls of caves or carving into tree trunks.

Do you know how we store information at present?

If you know, write your answers -

1. … … … … … … … … … …
2. … … … … … … … … … …
3. … … … … … … … … … …

Photo of caryapada

Well, how do our teachers store information if it is very important?

- Prepare paper or plastic files and keep them in cabinets.

- Type the information and store it in the hard disk of the computer.

Cabinets can be damaged for any reason, paper files can be eaten away by termites, computer hard disks can be damaged too. Memory cards where information is stored can be stolen or lost. So is there anything where information can be stored with much safety?

Yes, it is called cloud!

Cloud means মেঘ in Bangla. So is information stored in the clouds?

That is not so. There are many large internet service providers in the world who have huge data centres or information centres. Data from billions of people around the world is being stored there

every day. When we will open an online account, our data will be stored there too. We can use that account to access our data from anywhere in the world. We can use the data, update the data or view the data using our computer or mobile phone.

Photo of Bangladesh Data Center

But if someone has our password then they can also access and modify our data and take control of our account. This is similar to someone getting access to the key to the file cabinet.

Well, if you open an account, which data will you store there first? (Information can be any article, report, song, photo, video, any school project) –

1.

2.

3.

Now think, if these pieces of information get into the wrong hands can they harm us in any way?

Do we remember that we are to arrange a seminar on solving a particular problem?

Today we will decide which problem will be selected so we can make awareness raising content on it. Maybe we have more than one solution to our problem from the information we have gathered. But we will work with the most important of all the solutions.

Let's write down our group's problem and solution here -

Name of the group: .. …

The problem was: ....

....

The solution we can use for awareness raising campaign: ....

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Session 7: Propose a solution in the Seminar

Shaibal saw clouds gathering in the sky while coming to school. He came to the class and told his friends, 'You know it will rain today.' Shaibal observed his surroundings and provided information to his friends. It is his opinion. If the same information was provided by Shaibal by taking a picture of the clouds and writing rain forecast on it, then we could call it a content created by Shaibal.

Mala went to the market with her mother. She went there to buy a pen and saw that the storekeeper gave her a pen free for buying two pens. Mala was very happy and informed all of her friends about this. Mala shared her experience with her friends. If Mala saw a poster in front of the store which said "Buy two pens, get one free" then the advertisement would be a content.

Contents are a compilation of different information about a particular topic made by using different types of media and easy to understand for the audience. Stories in the books, drama, film, news, music all these are contents. Contents provide us with not only information but also entertainment.

If we think about it, we will find out that we see different contents around us every day. For example, we listen to music, watch shows on television, see different posters at shops. But which of these are digital contents? The contents that are distributed to us via internet are digital contents.

Let's have a conversation with the friend beside us

Let us have a conversation with our friend about what contents I have seen since yesterday. We will point out to our friends if any were digital contents. We will keep the conversation neat and mention what we have seen, when how, with whom and if we liked it or not?

In the following table, let's write down three contents that our friends have seen. Let's put a tick mark which among them are digital contents.

Contents seen by my friend	Digital	Non-digital
1.		
2.		
3.		

Arranging a seminar:

In the last few days we have researched in a group about a particular problem. We have found a solution to that problem as well. But it will not do anyone any good if the solution remains confined in the report. It would be best if we could arrange a seminar. We will present our proposed solutions in front of everyone in different ways. We can use different types of contents for our presentation, like -

- Using a computer for presentation
- Telling a story with images
- A play shot with mobile phone camera
- Storytelling using animation
- Creating a digital poster
- Making a play, song or rhyme.

We have to bear in mind, we will make content from whatever resources we have. For doing this task, we will not spend any money by buying any new device (such as a mobile phone or others)

Preparation for next session

What will our content look like?

We will think about what type of contents we are going to use to raise awareness among everyone in our school. We all will think at home about a task and the next day that in the group will choose it. In this case, we have to keep in mind that we have to work with what technologies we have around us. If we don't have access to technology, then we can raise awareness by songs, poems, rhymes, plays, etc.

Some information to help with the homework

We have to keep in mind that the people for whom we are creating the awareness raising content about our problem is our target group. We have learned about target groups in Class 6. Even so, we will see an example to refresh our memory. If my problem is –

'The habit of reading books has decreased among the secondary school students'.

From the information we have gathered from surveys and other media, we have learned that the main three reasons for this problem are -

1. Reading habit decreased due to addiction to video games;

2. The students do not get enough time due to stress of studying in school;

3. The students cannot buy storybooks due to price hike.

These three problems have three different solutions –

1. Parents should allow the students a little or limited time on mobile phones;

2. Teachers should try to complete most of the lessons at classroom so that students do not have to get extra coaching classes;

3. Schools should keep storybooks at the libraries so that students can read books for free or at a minimum cost.

The target groups for these three solutions will also be different –

1. The target group for the first solution - guardians

2. The target group for the second solution - teachers

3. The target group for the third solution - school authorities.

So we have to arrange our stories in such a way that our target groups like them as per their choice, age, educational qualification, etc. and be aware.

Session 8 – Creating Contents for Arranging Seminar

At the end of today's session we will discuss in a group and decide on what type of content we want to make. We may want to create a content by taking pictures with our phones, or maybe we want to draw comics or shoot a play with a mobile phone camera. In that case, we have to know certain things that will be useful to us. It will be more interesting if we can tell our story by drawing or adding pictures. Some strategies are given below for your advantage.

If we want to explain the language of the eyes without talking:

Let's see the way we see our story and how we want to tell it by photos. We do not have to memorise this. We just have to understand the concept and then when we are taking or drawing pictures, we just have to apply the strategies.

*A shot means the part of a picture that we want to keep in our content and how to do it.

1. Two friends are having a conversation. One friend is smiling. If I want to show the smile, I have to see the face from the front. When a photo is taken from the front, it is called a 'close shot'.
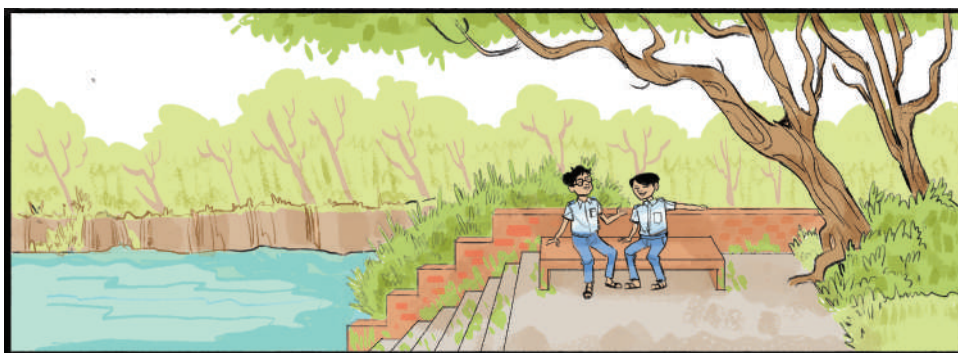
2. Two friends are talking beside the river. We have to take their picture from far away to show that they are talking in distance. This is called a 'long shot'

3. Two friends are going home after the talking. To show that they are going the opposite ways, we have seen from a little far. This is called a 'mid-shot'.

4. After the conversation, one is going away and another is standing. To picture the departure, the photo is taken over the shoulder of the standing friend so that we can see the departure of the friend over another's shoulder. This shot is called 'over the shoulder'

5. After departure of the friend, the other noticed that he forgot his diary. He is looking at the diary on the grass while standing. This means seeing something below from above. This shot is called 'bird's eye view'.

6. Let's say an ant is trapped under the diary. The ant is looking at the standing friend from below. If he picks up the diary the ant can survive. Seeing something above from below is called in the language of camera 'frog's eye view'.

We can use presentation software to easily create awareness about the problem's solution. The most popular software of recent times –

1. Microsoft PowerPoint

2. Google Slides

3. Prezi

4. Canva

The features of these software are more or less same. We just have to remember some symbols. Then we can easily make a digital presentation by adding some images and texts.

Insert   Image   Video

Text   Music

Group discussion and plan on creating contents

Preparation for creating contents:

1. We will inform our plan to create contents to our teacher. If we do not need any help from technology in creating our content, then we will prepare the content bit by bit every day before the next class.

2. If we need any technology like computer or mobile phone, then we will take support from our teacher and create the content bit by bit while at school.

3. If we need mobile phone to create the content then with the help of the teacher we will create the content using their phone before the next class.

4. If the teacher's phone is not available or does not have a camera, then we will write an application to the headteacher asking permission to bring our parents' phones for a day. We will present the application to our guardians and bring their phones for a day under their supervision. (Only one person from the group will do this)

5. If it is not possible to bring the guardians' phone to the school then we will go to the house of one of the group and use their guardian's phone to complete the task.

6. If it is not at all possible to use any phones of our teachers or guardians, then we will draw pictures according to what the shot will look like in camera. The drawings do not need to be accurate or good, if we can understand the subjects and characters then that should be enough. If anyone can draw pictures digitally using someone's computers, smart phones or tablets by an app, then we can do that too.

Digital Technology

Presenting content in the seminar (Work outside class)

Today is our seminar day. We will divide time slots among the groups and present our contents. We have outside guests in our classroom today. We will welcome them nicely. And then we will present our tasks.
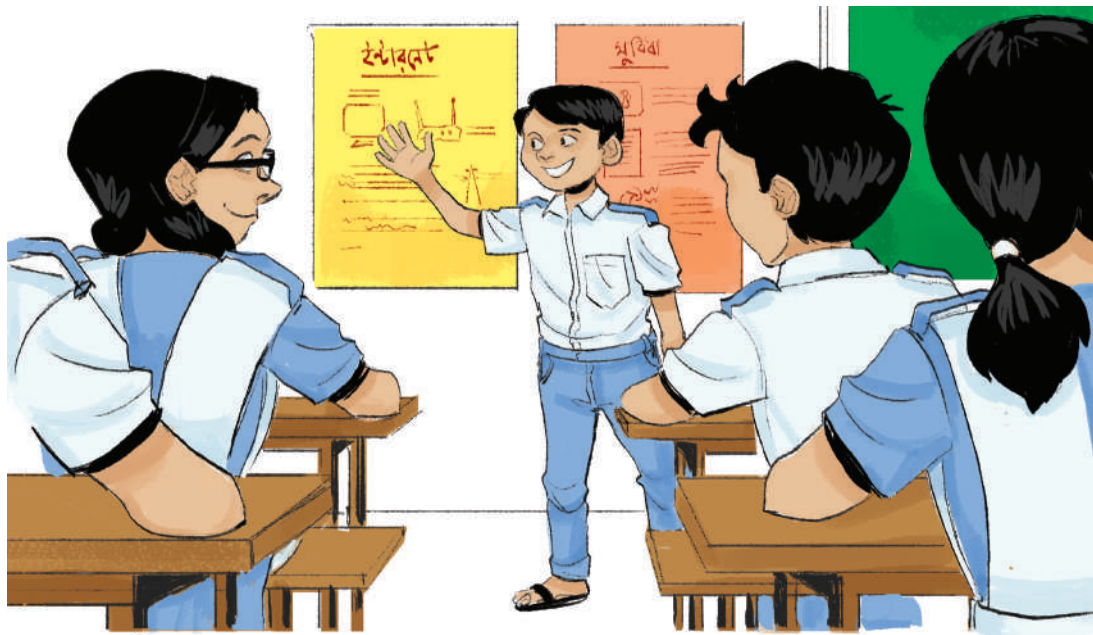
After the presentation, we will write the details in the table below. This will work as a diary at the end of the year.

Name of the group	
Topic of the presentation	
Media of the presentation	
Target group	
Opinion of the guests	

Congratulations to everyone for arranging a successful seminar!

Use of Intellectual Property

In Class 6, we learned something about intellectual property and the rights of copyright owners. But when we allow someone to use our intellectual property for personal or commercial use, we should have a guideline for that. As a result, no one can misuse our intellectual property.

Have you heard of Maimansingha Gitika? It is a compilation of local songs from Mymensingh region. These songs have passed down orally from generation to generation in this region. Chandrakumar Saha first started collecting this intellectual property. Dr. Dinesh Chandra Sen then collected all the songs and compiled and published them into a book. We would not get this outstanding collection if not for the efforts of these persons.

Can we make any intellectual property from our area usable as commercial property? We will try to learn that in this learning experience.

Session 1: Intellectual Property for Personal and Commercial Use

Hashi's father Afzal Hossain has a yogurt manufacturing factory. The product made in this factory is sold in the market as 'Hashi Yogurt'. Today after buying the yogurt, Hashi noticed that the taste was different. She looked closely at the packet and found out that instead of Hashi Yogurt, Hash Yogurt was written in the packet. But the packet looked the same with same colour, size and font. Everything was the same except Hash was printed instead of Hashi.

It is not noticeable unless you look very carefully. Hashi was worried, so she went to her father with the fake yogurt and showed him everything. Afzal Hossain listened everything and thanked Hashi for noticing it.

But we do not have to worry. Our yogurt tastes different from other yogurts. That is because I invented the formula myself and it is quite different from other processes.

That is why the formula of this yogurt is intellectual property. I will talk to one of my lawyer friends about this fake yogurt and take legal action against them

Digital Technology

As we have trademarked our product, so the people who faked our intellectual property and are selling them in the open market will have to compensate for that. Also they have to stop selling their fake product. Hashi was a bit relieved after hearing this.

In the story above, we can see that Afzal Hossain has created intellectual property. He had made yogurt with a formula, which is different from others' formula. That is why this is intellectual property. Then he has marketed the product.

People who are buying Hashi Yogurt are buying this personally as a commodity. That means they are only buying the rights to consume the product.

In this case, intellectual property is being used as personal purpose.

When someone buys a product personally, they gain the right to use it. But that does not give them the right to use the product commercially.

On the other hand, the company which created a fake product copying the packet of Hashi Yogurt is using it commercially.

If someone wants to use intellectual property commercially, they have to take necessary permission from the rights owner. Only after a formal agreement they can use it commercially.

Let's do an activity. There are some examples of intellectual property below. Let us find out if the intellectual property is being used personally or commercially and if the use is just or not.

a. Mizan registered to a website to watch a famous Bangla film. He paid a subscription fee to become a subscriber. But the website did not obtain permission from the film's producer to show it. Mizan is happily watching the film now.	
Decision – Mizan is using the intellectual property for personal purpose. But the website has not taken necessary permission for its commercial use. So, they are not obeying the law and the film's producers can take legal action against the website owners.	

b. Mitu was looking for software online and found that she had to buy it from the developer at the cost of 50 taka. Her friend Hena told her that she did not need to buy the software as she had it. She suggested Mitu to copy it from her. Mitu said that it was not right. She has bought the licence from the developers' website and is now using it.
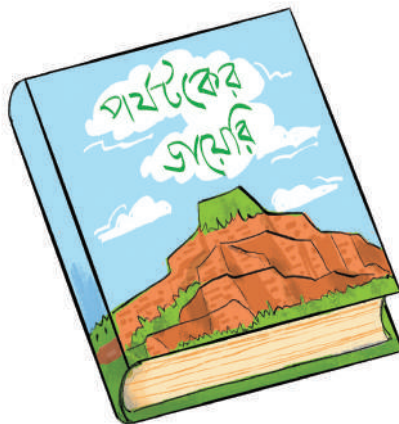
Decision –

c. A famous soft drink manufacturing company gave their formula to a Bangladeshi marketing company after an agreement was signed. But another company started selling a product in the market by the same name. Then the company that signed the agreement went to the court.

Decision –

d. Raihan has written a travel book based on his different travelling experiences. He has signed an agreement with a publishing company and allowed them to market his book with condition that he would get the copyright. The company has published the book in this year's book fair and the book has been a hit among the readers.

Decision –

Session 2: Protecting the rights of the copyright owner

We learned from reading a story in the last session that Afzal Hossain was considering demanding compensation in the court for commercially misusing the rights of Hashi Yogurt. But Afzal Hossain could not claim compensation if he did not have the trademarked. We learned about copyright and patent in Class 6. But what is trademark?

> Trademark is a unique logo or name of slogan that can differentiate intellectual property from other similar property.
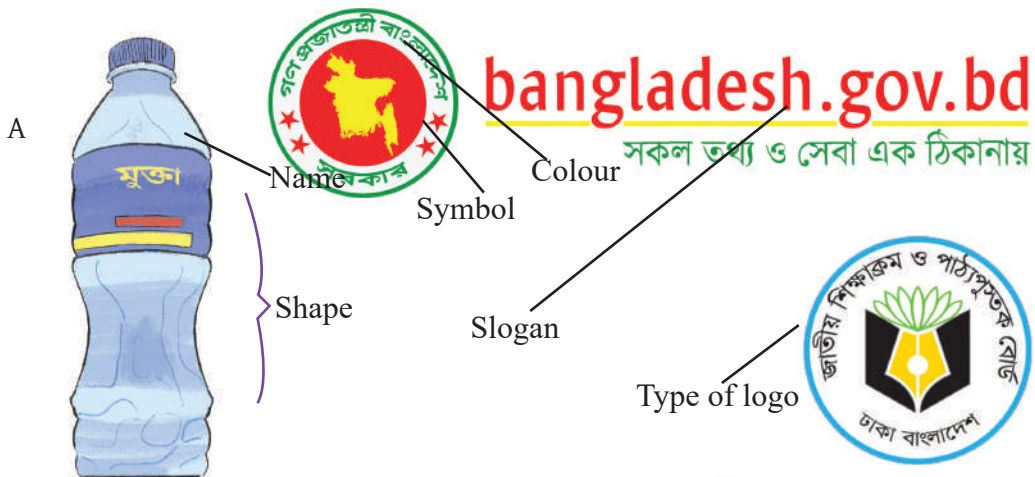
company or an individual registers a certain trademark for their intellectual property before commercially marketing that product. As a result, no one can make fake copies of their intellectual property and market it as per their wish.

Because of this, the rights of the copyright owners are protected and if anyone wants to misuse their property, they can take legal action.

Bangladesh is a member country of the World Trade Organization. So there is an opportunity to follow their rules and register trademarks in Bangladesh.

There are five steps to follow to register the trademark for intellectual property-

a. Fill up a form in the website of Department of Patents, Design and Trademark and pay a fee to register. We have to inform in details why we are asking to register trademark as the copyright owner of our intellectual property.

b. Some responsible officers from the department will verify our claim of the intellectual property. They will check if it is intellectual property or not, qualifies to have a trademark or not, does the trademark match other registered trademarks or not, etc.

c. If the department finds your application acceptable, they will publish an advertisement in the national dailies asking if any other trademark holder has any objection to your proposed trademark.

d. If any other trademark holder finds similarities with the new trademark with their own, they can submit an objection. For this, they will have to fill up another form from the department's website. They will have to explain why the new trademark should not be acceptable.

The new trademark applicant can also present their own logic. The department will resolve the issue after listening from both the sides.

e. If the department finally decides the applicant will be given the trademark, then the registration will be completed. A trademark certificate will be provided to the owner as a proof of registration.

At the end of this Learning Experience we want to commercialise intellectual property, don't we? So let us do something.

Let's design a logo for that imaginary intellectual property as the trademark in the next page.

Let's do another activity. Let's fill up a sample form for trademark registration for our intellectual property. For the required information, which you do not have, you can give imaginary ones –

Name of the applicant: …

Nationality: …

Address: …......

Mobile: … … … … … … … … … … … … … … Email: … … … … … … … … …......

Product Description: …

 …

… …

… …

… …

… …

Copy of Mark (Design): …

Signature and date …

The main application form of trademark registration does not look entirely like this. But we have filled out all the important parts in this sample form. When we apply for a trademark for intellectual property, we will fill up the official form.

If we have access to internet, we can go to http://www.dpdt.gov.bd/ website and download the trademark application form.

Preparation for next section :

Different companies have taken legal action in Bangladesh and elsewhere in the world for misusing their trademarks in personal or commercial use in different times. Let's collect some related news reports from newspapers and online for the next session. Let us also think which infringement of those incidents was due to personal use and which was commercial.

Digital Technology

Session 3 - Making a report on trademark related legal action

We have researched some incidents regarding trademark related legal actions. Now we will make a report out of it.

To make the report we have to do the following tasks–

1. The teacher will divide us into some groups first.

2. We all in the group will discuss the incidents we were looking for and decide on which incident we will prepare our report.

3. We have to select a particular incident. So we have to make sure that we get all the answers to the following questions in the published news. If we get all the answers then we can work with that incident.
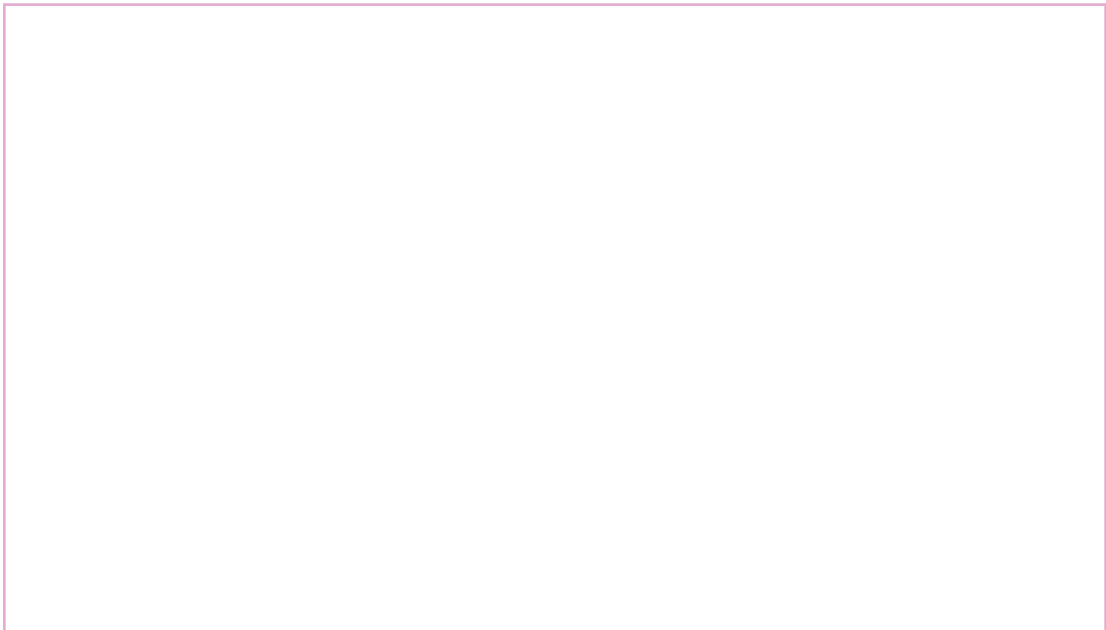
Primary question	Is the legal action for intellectual property? Is there information about both the parties involved?
Next question	Was the dispute about personal or commercial use? Does the report mention statements of both parties?
Final question	What evidence was submitted to the court? Was the final verdict delivered or not?

