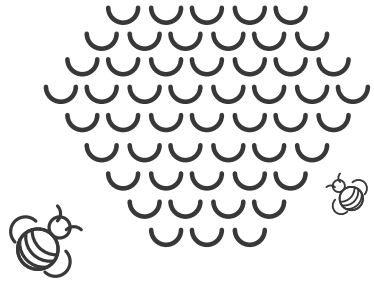


# Invitation to Connected Learning Initiative (i2C)

**A Learner's Handbook**



## This Handbook Belongs To

Name:

Username:

School:

Class:

## The Invitation to CLiX Team

Nagarjuna G., Satej Shende, V. K. Bharadwaj, Ulhas Shah  
Gnowledge Lab,  
Homi Bhabha Centre for Science Education,  
Tata Institute of Fundamental Research, Mumbai 400088, India

Amit Dhakulkar, Bindu Thirumalai, Meera Chandran, Nutan Bharati  
Centre for Education, Innovation and Action Research,  
Tata Institute of Social Sciences, Mumbai 400088, India

Louisa Rosenheck  
Education Arcade,  
Massachusetts Institute of Technology, Cambridge, MA, USA

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**Collaborators:** Centre for Education Research & Practice - Jaipur, Comet Media Foundation - Mumbai, Mizoram University - Aizawl, Eklayya - Madhya Pradesh, Homi Bhabha Centre for Science Education - Mumbai, National Institute of Advanced Studies - Bengaluru, State Council of Educational Research and Training (SCERT) of Telangana - Hyderabad, Tata Class Edge - Mumbai, UNICEF Chhattisgarh - Raipur, Govt. of Rajasthan, Govt. of Mizoram, Govt. of Chhattisgarh and Govt. of Telangana.

[www.clix.tiss.edu](http://www.clix.tiss.edu)

Any questions, suggestions or queries may be sent to us at: [contact@clix.tiss.edu](mailto:contact@clix.tiss.edu)

Course Website: <http://i2c.metastudio.org>

Cover design by Folo: <http://folo.co.in>



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# Let us learn together!

## About i2C Course

Invitation to CLlx (i2c) is the first course of the Connected Learning Initiative (CLlx). The course has a lot of fun filled activities, to be done in your own computer lab.

First we transform our computer lab into a tiny Internet by connecting all the computers to each other. Then we begin to send messages, share pictures and drawings to each other using this local computer network. This means, we are going to use computers to create a nice social network within our school. This is our new connected learning environment. We use this space to learn together.

During this course we learn to effectively use an Internet browser, make colourful drawings, make posters, write stories, exchange our comments with each other, learn how to write blogs, provide feedback to each other and many many other activities (like simulations, experiments, modeling, field research projectes etc). Eventually we use this new connected learning environment to learn science, mathematics and English communication.

Most activities in this course are done with each other. That is we do the activities and we learn how to do them along with others. We share each others knowledge, resources, help others and also seek help from others.

Invitation To Clix course content is already loaded into a server in your lab. A server is a computer that responds to your requests through an Internet browser. Since this course includes many videos, pictures and other software programs, it is not practical to give you all of it as a printed text book. This workbook is not a full text book. It does not have all the details. Use this book only as a planner.

This is an activity based course. Each time we go to the lab, we

do an activity. This workbook has a list of all the activities. For every small activity we gain some score, just as when you play a game you gain score. All this score will be added together and converted into marks for you.

Though most of the work will be done on the computer, we may do some projects out side the lab.

## How to use this Handbook?

Always carry a dedicated note book for i2c activities. Though this workbook has some space to write some notes, it may not have enough space to do or write all the activities.

After going through two or three activities you will notice that the nature and sequence of activities that you will do are more or less similar. They include:

- The main activity described in the section called **Making Time**.
- While doing the activity we will keep checking if what is listed in the **Checkpoint** section are gained, if not go back to the activity and practice till you gain confidence
- Give some attention to some new names or words we have introduced in the **Glossary** of each activity. This will help you to improve your vocabulary.
- We try to keep each entire activity in our mind while we are doing it. For each activity we have to write a Blog. A blog is an online note. This note can include text, pictures or videos. We will learn how to write them, not only in English but also in our mother tongue. The **Blog Time** section gives us some tips on what we could write.
- And finally it is **Feedback Time**. In every session we have to go around (by browsing the course website) to see our friends ac-

tivities, their blogs, their comments and their messages and rate their work. Yes, in this course students rate each other.

Since our school may not have enough computers, two or some times three of us can sit at the same computer. All students who sit at the same computer are called 'buddies', meaning friends. All of us get the same score when we do the activities together. We can tell the server computer through the browser which buddies are sitting at each computer.

Do not forget to take help from each other, and also to help those who need. Of course if we face any problem while doing any activity, our teacher is always there to help.

There are many other points that we will learn about this course while we do the activities.

So, come, Let Us Learn Together!

A huhovin zir ang u aw!

# Module 1 Introduction and Indic Typing

In this module you will be introduced to the course platform and its features. The various activities in this module will also provide you contexts for typing practice.

---

## Activity 1.1 Introduction

Group Members:

Date:

Time:

---





### Making Time

This activity introduces you to the basics of a computer. In this activity you will learn how to navigate the CLix platform to access and work on the I2C activities and become familiar with the keyboard and use of the mouse.

