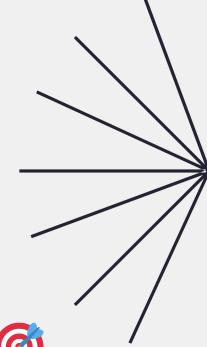


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A guide through the craftsmanship, innovation, and community behind geo-modelling.



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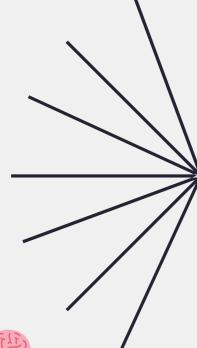
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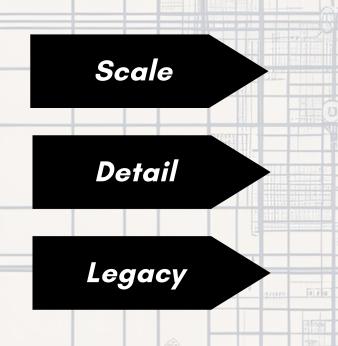
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**RESOURCE LINKS** 

# Here Begins Our Story:





The Geo-Modelling Club at Cadet College Hasanabdal transforms landmarks and heritage sites into handcrafted miniatures. Each model tells a story — Capturing history, reflecting culture, and showcasing the artistry of young minds in exquisite detail.

# INTRODUCTION

"The Geo-Modelling Club at Cadet College Hasanabdal, one of the institution's oldest clubs, brings iconic landscapes and architecture to life in exquisite miniature detail." Highlights:

- - · Officially affiliated with the International Plastic Modelers Society
  - · Known for precision, realism, and historical accuracy in scale modeling
  - Runner-Up Annual Club Exhibition Day 2022 - 23
  - Best Club Annual Club Exhibition Day 2023-24
  - · Fosters student excellence in design, planning, and craftsmanship





# AIM

We aim to inspire students to recreate the world's historical and cultural marvels through precise, artistic scale modeling, fostering creativity, skill, and appreciation for global heritage.

# **PURPOSE**

- Capture the essence of historical, cultural, and architectural marvels through scale modeling.
- Recreate landmarks and landscapes with artistic precision and creativity.
- Inspire appreciation for global heritage and skilled craftsmanship among students.
- Provide students with opportunities to practice Round Square ideals such as Internationalism, Adventure, and Service by exploring global cultures and histories, fostering respect for diversity.
- Collaborating on creative projects that bring the world's heritage to life in miniature form.

OBJECTIVES 04

- Engage students in project-based learning through hands-on modeling that reconstructs historical and architectural landmarks.
- Develop fine motor skills, attention to detail, and perseverance through the careful crafting of scale models using diverse materials.
- Promote interdisciplinary learning by integrating geography, history, and architecture into sustained, inquiry-driven projects.
- Foster research, critical thinking, and cultural understanding by exploring the historical significance of modeled structures
   e.g Arabic and Persian infrastructures have dome shapes while European have pointy edges.

# **OBJECTIVES**

- Encourage teamwork and collaborative problem-solving through long-term group projects rooted in project-based learning.
- Incorporate environmental responsibility by using sustainable, eco-friendly materials and methods throughout the modeling process.
   Most of the time we reuse material from the previous projects.
- Support personal development by nurturing patience, resilience, and respect for cultural diversity.
- Inspire academic curiosity and future interests in fields such as history, architecture, and geosciences.
- Provide authentic learning experiences
   through public exhibitions and presentations of student projects.

# SKILLS & ACTIVITIES





Member (8th Grade)

Participant (9th Grade)





Contributor (10th Grade)

Associate (11th Grade)





Fellow (12th Grade)

# SKILLS & ACTIVITIES

### 8th Grade: Member

#### **Skills:**

- Understand basic scale and proportion concepts
- Identify and safely use modeling tools
- Recognize common modeling materials (e.g., thermophore sheets, foam, glue)

### **Activities:**

- Introductory sessions on scaling techniques
- Practice cutting and shaping basic model elements
- Observe senior members during model construction



Refining details with precision

## 9th Grade: Participant

#### **Skills:**

- Cut modeling sheets accurately to scale
- Paint components neatly and apply glue properly
- Use sandpaper to smooth surfaces
- Develop basic construction and finishing skills

#### **Activities:**

- Assemble small-scale models individually or in pairs
- Build complete model bases using thermophore sheets
- Join junior teams in contributing to club-wide annual projects

## 10th Grade: Contributor

#### **Skills:**

- Develop task delegation and basic leadership abilities
- Assist with complex cutting, gluing, and surface detailing
- Collaborate effectively in team-based projects

