

STEAM Science Exhibition Guide

Introduction:

The Academy is proud to announce **The STEAM Science Exhibition**, organised by the Directorate of Inspection & Registration of Private Institutions Sindh in collaboration with The Academy. This annual event showcases students' projects across various scientific, technological, engineering, artistic, and mathematical domains.

The exhibition focuses on the following topics:

1. **Climate Change** - Understanding its causes, impacts, and mitigation strategies.
2. **Alternate Energy Resources** - Innovations in sustainable energy solutions.
3. **Artificial Intelligence** - Advancements and their impacts on various sectors.
4. **Cloud Seeding** - Applications of artificial rain.
5. **Math and Art Contest** - Integrating mathematical concepts in art.
6. **Poster Competition** - Philosophical themes inspired by renowned poets.

General Rules:

- Participation from registered private institutions in Sindh.
- Projects must align with one of the STEAM domains.
- Teams may consist of **3 to 5 members**.
- Only **one** project will be accepted from each age group in each category.
- Only **one** representative is allowed to accompany from **each school**.
- Project demonstration is mandatory.
 - Duration of Project demonstration is **5-7 minutes**, followed by a Q & A session.
- Participants must adhere to ethical and safety guidelines.
- Hazardous materials require **pre-approval**.
- Participants must report at least **one hour before** the start time (7:30 AM sharp).

Stall Setup & Decoration:

- Participants bring their own materials for decoration.
- Tables will be provided; additional accessories must be arranged by the teams. (pins, tapes, table cloth etc.)
- Stalls must be kept clean, organized, and visually appealing.
- Table size: 3 ft. x 1 ft. 3 inch.
- Poster size: 2 x 3 ft.

Judging & Evaluation:

- A panel of experts will evaluate both project demonstrations and presentations.
- Scoring will be based on the dimensions given in the rubric for each STEAM domain.
- Judging criteria include innovation, scientific accuracy, presentation quality, and theme relevancy.
- The decision of the judges will be **FINAL** and cannot be challenged.

Awards and Recognition:

- Awards will be given in each category based on the highest scores.
- All participants will receive a certificate of participation.

RUBRICS FOR JUDGING CRITERIA

Each project is evaluated on a 50-point scale across five domains with specific dimensions.

1. Science Projects

Criteria	Sub-Criteria	Description	Points
Scientific Concept	Depth & Accuracy	Demonstrates a deep understanding of scientific principles and accurate explanations.	5
	Hypothesis & Method	Development of hypotheses and experimental setups.	5
Innovation	Originality	Novelty and uniqueness of the scientific approach.	5
	Creativity	Innovative and practical application of ideas.	5
Practical Application	Real-World Relevance	Addresses real-world problems using scientific principles.	10
Model Presentation	Aesthetics & Clarity	Visual appeal, precision, and clarity of the model.	5
	Communication	Clarity, confidence, and ability to answer questions effectively.	5
Theme Relevancy	Alignment	Alignment with the exhibition theme (e.g., climate change, alternative energy, etc.).	5
Team Spirit	Collaboration	Evidence of teamwork and collective effort.	5

2. Technology Projects

Criteria	Sub-Criteria	Description	Points
Technological Concept	Depth & Accuracy	Demonstrates a thorough understanding of the technology and its applications.	5
	Integration	Seamless integration of software and hardware components.	5
Innovation	Originality	Unique and novel technological features.	5
	Creativity	An ingenious use of technology to solve problems.	5
Functionality	Effectiveness	The project functions as intended and achieves its goals.	10
Model Presentation	Aesthetics & Quality	Neatness, durability, and visual organisation.	5
	Communication	Clear and confident explanation with strong Q&A handling.	5
Theme Relevancy	Alignment	Alignment with the exhibition theme (e.g., AI, cloud seeding, etc.).	5
Team Spirit	Collaboration	Evidence of teamwork and cooperative effort.	5

3. Engineering Projects

Criteria	Sub-Criteria	Description	Points
Engineering Design	Structure	Strength, stability, and precision of the design.	5
	Iterative Process	Use of an iterative design process and prototyping.	5
Problem-Solving	Relevance	Solves real-world engineering challenges.	5
	Creativity	Innovative engineering solutions.	5
Functionality	Effectiveness	The project functions as designed and solves the identified problem.	10
Model Presentation	Aesthetics & Quality	Neatness, craftsmanship, and visual organisation.	5
	Communication	Clear, engaging explanation with strong Q&A handling.	5
Theme Relevancy	Alignment	Alignment with the exhibition theme (e.g., alternate energy, etc.).	5
Team Spirit	Collaboration	Evidence of teamwork and collective effort.	5

4. Art

Criteria	Sub-Criteria	Description	Points
Creativity & Originality	Uniqueness	Freshness and originality of the artistic idea.	5
	Execution	Skill, technique, and attention to detail.	5
Presentation Quality	Aesthetics	Neatness, visual appeal, and impact of the artwork.	5
Concept Explanation	Clarity	Ability to articulate the artistic intention or theme.	5
	Communication	Clear, engaging explanation with strong Q&A handling.	5
Artistic Expressions	Expressiveness of visual elements	The ability to convey emotions and ideas through visual components such as colour, tools, and composition.	5
	Use of symbolism	The use of symbols adds deeper meaning and layers to the artwork.	5
Theme Relevancy	Connection	Alignment with exhibition themes and depth of insight.	5
	Size and Dimensions	How appropriate the size and dimensions are for the display space?	5
Mathematical Integration	Relevance	Application of math elements like tessellations or fractals.	5

5. Mathematics

Criteria	Sub-Criteria	Description	Points
Mathematical Concept	Depth & Accuracy	Demonstrates a deep understanding of mathematical principles and their application.	5
	Problem-Solving	Effective use of mathematics to solve problems.	5
Innovation	Originality	Novelty and creativity in mathematical applications.	5
	Creativity	Original use of mathematical methods or integration with other domains.	5
Practical Application	Real-World Relevance	Application of mathematics to solve real-world problems.	10
Model Presentation	Aesthetics & Quality	Visual appeal and organisation of mathematical models or diagrams.	5
	Communication	Clarity, confidence, and ability to explain mathematical concepts effectively.	5
Team Spirit	Collaboration	Evidence of teamwork and cooperation.	5
Theme Relevancy	Alignment	Alignment with the exhibition theme (e.g., math in art or solving scientific issues).	5

We look forward to an exciting exhibition showcasing the students' creativity and innovation!