4. This way we have made the final plan to work with an incident. To make our work easier, let's write down the answers of the six questions above in the box below—

[box]

5. Now we will discuss different pieces of information regarding the selected incident and analyse the whole situation. We will prepare a report on what decision we have arrived in and if we agree with the legal verdict or our opinions in this regard.

Let's write the main part of our report in the box below—

[box]

6. Let's now present the report we have prepared in front of the teacher and the students in groups.

When we permit someone to use our cultural intellectual property commercially, we too have to notice if we are following any rules or violating any copyright owner's rights. Because if we do, then any rights owner can take legal actions against our intellectual property.

Session 4: Making a Terms and Conditions sheet regarding an intellectual property

Ritu has recently developed a mobile application software that can control different electronic devices at home like lights, fans, etc.

She has also trademarked the software following proper guidelines so that she can commercialise it. One day her father asked her, 'Have you made terms and conditions for the users of your software?'

Ritu was surprised a bit and said, 'I made a manual for the users on how to use the software. But What should terms and conditions should I make for them?'

Her father said, 'Listen, when we install software, it shows us some terms and conditions first.

This means we are informed what rules to abide by while using the software. We can only use the software when we agree to obey all the terms and conditions. Otherwise, anyone can misuse your software or remarket it. Not only for software, any intellectual property should have terms and conditions for personal and commercial use. It will prevent misuse of that property.'

Ritu heard everything and realised that now she has to make terms and conditions for her software.

We learned from the story above that the copyright owner has to make terms and conditions for the users of their intellectual property so that they know the restrictions attached to it.

For example, say there is a website where you can login with your ID and password and stream films. Now the website developers want that if only one person registers to their website, only that person can enjoy all of their contents.

This means multiple users cannot use the same account to enjoy their contents. This is because otherwise they will incur financial loss as 100 people can use their contents from a single account.

In this case, the online platform will add to the T&C for their users that more than one users cannot enjoy their contents from a single account by any means.

Similarly, any intellectual property should have terms and conditions for their users.

In the last session we made a presentation regarding trademark related legal actions.

We learned about several lawsuits and the problems related to those lawsuits. Let us now do the following activity—

1. With the knowledge from the lawsuits, let's think of some terms and conditions that should be applicable to intellectual property.

2. Let's write down in the following box the terms and conditions we think should be there after discussion in the group. Let's mention which terms are for personal use and which are for commercial use with tick marks.

Proposed terms and conditions for intellectual property		
Proposed terms	Personal use	Commercial use

Proposed terms and conditions for intellectual property		
Proposed terms	Personal use	Commercial use

3. Of the T/C we have thought about, some will be applicable for personal use. Similarly, some will be applicable for commercial use too. We have identified in that way. Now we will coordinate all the terms and conditions. We will write an article mentioning which terms we ourselves will follow for the use of our intellectual property we are going to work about next. Let's mention the main part of the article in the box below –

Session 5: Let's make Intellectual Property Suitable for Commercial Use

Investigative Work

We have already learned about different types of intellectual property. If we think of our own areas or districts, what intellectual property can be found here? Any specific local food, traditional house or place, song, verse, dance, sound or language, or any musical instrument, establishment, etc., of a particular area can be the intellectual property of that area. Do we know of any intellectual property in our area that may not be so well known to others or does not have a trademark? Similarly, now we are going to work with intellectual property of our area–

1. First, as before, each group of us will look for such intellectual property in our area or district.

2. We may take a longer time for this search upon the teacher's permission.

3. In this case, we may take the help of different people in the area because they may have information about such materials.

4. After collecting our selected intellectual property, we will collect detailed content. The content can be texts, images, videos, etc.

5. This time, we will make that content suitable for commercial use. The property must be trademark registered to make it suitable for commercial use. We have known earlier how to do the trademark registration of any intellectual property for its commercial use. We will apply for trademark registration of that intellectual property by visiting the specified website and following the procedure.

6. In this case, the intellectual property's original owner must first explain what the intellectual property is and the importance of trademarking it. So, your group needs to give the original owner a clear idea about it so that s/he agrees to register his/her intellectual property as a trademark.

7. Then, the intellectual property owner has to be explained his next responsibility by applying for registration of the trademark within the prescribed period.

8. Then, a policy of commercial use of that intellectual property has to be formulated. You will also help the original owner formulate this policy by following the rules shown in the book.

9. You can help make his intellectual property appropriate for commercial use.

Surely, after completing the whole procedure, the owner of intellectual property in your area will benefit a lot. Besides, when you become an intellectual property owner yourself, you will also benefit from this prior experience. Wonderful, no? Everyone in your group has got a great experience while helping someone else.

Digital Technology

During our whole working time, we will do different tasks in different weeks as per the table below –

Week	Task
1st & 2nd weeks	Search centre of intellectual property.
3rd week	All in the group will decide which intellectual property they will work on.
4th week	Collection of intellectual property in the form of content
°th week	Giving ideas to the original owner of intellectual property on the appropriate commercial use of his property.
6th week	Application for trademark registration.
7th week	Formulating policies for commercial use of intellectual property.
8th week	Exchanging experience on the entire work in the classroom.

Have you noticed what beautiful intellectual property we have worked with in this learning experience? Congratulations to you and your group! Similarly, when you create intellectual property yourself, you will follow the necessary steps for personal and commercial use of it. Then, no one can misuse your intellectual property.

Making Identities through Information Technology

We have different identities in different areas in real life. We have an identity at our school or institution and another identity in our personal life or friend circle. We have identities in another world, which is known as virtual world. Virtual world is where no one sees me but realises my digital presence. Here no work can be done without giving our identities. First we have to give or create our identities and move on to the next step in any website. For this we should know how to create virtual identities, what information should be provided for it or what are its moral aspects. We will experience this through some activities in the next few sessions.

Session-1: Concept of virtual identity

Dear students, greetings! Almost everyone has some previous experience about our virtual identities. Just we did not know exactly this was a virtual identity. We provide so much information in many places, later we see it on various websites. We have to create an account at first to receive any necessary service. For that, we need to register on the website of the service provider. We can see a virtual identity in the picture below which is based on the given information. Now let's find out what information is given in this virtual identity…

	Personal Information	
  Alina	ID/Roll No:	00226650
	Mother's Name:	Ferdous Ara Ima
	Father's Name:	Humayun Kabir
	Date of Birth:	01/01/2010
	Address:	Kapashia, Gazipur
	Name of School:	Chinaduli High School
	Class:	7th
	Hobby:	Painting
	Contact:	kabir@email.com

Let's write the information Alina has revealed in the box above in the table below:

	Father's Name		
		Date of Birth	

Virtual Identity

A virtual identity is some information shared about us which is an identity to be used in digital communication or social media. It is like our roll number. It is not my name or photo. But when used in a certain context, I can be identified. Sometimes we introduce ourselves under pseudonyms and do not reveal our real identity directly. Now guess that my favourite animal is lion. I always give the picture of a lion as my identity on the school wall magazine. Gradually everyone will start to know me with this picture. This is a kind of virtual identity. But since in digital media everything is fast and on a larger scale, this process of recognition will not be slow there. Rather it will spread among many people very fast. So it is better to think before doing anything there. In some cases, we cannot give false or fake identity as it can get us into trouble. For example, I have registered myself as a client of a government service providing organisation. If I use pseudonym or a fake photo there, they may not provide me the service after information verification. So we need to give our real identity in some context. Again, personal information should not be given without a trusted website.

[known-unknown]

We will do an activity now. There are pictures of two professionals given below.

Doctor   Teacher

We will be divided into six groups and each group will write about one of the professionals above. We will write what we know about them and what we do not. We will write the points in the table below:

Known	Unknown
1. Name	1. Passport number
2.	2.
3.	3.
4.	4.
5.	5.

By doing the above activity, we have learned that some profile information of the famous people is available in virtual world. But we cannot find some personal information about them. We should not also add a lot of such information to our virtual identity.

Session-2: Creating Own Virtual Identity

Nowadays everyone has a virtual identity. Everyone has a social, family or education oriented identity or profile. Some have two or three profiles or identities. Sometimes creating a profile is a prerequisite to accessing a service. So in this session we will experience how to create a profile considering moral aspects.

The school of Araf has decided that monthly payment would be made through a bank's online app. For this, his father has to open an account by giving different information.

After logging in, some information about his father can be seen in the profile. While taking e-services from government or e-commerce from private organizations, they want to know who wants this service. Then those organisations should create a virtual identity on their websites. In many places it is called an account. It is slightly like a bank account.

It is a rule to provide the least information as required. Additional information should never be given. The greatest asset of the virtual world is your personal information. For example, like I do not stand at the outside door and announce in a microphone what is going on at my house every minute, I should not reveal in the virtual world what is happening in my personal life. Remember that, once I put information in digital media, it will remain exposed forever.

We can create profile in two ways. We can create an identity for an organisation by providing its required information in order to take its services. And we can create our own profile to introduce ourselves in the virtual world. For this, I have to be cautious what information I can have in the virtual world. We have seen in the previous session that some information can be shared with others and some cannot. When we grow a bit older, we can create our own profile through professional or social media and share it with others. Publishing to everyone is called public sharing. And if we share absolutely personal information with a specific person, it is called private sharing. We can turn these options on or off. So we will take this action as per needs. If there is no such rule, we can use avatars instead of publishing our pictures in the virtual world.

An avatar is the symbolic image used for virtual identity instead of one's own image. The word comes from the Bangla word ▢▢▢▢▢ 'Abotar'. Multiple avatars are given in some social media. We can use any one as we wish for our identities. Again, we can create an avatar ourselves.

Let's see the picture below. We can avail many types of government services by visiting this website.
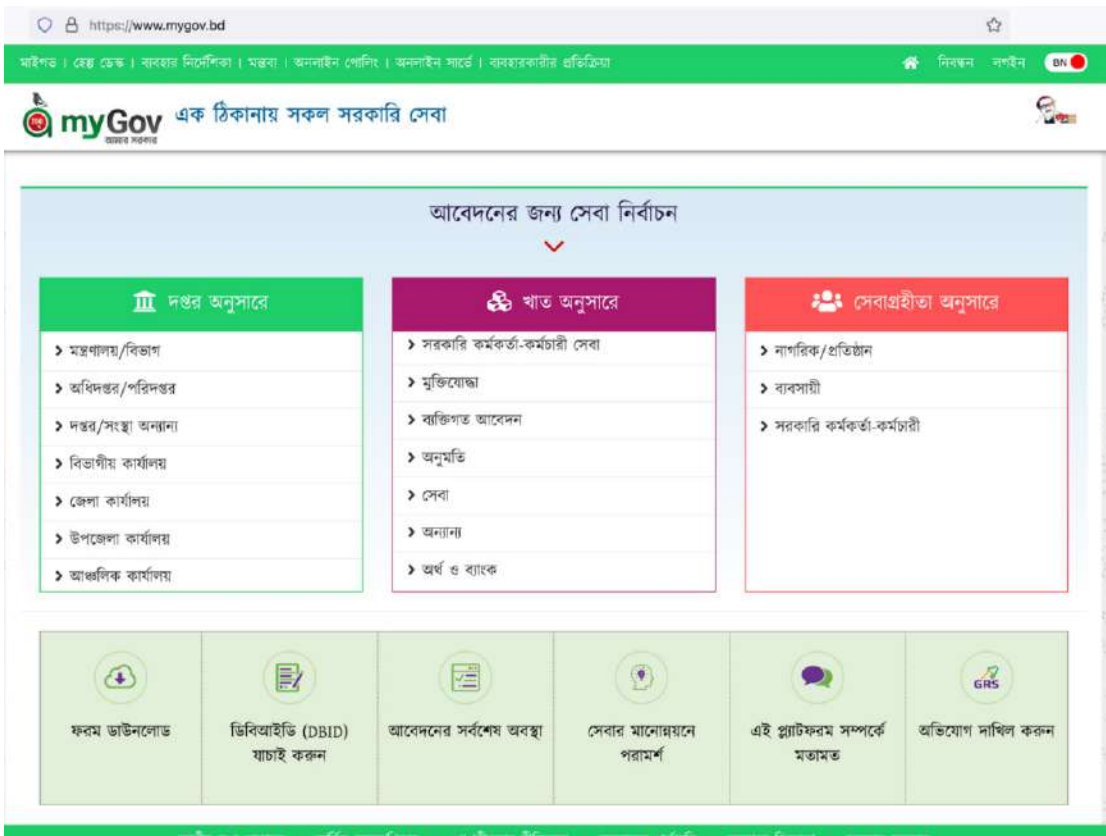
Now let's find where the word "registration" is in the above image and circle it. The following image will appear, if you click on this word "registration".

Here new account means creating a new virtual identity. Remember that providing false information to the government is punishable by law. That is, you have to give correct information in such websites.

There are many such websites where we have to create an account or virtual identity before availing services. This is called virtual identity for receiving services.

Preparation for next session

If we want to introduce ourselves as per our choice to a website, we can create a design in advance for our identity page. Let's create a virtual identity in the blank space of the next page with our information. We will give a self-drawn avatar instead of our picture.

My Profile

My Name

My School Name

What I like to do

The tasks I have done well

Session-3: Review of Virtual Identity

In the previous session we have learned how to create a virtual identity. We also made a hand-written profile. Though there is not much difference between a hand-written profile and a virtual profile, the latter is open to everyone. So, we should present our virtual profile to everyone considering every factor. Three images of the virtual profile of Microsoft founder Bill Gates are given below. One is from Twitter, one LinkedIn and one from Facebook. Twitter, LinkedIn and Facebook are three different social media. We will find the comparison and differences of our hand-written identity by looking at any of these.

প্রোফাইলটি সঠিক কিনা তা যাচাইয়ের প্রতীক। এটিকে বলা হয় ভেরিফাইড চিহ্ন।
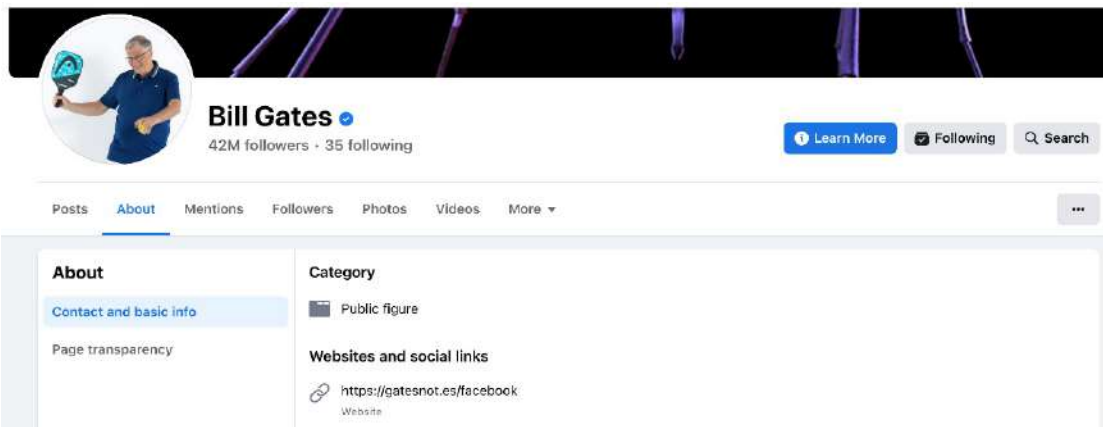
Let's create a profile or virtual identity based on the information given above. Let's practise creating a profile by taking screenshots of 'Kishore Batayan' which is created

Now let's try to find the answers to the following questions through discussion in groups

1. When was Bill Gates' profile opened?

Answer:

2. How many people are following the profile of Bill Gates?

Answer:

3. How do you know that this is his real profile or identity?

Answer:

4. What are his other profiles except this one?

Answer:

5. What are the other organisations of Bill Gates in addition to Microsoft?

Answer:

for students of our age.

সাইন আপ

শিক্ষার্থী

নাম * :

নাম লিখুন (ইংরেজীতে) — For personal security, won't give phone number here.

ফোন নাম্বার * :

01*********

পাসওয়ার্ড তৈরি করুন * :   পাসওয়ার্ডটি পুনরায় টাইপ করুন * :

পাসওয়ার্ড লিখুন   Remember that we will put the password as sample
Here. During online registration, won't use this.   পুনরায় পাসওয়ার্ড লিখুন

জেলা * :

শিক্ষা প্রতিষ্ঠান জেলা নির্বাচন করুন   ⌄

শিক্ষা প্রতিষ্ঠান * :

শিক্ষা প্রতিষ্ঠান নির্বাচন করুন   ⌄

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নিবন্ধন ›

Session-4: Let's Create a Virtual Identity for Myself

Today we will register for Kishore Batayan. We will complete the registration process by using the information we wrote on our book yesterday.

<div style="background:pink">

Ethical aspects of using virtual identities

On many occasions, we can see that someone we know has mistakenly provided excessive personal information to their virtual profile. It means we have learning something about them through the digital platform that we were not supposed to know. Does that mean we will misuse that information? Never! We will inform them safely to delete the information. Will we ever claim ourselves as something which we are not actually? Firstly, once false or exaggerated information about oneself goes to digital media, it is nearly impossible to remove that. So we will not do anything which will haunt us even after thirty to forty years.

</div>
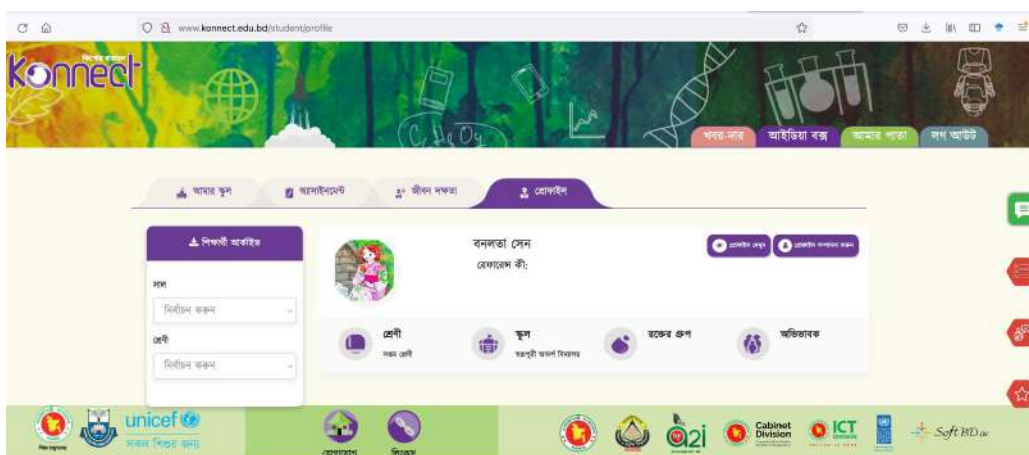
I have to edit the information to provide more details after registering or signing up on Kishore Batayan or Connect. It can be seen in the next picture what information should be provided. We will provide information accordingly.

We have to make virtual identities to get more services like Kishore Batayan. We need to create virtual identities by providing our information in various websites for e-commerce or citizen services. We need to provide accurate information and pictures on secure websites but in cases where it is not applicable, it is not right to reveal all your identity. It is important to make our virtual identity secure as there are many media where giving all information is risky.

Cyber Intelligence

Friends, this time, we will learn about cybercrime. Cyber is a different world where we have a virtual identity; we create another virtual world. We need to know the security of that world. In cyber intelligence, we will learn how to keep ourselves, our families and society secure in that world. Always remember that the cyber world and the real world are interconnected. A problem with either one can harm the other. We have to be very careful about this. We will be aware ourselves and work on how to make everyone aware.

You all know Pina. You were also introduced to Nano while sending emails in Class Six. The little robot Nano helped Pina a lot. Pina has been promoted to class seven. She talked to her expatriate maternal uncle living in Australia yesterday. He said, 'Pina, you are growing up now; you need to know about cyber security. This cyber world has benefited us in many ways, but many bad people here use technology to commit various crimes. These include various types of hacking, threatening, hurting someone mentally, harming the country and state by spreading wrong information or rumours, committing crimes by using other people's names, and so on. Surprised, Pina asked, 'So much in this small computer! How is this possible, uncle?' Her uncle said, 'You are in class seven now. Your teacher will make you understand this well. And well, follow what your teacher says. No more today; we'll talk another day.'