### Homework

What is a computer? Think about this and write down your ideas in your notebook.

### Checkpoints

-  Note the **address** of the course platform present in the location bar of the browser, in your notebook.
-  Note the **username** and **password** that is given to you in your notebook. You will require this information to login again in the next session.
-  Use a mouse to click on a button or link on the screen. Clicking the mouse, causes the computer to do different actions. A mouse has a left-click button and right-click button that can be used to do different actions.
-  The keyboard is like a typewriter, it has keys labelled with English alphabets and numbers. It also has keys with different symbols like \* & % called special characters and some editing keys like Enter and Backspace.

## Glossary

**Browser:** A computer programme that helps opens websites and other files.

**Platform:** A place for all interactions for the i2C course.

**Username:** A name by which the computer or a website will identify you.

**Password:** A secret word that will allow you to login to a computer or a website.

**Help Pages:** These are special pages in which there is help for you to do specific tasks.

## Blog Time

Entries in your computer notebook should include these points:

- What are the different features /pages you see on the platform? What activities can you do with these?
- How do you tell the computer to open the course platform?
- Do you know why we are using a nickname instead of your real name?

## For Notes and Rough Work



## Activity 1.2 Writing a Story

Group Members:






Date:

Time:

### Making Time

In this activity we learn to create a story in collaboration. Our teacher will start the story by typing the first sentence of the story. The first group will write the next sentence which is related to the sentence written by the teacher. The second group will write after the first group, till all the groups have written one sentence each. We will continue this till each group has written at least 5 sentences. At the end of the class we will have a story which is written collaboratively by the entire class!

### Checkpoints

-  We can Reply to a question by clicking on **Reply** button.
-  We can Add text formatting like bold, italics, underline using the text editor.
-  We can Reply to the story in English or Mizo.
-  The reply that we write should **(a)** have only one sentence **(b)** connect to the previous sentence **(c)** be meaningful to our friends
-  Write down our response first in our paper notebook and then type it on the computer.

### Glossary

**Comment:** A text message given by us on the platform using the **Comment** button.

**Computer Notebook:** A place on the course platform where we write down the work that we have done. Computer notebooks are also called as **blogs**. You can see them in the **Note Book** section on the platform.

**Post:** We can **Post** a message posted on the course platform as a response to an activity by using the **Post** button.

**Reply:** We can give a response to a comment, post, page or a file by using the **Reply** button.

**Tags:** We can add tags to the blogs we make and files we upload on the platform. **Tags** help us in finding and organise our work on the platform effectively.

### Blog Time

Entries in your computer notebook should include these points:

- What have you learned so far?
- What did you do in this activity?
- What do you think are the advantages and disadvantages of working collaboratively?

### For Notes and Rough Work

## Activity 1.3 Describing an Image

---

Group Members:

Date:





Time:

---

### Making Time

In this activity we look at a photograph and tell what we feel after looking at it. We will have to suggest a title or a name for the image. Thus we write a story about the photo.

### Checkpoints

-  Look at the photo and discuss with our group members what we want to write in the story.
-  We use the **Reply** button to answer in the activity.
-  We make any changes to the posted story, by using the **Reply** button to post the changes.
-  We look for any replies by others on our posts by seeing the notifications.

### Glossary

**Text Editor:** A place in the platform where we can type text. The text editor allows us to add formatting to the text, create lists and tables, add images.

**Text Format:** The text in the Text Editor can be changed to make it more readable. This can be done by adding sections, changing the text style (bold, italics) in the text editor.

**Notification:** The information that we receive when someone has given a response to our work on the course platform.

**Quiz Items:** The **Quiz Items** are small questions on the course platform at the end of each session. The quiz helps us to know how we are learning.

### Blog Time

Entries in your computer notebook should include these points:

- What does the photograph show?
- What is the subject of the photograph? Where do you think the photo was taken?
- What did you like or dislike in the photo?

### Feedback Time

Use these pointers to give feedback to your friends

- Look at the description of the photo made by your friends. Write down **two** questions that you want to ask about their work?

### For Notes and Rough Work

## Activity 1.4 Questioning and Answering

---

Group Members:

Date:




Time:

---

### Making Time

In this activity we will read a paragraph and ask questions based on this paragraph. We will have to create **at least** five questions. The questions that we create will be given as an exercise to our friends, in turn we will have to answer the questions that they ask.

### Checkpoints

-  We can ask the questions by using the **Comment** button.
-  We can answer the questions asked by using the **Reply** button.
-  For each question that we ask, we respond via the **Reply** button separately for each question.

### Glossary

**Numbered List:** We can create a list whose items are numbered like 1, 2, 3 ...using this **Numbered List** function in the text editor.

**Bulleled List:** We can create a list whose items are points using this **Bulleled List** function in the text editor.

**Filters:** We can change how the files in the gallery are shown by using various options in the **Filters**. Filters help us in searching through the gallery files.

**Copy, Paste:** We can copy a part of text by selecting it and pressing **Control+C**. To paste the copied part of the text we press **Control+V**.

### Blog Time

Entries in your computer notebook should include these points:

- The questions you have created.
- Were your questions, answered by your friends?
- Could you answer the questions that were asked to you?