#### **Activities:**

- Mentor 8th and 9th graders by assigning and supervising tasks
- Participate in mid-level model construction with increasing independence
- Support senior students (Grade 11–12) on larger collaborative builds

### 11th Grade: Associate

#### Skills:

- Refine modeling precision and structural accuracy
- Coordinate across teams and maintain project workflow
- Execute sensitive or advanced parts of models

#### **Activities:**

- Divided into two groups:
- Group 1: Work with 10th graders on collaborative projects
- Group 2: Assist 12th graders on the primary club model
- Engage in near-independent execution of assigned sections of key builds

Shaping form through careful cutting and detailing



### 12th Grade: Fellow

#### **Skills**

- Master scale modeling with high-level accuracy
- Oversee full project execution—from concept to final presentation
- Lead teams and maintain discipline and efficiency

#### **Activities**

- Supervise the entire club's workflow and guide junior members
- Ensure project timelines, accuracy, and task completion
- Handle major responsibilities like selecting model scales, designing infrastructure, and delivering final touches to exhibition pieces.
- Presents projects and elaborates the minute details to the guests.

Projects displayed on Exhibition Day



# CLUB PROJECTS



### **Underground City Of Cappadocia**

The foundation was made from stacked thermophore sheets shaped with sandpaper. Caves were formed using chart paper and painted black. A sandy texture was created by layering tissue paper with German glue and brown paint. Other elements followed standard scale modeling techniques.

## Khunjerab Pass (Pakistan)

Built on a plywood base, the Khunjerab Pass model features gray modeling sheets over a thermophore base. Mountains are shaped from thermophore and painted, while snow is made using tissue and thermophore flakes. Other parts use modeling sheets and wooden sticks.



# CLUB PROJECTS



### **Turf Houses (Iceland)**

Turf houses were made from thin plywood and modeling sheets, with artificial grass mats for realism. Bridges and hedges used modeling sheets and wooden sticks. A river was formed with blue paint and hot glue. The landscape, shaped from thermophore, was detailed with artificial bushes and animals.

### Rijal Alma (KSA)

Built on a wooden base with layered thermophore sheets, the Rijal Alma model features structures crafted from modeling sheets wrapped in chart paper to mimic original textures. Lace trims accent the rooftops, while colored X-ray sheets replicate the window panes.



# CLUB PROJECTS



### Machu Picchu

The Machu Picchu model was built using marble slates shaped with sandpaper and a handsaw to recreate key structures. Thermophore was used for the mountains, and artificial grass depicted the landscape. Real stones added texture to mimic the ancient stone walls.

### **Bled Island**

The Bled Island model features a thermophore base for the island and mountains. Painted tissue layers form the ocean bed, topped with epoxy resin for water. Buildings were crafted from cardboard with details added using chart paper, beads, and other elements.



07

**Cardboard Sheets** 

**Thermophore Sheets** 

Sandpaper

**Crafting Glue** 

**Artificial Grass & Animals** 

**Chartpaper / Coloured Sheets** 

**Modelling Sheet** 

**Acrylic Paints** 

## **Cardboard Sheets:**

Sturdy paper-based material ideal for constructing structures and platforms.



# **Thermophore Sheets**

Lightweight foam sheets used for shaping landscapes, mountains, and terrain bases.



# Sandpaper:

Abrasive paper used to smooth edges and surfaces for clean, refined finishes.



# **Crafting Glue:**

Adhesive used to bond various model components, available in forms like German glue or Fevicol.



**Artificial Grass & Animals:** 

Decorative elements used to enhance realism in terrain and landscape modeling.



# **Chart Paper / Coloured Sheets:**

Colored or plain paper used for coverings, decorations, or surface detailing.



# **Modelling Sheet**

Smooth, flexible, thick sheets of paper used for building clean, detailed surfaces and shapes.



# **Acrylic paints**

Fast-drying, water-based paints used for adding vibrant color and fine details to model surfaces.

07

**Precision Knife** 

**Paper Cutter** 

**Hand Saw** 

**Steel ruler / Protractor** 



# **Toothpicks / Tissue Papers**



**Circular Cutter** 



## **Precision Knife:**

Sharp blade tool resembling pencil, used for detailed and accurate cutting of sheets and small parts.



# **Paper Cutter:**

Straight-edge tool for clean, fast cuts through paper and thin board materials.



### **Hand Saw:**

Manual cutting tool used for thicker materials like wood or dense foam.



### **Steel ruler & Protractor:**

Measuring tools for accurate dimensions, straight lines, and angles.



# **Toothpicks:**

Small pointed sticks used for applying glue precisely or supporting miniature parts.



### **Paint Brushes:**

Tools for applying paint and adding detail to surfaces and miniature models.