Pina became very concerned. She has just opened a new email ID and is now thinking of opening social media accounts. Her elder brother Plabon has a social media ID. He posts his pictures there and communicates and talks with many people. Pina is now very worried. Pina fell asleep thinking about this. Suddenly she wakes up and sees the blue light coming from the computer in her room. Instantly, Pina shouts in joy.

Pina: 'Nano, you have come! After many days.'

Nano is smiling.

Nano: 'Yes, Pina, I see you are worried about cyber security. I can realise your worry and therefore have come to help you.'

Pina: 'Well done Nano, I was looking for you in my mind. Well, my uncle talked about cybercrime, hacking, and we are not safe. What are these?'

Nano: 'Now we will be cyber detectives. You will do everything and I will help you.'

Session-1: Different types of cyber crimes

Friends, various crimes are also committed in the virtual world or cyberspace, just like in our real world. These crimes are committed through various devices such as computers, mobile phones, the internet, and various technology devices. There are bad people in this cyberspace, and at the same time, there are also good people to help us. We need to know what cybercrime is and from whom we can take help and stay away from danger.

Now let's learn about some cybercrimes that are happening in the present day. First, we will read news from a newspaper and then get familiar with cybercrime-related terms.

Daily Bhorer Pakhi

Bangladesh under security threat for cybercrimes

Cybercrimes are increasing in Bangladesh like other countries of the world. One of the crimes in cyber is presenting false information as right one and spreading rumours. Telling an event that did not actually happen. People fall into many dangers without realising it. Another type of crime is hacking. Hacking means entering someone's computer without telling them. Hacking does not necessarily mean malicious activities. Simple changes to the design of any software in a computer can also be considered hacking because, it is not included in that software design. It is not a punishable offense but changing something without information also falls under hacking. Hacking is the most common form of cybercrime. A virus is a type of computer software that can cause a lot of damage without the user being aware of it. It can even send emails by itself. Many cybercrimes are also committed with this virus. We often think that no one will understand if we bully someone online. In fact, it is not the fact; it is a cybercrime. It is called imposter, often people do not give their correct information in cyber world and take other's name and identity as their own. Many crimes can be committed by it.

If someone is bullied or harassed by taking their pictures or words in cyber world, then that is also a cybercrime. Bullying is not a good act at all; it is also a type of cybercrime. We need to be aware to avoid cybercrimes.

Digital Technology

As we learn about cybercrimes, we are introduced to some new terms. Let's try to recognise the terms.

1. Cybersecurity

2. Cyberbullying

3. Hacking

4. Spread rumours

5.

6.

Hacking

the rumor

Cyber Security

Cyberbullying

We have learned many new things. Now we know what cybercrime is. But we need to know which one is cybercrime. Only then can we protect ourselves and help the state by being aware of cybercrimes.

Session- 2 : When we are Cyber Detectives

Friends, today we will be cyber detectives ourselves. We will find the cybercrimes happening around us. Now let's start our task. Let's write down one cybercrime happening around us. The incidents must be those that occurred in cyberspace and somehow harmed people and society or hampered security. 1

Sample Incident

Incident	Occurred through which medium?	Tick if cybercrime
1. Money is embezzled by taking the PIN of the mobile account	Mobile and Internet	
2. Spreading private photos of others on social media without permission.	Mobile/Computer and Internet	
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Session-3: We will Prevent Cybercrimes Now

Pina now knows which are cybercrimes. How many ways people follow in committing cybercrimes! But is there no way to catch cyber criminals? How to survive this crime?

Yesterday she was concerned what cybercrime was and tonight she cannot sleep thinking about how to prevent this crime. She wishes Nano came today! Pina slowly falls asleep.

'Pina, hello Pina, wake up. I'm Nano; I'm here.' Pina sees Nano sitting near her head. 'Listen, Pina! There are many measures and many laws to prevent cybercrimes. There are many laws in Bangladesh too. So, you have no reason to fear. I am going to show you what to do.

'First, tell your parents about the cybercrime that happened to you. If you can't find them, you will tell another senior member of the family. Then tell your teacher. Pina, everyone is there to help you. So, there is nothing to fear. But don't hide anything.'

Complaints about digital crime
2401320046234

Cyber security Helpline
01766678888

Police
Hot Line Number-
01320000888

If the password is stolen communication
https://www.cirt.gov.bd/
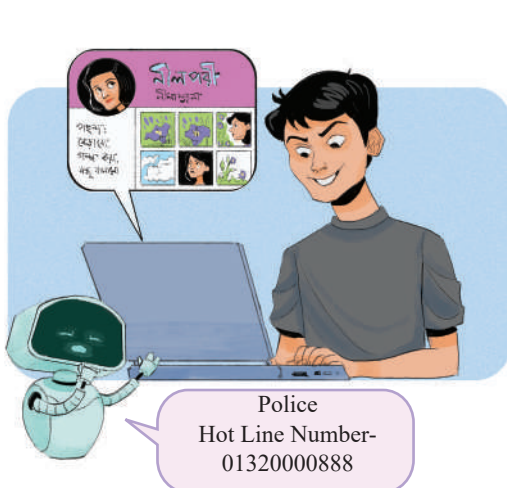
Now we will fill in the blank space of the cartoon on our table about what to do in case of various cybercrimes.
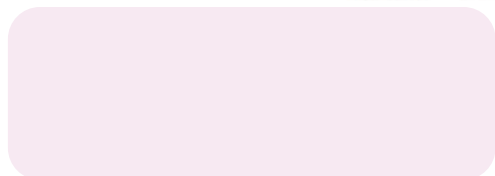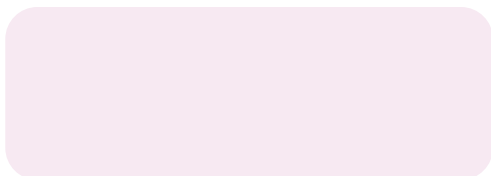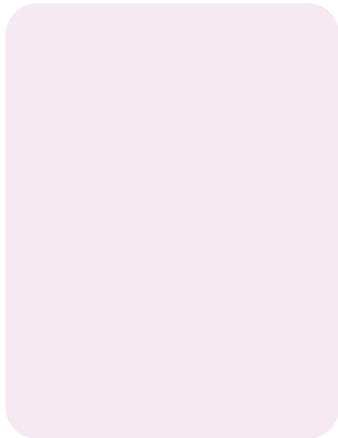
Session-4: Conquering in Cyber

Pina woke up at the call of the birds. She is going to school today in a delighted mood because she knows that as there are cybercrimes, there are ways to avoid them. Today she will be able to tell the teacher a lot.

Pina was waiting for the Digital Technology class. The teacher came and said, 'Yesterday we wrote about many cybercrimes. Today we will find out what to do to solve it. But we will not do this alone. After doing it here in the classroom, we will take it home. Then, we will solve it with parents/family members. Then you have to submit it with their signature.'

Friends, let's do the same with Pina-

Incident	Occurred through which medium?	What will we do in cybercrime	What my parents, and family members will do
1. Money is embezzled by taking the PIN of the mobile account	Mobile and Internet		
2. Spreading private photos of others on social media without permission.	Mobile/Computer and Internet		
3. Hacked other's ID			
4. Spread falsehood/ rumour			
5.			
6.			

Session-5: We shall formulate our cyber security policy

Friends, this time, we will formulate our cyber safety policy, where we will swear that we will follow the security rules ourselves and tell the rest of the school to follow them. Then we will collect the signatures of all the students on that security policy and put it on the wall of our

---

We, the students of …………..…….. Section of class seven of ……………………
.………………………….. School, swear that we will never do or encourage others to do the following for cyber security.

1. Will not talk to others on mobile phone or the internet keeping our own name secret.

2. Will not share personal information about us or our family with strangers.

3. Will not abuse/hurt anybody in the cyber world.

4.

5.

6.

7.

Signature of the student agreeing to the policy

Name	Roll no.	Signature

---

school so that everyone can be aware. We will fill in the following policy and write in a separate paper that we all create together.

Out-of-Class Activity – We will present our policy to the senior class of students in the school and ask if they agree with this policy and get the signatures of the students who agree as per the table above. If they do not agree on something, we will talk about it together to make the right decision.
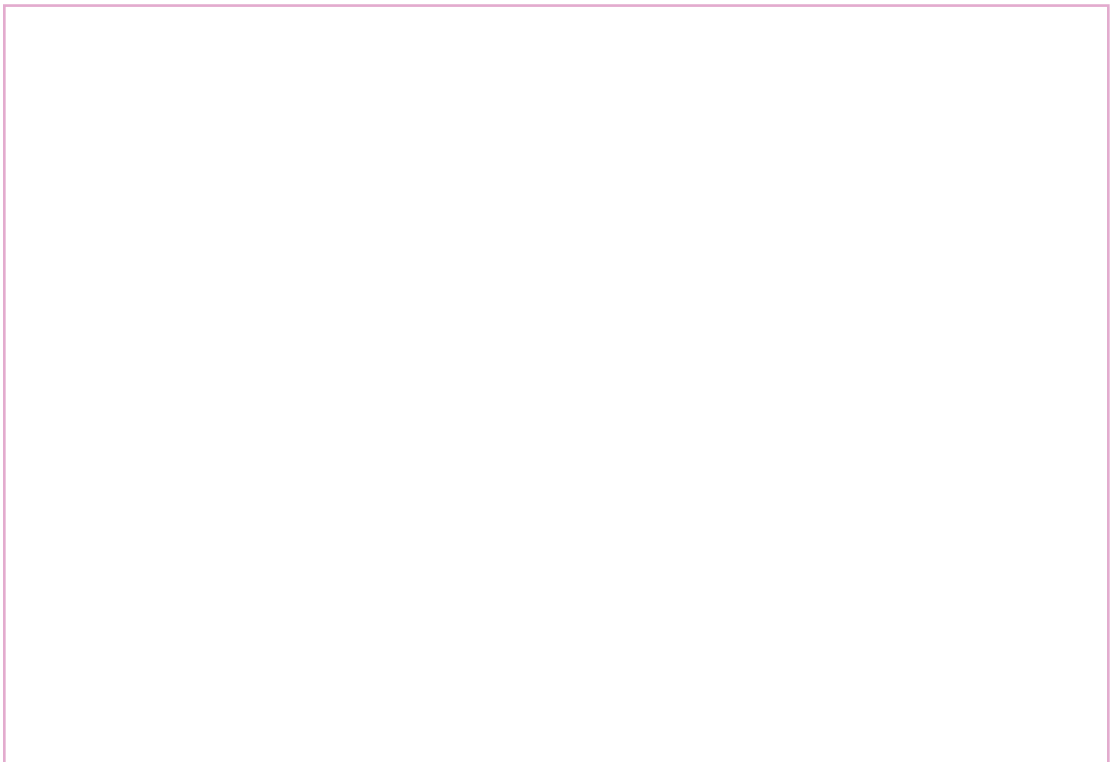
Session 6: We in Cyber Awareness

Pina sat with her father and solved all the problems. Now Pina wonders if everyone in the area knows how to prevent cybercrimes. Her father says, 'You will tell everyone the same way you have told me.' Pina is very worried about how she will tell everyone.

She went to the class the next day and told the teacher about it. The teacher said, 'It is your responsibility to inform everyone in your society. You will make a short drama and edit videos with a mobile phone. Your main job will be to tell everyone about cybercrime and how to stay safe. No problem if you don't have a mobile camera. You will make and act out a short drama which will be presented in front of everyone (teachers, family members, and dignitaries of the society will be present. You will present it at the annual function.'

Friends, now our task will be to plan a short drama as instructed by Pina's school teacher. There will be some cases of cybercrimes and ways to recover from them. Through this short drama, we actually tell everyone in the society about cybercrimes so that everyone can remain safe from cybercrimes and keep others safe.

Let's divide into groups and write the plan for the short drama in brief

If I were a Robot!

Learning Experience 5
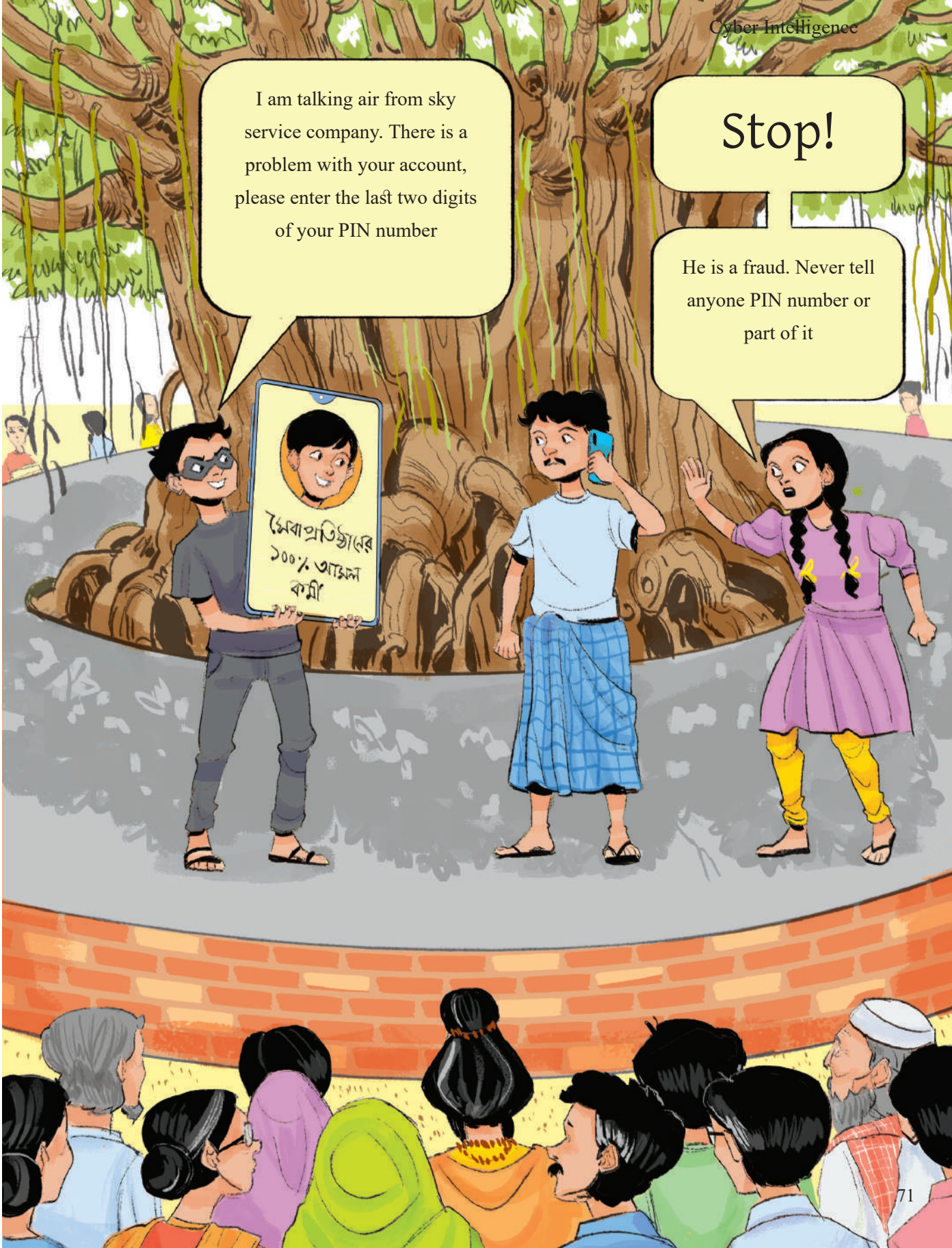
How many problems people face in their daily life! They have to face some problems regularly and solve those too. Some problems do not occur regularly and appear unexpectedly. But all of us do not face the same kind of problems.

Previously human being had to solve any problem by their own hands. Now the use of technology is increasing to solve different problems. As a result, people's life has become more comfortable. In this Learning Experience we will see how we can take help of technology to solve different practical problems around us.

Robots are being popular among different technologies nowadays. It is because robots can solve people's different problems so easily. Human beings teach the robots the command to work.

We learned about algorithm in Class �৬ before. This time we will create a flowchart from algorithm. Then we will transform the flowchart into pseudocode understandable by a robot. We do not yet know anything about pseudocode. But after this session we will learn about it. Well, how will it be if we all turn into robots? Can we then understand the commands of pseudocodes prepared for a robot? We will try to solve that mystery by posing as robots in this session.

Session 1 – Different Types of Practical Problems

Any problem that people face in their own life is a practical problem. A girl named 'Megha' and her friends have encountered such a practical problem. Let's learn about it from the story of Megha –

Megha is a student of class ৭. One day she was absent-mindedly thinking about something during the tiffin break. Then Megha's friend Jisan came and said, 'Everyone was chatting there and what are you thinking here alone?' In reply, Megha said, 'Well, I'll tell everyone. Ask them to come to me.'

 All of Megha's friends were eagerly waiting to hear what she would say. Then she started, 'I was shivering while coming to school in sweater this morning. You all know last few days have been very cold. Suddenly I saw two persons who did not have any warm clothes in them. They were suffering in the cold. There are many people around us who cannot afford to buy warm clothes. Every year they suffer a lot during winter. Can't we do anything to solve this problem?

Hearing this, Megha's friend Riya said, 'I've never thought of this. If we want, we can conduct a winter clothes distribution campaign. Then many people, who need warm clothes, will be benefited.'

At this, Megha became happy and said, 'In that case, we should now work out how we will do it and what challenges we may face.'

This time another friend Hashem said, 'The first challenge is financial. We have to collect plenty of warm clothes. We can run a campaign for this so that those who are solvent can help our initiative with cash or old warm clothes.'

Hearing this, friend Neha said, 'Look Hashem, I agree with you. But another important side is thinking of the social situation. Everyone doesn't need warm clothes. For whom exactly will we collect these warm clothes? That means we need to make a survey to determine for people of which part of the society we will conduct this programme. From that survey we will find out which people of the society are in need of warm clothes. So there is a social dependency in working to solve this problem.'

This time Megha said, 'We need to notice one more thing. We need to think of a practical aspect while surveying on from whom to collect the warm clothes and whom to distribute. We need to choose a distribution point to properly distribute the warm clothes among the needy. If we want, we can take permission to use our school for that. After taking permission from the school authorities, we need to inform those who need the clothes about the date, time and venue. After that we will have to implement the distribution programme on the scheduled day.

At this point, Raihan said, 'There's one more thing. If we distribute warm clothes among a good number of people, we need to properly maintain a list of the recipients. It's because nobody should miss it or get the help twice. So, we need to keep in mind the technical issues here. If we work with a hand-written list, we might make mistake in the account. So we should use spreadsheet software where we will insert the list and keep account of the recipients.

Now Priya said, 'Yes, we have thought of different sides of our warm clothes distribution.

But we have to keep in mind the weather as well as environment on the day of distribution. We will get the weather forecast beforehand so that if it rains or anything else happens, we can be prepared. Otherwise, the entire programme may be hampered. Megha said, 'Friends, I'm very happy now. I was so sad about the problem in the morning. Now we all have discussed it and found a solution. Now we have plenty of work to do. Let's distribute the work who will do what. I hope we will be successful in this work!'

We have learned about Megha and her friends' warm clothes distribution programme. When they took up this programme, they had to think about five more things to solve it. Those are – economic, social, practical, technical and environmental. To be fair, any practical problems may have many similar things or challenges. But every practical problem will have five sides, it is not like that! Some problem may have only one side, some have several others. But from now on when we work

about any problem, we will verify if it is related with those five sides. In that case, it will be easy to solve the problem. Let's do an activity, let's think about a new problem. Say, we will travel to a new and unknown place. In that case, which sides will we have to rely on? And what type of dependency will those sides have? Let's write it in the box below–

Name of Problem: Visiting a new, unknown place					
Side of Dependence	Economic	Social	Practical	Technical	Environmental

Session 2 – Use of Technology to Solve Problems

Use of different technologies is a blessing for human civilisation. Right technology should be used to solve a problem in right time. There are many problems around us that people used to solve themselves before. But now solving those problems has become easier with the use of technology. In the last session we thought of visiting an unfamiliar and new place. In the past

whenever people went to such places they had taken idea about it from someone who went there. From that person they had to learn how to go there, how long it would take and which roads to follow, etc.

but now an easy solution is using any map software. If we put our location and destination, such software shows us how long the journey will take, how much traffic is there on the road, which road is better and which mode of transport will take how much time and many more!

Moreover, different technologies are invented to solve the same problem based on our needs! For example, map software just lets us know how to go to a certain destination. But if we want to book a vehicle, which will take us directly to the destination, then we can use different vehicle booking software. We can book certain vehicles by these software and learn beforehand how much it will cost to go to our destination in a certain vehicle. That means we get more benefits than the map software. The problem of going to a certain destination is fully solved, we do not have to worry at all. Similarly, we can easily purchase tickets for bus, train or aeroplane from certain websites.

All the education institutions of Bangladesh were closed for a certain period because of Corona pandemic considering the health ground. During that period different online software connected the teachers and students in online classes thanks to the technology.

There is a saying 'necessity is the mother of invention'.

Before the Corona pandemic there was not much demand for different online meeting platform. But people around the globe were confined to their houses during the pandemic. That time Zoom, Google Meet, Microsoft Team, etc. online meeting software were used to take class, conduct business meetings, etc. If this technology did not come as an alternative, many activities of the world would have stalled due to corona. So this technology helped countless people in this regard.

On the other hand, inventing a new technology to solve a problem is not enough on many occasions. It is seen that the problem is not fully solved or solution has some setbacks. Then that technology needs to be updated. Let's think of financial transaction. Previously sending money from one place to another was very difficult. Sending money through 'money order' required a lot of time.