### Feedback Time

Use these pointers to give feedback to our friends

- Write the comments that you want to give to your friends on their work?

### For Notes and Rough Work

## Module 2 Analysing with Spreadsheets

Data collection, handling and analysis are an essential skills required for doing science. In this module we will learn to use various features of the spreadsheet tool to enter, tabulate and analyse data.

---

### Activity 2.1 Introduction to spreadsheets

---

Group Members:

Date:






Time:

---

#### Making Time

In this activity, we are going to look at a bill for purchase. We enter this bill into a spreadsheet. After entering the data in the spreadsheet we explore various features to get additions of the bill.

#### Checkpoints

-  The name of the files created by Calc ends with **.ods**.
-  Each cell has a unique number, cell number of selected cell is displayed at the top left corner.
-  You can select multiple cells, columns and rows by clicking when keeping **Control** button pressed.
-  Save your file every few minutes. The short-cut for saving file is **Control+S**.
-  We use cell numbers to find average and sums.

#### Glossary

**Spreadsheet:** A spreadsheet is a computer application that helps us to enter, tabulate, view and analyse data in form of tables.

**Data Table:** An arrangement of data in the form of a table. A data table has information about its contents.

**File Upload:** The action of submitting a file from the computer to the course platform. We upload files from the gallery or text editor.

**Gallery:** The course Gallery is a place where we can see all the files uploaded by us and our friends.

### Blog Time

Entries in your computer notebook should include these points:

- The different functions of the spreadsheet that you used in this activity.
- How did you decide upon how you want to make tables from your data?
- The questions you have asked from the tables.
- Links to the spreadsheet (.ods) files you have uploaded to the course gallery.

### For Notes and Rough Work



## Activity 2.2 Analysing a T20 Match 1

Group Members:





Date:

Time:

### Making Time

In this activity we will tabulate and handle raw data from a T20 cricket match. You will learn to use various functions of the spreadsheet to tabulate the raw data in a format that is easy for saving, viewing and for further analysis.

### Checkpoints

-  We can format the text entries in the spreadsheet for bold, colour, background colour.
-  We can adjust the **width** of rows and columns by **double clicking** or moving the border of the row or column header.
-  We can add extra rows or columns to existing ones by **right clicking** on the selected row and choosing the required option.
-  We can use the **freeze** function to fix rows above the selected row.

### Glossary

**Rows:** In a spreadsheet the data is stored in a tabular form with in vertical and horizontal entries. The rows are the horizontal entries in a table. Each row has a unique name, usually a number.

**Columns:** In a spreadsheet the data is stored in a tabular form within vertical and horizontal entries. The columns are the vertical entries in a table. Each column has a unique name, usually letters of the alphabet.

**Cell:** A cell in a spreadsheet is a location where information is stored. The address of a cell is determined by the intersection of rows and columns. A cell can be selected by clicking on it.

**Data Type:** A cell can store different types of data types like text, numbers, date, time etc. One cell can have only one data type.

**Functions:** Functions in a spreadsheet are specially defined instructions which do a specific task on the selected set of cells.

### Blog Time

Entries in your computer notebook should include these points:

- The different functions of the spreadsheet that you used in this activity.
- How did you decide upon how you want to make tables from your data?
- Were the questions that you had asked, answered by your friends?
- The questions you have asked.
- Links to the spreadsheet (.ods) files you have uploaded to course gallery.

### Feedback Time

Use these pointers to give feedback to our friends

- Write down **two** questions that you want to ask your friends on their work in this activity.
- Do not forget to add rating to your friend's work.

### For Notes and Rough Work

## Activity 2.3 Analysing A T20 Match 2

Group Members:

Date:

Time:





### Making Time

In this activity we will analyse the tabulated data from the last activity. For this we will use the graphing tools in the spreadsheet. These tools will draw graphs from the data that we select. The graphs will allow us to ask and answer various questions related to the match.

### Homework

The data to be used should be tabulated and ready from the previous activity.

### Checkpoints

-  The same data can be represented in many ways.
-  We select the row or column containing data to plot it
-  We can also add labels, title and legend to our graph after we have plotted it
-  We export the graphs as images using the **Export** function

### Glossary

**Graph:** A graphical representation of information using different symbols like bars in bar graph. In spreadsheets one can draw graph by selecting the required rows or columns.

**Table:** A table is an arrangement of information in columns and rows.

**Formula:** A particular cell can store results of calculations from other cells. This can be done by defining a formula in that cell. A formula can be entered in a cell by typing = followed by the function.

**Sum and Average:** The sum function provides the addition of the numbers in the selected cells. The average function provides the average of the numbers in the selected cells. The cell contents should be numbers to use these functions.

### Blog Time

Entries in your computer notebook should include these points:

- The different spreadsheet functions that you have used in this activity.
- The graphs (.png) you have uploaded to the course gallery.
- What are the different graphs that you have plotted? Write down the title of the graph and the variables on the X and Y axes.
- Based on the graphs, write questions that you could ask and also answer.
- Links to the spreadsheet (.ods) files you have uploaded to the course gallery.
- A newspaper report based on the match scores.

### Feedback Time

Use these pointers to give feedback to our friends

- What did you like in the newspaper report that your friends have written?
- Any questions that the newspaper report could not answer?
- Do not forget to add a rating to your friend's work.

