UNDER THE AEGIS OF
THE BOARD OF DIRECTORS,
INDIAN SCHOOLS IN OMAN

# INDIAN SCHOOL BOUSHER

PROUDLY PRESENTS

# STAI 2025

## (SCIENCE, TECHNOLOGY AND INNOVATION)


[FOR INDIAN, PRIVATE, INTERNATIONAL AND MINISTRY SCHOOLS]

SCIENCE SPARKS, TECHNOLOGY TRANSFORMS, INNOVATION INSPIRES

# HANDBOOK FOR THE EVENT

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## PROUDLY PRESENTS

# STAI 2025

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# INDEX

# PREFACE

# ANCHORING ASPIRATIONS, ACCELERATING IMPACT

The **Science, Technology and Innovation (STAI) 2025** event has been envisioned with a clear purpose — to ignite curiosity, foster experimentation, and empower young minds to become architects of a sustainable and innovative future.

This handbook serves as a comprehensive guide to STAI 2025, an initiative dedicated to nurturing a culture of **scientific inquiry, technological awareness, and innovative thinking** among school students. Designed as a vibrant platform, it enables learners to explore real-world applications of science and technology, present original ideas, collaborate on meaningful projects, and engage in hands-on activities that extend far beyond conventional learning.

A distinctive feature of STAI 2025 is its strong alignment with the **United Nations Sustainable Development Goals (SDGs).** Each event is thoughtfully curated to address one or more of these global goals — such as quality education, affordable and clean energy, sustainable cities, climate action, and responsible consumption. By embedding SDGs into the framework, STAI 2025 emphasizes innovation not only for progress but also with purpose, inspiring students to apply their creativity in solving challenges that impact both people and the planet.

Further enriching the experience, STAI 2025 adopts an **interdisciplinary approach.** Economics, Business Studies, and Marketing are seamlessly integrated into select events, enabling students to understand the economic viability, entrepreneurial potential, and market relevance of their ideas. Simultaneously, **Art integration** ensures that creativity and aesthetics complement scientific and technological pursuits, making projects more holistic and impactful. This blend of disciplines mirrors real-world problem-solving, where knowledge across domains converges to create meaningful solutions.

Every event within STAI 2025 is carefully designed to highlight and strengthen the core skills required in the 21st century. From **critical thinking, problem-solving, and innovation to collaboration, digital literacy, entrepreneurial mindset, and environmental responsibility,** participants are encouraged to move beyond textbook knowledge and apply their learning in practical, impactful ways.

Through their participation, learners will not only deepen their academic understanding but also gain the confidence and vision to design solutions that are practical, sustainable, and forward-looking. STAI 2025 is a step toward building that future — one idea, one innovation, and one inspired student at a time.

We hope this event ignites a lifelong passion for discovery and serves as a springboard for the scientists, technologists, and innovators of tomorrow.

Warm regards,

**Prabakaran P**

Principal

Indian School Bousher

# VISION AND OBJECTIVES OF STAI 2025

## VISION OF STAI 2025

To ignite curiosity, foster critical thinking, and empower young minds to explore and discover through the transformative power of Science, Technology, and Innovation, facilitated by Art Integration.

## OBJECTIVES OF STAI 2025

**Promote Scientific Temper:**

Encourage inquiry-based learning and scientific thinking among students through hands-on experiments, projects, and discussions.

**Enhance Technological Literacy:**

Foster awareness and understanding of emerging technologies and their role in shaping a sustainable and inclusive future.

**Celebrate Innovation:**

Provide a platform for students to showcase original ideas, creative solutions, and prototypes that address real-world problems.