At present, certain amount of money can be sent to any corner of the country instantly through mobile using transaction platforms. But there was a problem when first this transaction service was launched. Suppose we would withdraw ৩০০ taka from our own account. We had to go to a certain agent and send our money to their mobile number for cash out.

The agents would give us our money when they received the money in their accounts. The problem occurred if we made a mistake while typing the agent's phone number. The money would have sent to another person. We would face a loss then. Initially people often fell into this trouble by sending money to wrong numbers.

But that problem was solved by technology. Now the agents have a QR code in their shops for transaction. The transaction app in the mobile phone has option to scan the QR code. As a result, there is no scope to wrongly type the agent's number. After scanning the QR code, it is confirm that the money will be sent to the right number.


কিউ এআর কোড স্ক্যান করুন :

It is not that these applications are used only to get money or send someone money! We can pay the utility bills like electricity, water, gas, etc. by these apps. As a result, the trouble of paying the bills by going to a certain office and standing in long queues is over. A technology maybe invented initially to solve a certain problem, but in times it can be applied to different other purposes.

We have learned about different software technologies above. Similarly, different robots are now being used to solve different problems. For example, when fires break out in different places, fire service is needed to control the fire and rescue the trapped people. The firefighters who enter the building in fire to rescue the trapped people also face life risk. In situations like these, firefighting robots can be used to help the fire service.
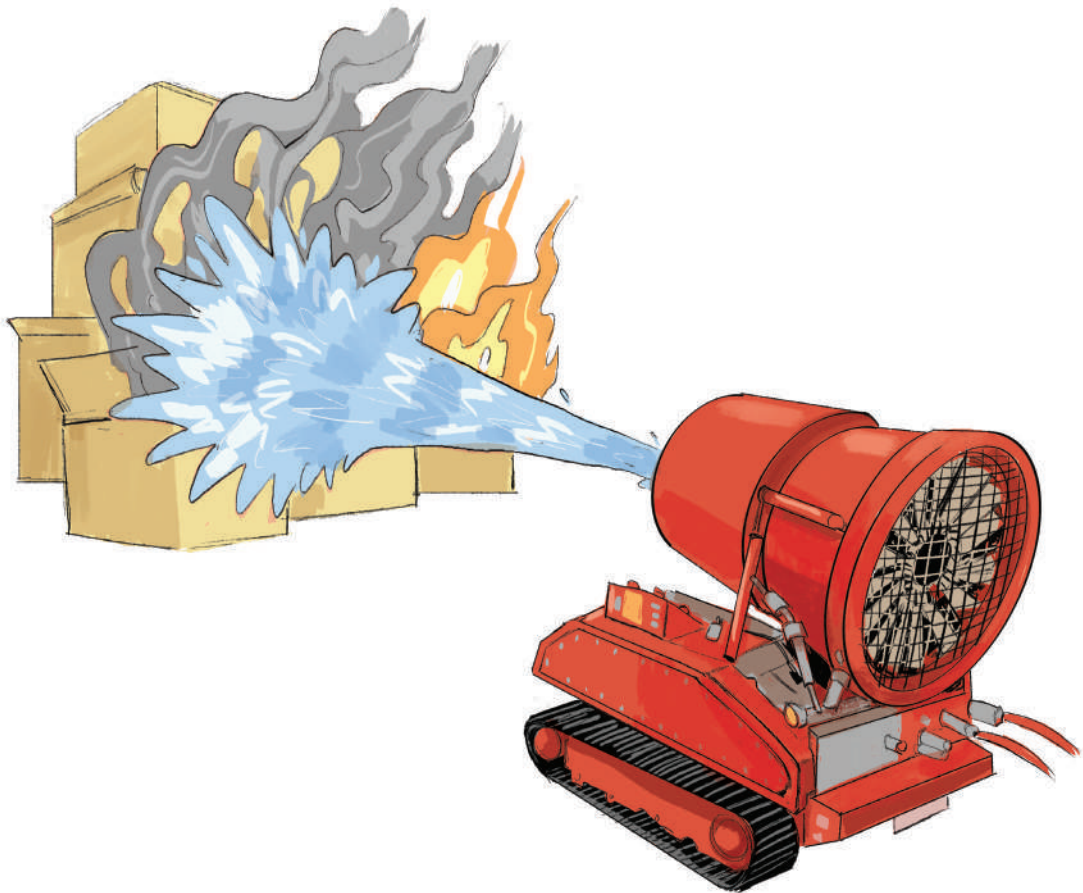
For the first time in Bangladesh, the Fire Service and Civil Defence used robots to douse the fire at Sitakunda in 2022.

Different use of different robotic technologies like this is increasing day by day.

In this way, we can solve any problem with the help of technology.

Preparation for next session

After returning home, we will try to find out few realistic problems, which can be solved by using different technologies. You can look for those problems which can be solved specially by a particular robot.

Let's write such five problems in the table below—

1.

2.

3.

4.

5.

Session 3 – Let's Prepare Problem Solving Algorithms

We made a list of several problems after returning home that can be solved by technology. Now, we will select one of the problems and will write down the steps of solving the problem that means the algorithms. Before that we need to complete the following tasks—

1. The teacher will divide all the students of the class into six different groups.

2. All the members of each group will combine their written lists of problems that can be solved by using technology (especially with a robot).

3. All the members will discuss among themselves in selecting one problem. In the next sessions, we will work on this problem.

4. While selecting the problem, priority can be given on that problem which was on the list of more than one student.

5. Now, let us discuss the steps of solution that means algorithm and write it down. Here, we have to keep in mind that the algorithm has to be written in such a way that if it is given to a robot, it can follow the steps of the algorithm and complete the entire task.

For example, we learned the use of robots earlier to put out fire. If you were a firefighting robot, how would your working algorithm be like?

In this case, our algorithm will be like the following—

Problem – Using Robots to Put Out Fire

Algorithm –

1st step. Let's start the robot first.

2nd step. Let's observe the situation ahead through the front camera of the robot.

3rd step. If no fire is seen anywhere then let's move to the 4th step. And if a fire is seen in the front, then let's spray water through the pipe of the robot till the fire is doused.

4th step. Task completed.

Let's now write down the subject matter and solution algorithm of the problem selected by our group—

Problem—

Algorithms—

Session 4 – Let's Make a Flowchart

Earlier in Class 6, we saw the making of a flowchart. But those were very simple flowcharts. There are basically two steps for programming or giving instructions to a machine. First step is to make a flowchart; so that our instructions are understandable by the machine, then we need to write the programme according to the flowchart.

The biggest benefit of making a flowchart is all the steps of the entire instruction can easily be understood at a glance at the picture. Therefore, it becomes easier to make the machine understand the whole programme.
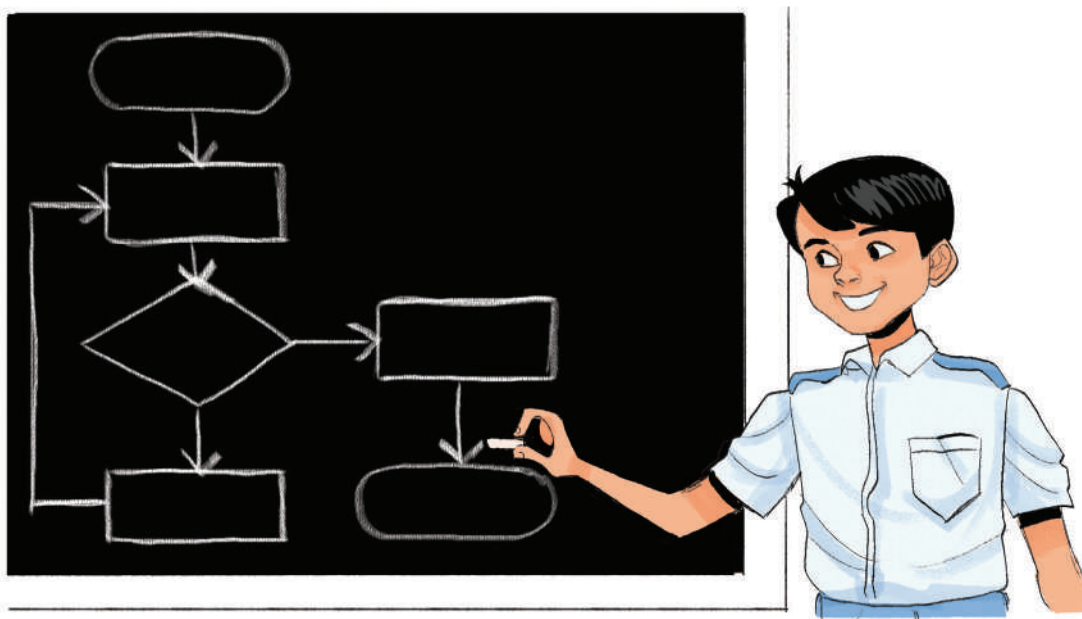
Again, if there is any mistake in the instructional steps, that is not always easy to identify from the algorithm. In comparison, from the flowchart it is easier to identify such mistakes that in which part of the instruction what went wrong.

Again, in case of brining any changes to instructions, using flowcharts makes it easier to make changes. But it is not like that that flowcharts do not have mistakes.

If our instructional steps are too complex, it will be quite difficult to present the entire instruction in a flowchart. For this reason, if the instructional steps are too complex, then the use of flowchart is not always possible.
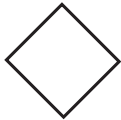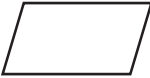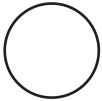
The simple flowcharts we have seen in class six basically showed different instructions in a straight line from the beginning to the end of the entire instruction with arrows. It is not much different from an algorithm.

But in a flowchart, different situations can arise between the starting and the ending. Any certain information may need to be given as input or output, any decision may need to be made, some other tasks may need to be performed, etc.

Have you ever heard the words input and output? Input refers to receiving information from outside. For example, I can see a white cat with my eyes. The cat was outside my eyesight. My eyes received information about the colour of the cat. The colour of the cat is white- this information is an input to the eye.

And if something is done in the outside world, it is called output. For example, when you speak with your mouth, the sound comes out of your mouth. The word or information that went out of your mouth, this word or information is an output of the mouth.
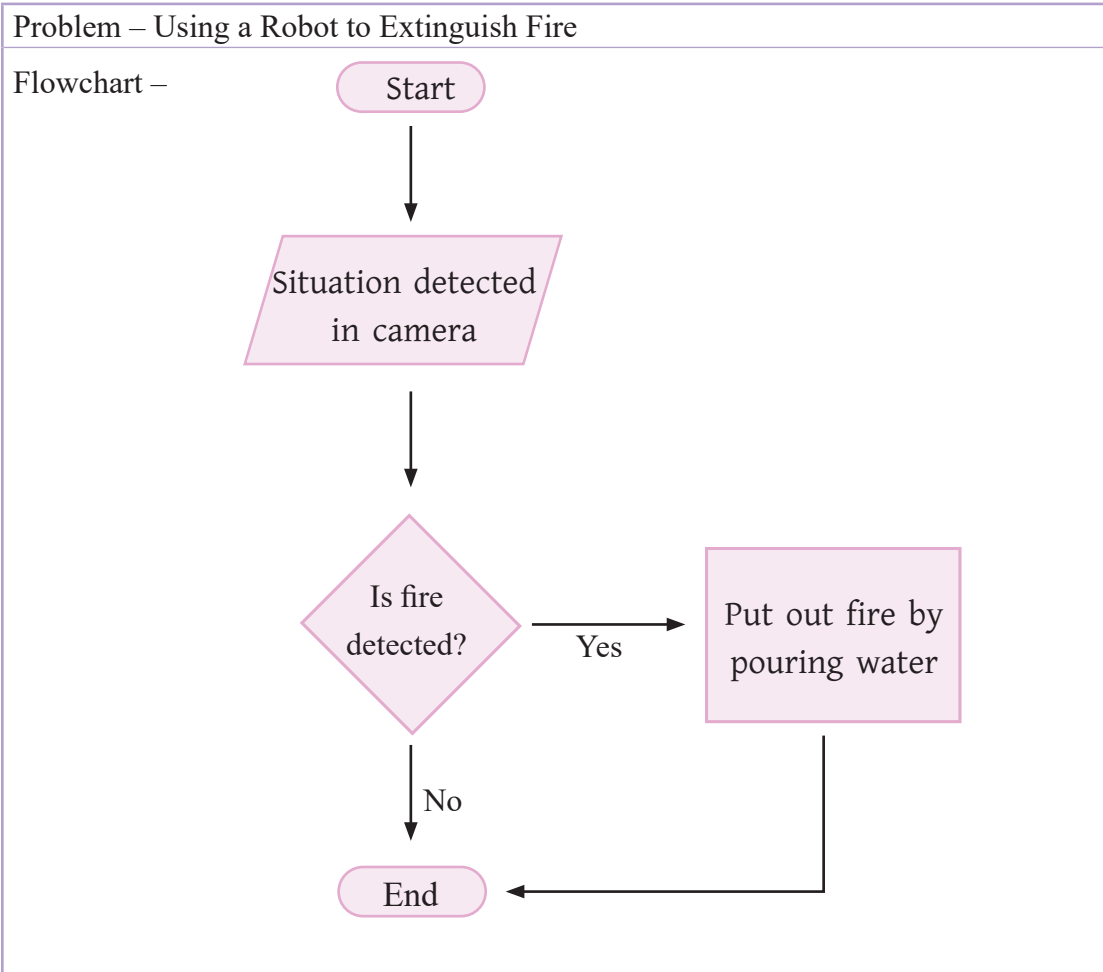
We have to use several symbols in the machine-readable flowchart we are to make-

Symbol	Meaning	Details
	Starting/ Ending	This symbol is used to indicate the beginning or the ending of a task.
	Process	This symbol is used to show a very basic process or step.
	Decision	This symbol is used while making any decision.
	Input/ Output	This symbol is used to take any data input or provide output.
	Connector	This symbol is used while linking one step in the flowchart with another step.
	Direction of Flow	This direction indicates which step comes after which step.

Apart from these, there are various other symbols for drawing flowcharts. We will learn those when needed in the higher classes.

Digital Technology

Now, let's think about the algorithm of fire extinguishing by a robot that we have learned in the previous session.

If you were a firefighting robot yourself, how would it look like if we converted the previously developed algorithm into a flowchart?

Problem – Using a Robot to Extinguish Fire

Flowchart –

```
                    ┌─────────┐
                    │  Start  │
                    └─────────┘
                         │
                         ▼
              ╱────────────────────╲
             ╱  Situation detected  ╲
             ╲      in camera       ╱
              ╲────────────────────╱
                         │
                         ▼
                    ◇ Is fire ◇           ┌──────────────────┐
                    ◇ detected? ◇ ──Yes──▶│  Put out fire by │
                    ◇         ◇           │   pouring water  │
                         │                └──────────────────┘
                         │ No                      │
                         ▼                         │
                    ┌─────────┐                    │
                    │   End   │◀───────────────────┘
                    └─────────┘
```

Session 5 : Converting Self-Developed Algorithms into Flowcharts

We have seen earlier how to convert algorithm to flowchart easily. In flowcharts, we did not have to write detailed instructions like in algorithms.

Rather, the different symbols we are using indicate in which step what work is being done. Now, we will convert the algorithm, which we have developed from the problem we selected in groups earlier, into a flowchart.

Our created algorithm sure has several steps. To do the work easily, let us first determine in which steps we have taken input and in which steps we have given output, in which steps what kind of decision was taken and in which steps only the general information was processed.

Afterwards, we will frame the flowchart accordingly—

Problem:
Different input/ output-
Different steps of decision:

Different Common Tasks-

Our Flowchart-

Session 6: Let the Machine Read Our Words

We have created a flowchart about solving our problems in the previous session. But, no machine is actually provided with the flowchart directly. The machine has to be provided with specific programme or code where the steps of the task are written in a way that the machine can understand.

The specific programme or code that we will formulate, for the machine to read, must be formulated according to the flowchart. But code can be made directly from algorithm if wanted. But how does a machine actually read our instructions? First of all, a machine (computer, robot, etc.) cannot directly read our oral language. Be it in English, Bangla or any other language! Machine mainly understands two digits— 0 and 1. These two are called binary digits.

The machine reads all instructions through these binary numbers of 0 and 1. For example, in our Bangla language there are 50 letters. Countless words and sentences are formed with these 50 letters for our understanding. Just like that, all the machine-readable instructions are made with only 1 and 0! These instructions or codes made with 0 and 1 are called machine codes. But we do not understand machine codes. If we see many 0 and 1 together, we will just think it is gibberish! Then how will we communicate with the machine? For that there are different programming languages like, C, Python, Perl, Java, Scratch, etc.

Instructions are usually written in a programming language in a human-understandable way (like English or Bangla, etc.) following certain rules so that the machine can also understand those. Afterwards, when those instructions are sent to the machine, it converts them easily into machine codes and works as per the instructions. Now a question may arise which programming language should we learn?

In fact, one can start instructing the machine after learning any programming language. If we learn one programming language, it will be easier to learn other languages. We are not going to learn any specific programming language directly right now. Instead, we will learn to make pseudocode which can easily be converted to any programming language.

What is pseudocode? Pseudo means similar or disguise. Basically, pseudocode is the expression of algorithms, in the form of signals or codes, in a human-understandable language, from which the entire instructions can easily be converted into any programming language.

But it is to be noted that pseudocode is not a real programme. So, machine will not understand if only pseudocode is provided without writing any programming language. The biggest advantage is pseudocode can be converted to any programming language anytime.

Digital Technology

If we want to convert our flowchart of extinguishing fire by a robot into pseudocodes, we need to consider a few things. Firstly, all inputs or outputs must be expressed with specific variables (a, b, c, etc.). Again, when taking a decision, we need to express it with 'if' and 'else'.

And when completing any work (such as dousing a fire) we will express it as a function with

Welcome friend!!

01100001
01101001
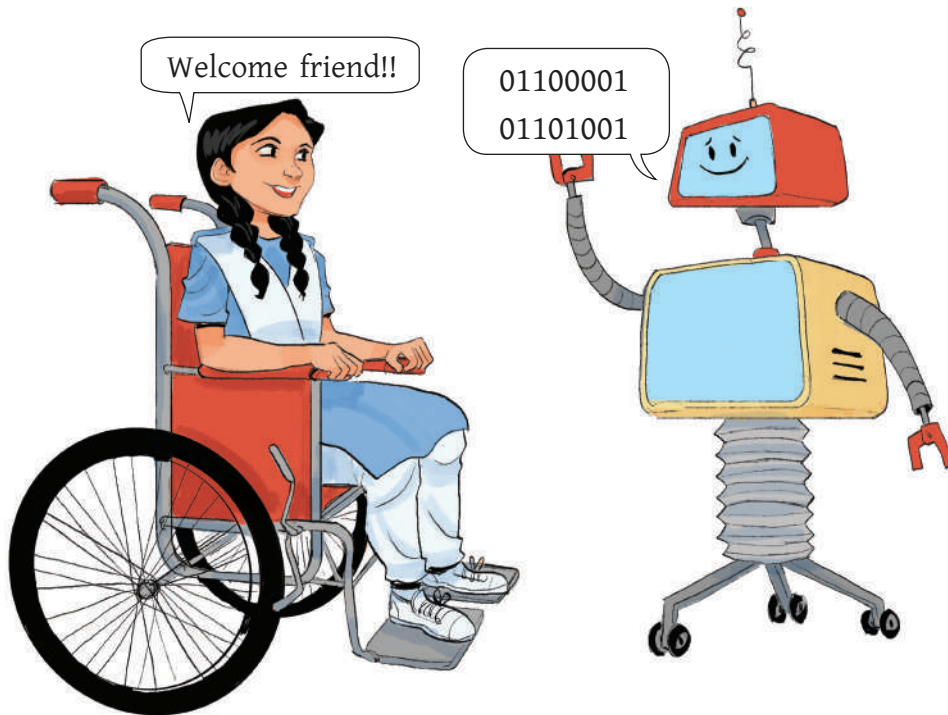
Function means to complete a certain task by following certain steps.

For example, the fire extinguishing function can be fire extinguishing ().

The pseudocode will be like—

Starting

X = Camera

If X = yes then Fire extinguishing () then finished

Otherwise finished

So, how easily we have shown the whole task with a pseudocode!

Now, let us convert our group's flowchart into pseudocode following the same process—

Session 7 – Let's Make a Robot with Paper

In this learning outcome, we have started working on a practical problem and formulated algorithms, made flowcharts and pseudocodes to solve it. But for whom have we formed the pseudocodes? To solve the problem by a machine, doesn't it?

How come then we are not creating a machine or a robot! Now we will make a robot by cutting paper. And for this we will use different symbols of a flowchart! There is already a flowchart made for this on the next page! We will create the robot following that!