### For Notes and Rough Work

## Activity 2.4 Let Us Investigate Birthdays

Group Members:




Date:

Time:

### Making Time

In this activity we will collect data from our classroom and analyse for any patterns or trends. Our teacher will ask you to enter your birthdays in a table. Record the data from all of our class and enter it into a spreadsheet. Plot a graph from this data which will show months and number of births in that month. Export the graph to an image. Think about what different questions that you can ask and answer with this data.

### Checkpoints

-  We can use **Auto-Complete** function to add months in the spreadsheet.
-  We can use the **SUM** function to get sum of the entries of birth dates in a month.
-  We use different columns for birth dates of boys and girls.

### Glossary

**Auto Complete:** The function in spreadsheet in which a particular series is completed automatically. This is useful in creating lists in a given order, for example, 1,2,3,4,5.

**Multi Column Graphs:** Graphs in which data from more than one column from the spreadsheet is plotted.

**Select:** We can select contents of a row or column by keeping **Shift** key pressed and moving the cursor with arrow keys.

**Export:** We can export the graph into a picture by using **export** function.

### Blog Time

Entries in your computer notebook should include these points:

- The functions that we used in this activity.
- Any patterns in the graphs that we have plotted.
- The different graphs that we plotted? Write down what is on the X and Y axis for each graph.
- The graphs (.png) we have uploaded to the course gallery.
- The questions that we asked based on the graphs?
- Links to the spreadsheet (.ods) files you have uploaded to course gallery.

### Feedback Time

Use these pointers to give feedback to our friends

- Answer the questions that your friends have asked.
- Do not forget to add rating to your friend's work.

### For Observations and Notes

Months	Birthdays	Months	Birthdays
January		July	
February		August	
March		September	
April		October	
May		November	
June		December	

## Activity 2.5 What Can You Fit In A Matchbox?

Group Members:

Date:

Time:




### Making Time

In this activity we have to do a homework task as told to us by the teacher. Enter the observations from our table into a spreadsheet. Sort the data in increasing order. Plot a graph of objects versus the number of objects.

### Homework

- (1) Take an empty match box. Fill the matchbox with as many objects as possible of one kind. Try to cover all the space in the box.
- (2) Note the number of objects in the matchbox in this book.
- (3) Repeat **Steps 1 and 2** again with a different set of the same objects. For example, if you had chosen rice grains, repeat **Step 1** with a different set of rice grains. Note all the readings in the table provided in the this Handbook.
- (4) Repeat **Steps 1 and 2** for at least 8 different objects. Use the same matchbox for all the observations.

### Checkpoints

-  We can use **sort** function to sort the data entered in a column.
-  We have to select the data to plot the bar graph.
-  We the **Export** function to save the graph as an image.

### Glossary

**Sorting:** The process of arranging a list in a given order. The sorting can be done in an increasing or decreasing order.

**Packing:** The process of filling a given space with the maximum number of objects.

**Data:** Information and facts collected together for reference or analysis.

**Collecting Data:** The process of getting and storing information by doing observations and experiments or using references.

### Blog Time

Entries in your computer notebook should include these points:

- List of the objects you chose to put in the matchbox.
- Why did you choose these objects?
- Which object had the maximum number inside the matchbox?
- Which object had the minimum number inside the matchbox?
- The spreadsheet functions that you used in this activity.
- The graphs (.png) you have uploaded to the course gallery.
- Questions that you asked based on the graphs
- Links to the spreadsheet (.ods) files you have uploaded to the course gallery.

### For Observations and Notes

Object	Number of Objects	Object	Number of Objects



## Module 3 Drawing with Inkscape

In this module we learn to design and draw using a vector graphics application named Inkscape.

### Activity 3.1 Making A Book Label

Group Members:






Date:

Time:

#### Making Time

In this activity we will learn to make notebook labels that we use on our school using Inkscape. We learn to use various tools in Inkscape for creating various kinds of labels. We will also see variety of labels created by our friends on the course platform.

#### Checkpoints

-  The name of the files created by Inkscape end with ".svg".
-  Save the file with our username and activity number.
-  Save the file every few minutes by pressing **Ctrl + S**.
-  To colour an object select the object and click on colour palette.
-  To move the object we need to select the object using **Select** tool.

#### Glossary

**Object:** An object in Inkscape is anything that you create on the canvas. All the objects have properties which can be changed.

**Select Tool:** The select tool in Inkscape selects the object and allows to move, scale and rotate the selected object. To select an object, click on the Select tool, and then click on the object.

**Text Tool:** The text tool is used to add text material to the drawing. To type text, click on the text tool and then click where you want to type the text.

**Basic Shapes:** The basic shapes in Inkscape are Rectangle, Ellipse, Stars and Polygons. These shapes can be created by clicking on the tools in the Toolbar.

**Canvas:** The area where we can draw or create shapes or paint is a canvas.

### Blog Time

Entries in your computer notebook should include these points:

- The tools of Inkscape you used in this activity.
- The colours you used in this activity.
- The Inkscape (.svg) files you have uploaded to the course gallery.
- What else would you have liked to do with your label?