**Encourage Interdisciplinary Learning:**

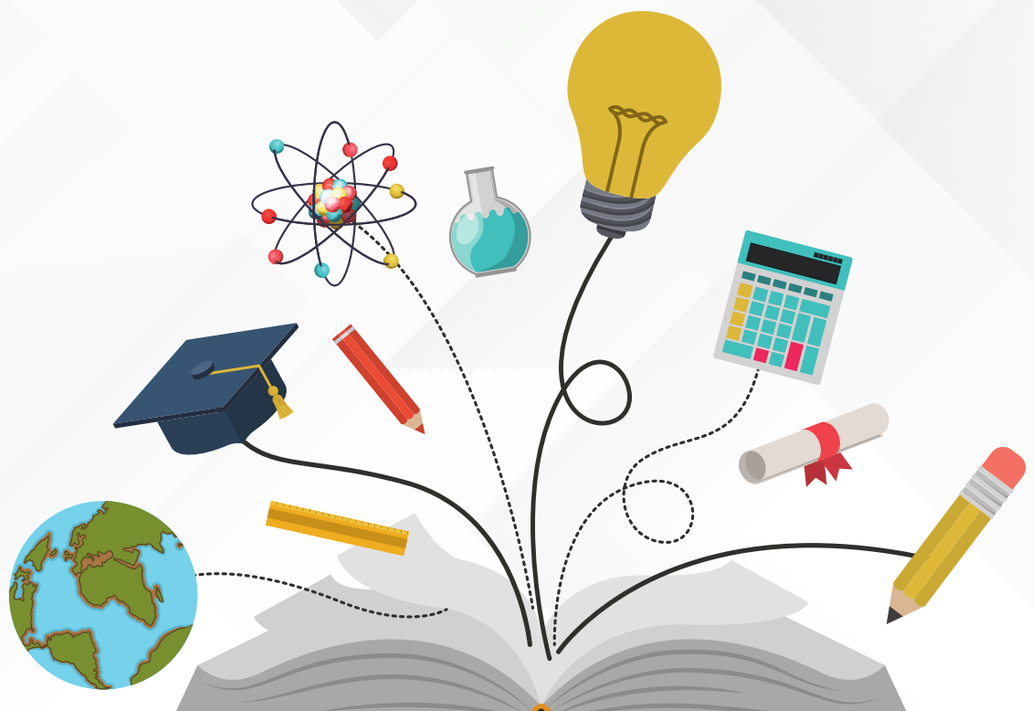
Connect science and technology with art, mathematics, the environment, and social responsibility to promote holistic learning.

**Build Future-Ready Skills:**

Inspire teamwork, problem-solving, design thinking, and digital fluency—skills essential for thriving in the 21st century.

**Create a Collaborative Ecosystem:**

Engage students, educators, parents, and community experts to build a culture of curiosity, innovation, and lifelong learning.



# EVENTS AT A GLANCE

| DATES | NAME OF THE EVENT | APPLICABLE FOR | AT SCHOOL / ON-SITE AT THE HOST SCHOOL |
|---|---|---|---|
| **28th September - 2nd October 2025** | **SciTechNova in Me!** | Foundation Level [Grades 1 AND 2] **STAI SPROUTS** | At the respective Schools |
| **5th October 2025 - 9th October 2025** | **SciTechNova Crossword** | Preparatory Level [GRADES 3, 4 AND 5] **CURIOSITY CHAMPS** | At the respective Schools |
| **On or before 9th October 2025** | **Animate-a-Story Challenge** | Middle Level [GRADES 6, 7 AND 8] **TECHNO SAPIENS** | Making and Submission: From respective schools |
| **Day 1 (17th October 2025)** | **Build-a-Bot Arena** | Middle Level [GRADES 6, 7 AND 8] **TECHNO SAPIENS** | At the Host School |
| **Day 1 (17th October 2025)** | **Future Labs Expo** | Middle and Secondary Level [GRADES 6, 7 AND 8] **TECHNO SAPIENS** [GRADES 9,10, 11 AND 12] **IDEA CRAFTERS** | At the Host School |
| **Day 1 (17th October 2025)** | **InnovateX: The SciTech–Business Fusion** | Secondary Level [GRADES 9,10, 11 AND 12] **IDEA CRAFTERS** | At the Host School |
| **Day 2 (18th October 2025)** | **Animate - a - Story Challenge** | Middle Level [GRADES 6,7 and 8] **IDEA CRAFTERS** | Presentation: At the host school |
| **Day 2 (18th October 2025)** | **Elements Alive: Science on Stage** | Middle and Secondary Level [GRADES 6 - 12] **UNISON UNBOUND** | At the Host School |
| **12th October 2025 (Grades I - V) 13th October 2025 (Grades VI - XII)** | **SciTechNova Quiz** | For All Categories | Online |




# GENERAL GUIDELINES

- Students of any nationality studying in any of the Indian, Private, International and Ministry Schools in Oman can participate in the contest. Registration should be done through the school.
- There will be **NO ENTRY FEE** for the participants.
- The mail ID for all official communication will be **stai2025@isboman.com**
- All participating schools will have a STAI Coordinator, who will be responsible for coordinating with the host school.
- Registration forms will be provided to the schools. Schools are expected to fill the form in the prescribed format given by the host school.
- An Orientation Session will be held for the coordinators to provide a briefing on the events.
- The Last Date for registration in all 4 categories is 15th September, 2025.