Necessary Materials — scissors and glue
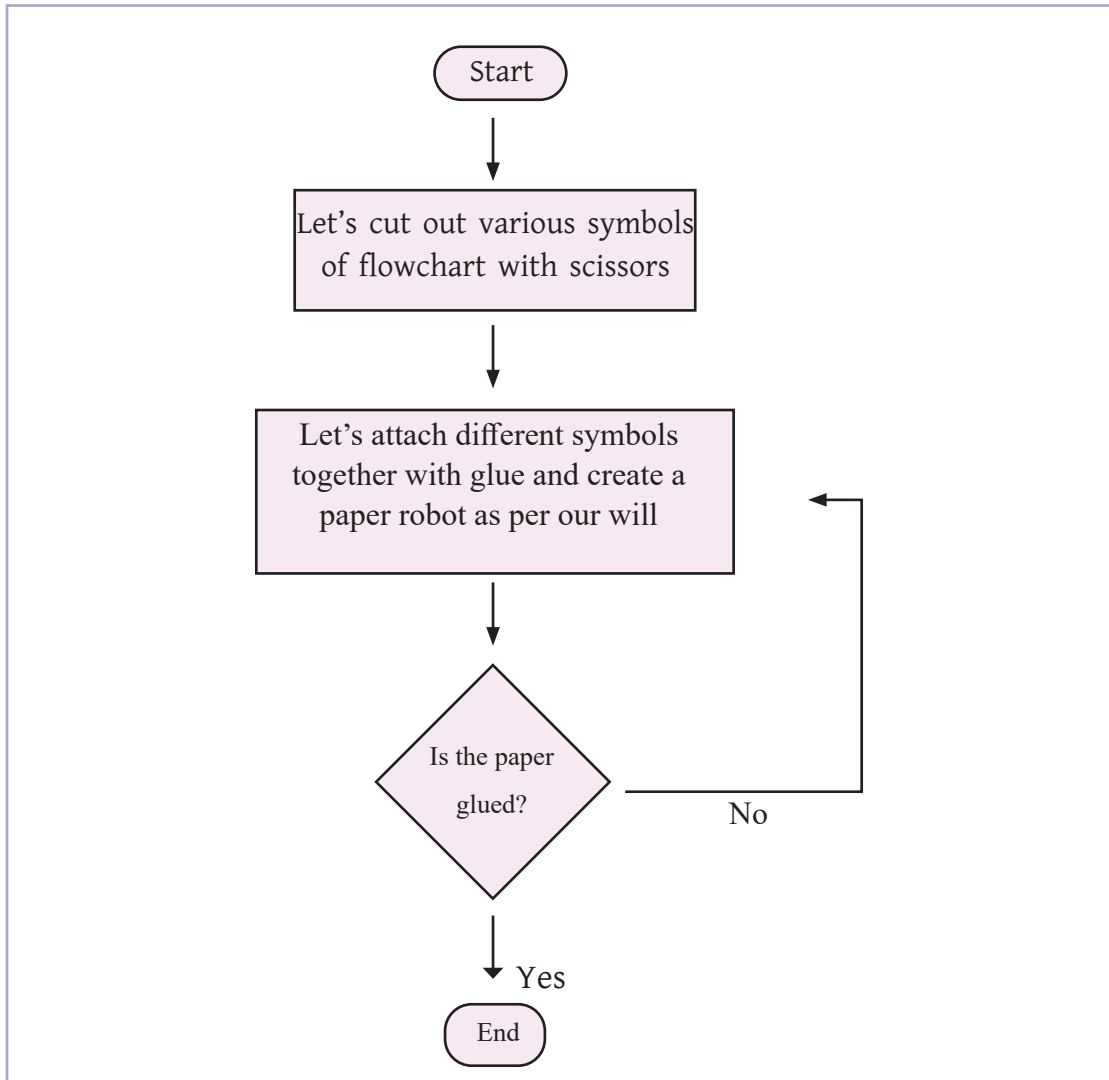
We hope by looking at the flowchart you have realised how we will have to make our paper robot. Here, the same symbol is given multiple times. In groups, use as many

symbols as you like to create the paper robot as per your wish.

The fun part is we are doing it ourselves, so we are following the instructions in the flowchart and cutting the symbols we like to make the robot. But the computer could not choose the symbols itself. For this, the computer needs to be instructed beforehand which symbol is what and how it looks.
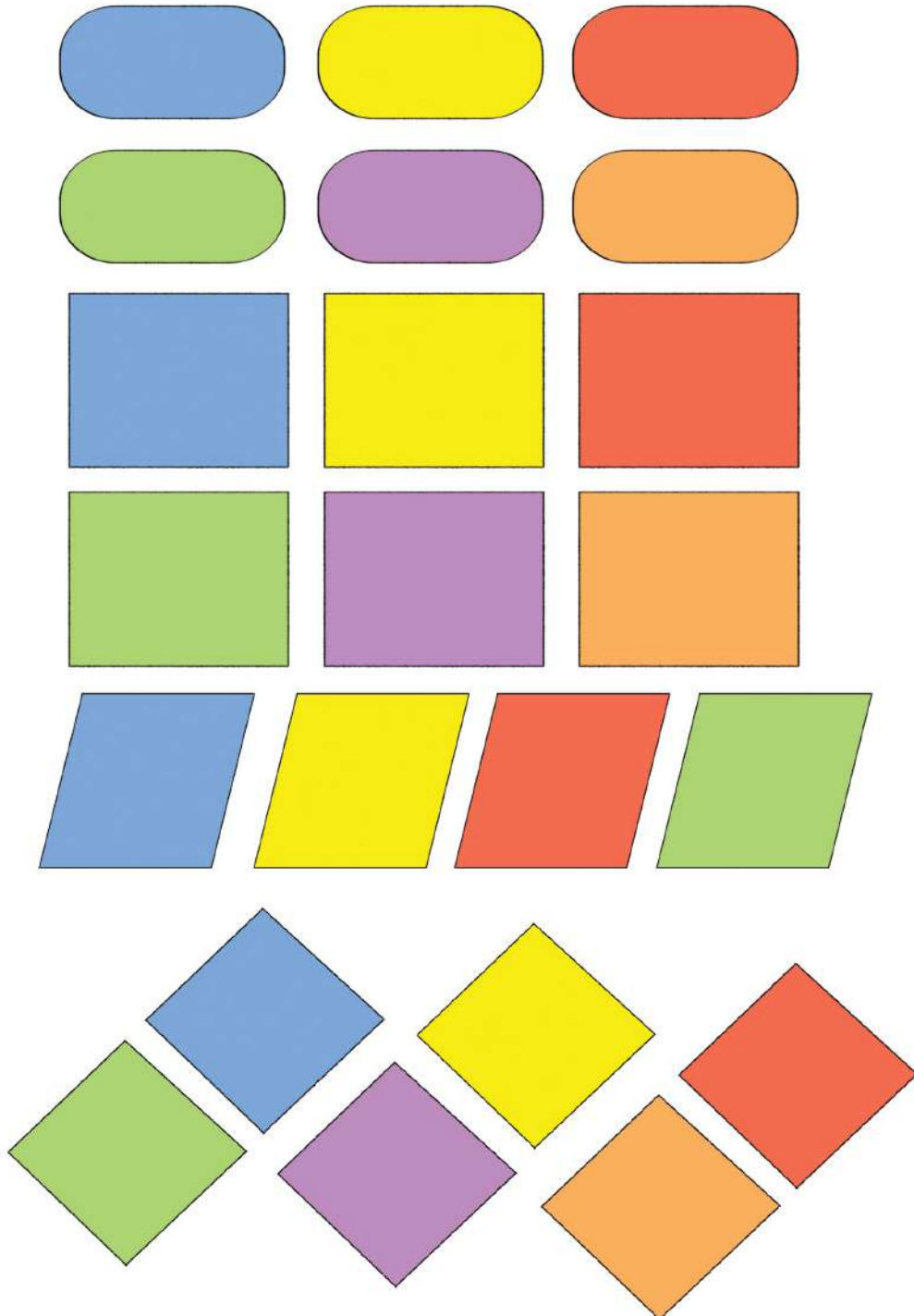
Let's cut the symbols given above and make a robot of our choice

Session 8: Let's Run Pseudocodes in Robot

In the last two sessions, we have created pseudocodes from the solutions of our selected problems. Besides, we have also created a paper robot following a flowchart.

But we need to verify if the pseudocode we formed is correct and if it is understandable by the robot!

So, we will play a game now to run pseudocode on the robot. Let us first know the rules of the game—

1. Two teams will face each other. They will have the pseudocodes they made and their group's paper robots with them.

2.   Now the fun game will begin.

One team will hand over their pseudocode to the other team. Besides, they will also write it down on a piece of paper the code was formed to solve which problem.

3.   We will act as a robot once we get the pseudocode from the other team. We will imagine ourselves as robots.

4.   If I were a robot, would I be able to solve the problem for real by following the pseudocode I have?

We will verify it.

5.   We will fill in the table below if we can successfully complete the task by following each of the steps given in the pseudocode—

Question	Verification (Write 'Yes' or 'No')
Have we understood the complete pseudocode?	
Has the task been completed following the pseudocode?	
Have we got any fixed input/output in the pseudocode?	
Did we have to take any decision while going through the pseudocode?	
Do we think the pseudocode could be completed within fewer steps?	

Is there any absolutely necessary step that was left out from the pseudocode?	

6. If the answers to most of the steps in this table are satisfactory, then let's congratulate the other team. And let's gift our paper-made robot to them.

So, if all the teams have successfully completed the pseudocodes, each of them will get a new paper-made robot instead of their self-made paper robot.

Isn't that wonderful?

In this way, we can formulate and create necessary algorithms, flowcharts and pseudocodes to get help from technology in solving any real-life problem.

If necessary, we can take the teacher's advice whenever needed to complete these tasks.

Thought Exchange on Friends' Network

We learned in Class Six what network is and how it works. We also created a network. Now we will learn about the types of network and see how it was in the past and how it is now. We will also learn how wireless network started and what is our history associated with it. You surely remember Pina and Nano. We will do plenty of activities with them as well.

Session-1: Let's Learn about Past Network from History

Pina's mood is off today. She has no communication with Nano for long. She was wondering if there was a way to communicate with Nano. She learned about internet while communicating with her maternal uncle but that is wired network. Connection through wire; but what if there is no wire now. For example, we communicate wirelessly through mobile. How is it possible? What if Nano could be communicated like this. Thinking about this, Pina fell drowsy on the roof. At that time, she heard someone calling, 'Pina, hey Pina, I am here.' Opening her eyes Pina found that Nano was smiling at her.

Pina: 'Hey Nano, why are you so late? I have looked for you. I could not communicate with you by any means. You were inside the computer, how have you come out?'

Nano: 'I went to visit my maternal uncle's house in a different planet. That is why you could not contact me. A lot of wave energy is required to establish communication with distant planets.

Pina: 'Nano, you always say difficult words! I don't understand these at all. I just know that network is of two kinds: wired and wireless. You taught me this last time.'

Nano: 'Hmm. I will teach you better this time. And you along with your friends will build a network of your own.

'You know Pina, the first person to start wireless communication is a scientist from your country. He is Jagadish Chandra Bose. Back in 1897, he was the first to establish wireless communication from one room to another through microwaves.
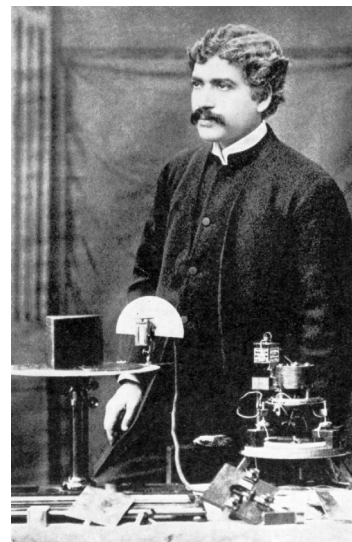
Many scientists in other countries also were trying to establish wireless communication during this discovery. Of them, Italian scientist Guglielmo Marconi became successful. From there the other scientists kept on researching and radio was invented. It brought an enormous change in communication.' Symbolic photo: Credit: Tareque Masud Memorial Trust

Information can be sent to long distance through radio. All the news of our Liberation War was received through radio. The naval commandos of Sector-10 of the Liberation War attacked the fleet of the Pakistani invasion forces together on August 15, 1971. They attacked together when a certain song was aired on Akashbani at that time.

The attack started as soon as the song began on radio. This was the secret signal of attack.

Pina: 'How wonderful! Wireless communication has plenty of benefits.' Pina listens in surprise.

Pina: 'Well Nano, how does this wireless communication actually take place?'

Nano: 'Each of these is actually a different type of wave. Your teacher will explain everything to you when you get to the higher classes. Maybe you will also discover many new things.'

Suddenly Pina hears someone calling from far, 'Hey Pina, Pina! Won't you go to play?' Oh, Nano is fading away and Pina's friend Rini appears there. Pina realised that she had been dreaming, but how beautiful the dream was!

Well friends, we have learned about wireless network from Pina and Nano's story. Do we have any such wireless network around us? Let's search if there is any wireless network inside our classroom or in our school. Let's complete the following table:

Wired Network in School	Wireless Network in School
Telephone	Mobile

Digital Technology

Now we will see what kind of networks are there around our house and where do those networks go from where.

Session 2: My Surroundings have Various Networks

Now let us observe various machines around us and see which exchanges information wirelessly and which with the wire.

Machine	Medium of Sending Information	My Observation
Mobile	Wireless	Information receiving and sending
Radio	Wireless	Only information receiving

Let us now find how these networks work. We will be divided into two groups, one for wired network and the other for wireless network. One group will look for the advantages and disadvantages of wired network, while the other will look for the advantages and disadvantages of wireless network. Let us present the information in the table below:

| Group-1 Wired Network		Group-2 Wireless Network	
Advantages	Disadvantages	Advantages	Disadvantages

Homework

Now, we will draw any network at our home and bring it to school. We will draw a network just like the travel plan we made in Class Six. But it has to be a network around our home.

Session 3: Let Us Send Information through Network

We have found out various wired and wireless networks in the last session. The main task of the networks is to exchange information from one place to another. But how does this actually work? Some networks are wired but how does the information pass through the wire? Moreover, some networks do not even have wire! Then, how does the information pass through those networks? It is really surprising to think about it, isn't it?

Different networks actually work in different ways. Let us learn about information exchange through two ordinary networks.

As a wired network, the way a telephone transfers information to another telephone—

At first, we need to understand what sort of information we are sending through a telephone. When we talk over telephone, we send sounds as information to the other telephone. There is a microphone in the telephone handset. The job of this microphone is to transform our words into electric signals. Electric signal is basically a kind of special information that can be sent from one place to the other through wire. The cable of the telephone line actually contains copper wire. Copper is a metal that can carry electric current very easily. So the electrical signal converted inside the microphone can easily be sent to the other side through the copper wire. There is a loudspeaker in the other telephone that will receive the information. This loudspeaker converts the electric signal coming from the other telephone again into sounds. Then we can hear that sound in the loudspeaker.

Copper wire carries electric signal

Microphone converts words into electric signal

Loudspeaker converts electric signal into sounds
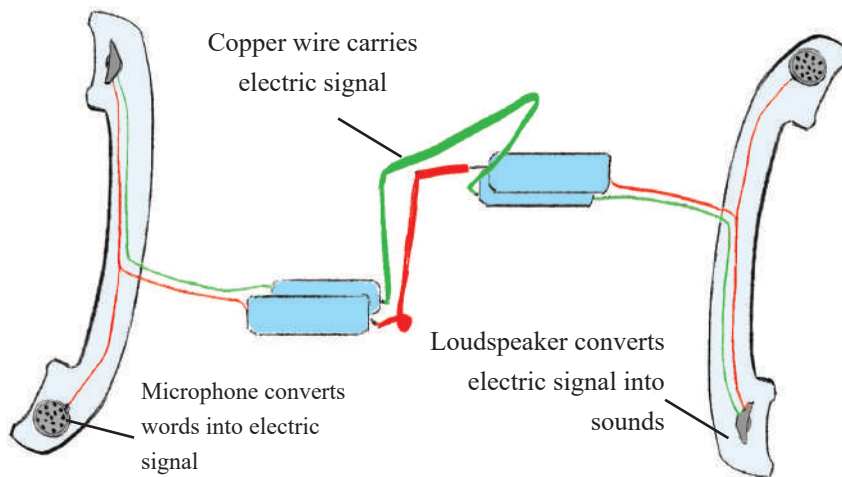
Let's take a look again at the main functions of information transfer in a wired network—

a) The device from which the information will be sent has a tool that converted the information into a medium that can be sent.

b) The converted information went through wire to the device it was supposed to go.

c) The device that received the converted information again converted the information back to its original state.

Besides telephones, all other wired networks follow this general system of exchanging information.

Now let's do an activity. We have learned to write the steps of doing a task through algorithm in Class Six.

Let's write an algorithm below with the steps to exchange information through telephone—

1st Step - Let's talk over telephone

2nd Step - My words are converted into electric signal through microphone

Let's now get some idea about the information transfer through wireless network too. As telephone is discussed in wired network, let's now learn how mobile phones send information.

We have learned about radio wave earlier. When our mobile phone sends information, it uses radio wave. Every mobile phone has an antenna for sending and receiving radio wave. When we talk over mobile phone, the information spreads from the mobile phone through the radio wave from the antenna. There are network towers to receive this information from the mobile phone. The network tower receives the information and sends it back to the mobile where the information is to be sent.

That mobile phone then receives that information through its antenna. So the basic method of exchanging information in wireless network is as follows-

a)   Firstly, sent information from a device
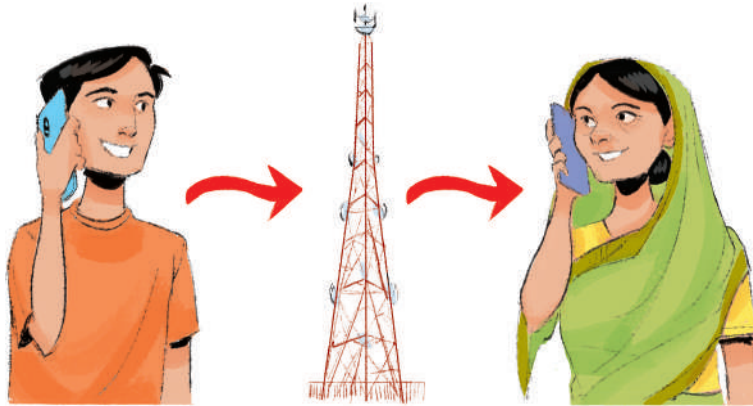
b)   That information went to a network tower through radio waves

c)   From the network tower, the information is sent to the receiving device through radio waves

Most of the wireless networks follow this simple method to run their operation.

Let's write an algorithm below with the steps to exchange information through mobile phones-

Here we have learned about information exchange in both wired and wireless networks in a very simple way. In reality, networks work in a more complex way. We will learn more about exchanging information on the network when we grow up more.

Session 4: We will Keep Our Network Secured

Friends, we made a school learning network last year. Now, we will make that learning network even more secured. Suppose you along with your friend Tarek are making a gift for another friend Rahat to surprise him on his birthday. You want this plan to remain a secret between you and Tarek. You do not want Rahat to get any hint of it. Now, how will you keep this matter a secret and still do the task? Surely, by using some secret code. We will use such a secured method for the safety of our friends' network.

This time our friends' network's task will be to exchange all our necessary homework and other essential information within us secretly.

Well, let's first learn how to send data securely through a network. Every network has some secret codes. No machine can access this network if it does not know the secret codes. If any specific machine knows that secret code, it can enter that network. So, it is very important to send information by maintaining secrecy. Usually, networks used for important public-private purposes are made highly secured so that no one else gets any secret information and can do any harm.

During the World War II, secret information was exchanged wirelessly. The victory and defeat of Germany and the Axis against the Allied Forces were determined by deciphering such secret messages. You will learn about it more in higher classes.

Last year we learned about different parts of a network such as sender, receiver, server, router, etc. This time we will compare those parts with the network we have created. But we have to keep it in mind that we need to maintain the secrecy of our network.

We will play the following game to maintain secrecy of the network-

It is more like the 'Phul Toka' game where we call our friends by secret names and ask them to tap on the forehead of another friend, whose eyes are closed. Afterwards, the friend whose eyes were closed, has to find the friends whom we called by the secret names.

Firstly, let's get divided into six groups. Four groups will send two secret information each to the other group. The other two groups will be the hackers. They will try to steal the information. In order to send secret information, we need to encode, that means coding and decoding the information. We will do that by replacing the position of different letters with one another. Let's now observe the following table—

Real Letters	A	B	C	D	E
Replaced by	F	G	H	I	J

You have made codes by doing this replacement. Now, the word 'Ace' will become 'Fhj' and it will be very difficult for the other team to understand. This is actually how information is sent secretly through different networks.

Your task will be to write a message in such a way that the other group cannot understand it. Each group's message will remain with the hacker group for three minutes. If they fail to retrieve the meaning within this duration then the message writing group will win.

Friends, now we have realised how security of a network is ensured. We will now find out how a network is kept secured.

Necessity of Network Security

Network security is very important. We can ensure information security through this. To keep the information of any organisation secured, the network must be kept secured so that bad people cannot access the information. Hackers may cause much harm by accessing the information. For example, they can steal money from a bank by accessing the network information. Again, they can change the result of any education institution and can also cause harm by overhearing someone's mobile conversation. We need to keep our network secured for many reasons like these.

Preparation for next session : We will create a network just like the school learning network and guardian network we have created in Class 6 (you can go through the learning experience 6 of the Digital Technology book of Class 6).

Session 5: Wireless Satellite Network

Friends, have you heard the name of Bangabandhu Satellite? This is Bangladesh's first artificial satellite. It helps us enormously in exchanging information. It is rotating from a position in its orbit in the space and is sending us information. We can find our location by using mobile, watch, GPS (Global Positioning System) at many times. This location tracing is very important as aeroplanes, ships, cars these days use satellite information to find the exact path. It is also a wireless network. Now we will see the location of Bangabandhu Satellite and find out our school's location from it.

Now we will mark Bangabandhu Satellite on the map below and draw how it exchanges information. We will mark the location of our school on our map and from there we will connect the location of Bangabandhu Satellite.

We have seen the location of the satellite and ourselves. Satellite is another type of wireless communication network that helps us in exchanging information. Satellite is also used in finding location in remote mountain areas.

Satellite for Personal Work	Satellite for Business

Homework: We will find out in which tasks of our life we use satellite network.