### Feedback Time

Use these pointers to give feedback to our friends

- What did you like or dislike in the labels that your friend have made?
- What colours were used by your friends in their labels?
- What shapes were used by your friends in their labels?
- Do not forget to add a rating to your friend's work.

### For Notes and Rough Work

## Activity 3.2 Creating A Picture Story

Group Members:

Date:

Time:





### Making Time

In this activity we create a story using the picture icons given to us. We use the icons as we like to tell our story. We can colour the icons as we like and use the text tool to write the story. We can use one picture icon as many times as we like.

### Homework

Create a story using the picture icons and write it in your notebook. This story should have text and picture icons as described above. You can use English or Mizo to write the story.

### Checkpoints

-  Download the template file for making the story.
-  We can change the colors of the icon in the file.
-  To move an icon, it must be selected. We can also use **arrow keys** on the keyboard to move the selected objects.
-  Use text tool to add text, we can type in Mizo or English.

### Glossary

**Move Tool:** This tool in Inkscape moves object on the canvas. Select an object using the **Select Tool** and then drag the object to the required place.

**Colour Palette:** The different colours present at the bottom of the Inkscape window.

**Stroke Colour:** The outline colour of an object. To add stroke colour to an object, select the object and Shift+click on the colour in the palette.

**Fill Colour:** The colour of an object, without its outline. To add fill colour to an object, select the object and click on the colour in the palette.

### Blog Time

Entries in your computer notebook should include these points:

- The title of your story and its main characters.
- The Inkscape tools that you used in this activity.
- The Inkscape (.svg) files you have uploaded to the course gallery.
- What do you want do to improve your story?

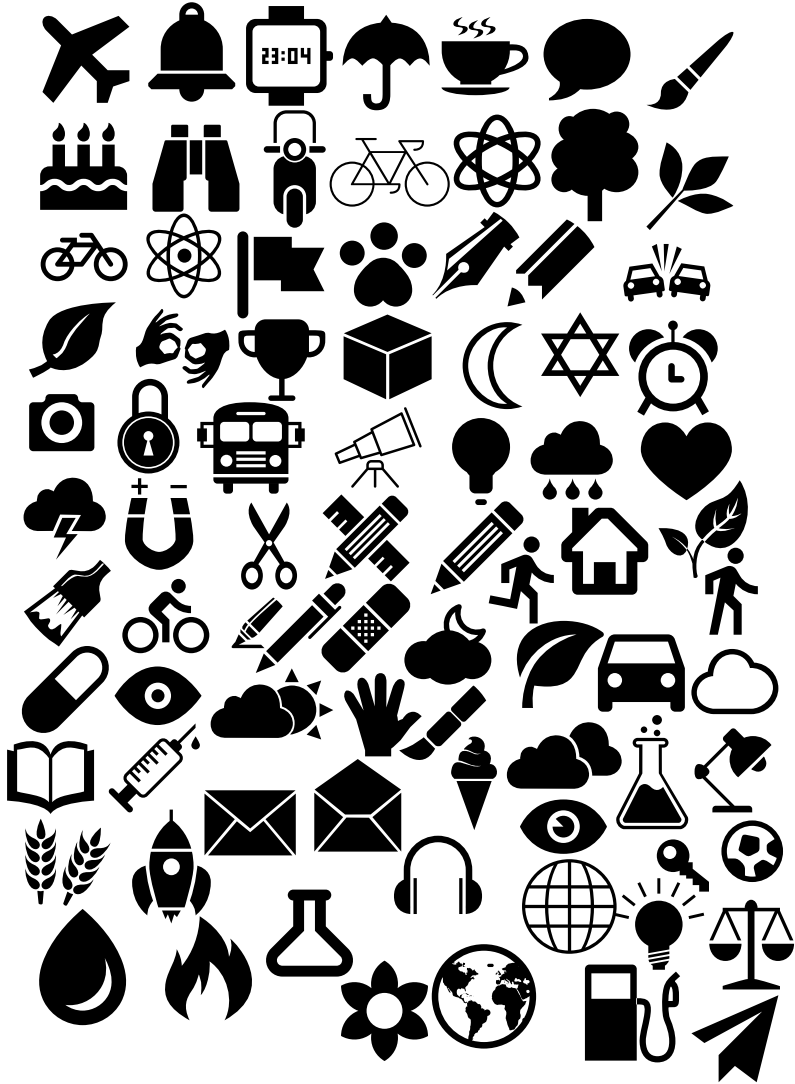
### Feedback Time

Use these pointers to give feedback to our friends

- What did you like or dislike in your friend's story?
- What suggestions do you have for improving your friend's story?
- Do not forget to add a rating to your friend's work.

### For Notes and Rough Work

Icon set for creating story in Activity 3.2.



## Activity 3.3 Making An Object Chart

Group Members:





Date:

Time:

### Making Time

In this activity we will create an object chart which will have images of similar kinds of object. We can create charts of animals, birds, great people of India, monuments in India, etc.

### Checkpoints

-  Download the templates and image files from **Raw Materials**.
-  Use the **import** function to get files inside Inkscape canvas.
-  While **scaling** (resizing) images we make sure that we keep the **Control** key pressed so that the **aspect ratio** of images is preserved.
-  For multiple selections while using **Align** tool use **Shift** key.