# CATEGORIES AND EVENTS FOR PARTICIPATION

**GRADES I AND II**

FOUNDATION: STAI SPROUTS
SCITECHNOVA IN ME!
SCITECHNOVA QUIZ

**GRADES III - V**

PREPARATORY: CURIOSITY CHAMPS
SCITECHNOVA CROSSWORD
SCITECHNOVA QUIZ

**GRADES VI - VIII**

MIDDLE: TECHNO SAPIENS
ANIMATE-A-STORY CHALLENGE
BUILD-A-BOT ARENA
FUTURE LABS EXPO
SCITECHNOVA QUIZ

**GRADES IX - XII**

SECONDARY: IDEA CRAFTERS
FUTURE LABS EXPO
INNOVATEX: THE SCITECH-BUSINESS FUSION
SCITECHNOVA QUIZ

**OPEN**

UNBOUND UNISON: [GRADES VI – XII]
ELEMENTS ALIVE: SCIENCE ON STAGE

# SCITECHNOVA IN ME!

## FOR: STUDENTS OF FOUNDATION LEVEL GRADES 1 AND 2 – STAI SPROUTS

## EVENT CATEGORY: SCHOOL-LEVEL EVENT UNDER STAI 2025

**OBJECTIVES:**

**The objective of the Scientist in Me! event is to:**

- **Spark curiosity in young learners about science, technology and innovation and how it connects to everyday life.**
- **Encourage students to explore and present a scientific concept, technology, or innovation in a fun and creative way.**
- **Build early confidence in public speaking, presentation, and scientific expression.**
- **Lay the foundation for scientific thinking and inquiry through imagination and play-based learning.**

**INSTRUCTIONS:**

**THEME:**

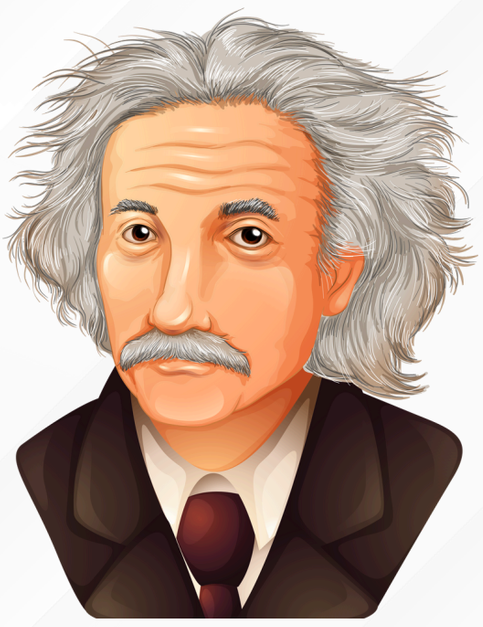
**Students can choose to do one of the following:**

- **Dress up as a Scientist/Inventor: Dress up as a famous scientist or inventor and explain their contribution/discovery/invention.**
- **Or Show-and-Tell with Simple Tech: Use an everyday gadget and explain how it works in a few sentences.**
- **Or Mini Innovation by STAI Sprouts: Students may present a small creative idea or simple model that demonstrates innovation and practical thinking.**

**Time Limit: Each participant will be given 2-3 minutes to present.**

**Language: English**

**Presentation Aids: Props, charts, simple models, or costumes may be used.**



## EVALUATION CRITERIA

**Creativity & Originality**

**Relevance to Theme**

**Costume/Props/Visual Appeal**

**Content and Clarity of Speech**

- **Participating schools are encouraged to motivate all learners to actively engage in the event and evaluate participants in accordance with the prescribed criteria.**
- **Based on the overall performance, each school shall select its top entries and share them with the host school.**
- **Schools may also submit videos of the shortlisted entries along with a brief report describing how the event was organized and conducted.**
- **To facilitate this process, a Google Form will be provided for uploading the videos and the reports.**

**AFTER SHORTLISTING, THE FOLLOWING NUMBER OF TOP ENTRIES MAY BE FORWARDED TO THE HOST SCHOOL**

| Strength of Students in the Foundation Level 2 (Grades 1 and 2) | Number of Top Participants who will be Recognized with Awards |
|---|---|
| 1000 and above | 4 |
| 750-999 | 3 |
| 500 - 749 | 2 |
| Upto 499 | 1 |