Session 6 - Our Friend Network

We will create a message similar to the one we sent in session 4 and will send it through our network. We will form our friend network in groups just like we did in session 3 by dividing into groups. We will write a message in groups which we will send to another group. All my group mates will know the message but it will be encoded like the message sent in session 4. Only the other associate group will know how to decode it.

Let's now play the game following the activities below:

1. We will make a human network after knowing the house location of all the members of my group and hacker group.

2. There will be a hacker friend in every two message sending friends.

3. At first, the friend furthest from the school will start the message. S/he will write only the first part and take the coded message to a hacker friend. The hacker friend's job will be to decode the message.

4. Only one hour will be given to decode the message. After one hour, s/he will have to pass the message to the next message sending friend.

5. Thus, the message will pass through all friends and return to the last member of the sending team. If the hacker team cannot retrieve the message, then the message sending team will win. The hacker team will win if they recover the message. In this way, we will finish the full game and with it, our friend network will be formed.

Let us now mark the locations of our school and friends' homes in the map below and form our network.
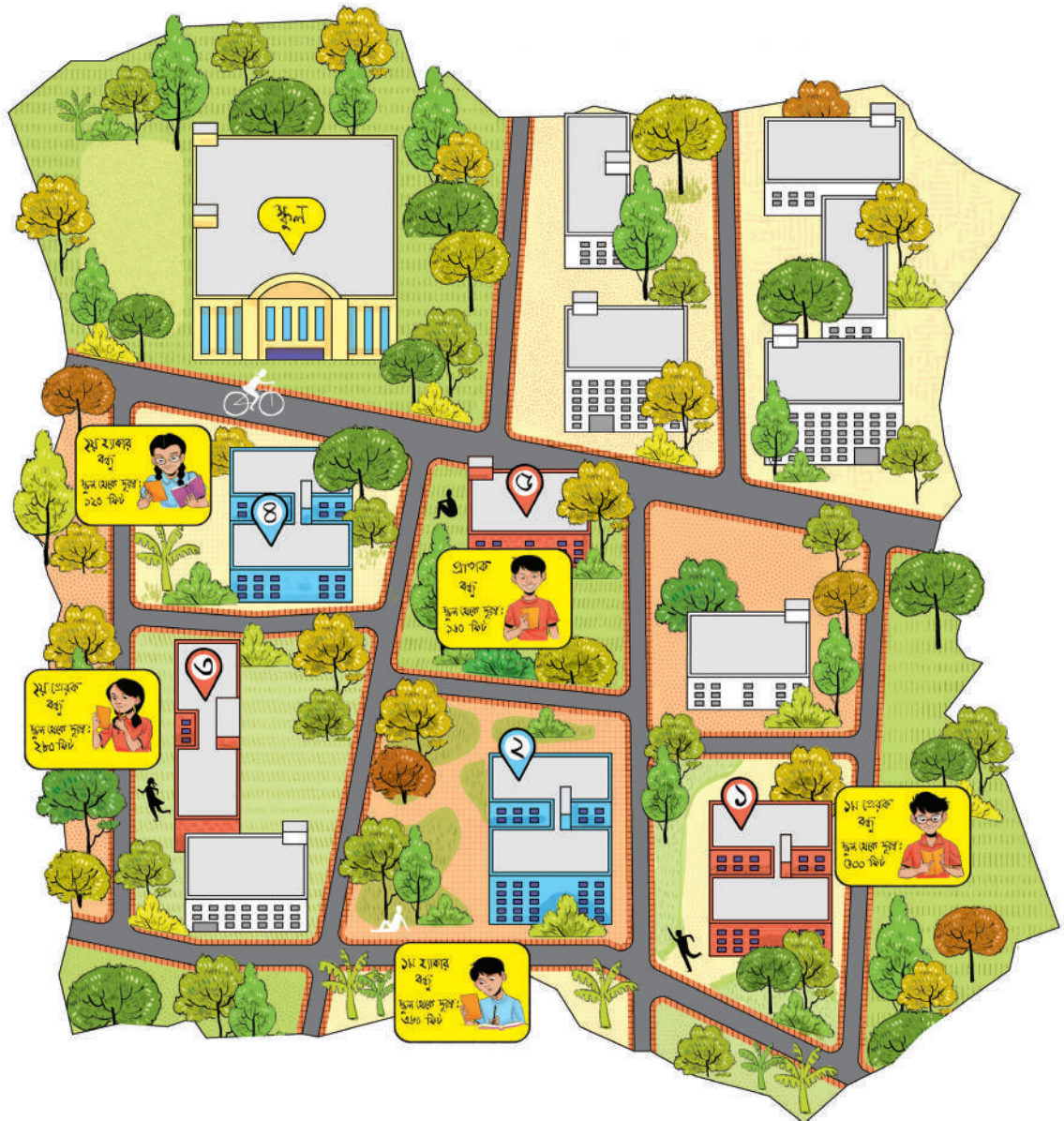
Friends, the network we have made will be our wireless friend network. We will exchange various necessary information through this network and will maintain its secrecy. We will be able to communicate wirelessly if we have a mobile phone or internet access similar to the community network of friends we created in Class Six. There we will send the message instead of just walking from one friend to another.

Preparation for next session : Write down your techniques on how to make friends' network stronger and even more secret. And we will write down about the benefits we can have from the friends' network.

Strategies to make the friends' network stronger

<table>
<tr><td>Learning Experience 7</td><td># Use of Digital Technology in Customer Service</td></tr>
</table>

Digital media are being used to ensure citizen services by easy access to the services provided by different government agencies. Common citizens, from city to village levels, are now getting citizen services using various websites and mobile apps. Besides, we can also get our daily essentials within the reach of our hands by using digital media. We will have some experiences in the next few sessions on how easily necessary tasks can be completed using digital media.

Session 1: Preparing a Table on Civic Services and Concept of E-commerce

Dear students, welcome to this session. In the previous session, we used digital media to get emergency services. Similarly, we will do some activities in this session to learn the use of digital media for citizen services and e-commerce. Let us silently read the following example.

Joyeeta's father has to go to the bank to pay the electricity bill every month. Sometimes he gets late for his office due to the long queue. Besides, going to the bank from home also requires a good amount of travel cost. She often hears her father saying, 'Again I was late for office today!' That is why she installed a mobile banking app in her father's mobile and opened him an account with recharge for this month's bill. As soon as the bill came, Joyeeta along with her father filled up necessary information and paid the bill within minutes. Her father was delighted that the bill was paid so easily without much

time and effort and in exchange of little service charge. He said that he would pay the bills this way from next month.

Let's try to get the answers to the following questions based on the case study above-

- Which medium is actually used here?
- What can be briefly called the service that Joyeeta's father received?
- What is the process of monetary transaction through mobile apps called?
- What other services are there that we get through digital media?
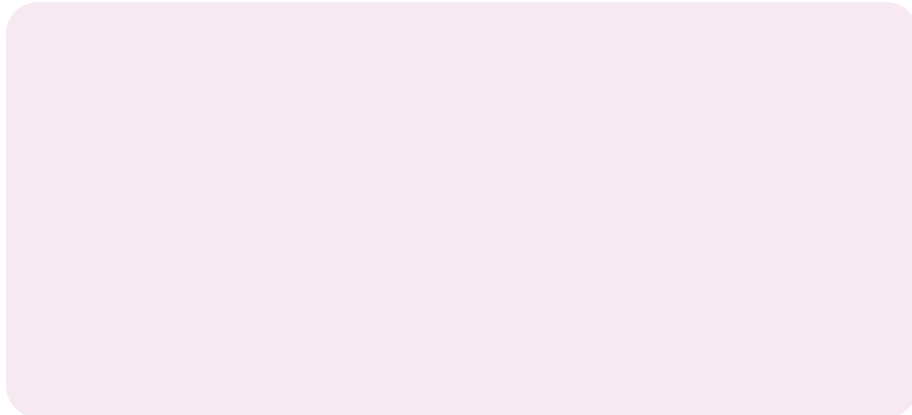
- Have any of our known persons used digital media for shopping or monetary transactions?
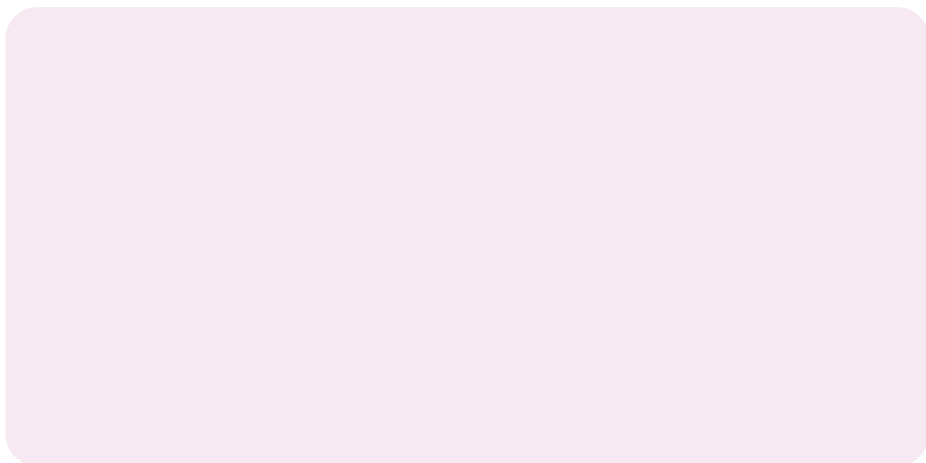
Digital Technology

We have learned about the concept of citizen services and e-commerce from the discussion above. Now let us write a few names of citizen services and e-commerce in the table below—

Citizen Services	E-Commerce

Digital Media to Get Emergency Services:

Citizen services and e-commerce are actually done by both the one providing the services (service provider) and the one receiving the service (service receiver) using digital media. Communication is established through mobile apps or websites. Nowadays, every service providing organisation is making service providing easier by using digital media. Even service can be received by just sending a message from a very ordinary mobile phone now. Different official or personal service providing pages or groups are also seen in the social media in our parents' mobile phones. Service or products can be received very easily through communication from there as well. So, let us write the media of citizen services and e-commerce in the table below.

Media of
Citizen Services
& e-commerce
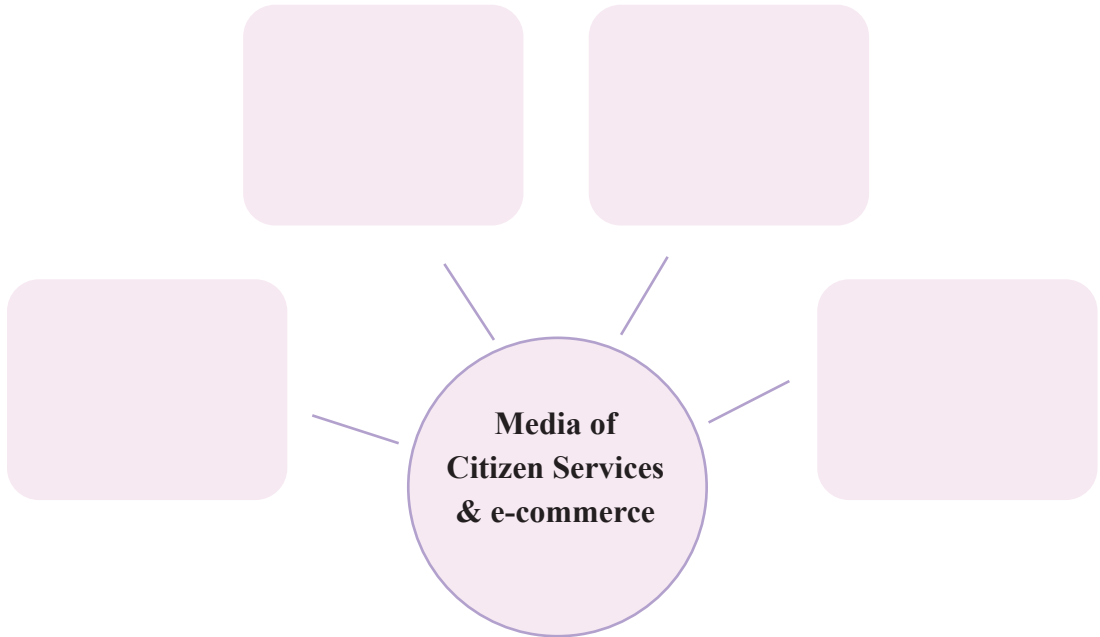
However, monetary transactions must be completed through financial organisations in order to get services from an organisation. In that case, we have to complete the monetary transaction using our bank account or mobile banking app. We have certainly noticed in the case study that Joyeeta installed a mobile banking app in her father's mobile and opened an account before paying the bill.

Session 2: Citizen Services and Benefits of e-Commerce

We got the idea of citizen services and e-commerce in the previous session. Now we will identify the benefits of those services. There are many among us who have experience of citizen services or e-commerce like the example of Joyeeta of the previous session. For example, we have received stipend money or senior citizen allowance for the elderly member of our family.

Digital Technology

Use of digital media reduces time, travel and cost of receiving and delivering citizen services or e-commerce services. We can get these services in exchange of a minimum service charge. For these benefits, the use of digital media is increasing day by day. Let us enlist the benefits in the following table—

Serial	Benefits of Citizen Services and e-Commerce
1.	Cost decreases.
2.	Very fast service delivery
3.	Service provider can be contacted.
4.	
5.	
6.	
7.	
8.	

Now, let's attentively observe the picture below and write in groups which services we as students can get from here if required.
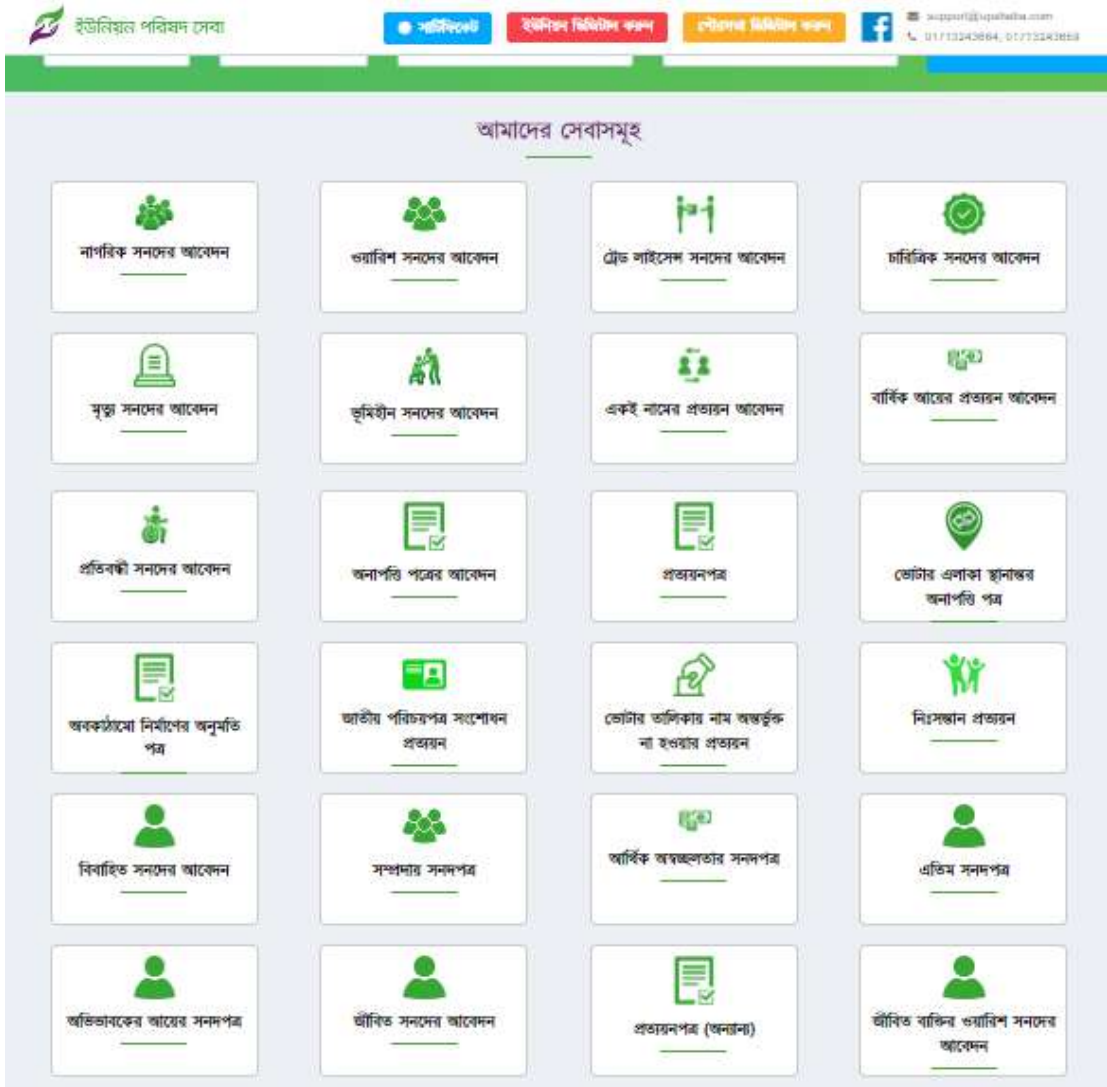
Serial	Name of Service	For what Purpose?
1.	Certificate	For applying in different competitions
2.	Income certificate of guardian	For getting monetary help or scholarship
3.		
4.		
5.		

Session 3: Steps of Getting Citizen Services

We were able to make a list of what citizen services we should take and for what purpose from a website in the previous session. Today we will identify the steps that we need to follow to get such a service and will make a flowchart accordingly.

I have to search through digital media with which website or app I can get the service I want. All government and private service providers have specific websites. Again, all government offices have a section called 'Citizen Charter' in their website which says how a common citizen can avail services. In there, instructions are given on what steps to follow or who to contact to get the service without any hassle. Moreover, there are also instructions on how to get a service using the website or mobile app of the private

organisations. Nowadays, many organisations make video instructions or commercials about the steps to get their services.

If we create such a website for our institution where such promises of services are to be mentioned, then let's fill in the table below with what to include in there:

Serial no.	Name of Service	Service delivery process	Service charge and how to pay	Delivery time limit	Person in charge
1	Student Admission Management	Providing notice of admission through advertisement	Purchasing admission form through prescribed fee	December	Headteacher, asst. headteacher and admission committee
2	Use of library				
3	Use of science laboratories				
4	Certificate collection				
5	Annual prize and cultural events				

What can we see in the picture next page? What services can be availed through it? What are the steps or what to do to get certain services?