### Glossary

**Align:** The Align tool can be used to adjust the positions of various objects relative to each other, or relative to a page.

**Aspect Ratio:** The aspect ratio of an object is the ratio of height to the width of an object. If we change the aspect ratio, we change the look of the object.

**Scale:** The action of changing the size of an object. An object can be scaled by using the “Arrow” handles when the object is selected. Keep the control key pressed if you do not want the aspect ratio to change.

**Rotate:** The action of changing the orientation of an object. An object can be rotated by moving the “Rotate Arrow” handles obtained by clicking on the object twice.

### Blog Time

Entries in your computer notebook should include these points:

- The Inkscape tools that you used in this activity.
- The theme chosen to create the chart.
- The objects in chart.
- The Inkscape (.svg) files you have uploaded to the course gallery.
- Any other chart that you would like to create in this activity.

### Feedback Time

Use these pointers to give feedback to our friends

- What did you like most in the charts that your friends have made?
- What suggestions would you give them to improve their charts?
- Do not forget to add rating to your friend's work.

### For Notes and Rough Work

## Activity 3.4 Making Compound Shapes

Group Members:





Date:

Time:

### Making Time

In this activity we will learn to create compound shapes using simple basic shapes. The compound shapes can be drawn by combining two or more basic shapes using the intersection tool, difference tool and union tool. These tools will combine or cut the overlapping shapes. It helps us to draw shapes like test tube, flask, flower, etc.

### Checkpoints

-  To select multiple objects use the **Shift** key
-  The objects should **overlap** some part of one another for path operations to work
-  **Order of objects** (above and below) will determine the output of the operation
-  If the results are not as desired you can press **Control+Z** on the keyboard to undo.

### Glossary

**Path:** An object in Inkscape, which is made up of connected points. It can have any shape.

**Union:** A function in Inkscape which will **combine** shape of any two objects. The two selected objects must be **paths** to use this tool.

**Difference:** A function in Inkscape which will **remove** the overlapping region between two objects. The object on the top is also removed. The two selected objects must be **paths** to use this tool.

**Intersection:** A function in Inkscape which keeps the **overlapping** region between two objects and removes the rest. The two selected objects must be **paths** to use this tool.



### Blog Time

Entries in your computer notebook should include these points:

- The Inkscape tools that you used in this activity.
- The shapes you created in this activity.
- Any other shapes you want to create.
- The Inkscape (.svg) files you have uploaded to the course gallery.

### Feedback Time

Use these pointers to give feedback to our friends

- What simple shapes and tools do you think your friend used to create their shapes?
- What suggestions would give them to improve their shapes?
- Do not forget to add a rating to your friend's work.

### For Notes and Rough Work

## Module 4 Fun with GeoGebra

In this module we create drawings and animations. For this we learn to use the dynamic mathematics application GeoGebra.

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### Activity 4.1 Making A Dot Drawing

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Group Members:

Date:






Time:

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#### Making Time

In this activity we create a drawing on a rectangular grid using points and segments. The points and segments can be coloured and their styles can be changed. Using these two tools make a wonderful drawing using our imagination.

#### Checkpoints

-  All objects in GeoGebra have **properties** like colour, size that we can change as we like.
-  To Select an object we use the **Select** tool.
-  The name of the files created by GeoGebra end with “.ggb”.
-  Save your work every few minutes: keyboard short-cut for saving **Control+S**.
-  We use the grid provided in the Handbook to create rough sketches of your drawing.

#### Glossary

**Object:** All the things we draw in GeoGebra are called “objects”. Each object has properties which can be changed, as in Inkscape/.

**Point Tool:** The point is a basic object in geometry. In Geogebra a point can be created by using the point tool.

**Grid:** These are horizontal and vertical lines on the Geogebra drawing interface. They help us in placing points or other objects on the drawing as in a graph paper.

**Segment:** A line joining two points. In GeoGebra a segment can be created by using the segment tool.

**Export:** The format for Geogebra files is .ggb. But GeoGebra can save the file in many different formats. This action is called export.

### Blog Time

Entries in your computer notebook should include these points:

- The tools in GeoGebra that you used in this activity.
- The shapes and colours that you used in this activity.
- What more things would you like to do in this activity?
- Links to the GeoGebra (.ggb) files you have uploaded to the course gallery.
- The .png, images you have uploaded to the course gallery.

