

The Ignite PlayLab

Zeal Education, Ahmedabad

What is an Ignite PlayLab?

The Ignite PlayLab is a unique institution that enables students of class 5-8 to **play with models and find answers to questions in science and mathematics.**

It is a collection of three kinds of materials:

- A collection of science and maths models that are used by students to explore and solve questions in science and mathematics
- A collection of mathematical puzzles designed to show the student the vastness and the joy of doing mathematics
- A collection of hands on activities where the student visitor would make a model/investigate a phenomenon as a conducted group activity.

What does a student visitor do there?

A student visitor typically spends 2 hours on each visit to the Ignite PlayLab. During this time

- He/she spends about 1 hour exploring the 3 models and solving the 3 puzzles that are on display. Models require hands-on experimenting and solving the puzzles may require the student to use manipulatives.
- He/she spends about 1 hour performing a conducted group activity. The activity may involve making a model, learning some novel mathematical tricks, etc.

Some examples:

Models:

- Brachistochrone curve: Which curve is the curve of fastest descent?
- Kaleidoscope: Use the mirrors (up to six of them) to create your own kaleidoscope!
- Create a food chain using the jigsaw puzzle pieces provided!
- What happens when both parents have dimpled chins? Will the child always have them? Investigate this using the Inheritance model.
- How do you use Napier's Bones to multiply quickly?
- How do you build molecules using the given ions and radicals?

Puzzles:

- Can you traverse the maze? Which method is the fastest?
- Can you draw the picture without lifting your pencil?
- Can you make the displayed figure using the seven tangram pieces?
- Can you cross each bridge exactly once?
- Can you colour the map using as few colours as you can?

Activities:

- Learn how to make a set of binary cards and find out what number I am thinking of.
- Make colour circles and explore colour mixing.
- Make a double swing and explore the phenomenon of resonance.

- Make paper helicopters and planes and fly them!
- Make a telescope!

Note: Each activity is targeted at a specific class from 5-8.

What's unique about the Ignite PlayLab?

- The Ignite PlayLab changes all the time! Every month, all the contents are replaced by new ones!
 - Students look forward to repeat visits as they do not know what they will be seeing next!
 - In most museums or science centres, the exhibits are elaborate and typically remain for many years! This reduces the desire to visit the museum/centre again!
- The Ignite PlayLab is small at a given time: With just 3 models, 3 puzzles and 1 activity to go through in 2 hours, the student gets an opportunity to try and work at problems rather than just walk past.
 - The small size of the Ignite PlayLab means that it can easily be housed in two rooms with no need for elaborate furniture! They would be typically located in larger rural schools.
- The Ignite PlayLab delivers an intense rather than an extensive experience. Instead of a student walking past 200 exhibits and perhaps interacting with 3-4 of them, the student gets an opportunity to work at a few exhibits on every visit!
 - Information is best delivered in small periodic doses! A periodical that is just a few pages long is more effective than an encyclopaedia!
- The Ignite PlayLab gives us an opportunity to really change the mind-set of the student! A typical student who starts visiting the Ignite

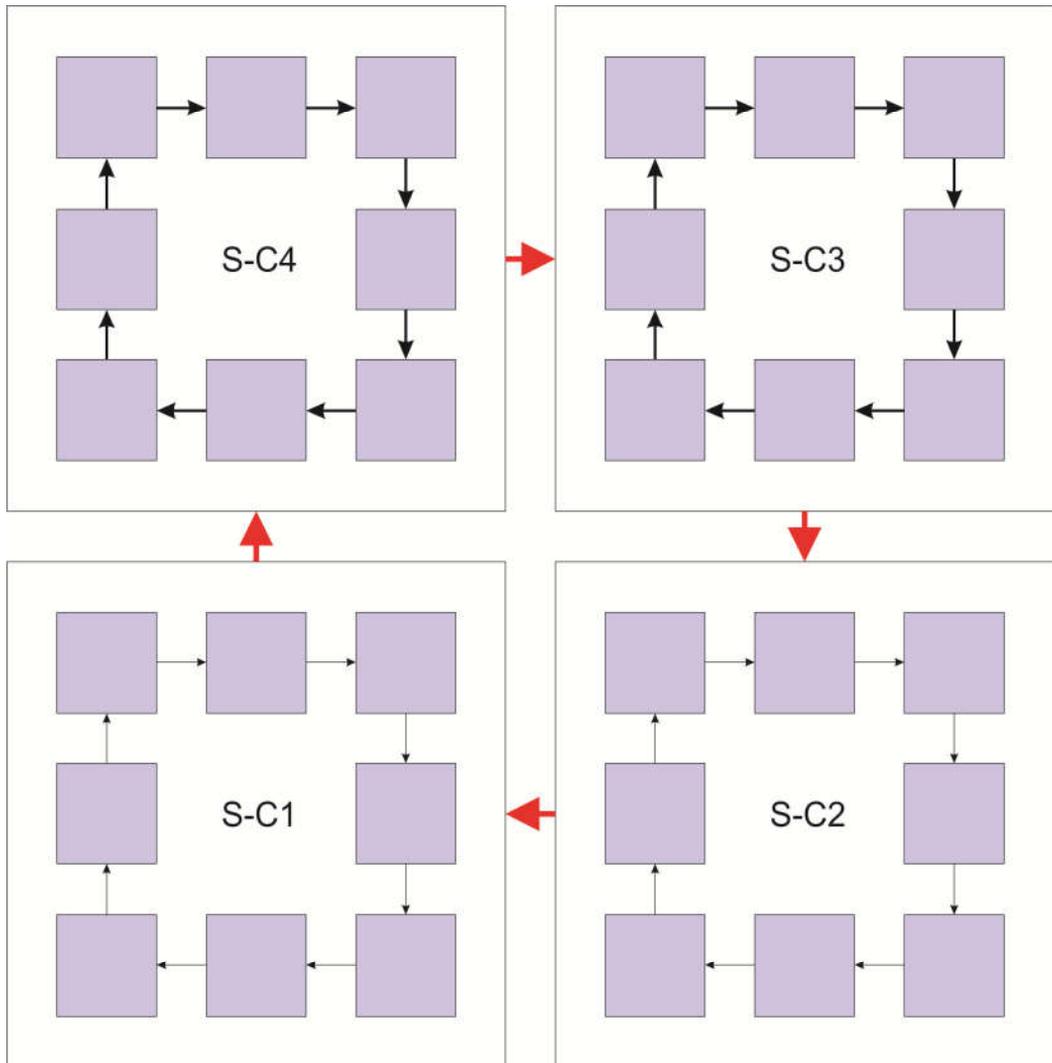
PlayLab in class 5 visits it a total of 32 times before she passes out of class 8. In this period, she would have worked with 96 models, solved 96 puzzles and taken part in 32 different activities