Preparation for next session:

Many organisations have developed mobile apps for easy service delivery to citizens nowadays. As a result, services are within our hand's reach. The picture below shows how easily a common citizen can avail the services by following a few steps. So, if we have to develop such an app to get the services from my City Corporation/Municipality/Union Parishad, for that we will fill up the flowchart given in the next page at home.
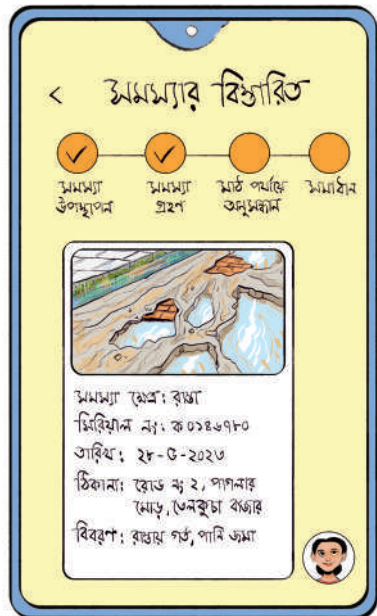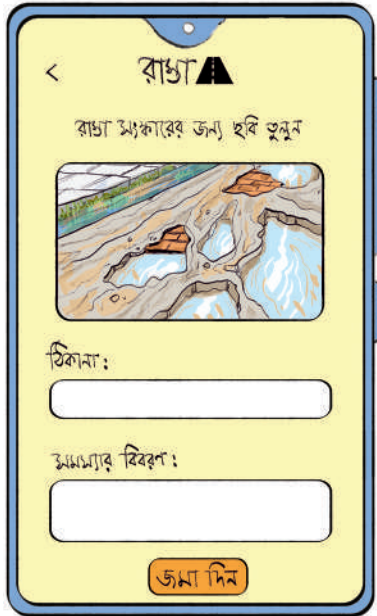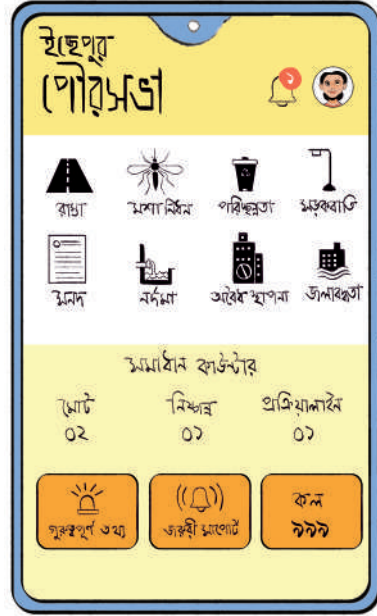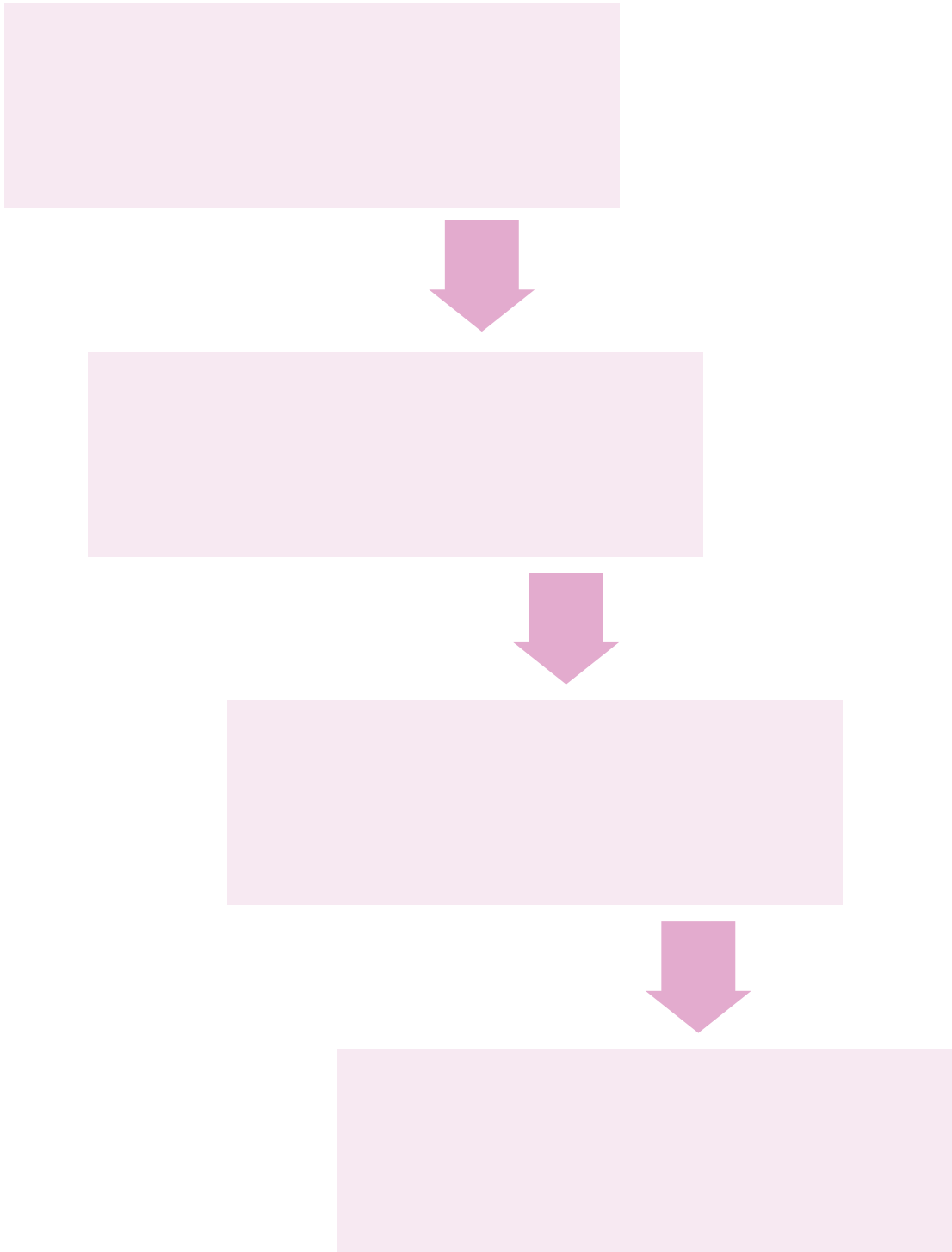
## Session-4: Steps and Factors in Getting e-Commerce (Using Digital Media) Services

In today's session, we will learn how to get a product or service as a customer in e-commerce. We will try to income through e-commerce once we get a little older. Many people have started businesses with little capital because of introduction of e-commerce. Is there anyone here with us who can share any e-commerce experience? We will listen to the experiences of a client and a service provider. We may talk about someone if not about us as client or service provider. Through our experience, we have understood that in e-commerce, we as clients have to go through five to six steps to purchase a product or a service.

Like citizen services, e-commerce also requires several steps for services. But the aim of e-commerce service providers is to deliver the product at the client's home. So, in most cases, a third party exchanges goods and money. Mobile banking is also used in some cases. So, e-commerce requires a few more steps. But as clients our task is to order a product, pay the price and receive it. Some steps in between are done by product suppliers or e-commerce companies. If the payment is made through online or mobile banking, it is automatically paid through the software. However, we have to maintain caution and secrecy in providing information online or in mobile banking. The price of the same product or service varies for different companies. Again, the quality of the product has to be checked too. To understand this, we can look for previous clients' comments in the review section of that company or e-commerce service provider to see how much satisfied they were.

We understood from our discussion so far that for the product or service we need technology and people to do the work. Now, let's complete the activity through a fun roleplay in the classroom. For that we will play the following characters:

1. Client or service receiver (one person)

2. Mobile or computer (one person)

3. Product or service (four to five persons)

4. Cash or debit/credit card or mobile banking app (one person)

5. Vehicle (one person)

6. Deliveryman or the person who will deliver the goods (one person)

Let's fill in the blanks in the picture below based on our experience of watching the roleplay so far:
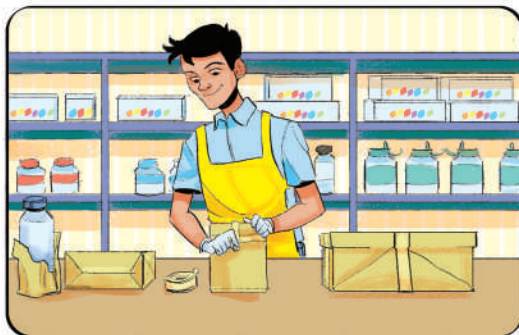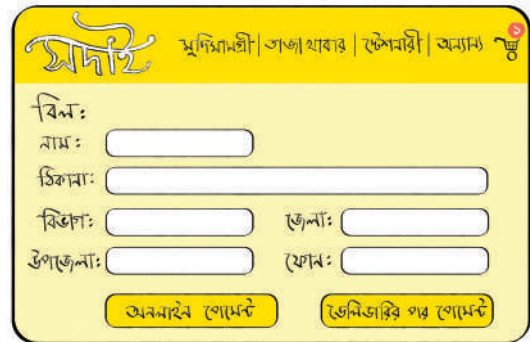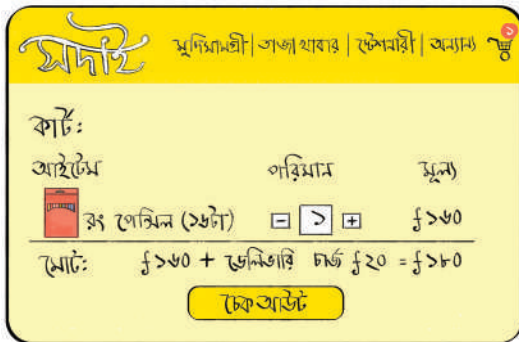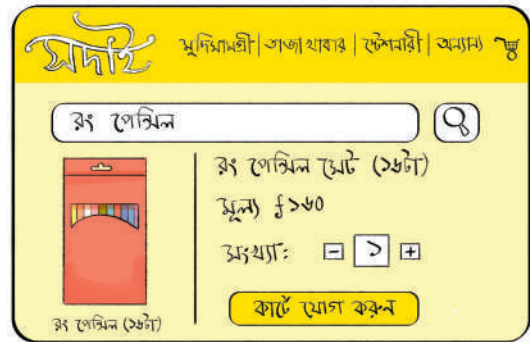
Session-5: Preparing Instructions/ Handbook by Identifying Steps to Get Services

We have been able to identify the steps of citizen services and e-commerce through different activities in the previous sessions. Today we will prepare some instruction books with those steps for our future use.

Our entire class will be divided into six (06) groups. Every group will work on the tasks given below:

a. 1st Group: General rules of getting services

b. 2nd, 3rd and 4th Groups: Steps to get three (one for each group) daily needed citizen services after discussion in the class;

c. 5th and 6th Groups: Steps to get two (one for each group) daily needed e-commerce services after the discussion in the class;

We surely recall that we made a school magazine in Class Six. The instruction handbook will be like that somehow. Each group will create infographics for each topic to make the handbook attractive. We will work on the two blank pages given at the end of this experience or chapter. After completing the task we will compile those pages to create the handbook and will store it in our library.

Session-6: Availing Citizen Services

Today we will learn how to verify birth information in the class. We have seen earlier how to do birth registration under emergency services in our previous class. We have learned it in this experience as well. We can also register our birth from the local government website or app. We all have birth registration, but it is important to check if it is correct. So, we will see how to verify birth information in this session. This citizen service can be easily availed from the Birth and Death Registration website or some apps (privately developed). We will take the help of the teacher to do this task.

We have to do the verification by keeping the birth registration number secret just like the teacher. This is information privacy. We learned about this in previous class. We have learned the rules in today's class to do the activity on our own. We will verify our birth registration number as shown in the picture below.

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LOCAL GOVERNMENT DIVISION

Enter "17 digits Birth Registration Number" and "Date of Birth" of a person to verify the Birth Record.
জন্ম নিবন্ধন তথ্য যাচাই এর জন্য ১৭ অংকের জন্ম নিবন্ধন নম্বর ও জন্ম তারিখ প্রবেশ করান

Birth Registration Number:

Date of Birth (YYYY-MM-dd):

96-22=?

The answer is

Search   Clear

Let's look at an interesting matter given at the very end. The website asks me to subtract 22 from 96 and enter the result. Why? It is because they do not want people using automated robot software to use this website countless times to put pressure on the server. Such mini puzzles are given in many websites that are easy for human but difficult for robots. Through this we prove that we are genuine users of this website.

Information will be displayed like the picture below once we enter the website and search after giving input about our birth registration number, date of birth and answer the required number solution. Through this we can check if all the information in our birth registration is correct or not. There are many blank cells in the picture below where we will insert our information.

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LOCAL GOVERNMENT DIVISION

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BIRTH REGISTRATION RECORD VERIFICATION

REGISTRATION DATE	REGISTRATION OFFICE	ISSUANCE DATE
30 DECEMBER		30 DECEMBER
DATE OF BIRTH	BIRTH REGISTRATION NUMBER	

নিবন্ধিত ব্যক্তির নাম		REGISTERED PERSON NAME	
জন্মস্থান		PLACE OF BIRTH	
মাতার নাম		MOTHER'S NAME	
মাতার জাতীয়তা	বাংলাদেশী	MOTHER'S NATIONALITY	BANGLADESHI
পিতার নাম		FATHER'S NAME	
পিতার জাতীয়তা	বাংলাদেশী	FATHER'S NATIONALITY	BANGLADESHI

Let us prepare a list of what other citizen services we can avail using digital technology for the needs of our family and near ones and write those in the box below:

1. Vaccination Certificate	6.
2. Application Form of Old Age Allowance	7.
3.	8.
4.	9.
5.	10.

Activities outside the classroom

We have learned about getting citizen services and e-commerce using digital method and by doing many activities in the previous sessions. In addition to our own needs, we prepared a list of citizen services through technology in the last class for our family and near ones. From that list we will follow any service's steps to avail it and prepare a report in the box below for the next class.

Report

Use of digital technology in getting citizen services

Name of Service:

For whom the service was availed:

Which medium used:

Steps followed:

How long it took to avail the service:

Findings:

<table>
<tr><td>

Learning Experience 8

</td><td>

Let's Follow the Rules of Communication

</td></tr>
</table>

Session-1

We learned in Class Six that communication is a process where we share our thoughts, ideas, feelings, experiences and opinions with each other. We also tried to understand a few types of communication such as verbal communication, written communication, non-verbal or symbolic communication. As per our relationship with the person and the situation, communication can be of two types, formal and informal communication.

Once Sazal went to a school at upazila level to take part in a debate competition. His father went to his office immediately after dropping Sazal at that school. Sazal entered the school alone. He knew no one there. Seeing a big poster of the competition, he realised where to go. Reaching there, he found a senior sister sitting on a desk and ensuring everyone's presence. Sazal went to her, told his name and asked what to do next. Before that senior sister say anything, another boy of Sazal's age came and sat on the chair placed in front of the desk and asked, 'What to do?' Sazal thought this boy must have known everyone there. He became sad that he did not know anyone there. But that senior sister surprised him and said to the boy, 'What is your name? Why are you here? Who told you to sit down?' The boy immediately got up from the chair and said, 'I have come to participate in the debate competition.'

The boy in the story did not know that one must introduce oneself first in order to talk to a stranger and then should state the purpose or reason why he/she wants to talk. And if the person asks him/her to sit then they can sit otherwise they should seek permission to sit. We all know that our speech, our use of words and body language are all very important in communication.

Have you wondered why we are talking about these in Digital Technology book?

The reason behind talking about these manners of communication here is to understand how these manners, which we all follow in normal life communication, work in case of digital communication.

Before that let us do a roleplay.

A total six of us will do the roleplay in pairs and the rest of the class will see their performances and give feedback on which performance is not correct according to situation and relationship.

1. 1st pair - one will act as the headteacher and the other as a student (student has gone to the teacher to understand lesson after the class)

2. 2nd pair: One will act as a police officer and the other as a student (student has gone to the police station to file a complaint)

3. 3rd pair: One friend is asking another about the score and highlights of a football match aired on television last night.

In formal communication, people interact with each other through appropriate behaviour maintaining some specific manners. On the other hand, there is no such rules for informal communication. This difference is because of personal relationships and circumstances. For example, we usually communicate informally with our siblings, parents, close relatives and friends. On the other hand, we communicate formally with our teachers, strangers, acquaintances and seniors.

We have seen three roleplays. Let's put a tick mark which one falls in which type of communication below-

|	Formal communication	Informal or formality-free communication
Teacher-Student communication		
Police-Teacher communication		
Communication between two friends		

Preparation for next session:

Was there any mistake while communicating with each other during the roleplay? If yes, let's write it in the box below what sort of mistake was it? An example is given below for our convenience. We will write at least five more mistakes in the box. We can find out the mistakes by discussing among ourselves.

1. They did not exchange greetings with the teacher at the beginning of communication
2.
3.
4.
5.
6.

Session-2: Medium or Chanel of Communication

When we talk face to face with each other or verbally communicate, sound is created and this sound travels through air. Here, air is a 'medium'. Something which the receiver and the sender use to communicate with each other is called a medium. For example, letter, telephone and internet are media.
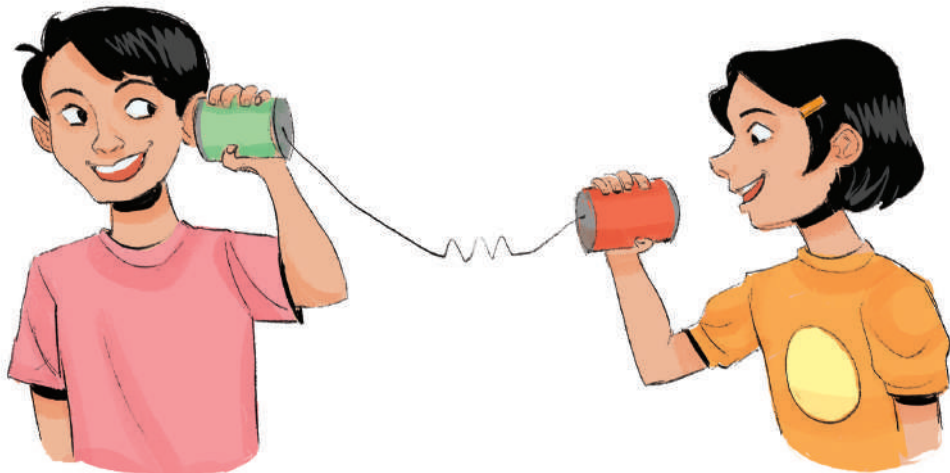
The invention of electricity and internet has created many media to facilitate our communication. We all know about television, radio and telephone. But with the help of internet we regularly use many other media or channels. For example-

1. Email
2. Website
3. Video Call
4. Voice Call / Recorded Voice
5. Chat Message
6. Social Media
7. Blog
8. Vlog
9. Virtual Meeting/ Classroom

Digital Technology

In formal and official communication the medium of communication is very important. For example, when the government issues an instruction, it is usually printed in the form of an advertisement in the newspapers and placed on the website so that all people can see it. Many times, SMS is sent to our phones. Besides, all government communication at personal level is still done by post since everyone in the country still does not have access to internet!

But when we communicate on a very small scale and if we have access to internet, which medium would be the most appropriate or right one to use?

Let's analyse the following events and tick the one which can be the appropriate medium. One example is given.

1. If I want to know the correct rules to apply for a scholarship in upazila education office.	a. Send an email · b. Make a call c. Send a text message
2. I will contact the teacher for confirmation if the next day's examination has been cancelled or not.	a. Make a video call b. Send an SMS c. Create a vlog
3. I will contact my friend to know tomorrow's homework.	a. Make an audio call b. Write in social media c. Send an email
4. I will apply to the upazila education officer to organise an inter-upazila environmental science fair in my own upazila on the occasion of Environment Day.	a. Send a text through chat b. Make an audio call c. Send an email

Preparation for next session:

Through this experience, we will identify a problem around us together that is almost impossible to solve alone. To solve this problem, help from any person, organisation or institution will be required. While returning home from school, we will find such a problem.

The problem can be like this— repairing the road beside the school, constructing a dam near the school, constructing of foot-over bridge for crossing the road near the school, installing a dustbin near the school, setting a tube well for pure drinking water in the school, etc. These examples are given for better understanding. You will look around your school to find the most important problems.

Session - 3: Communication and the Use of Language

My parents were too busy with household chores on a holiday! I helped them and was reading a book after being tired. Suddenly my father told me, 'Tontu, I have put rice on the stove. Read your story book near the kitchen and keep an eye on the rice.' I was reading and rice was cooking. I was still reading and a lot of foam from the rice forced the lid fall. Later I smelled burning rice but I was still reading. My mother rushed to bring down the rice pot and scolded me a lot! I did not realise why mother was so angry? I was asked to keep an eye on the rice and I did that! I was looking at the rice pot every minute while reading!

We often hear this kind of jokes, don't we? We all understand that 'to keep an eye on the rice' means 'to put the rice pot down when it is ready'. But there are many words that may have two different meanings in two countries or two districts. So, while communicating, we have to keep in mind that the person we are communicating with should understand the meaning of my message.

Individuality of a person in communication process: Those who research on communication believe that social norms and cultural factors are very important in communication. We have to understand the culture of the person we are communicating with, their perspective of understanding something, social behaviour and culture. Then we have to communicate, otherwise the communication will not be successful.
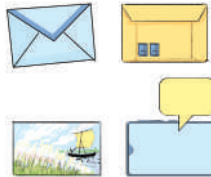
Figure: A
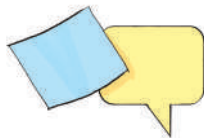
| sender | Message | Channel | Receiver |

1. Communication skills
2. Perspective
3. Knowledge
4. Social norms
5. Culture

1. Communication skills
2. Perspective
3. Knowledge
4. Social norms
5. Culture

Digital Technology

Here it is meant that when a person wants to communicate with another, the communication skill, thinking process, knowledge, social norms and culture have an important influence on communication. For example, if I say to a toddler, who has learned to speak only a few words, that, 'I will come from school during tiffin break and then take you for a walk,' they may not be familiar with the term 'tiffin break' and will not understand what I mean. Again, if I ask a new rickshaw-puller who knows nothing about traffic rules, 'Stop ahead of the Zebra Crossing,' will he understand anything?

So, it is important to understand the person or people with whom we will communicate. Otherwise, a successful communication will not be possible.

Use of language in formal communication: We have identified earlier through the roleplay that we do not talk to our teacher the way we talk to a friend. But if we communicate with someone through writing and in a formal or official manner then the sentence structure will be slightly different.

Informal/with friends or peers	With elders or acquaintances	In written formal communication
What's up?	How are you?	Hope you are well.
I can't do it right now.	It may not be possible for me to do it in such a short time.	If you do not mind, can I have two more days to do the work?
Why didn't you pick up my call yesterday?	I called you yesterday. I had something important to discuss. Can I say that now?	I called you to inform an urgent matter yesterday. You were probably busy. Would it be convenient for you if I call you today?
Let's take a selfie.	May I take a picture with you?	We all want to take a picture with you after the programme tomorrow. I hope you will spare some time to take pictures with us.

We will play a game now-

Have you ever played 'Gaaner Koli'? One group sings a song and with the last letter of that song, the other group starts another song. Today's game is something similar to that. Everyone in the class will divide into two groups. One group will say a sentence in an informal manner, the other group will say that formally. After doing that, they will give the other group an informal sentence. They will again say how the sentence could be in formal manner. Each team will get one minute to transform a sentence.
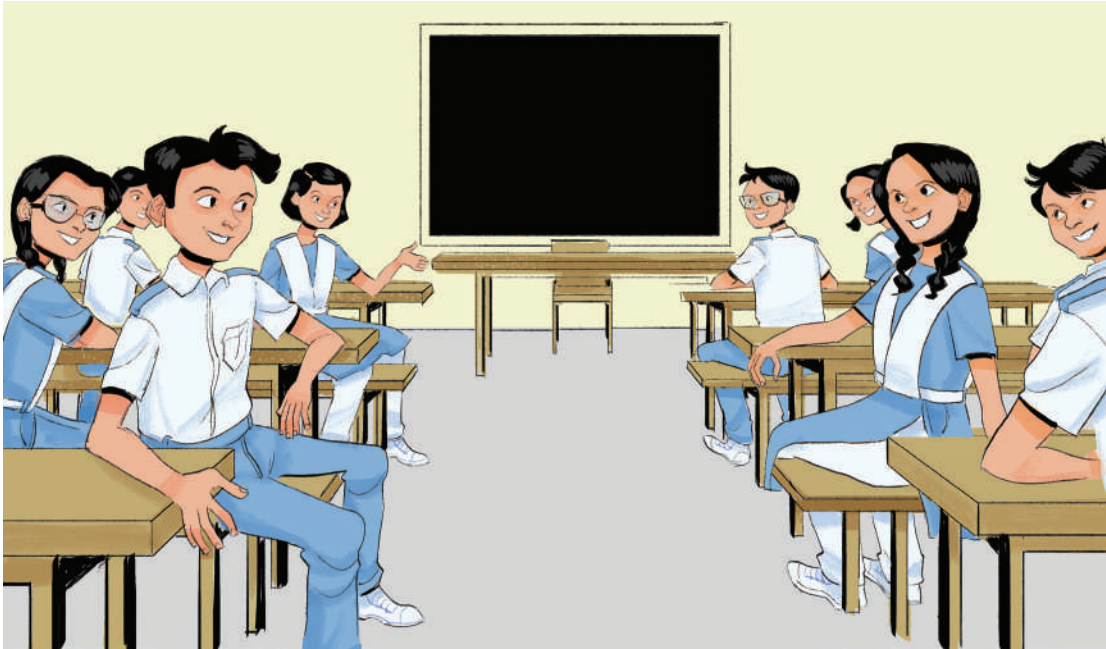
Preparation for next session: I will find out who can be the appropriate person, organisation or institution to solve the problem I have already identified.