**The top selected participants from each school will be awarded Certificates of Merit and medals.**

CURIOSITY CHAMPS

# SCITECHNOVA CROSSWORD!

**FOR: STUDENTS OF PREPARATORY LEVEL GRADES 3, 4, AND 5 – CURIOSITY CHAMPS**

**EVENT CATEGORY: SCHOOL-LEVEL EVENT UNDER STAI 2025**

## OBJECTIVES:

The SciTechNova Crossword is designed to provide young learners with an exciting platform that blends language skills with scientific curiosity. The objective of the event is to:

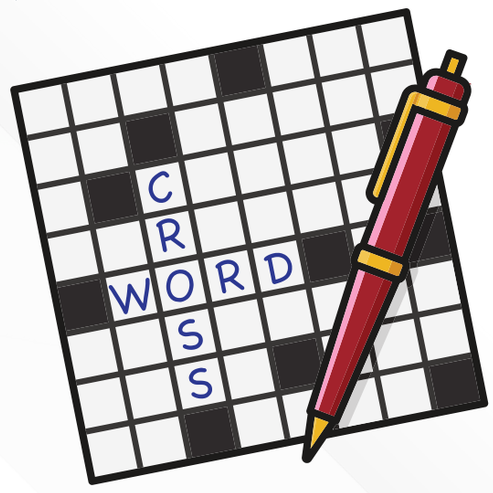
🔡 Strengthen vocabulary and spelling related to Science, Technology, and Innovation

🔍 Enhance subject knowledge through clue-based problem-solving

🧠 Promote critical thinking and comprehension of scientific concepts

🚀 Encourage curiosity and exploration beyond textbooks

🎮 Offer a fun, competitive experience to foster meaningful learning




## EVENT FORMAT: THREE PROGRESSIVE ROUNDS

The competition is divided into three rounds, each increasing in complexity. All crossword puzzles will be age-appropriate, engaging, and aligned with topics from the domains of Science, Technology, and Innovation.

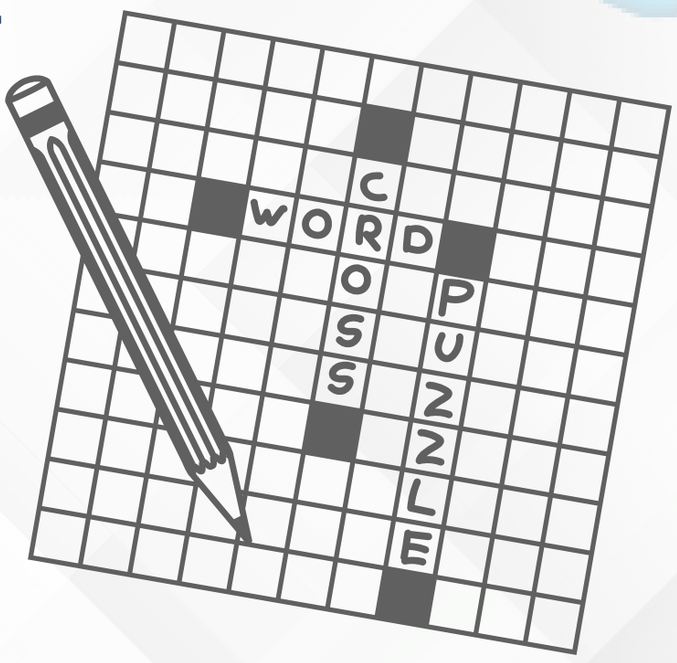
## ROUND 1: EASY LEVEL – BASIC VOCABULARY BUILDER

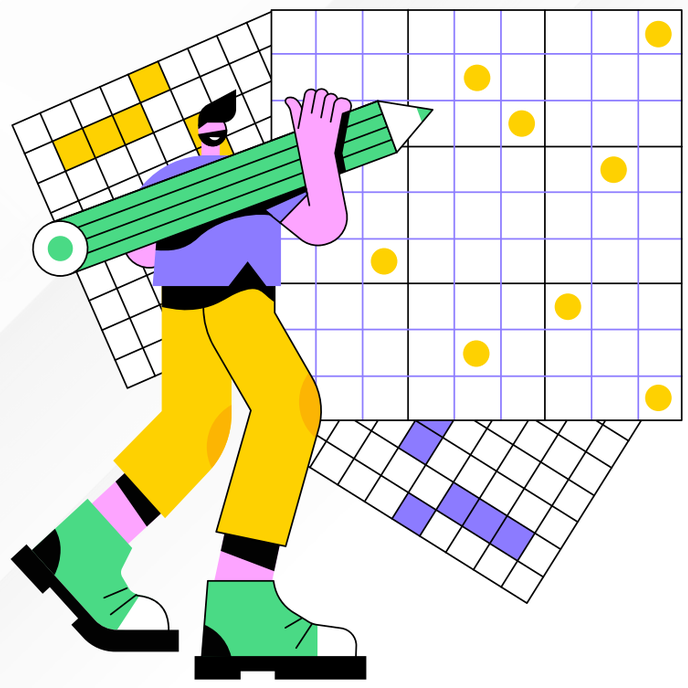
Focus: Words related to basic Science, Technology, Innovation, and Nature that children are familiar with in their daily lives and classroom learning.