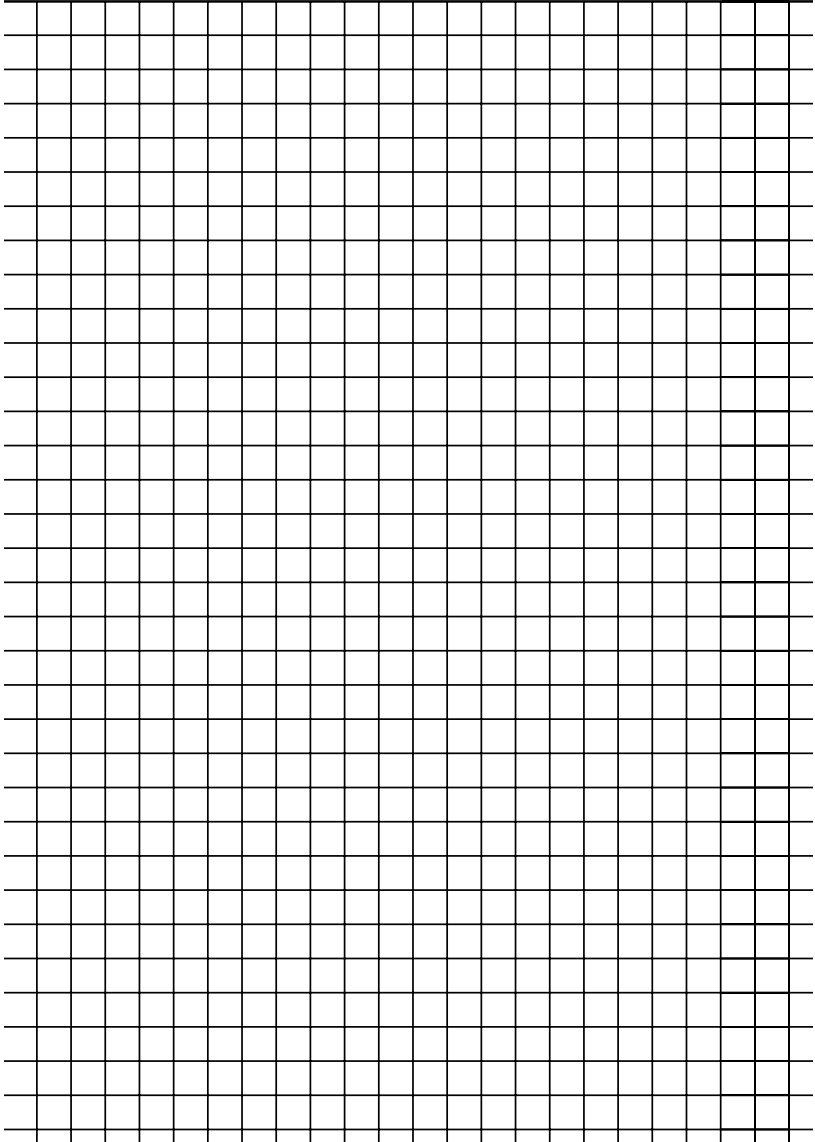
### Feedback Time

Use these pointers to give feedback to our friends

- 1 What the drawing looks like.
- 2 The colours used in the drawing.
- 3 What you feel when you see this picture.
- 4 Do not forget to add a rating to your friend's work.

### For Notes and Rough Work

Grid for creating dot drawings in Activity 4.1.



## Activity 4.2 Connecting The Dots

Group Members:




Date:

Time:

### Making Time

In this activity we plot a list of points with the given coordinates. This list of points is a clue to a picture. The final drawing will emerge once we connect the dots in a sequence (alphabetic) using the polygon tool. In the second part of the activity you have to create puzzle with list of points and post it on the platform for your friends to solve.

### Checkpoints

-  In GeoGebra for each object we can **(a)** Hide the object completely, or **(b)** Decide what information will be visible about the object such as: value, caption, etc
-  When using the Polygon Tool **(a)** The starting point and the end point have to be the same **(b)** We can change the colour and transparency of the polygon by selecting it
-  We can add numbers to the grid in the handbook for creating our own puzzles.

### Glossary

**Coordinates of point:** The numbers that decide the position of a point in the grid.

**Show/Hide:** The show/hide function will decide whether the selected object is visible on the screen or hidden from the screen.

**Polygon Tool:** A tool in Geogebra which draws a polygon from at least three points. The starting point and the end point should be the same for completing the polygon.

**Caption:** The text that you add to provide information or title to an image. You can use the text tool in Goegebra to add a caption to your drawing.

### Blog Time

Entries in your computer notebook should include these points:

- The GeoGebra tools that you used in this activity.
- Have you ever solved a similar puzzle? Have you ever created a similar puzzle?
- The title of your puzzle.
- The number of points it contains.
- Links to the GeoGebra (.ggb) files you have uploaded to the course gallery.
- The .png, images you have uploaded to the course gallery.