Session – 4: Preparation of Formal Communication

The traditional medium of formal communication is application or letter. We usually write an application to our teacher or headteacher to apply for something. But now that internet is reaching everyone's home, we can do the same communication through email. Today we will take a look at the basics we must know to write an email.

Do we remember that we will apply to a person, organisation or institution to solve a problem around us? Yes, that is why we will finish our preparations to write email by today.

The benefits of email are –

1. We can communicate faster.

2. We can send the same email to several people at same time. (We will find some benefits ourselves)

3. We can communicate at a very low cost.

4. There is little risk of someone else, rather than recipient, seeing my email unless I want it to. In cas letters, there would have been more risk.

5. I can attach large files or images with my emails.

6. I can send one email to several people at the same time if I want. But I can also send it in a way that my recipients will not know to whom else I have sent this same email.

We learned in Class Six –

- I will write my recipient's address in 'To' cell.

- I will write the name of the subject of my email in 'Subject' cell. It is more like writing the subject of an application.

- I will write the full text of my email in 'Body' box.

- We will attach any file or picture if we want to send it along with the email by clicking 📎 'Attachment.'

We will learn a few more features of email now.

There are many internet service providers with email services around the world.

For example, Gmail, Yahoo!, Outlook, etc. Again, when we create our own websites, we can add separate email services to it.

All emails have some common or existing features which are almost same in every email service. Let's take a look at some of these features.

1. We can start writing an email by clicking 'Compose'. That means if it is clicked then a box will appear for writing the email. It is also represented by such a pen-like symbol.

2. If someone sends me emails, those emails are stored in 'Inbox.'

3. All the emails I have sent are saved in 'Sent' box.

4. 'Junk/Spam' box or folder has different names in different email services. We need to remain careful about this box. Many individuals or organisations send emails to scam people where they lure them with money, lotteries or other attractive products. Such types of emails are delivered here. So, these emails do not have to be answered or responded to. If there is a link, that link should not be clicked too. I will not click or 'reply' the email until I am sure that the sender of the email and their purpose are identified.

5. I can write an email and save it to 'Draft' box. In the middle of writing an email, if I think it would be better to send the email later, then I can put it in the draft box.
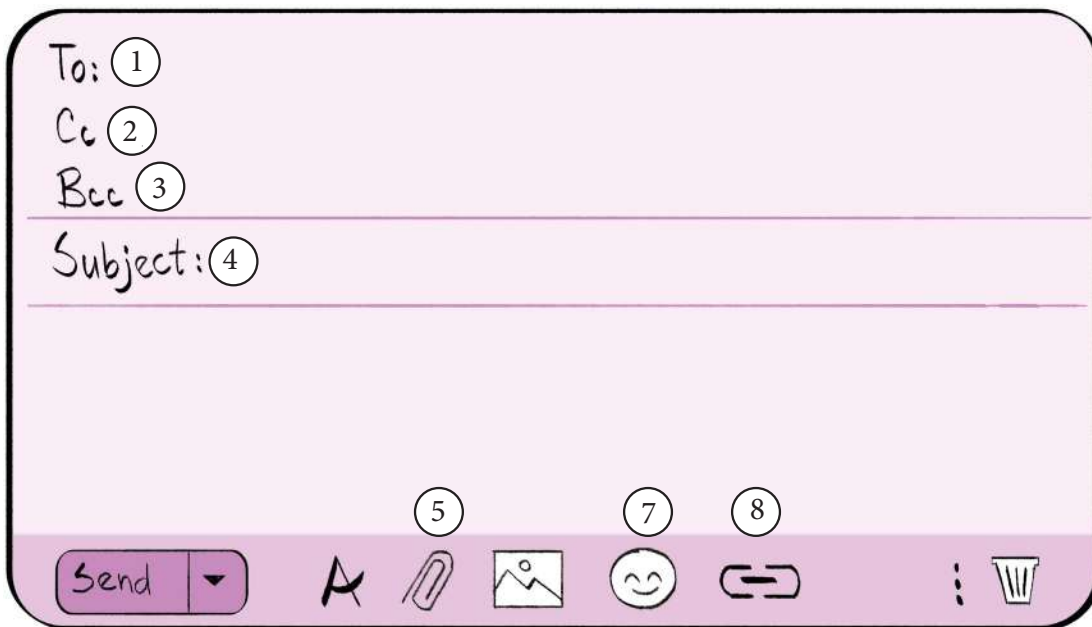
1. We have already learned that the address of the person to whom I am sending the email should be written in 'To'.

2. 'CC' means carbon copy. If I want to notify another person about my email to the recipient, then I will write the address of that person in 'CC'. For example, I will apply to my headteacher for leave and my class teacher should know about it. So, I will keep my class teacher in CC so that they know about my leave application. It is better to use CC in formal communication. Many people can be added in the CC at the same time.

3. Usually, 'BCC' is used when many people are sent the email at the same time. The main purpose of BCC is, one recipient will not know about another recipient's email address. Email address is also personal information. Suppose, I will send an email to 100 students of my school. If I insert all the 100 addresses in 'To' cell then everyone will know everyone's email address. It will not be good. In such circumstances, I can keep all the 100 in BCC.

4. I will write the function of 'Subject'……………………………………………………….

5. I will write the function of 'Attachment' ………………………………………………………

6. If I want to add any website's address in my email then I will click on the portion or the word within which I want to keep that address. After that, I will click on the symbol as shown in picture 6 and a box will appear. I will paste the address of the website there in the box.

7. We usually use emoji to express plenty of words or feelings in short. We can get emoji by clicking here. But it will not be wise to use emoji in official communication.

Discussion about homework:

As homework, we have tried to find out a person, organisation or institution to solve our identified problem. Today we will inform teacher the problem and the name of that person, organisation or institution associated with the solution. We will select, with the help of the teacher, which problem we want to communicate about. We will select the problem by taking everyone's opinion.

Preparation for next session:

We will write a draft of what we want to write in our email stating our request and problem here. The things that will be here:

1. My identity and the reason to write the email.

2. Details of our problem

3. How the recipient can step forward to solve our problem.

4. Thanks

Besides, we will also write how we have applied our learning from Picture A (recipient's skills, knowledge, attitudes, social norms and culture). We will use extra sheet of paper if necessary. We will glue that paper to the blank page.

.... add glue here ....

How I have applied the features learned from picture A:

Session 5: Time to Send the Email

At last, today is the day to send our email. We have already decided whom to send the email and drafted the email too. We will write the email together in the classroom today. Since we will all write one email, we will use anyone's email address. It would be wise if we use our teacher's email address as we all are below 13 and many may not have an email address yet. Even if we use the teacher's email address, we will do the work ourselves.

At first, we will write the body of the email on a page (the next page of the book). We can complete this by taking help from the draft emails we have done as homework. Here, one person will go to the front of the class and will take the responsibility of writing with the help of the teacher. Everyone else will help him/her. That means, everyone else will suggest what to write in one sentence each. (Take note that there should not be noise in the classroom). I will also write the selected sentence, what is written by the student in the front, on my book.

When the writing is done, we will write the entire text using the computer in the classroom. Our teacher has already collected the email address of the recipient whom we will send the email. The teacher will start the computer and sign in to his email address. Then after clicking 'New Email/ Compose' a new box will appear. From then, our work begins. We will write down the email. Everyone in the class will try to write 2/3 sentences. If everyone in the class cannot type Bangla, then with the help of someone who can, we will write at least 2/3 words.

If no one in the class can type Bangla, then the teacher will take a picture of the email written on the next page. We will send that picture as an 'attachment' of our email. In that case, we will write our brief introduction in English in the email body and request to view the attachment.

Digital Technology

Email :

To:

CC:

Subject:

*** If the school does not have internet access then do not be sad. Our teacher will arrange for our email to reach the post office in the form of a letter. Once the email is written on paper, we will learn how to write the address of the recipient and the sender on the envelope. Then we will write it on an envelope. We will find out what is our and our recipient's postcode from our teacher.
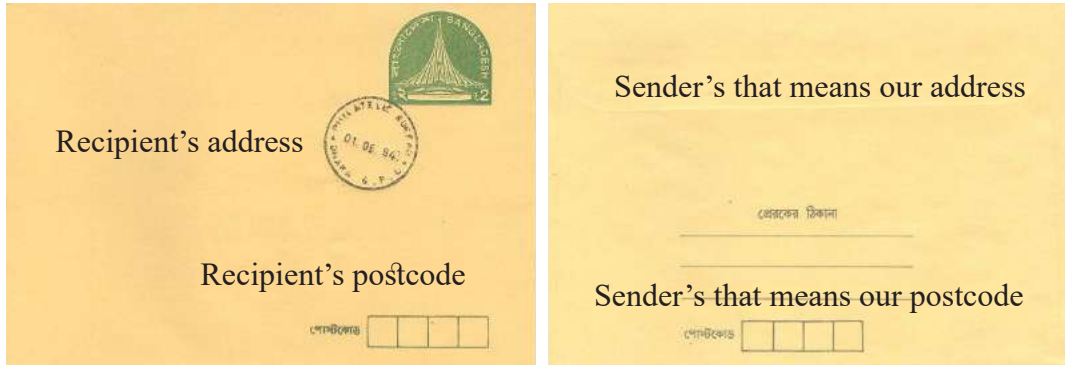
Collecting stars from the guardians:

We have performed our duty as good citizens. We have applied to the authorities concerned for our problem and solution. Our guardians will be very happy if they learn about this activity. We will read our email/letter to our guardian after we get back home. Our guardians will say how our writing was. The guardian can reward us with 1 to 5 coloured stars as they like. Here 1 means liked less and 5 means liked too much.

☆ ☆ ☆ ☆ ☆

Guardian's Signature:

Learning Experience 9

Regional Diversity Card

Session – 1 : The beauty of diversity

To me, diversity means variety. We learned about the eight divisions of Bangladesh and achieved a local diversity card in Class Six. Now we will work towards achieving a regional diversity card. By region we understand a certain area or a certain extent of a place. It can be very large or very small. For example, just as a village has a specific region, similarly the world may also have specific regions. This time we will try to learn about a region of the world, South Asia. If we become successful then we will get a regional diversity card. Besides, our teacher will give emphasis on the assessment of all the projects we have completed since the beginning of this book in order to approve the diversity card.

A map of South Asia is given below. Can we name the countries from the map?

Let's write the names of the countries beside their maps-
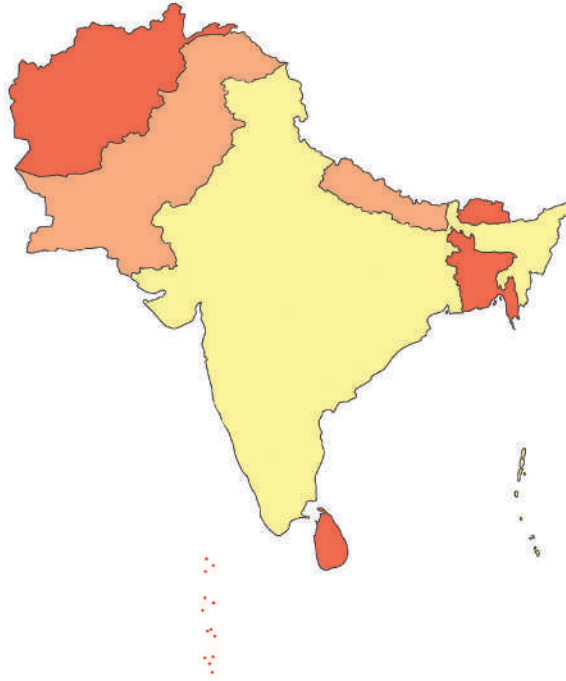
Just as there are similarities between people, there are also some differences. Humans are born with some basic differences like skin colour, body shape, and appearance. There are some similarities and differences in human behaviour since they grow up together or separately. For example, in our country, people of each district speak Bangla differently and the ethnic communities speak different languages. But when we think about our country, we all think about the country with the same love.

Let's write in one sentence about the change I would like to see in Bangladesh after ten years:

If we compare the thoughts of me and my friend about Bangladesh as written above, we will see that many of us have written the same thoughts. Many others have written something different too. Different reasons can create differences in our behaviour and

thinking. Suppose, 100 years ago a person lived in the same region of Bangladesh where I live now. There are differences in the behaviour and thoughts of both me and the person from 100 years ago despite living in the same region. Can you say what these differences are?

	(Draw the face shape of a man 100 years ago)
(Draw my face shape in this box)	
1. I read in electric light.	1. There was no electricity back then·
2. I ride in motorised vehicles.	2. Maybe carts pulled by the cows.
3.	3.
4.	4.
5.	5.

Homework for next day:

In the blank space above I will write what I think are the differences between me and the person who lived 100 years ago. While writing the differences we will consider behaviour and thoughts only. Difference in our appearance need not be written.

Session - 2: Change of Technology

People have made their daily life much easier and better using technology. Have we noticed one thing while doing yesterday's homework that most of the differences between me and the person living 100 years ago are because of the changes in technology?

Another mentionable thing is that, the changes I have seen between us are mostly social and cultural changes. Social change is a change in social structure and cultural change is a change in people's life and also in behaviour.

For example, once upon a time everyone used to wear clothes made of handlooms. It took a lot of time to make clothes with handlooms which is why it was much expensive. When thread and cloth manufacturing technology was invented and used, it became possible to produce a lot of cloth in a short period. People also started buying clothes at very cheap price and apart from cotton clothes they started wearing synthetic (nylon, polyester) clothes of different colours and designs. This change in the behaviour of people in wearing clothes is related to the change in technology.

Once upon a time, in the Indian subcontinent, dresses like *Dhuti* or *Lungi* was the main dress of men. When the British ruled this region, they encouraged or sometimes forced the people to wear their dresses like 'pants'. At some point, these pants became the official dress for men. Now, we do not see anyone going to school or office wearing *Dhuti* or *Lungi*. This change in people wearing different types of clothing has more to do with politics and governance than technology.

Some technological changes bring such changes or novelty in our lifestyle that make us surprised. Many cannot accept this change easily, while many adapt to this change.

Some changes are given below. You will use your imagination to brainstorm and write what changes can come in our life in the future ad how.

And in one of the two adjacent columns below, you will give feedback about that change. If you think the change is positive or good, then you will give √ and if you think it is not a good change then you will give ×. In the other column you will tick √ or cross × after taking the opinion of the most senior members of your family such as maternal or paternal grandparents. You will fill up the column at the right most side with tick √ or cross × marks based on the opinion of 'most senior members of your family' after returning home.

Digital Technology

Table 9.1

Changes	My opinion	Opinion of the most senior members of family
1. Use of plastic bags to buy fish or fruits from the market		
2. Use of internet to understand studies		
3. Taking entertainment from the internet instead of stage plays or dramas		
4. Playing video games on mobile phones instead of playing on the field		
5. Travelling from one country to the other by plane		
6. Talking on video calls using internet		
7. Shopping through mobile apps		
8. Treating a disease by watching videos in the internet		
9.		
10.		
11.		
12.		
13.		
14.		

Preparation for next session:

1. In the rightmost column of the above table, give tick √ or cross × based on the opinion of your senior most family members.

2. Talk to your parents or guardians and try to understand the difference between living in your time and living in their time then write those in the blank space below.

Differences between my living period and my guardian's living period:

Does technology have a role behind these differences?

If yes, then what are those?

Session 3: Difference in Opinion and Game of Logic

We completed an activity yesterday where we expressed our opinions on what technological changes we liked and what technological changes we did not. If we observe a little, we will understand that our opinions and our friends' opinions differ to some extent. The same happened in case of the opinions of us and our senior most family members.

What if we do something? Yesterday in table 9.1, we gave our opinions and talked about few changes - which are good changes and which are not. Now, we will get divided into two groups, all the even roll/ID numbers in the classroom will be in favour of 'negative' and all the odd roll/ID numbers will be in favour of 'positive' changes. (We will remain seated at our own desk, nobody has to change their seats).

Now, the teacher will mention one change at a time. And everyone with even roll number will raise their hand and try to argue that that change is bad. On the other hand, all those with odd roll numbers will raise their hands and try to prove that the change is good.

Example :

Teacher: Use of plastic bags to buy fish or fruits from the market

Even roll number: This is not a good change, it pollutes the environment.

Odd roll number: This is a good change, as it has many benefits in our life.

It is good to know one thing before starting the game of logic: when we speak against another group, it means arguing against what that party is talking about, not making personal attacks on each other.

Many times we may have disagreements, I may dislike someone's choice or opinion. When we talk down others to prove our opinion right, it is called spreading hate. Many people do this in our normal life, and many people also do it using the internet. When you talk to spread hate using the internet, the dreadfulness of it increases many times.

So we will focus on our arguments, we will try to establish or prove our opinion with logic and facts and not by personally attacking or verbally abusing others.

……………………………Game of Logic…………………………….

The logic I have expressed about the changes mentioned by the teacher in the game of logic:

1.

2.

3.

Group formation: We decided to organise a South Asia fair. Now, the teacher will divide us into seven groups. The teacher will also select one South Asian country for each group. Our task will be to find out what changes have taken place in that country as a result of technological change that other less developed countries of the world can learn from. We will start looking for information about the country that my team will be working with from today.

We will put emphasis on any change from the following list:

1. Changes in the education sector

2. Changes in the medical sector

3. Changes in entertainment

4. Changes in environmental and climate balance

5. Changes in employment

Session - 4 : Creating Profiles by Finding Information

We will use today's session only to find information and decide together with the group about who will work on which part for the next day's presentation.

The sources of information can be:

1. School library

2. Newspapers/books/magazines

3. Internet

4. Anyone around me who has good command over current affairs

5. A teacher in my school

Preparation for next day's fair: We will set up a booth for our group inside or outside the classroom (quite like the science fair booth). We will give presentation standing in the booth. All preparations like decorating the booth and making contents for presentation should be completed before the beginning of the fair. Besides, we will also make a diary for ourselves to write down what we learned about different countries at the fair.

Session- 5 : South Asian Fair

We will only make presentation today. Each member of the group will spend 10-15 minutes (depending on the number of members) in front of their own booth, while the rest of the group members will go around to other booths to learn about different countries and will write about those countries on the diary. The presenter of the group will remain standing at the booth and everyone from other groups will come and ask him/her questions about the country and will take notes on their diaries.

After today's presentation, we will return home and write down our own observations about different countries in the diary. The next day we will submit the diary to our "Digital Technology" teacher. The teacher will evaluate our diary and recommend 'Regional Diversity Cards' for us. The Headteacher will sign the 'Diversity Card' for those of us who are eligible for that. The teacher will

return our diaries and we will cut out our 'Diversity Card' to it ourselves.

Things that would be in my diary: (The diary has to be written based on the information of different groups found in the fair)

1. Name of the country (7 countries to be written separately);

2. Changes learned from the presentation;

3. My feelings about the changes;

4. What I think the other countries can learn from these changes-

⸻✂

....(Name)

was able to present appropriate information and own observations about _____ countries. I wish him/her a vibrant and diverse future.

Teacher's Sign   Headteacher's Sign

১৯৭৩ সালে আলজেরিয়ায় অনুষ্ঠিত জোট নিরপেক্ষ আন্দোলনের (ন্যাম) চতুর্থ সম্মেলনে
কিউবার বিপ্লবী নেতা ফিদেল ক্যাস্ট্রোর সাথে বঙ্গবন্ধু শেখ মুজিবুর রহমান

"আমি হিমালয় দেখিনি
কিন্তু শেখ মুজিবকে দেখেছি,
ব্যক্তিত্ব এবং সাহসিকতায়
তিনিই হিমালয়"
                    – ফিদেল ক্যাস্ট্রা

Academic Year 2023

Class Seven

Digital Technology

ডিজিটাল বাংলাদেশ গড়তে হলে নতুন প্রজন্মকে প্রস্তুত হতে হবে

- মাননীয় প্রধানমন্ত্রী শেখ হাসিনা

তথ্য, সেবা ও সামাজিক সমস্যা প্রতিকারের জন্য "৩৩৩" কলসেন্টারে ফোন করুন

নারী ও শিশু নির্যাতনের ঘটনা ঘটলে প্রতিকারের জন্য ন্যাশনাল হেল্পলাইন সেন্টারে ১০৯ নম্বর এ (টোল ফ্রি, ২৪ ঘন্টা সার্ভিস) ফোন করুন

Ministry of Education

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