# **Tissue Papers:**

Soft paper used for creating textures like snow, waves, or sandy surfaces.



## Circular cutter:

Use to cut arcs, circular objects with neatness and precision.



# TECHNIQUES EMPLOYED

08

Scaling

Referencing

Mapping

**Basework** 



Crafting

**Assembly** 

**Detailing** 

**Realism & Decoration** 



# **TECHNIQUES**

### **Scaling**

Adjusting real-world dimensions proportionally to fit the model's chosen scale.

### Referencing

Using images, maps, or plans to guide accurate and realistic model creation.

### **Mapping**

Planning the spatial layout of elements based on drawings or real locations.

#### **Base work**

Creating a stable foundation and terrain structure for the model.

### **Crafting**

Building model components using various tools and materials.

#### **Assembly**

Combining all parts onto the base to form a complete structure.

#### **Detailing**

Adding fine features to enhance realism and visual depth.

#### **Realism & Decoration**

Reproducing lifelike textures, colors, and scale effects in the model.

# GEOHACKS: Lessons Learnt the Hard Way

These aren't rules from a manual — they're hardearned **insights from trial**, error, and long nights before exhibition day.

- Scale is a Guide, Not a Rulebook: Slight deviations are okay if they improve proportion and visual appeal just stay balanced.

  Models speak with proportion, not perfection.
- Cut with Patience, Not Pressure: Tilt your blade slightly and cut in layers — never force it. Clean cuts come from calm hands, not heavy ones.
  - Mark with Precision: Align your pencil with the bottom edge of the scale for accurate lines. Every perfect cut begins with a perfect mark
  - Reference Everything: Use maps, images, and plans — guessing leads to gaps.
     Accuracy starts with good research.

# **GEOHACKS**

• **Dry-Fit Before You Glue:** Always test the fit before applying glue.

A test fit saves a rebuild.

 Sand Light, Sand Often: Gently smooth edges after major cuts.
 Smooth surfaces speak of sharp minds.

- Apply Glue, Don't Pour It: Use toothpicks or fine tools for controlled gluing.
   Glue should never outshine the model.
- Plan Your Base: Sketch your layout before placing anything.

A model without a plan is a model bound to fail.

• Work Clean: Keep your workspace tidy and your hands clean.

Clean hands build clean models.

• **Finish Strong:** Add final touches — textures, foliage, figures.

In exhibitions, it's the details that win hearts — and points.

# AFFILIATIONS & AWARDS





**Certificate of Branch Status** 



# INTERNATIONAL PLASTIC MODELLERS SOCIETY PAKISTAN

It is affirmed to be that in recognition of their efforts for the promotion of the hobby the student club of Cadet College, Hasanabdal are formally recognized as

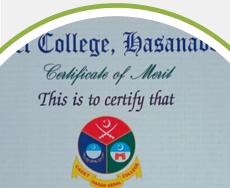
# Cadet College Hasanabdal Branch

off.

Omar Aziz Tipu President IPMS Pakistan In accepting this recognition, they agree to uphold the basic principles of the Society, regardless of race, religion, age, sex or ability and promote the hobby of scale modelling by sharing skills, information and knowledge.

1st of October 2020

# Affiliation with International Plastic Modelers Society



Best & Second Best Club for Year 2023 & 2024

Geo Modelling (Scale Miniatures Club)

has been awarded this certificate

### International Plastic Modellers' Society (IPMS)(UK)

A global network of plastic model kit builders founded in 1963, with national chapters around the world Website: <a href="https://www.ipmsuk.org/">https://www.ipmsuk.org/</a>

#### International Plastic Modellers' Society (IPMS)(USA)

A global network of plastic model kit builders founded in 1963, with national chapters around the world Website: <a href="https://www.ipmsusa.org/">https://www.ipmsusa.org/</a>

### **Satellite Imagery & Orthophoto Sources**

- **Google Earth:** View, measure, and map real-world geography in 3D with tools for distance and area scaling. https://earth.google.com
- MapTools Scale Calculator: Helps calculate scale and real-world distances for mapping and modeling projects. https://www.maptools.com/scale\_calculator

### **Measurement & Coordinate Conversion Tools**

- **GPS Visualizer :** Convert GPS coordinates, calculate distances, and visualize on maps.
  - https://www.gpsvisualizer.com/
- **EPSG.io**: Convert coordinates between projections, get projection info.
  - https://epsg.io/

### **Mapping Tools**

- **Spline:** Web-based real-time 3D design tool with collaboration, materials, animation, and export support https://spline.design/
- **3D-Mapper:** Browser-based tool to create, customize, and export interactive 3D maps for web use https://3d-mapper.com/

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