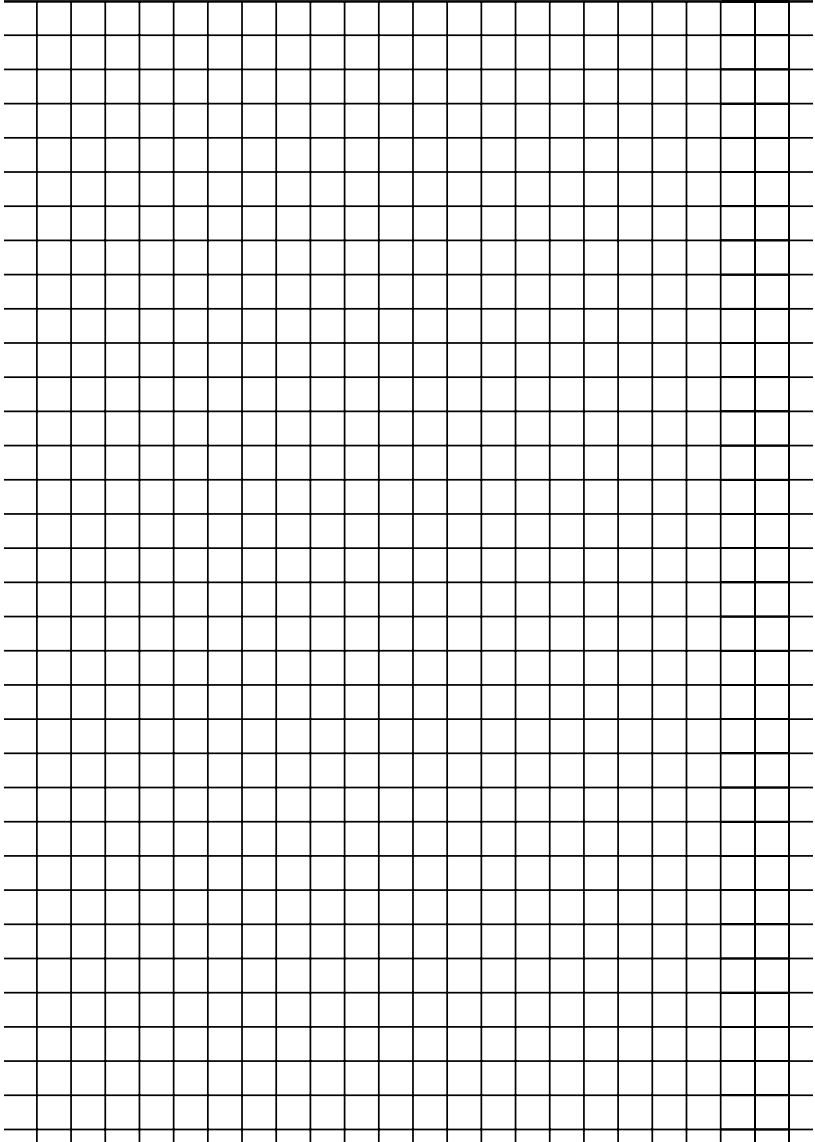
### Feedback Time

Use these pointers to give feedback to our friends

- What you liked or disliked in this puzzle.
- Your solution to the puzzle.
- Do not forget to add a rating to your friend's work.

### For Notes and Rough Work

Grid for creating dot drawings in Activity 4.2.



## Activity 4.3 Let Us Race!

Group Members:




Date:

Time:

### Making Time

In this activity you will set up and run a race between different animals or vehicles. For this you will need to make each object a slider, which will determine the speed of the object.

### Checkpoints

-  We can set various properties of a **Slider** like speed, increment, and range at the time of its creation.
-  To change the properties later, we can go to **Object Properties** of the slider.
-  To move an object, we assign the X or Y coordinates of the object to the value of the slider

### Glossary

**Animation:** Animation is a process of creating motion by changing certain properties. In GeoGebra an object can be animated by using sliders.

**GIF Format:** Graphics Interchange Format (GIF) is a image format which can support animations.

**Slider:** A tool in GeoGebra which stores values of numbers, integers and angles in a given range. The stored value can be changed by moving the slider and can be passed to any other object.

**Auto Play:** A feature in GeoGebra which allows to control animations in a GeoGebra construction with just one click. Auto Play button appears at the bottom left corner of the GeoGebra window.



### Blog Time

Entries in your computer notebook should include these points:

- The GeoGebra tools that you used in this activity.
- The characters you choose in your race.
- What else would you like to do in the race?
- Links to the GeoGebra (.ggb) files you have uploaded to the course gallery.
- The .png, .gif images you have uploaded to the course gallery.

### Feedback Time

Use these pointers to give feedback to our friends

- The characters in the race.
- The winner in the race.
- What you liked or disliked in this race.
- Do not forget to add a rating to your friend's work.

### For Notes and Rough Work

## Activity 4.4 Creating A Dancing Figure

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Group Members:





Date and Time:

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### Making Time

In this activity you will animate a stick figure. You will rotate different parts of the stick figure for performing different actions like nodding, waving hands, bending and walking.

### Checkpoints

-  We can set various properties of the slider like range, speed and increment at the time of its creation.
-  To change the properties later, we can go to **Object Properties** of the slider.
-  To create an object which moves with the given angle slider we can use “Angle with given size tool”
-  To run the slider automatically, right click on the slider and select “Animation On”

### Glossary

**Angle with given size Tool:** This tool can create an angle with the given size. The given angle can be manually entered, or can be given from a slider.

**Speed (Slider):** The number of steps that the slider takes in unit time, the default value is 1.

**Range (Slider):** The maximum and minimum values of a slider. For example, for an angle slider range can be from 0 to 360 degrees.

**Increment (Slider):** The size of steps of a slider. For example, the increment of an angle can be 0.1 or 1. If the range is 0 to 360, an increment of 1 will give us 360 steps, and increment of 0.1 will give as 3600 steps.

### Blog Time

Entries in your computer notebook should include these points:

- The GeoGebra tools that you used in this activity.
- The various actions you create for your dancing figure.
- What else would you like to do in the race?
- Links to the GeoGebra (.ggb) files you have uploaded to the course gallery.
- The .png, .gif images you have uploaded to the course gallery.

### Feedback Time

Use these pointers to give feedback to our friends

- The difference in this and your animation.
- What did we like in this animation? Why?
- What can be done to make this animation better?

### For Notes and Rough Work