- The models, puzzles and activities have been carefully chosen for their impact on a student. They are not directly related to the curriculum but are designed to awaken the student's curiosity. When the student comes across the same phenomenon in later years, she would remember having worked with it many years before!
- In many of the activities, students will be making models of their own (typically using simple materials like paper and corrugated board). Some of these would be made in groups but many would be made by students individually. Students/schools would get to keep such models for themselves!
- Indian curricula in general pay very little attention to activities such as making models. The visits to the centre would help in augmenting routine instruction and enable skilling in areas such as design drawing, cutting and assembly at a young age

How does it work?

- The Ignite PlayLab cluster consists of a total of 32 centres. Each centre caters to about 1000 students in its immediate vicinity. These students visit their centre once a month in groups of 50 each.
- Typically each centre would be located in a school, with all 32 schools being in the same Taluka or district.
- The 32 centres in each cluster would be divided into 4 subclusters of 8 centres each.

- At the beginning of the program, 24 models are distributed to each of the 4 subclusters. Resource persons from each sub cluster will be given training in using the 24 models provided to them.
- At the end of every month, the centres of a subcluster will exchange the exhibits amongst themselves and will also get 3 new puzzles and 4 activities (one each for grades 5, 6, 7 and 8). A training program will be held every month in the sub-cluster to discuss these puzzles and activities.
- At the end of the year, sub-clusters will exchange all the exhibits with each other.



Cluster consisting of 4 sub-clusters of 8 centres each. Small arrows indicate monthly movement of exhibits between centres in each sub-cluster. Red arrows indicate annual movement of exhibits between sub-clusters. Every month, new puzzles and activities will be sent to all centres.

How much does it cost?

The annual cost of the Ignite PlayLab cluster, with 32 centres catering to a total of 32,000 students is Rs. Sixty Four Lakhs, an expenditure of Rs. 200 per student per year or Rs. 25 per student per visit. This works out to a total cost of Rs. 2,56,00,000 over four years.

Deliverables:

1. At the beginning of the 4 year project:
 - a) Supply of 96 models to 32 centres
 - b) Supply of 6 tables to each centre
2. At the beginning of every year
 - a) Transfer of models from 1 sub-cluster to next one.
 - b) 4 day workshops for resource persons from each sub-cluster and explanation of all the models
 - c) Supply of Tool box (including consumables, scales, paper cutters and scissors) for use in activities.
3. At the beginning of every month:
 - a) Supply of 3 puzzles and 4 activities to all centres (puzzles and activities will be the same for all 32 centres)
 - b) 1 day workshops for resource persons of each sub-cluster to explain puzzles and activities.
 - c) Transfer models from one centre to the next.

Total: 96 models, 96 puzzles and 32 activities.

Workshops for resource persons:

1. 4 days/workshop x 4 sub-cluster model workshop: 16 days per year.

2. 1 day/workshop x 8 workshops/year/sub-cluster x 4 sub-clusters = 32 days per year.

Requirements for Centre:

1. 1 room for housing models and puzzles (tables will be provided to each centre).
2. 1 room for arranging activity with space for 25 students to sit.
3. 3 resource persons to guide students and to take feedback from students and teachers.

Feedback and Records:

1. Resource persons will collect audio and video feedback regarding the models, puzzles and activities and submit the same to Zeal Education
2. Resource persons will also photograph and video students interacting with the centre and send the same to Zeal Education
3. Zeal Education will publish all of these on a website dedicated for this purpose.

Sponsorship:

All materials (models, puzzles and activity material) will be labelled with the name and logo of the sponsor along with the name and logo of Zeal Education. In addition, each centre will be supplied with banners bearing the same information that will be displayed at the centre. Acknowledgement of sponsorship will also be made prominently on the website