Type of Clues: Simple, direct definitions or visual cues

Example Clue: The star at the center of our solar system → Sun

This round helps participants build confidence and recall everyday science terms they encounter in class and nature.



## ROUND 2: INTERMEDIATE LEVEL – CONCEPT & PROCESS CONNECT

Focus: Words and ideas related to early scientific concepts, simple technological tools, and basic processes of innovation that children can easily relate to.

Type of Clues: Short descriptive or situational clues that explain a concept

Example Clue: Process by which plants make their own food using sunlight → Photosynthesis

This round encourages students to apply their understanding of how things work in the natural and technological world.

(CONT..)

## ROUND 3: ADVANCED LEVEL – APPLICATION & INNOVATION EXPLORER

**Focus: Words and ideas that involve the application of scientific concepts, simple innovations, and problem-solving using technology.**

**Type of Clues: Contextual and slightly detailed, sometimes with a historical or innovation-related background**

**Example Clue: Scientist known for explaining the law of gravity → Newton**

**This round aims to broaden students' exposure to the wider world of science and innovation, and introduce them to key thinkers and phenomena.**

## INCREASED COMPLEXITY OVER THE ROUNDS:

| Aspect | Round 1 - Easy | Round 2 - Intermediate | Round 3 - Advanced |
|---|---|---|---|
| Word Length | Short (3–5 letters) | Medium (6–10 letters) | Longer & multi-syllable words |
| Clue Style | Simple, direct definitions | Descriptive with hints | Contextual, some with background |
| Crossword Size | Smaller grid (8x8) | Medium grid (10x10) | Larger grid (15x15) |
| Time Limit | 10 minutes | 15 minutes | 20 minutes |

## GENERAL SHORTLISTING GUIDELINES

| Round | Number of Participants | Shortlisting Criteria | Students Shortlisted |
|---|---|---|---|
| **Round 1** - Easy Level | All students | - Accuracy (correct answers)<br>- Completion within time | Top 50% scorers |
| **Round 2** – Intermediate Level | Top 50% scorers shortlisted students from Round 1 | - Accuracy (correct answers)<br>- Completion within time<br>- Tie-breaker (if needed) | Top 8 students |
| **Round 3** – Advanced Level | Top 8 students shortlisted from Round 2 | - Overall score<br>- Bonus for complex word attempts<br>- Tie-breaker (if needed) | <table><tr><th>Strength of Students in the Preparatory Segment (Grades 3, 4 and 5)</th><th>Number of Position Holders to be awarded</th></tr><tr><td>1000 and above</td><td>Top 4 position holders (1st, 2nd, 3rd, and 4th position)</td></tr><tr><td>750 - 999 students</td><td>Top 3 position holders (1st, 2nd, and 3rd position)</td></tr><tr><td>500 - 749 students</td><td>Top 2 position holders (1st and 2nd position)</td></tr><tr><td>Up to 499 students</td><td>1 position holder (1st position only)</td></tr></table>Certificates of Merit and Medals will be awarded to the position holders from each school. |

TECHNO SAPIENS

# ANIMATE-A-STORY CHALLENGE

## WEAVE WONDERS WITH CODE – ANIMATE FOR A BETTER WORLD!

## FOR: STUDENTS OF MIDDLE LEVEL GRADES 6, 7, AND 8 – TECHNO SAPIENS

## EVENT CATEGORY: ON-SITE AT THE HOST SCHOOL

**OBJECTIVES**

The Animate-a-Story Challenge aims to:

🎨 Encourage creativity through coding, animation, and innovative use of technology

🧠 Develop computational thinking, problem-solving, and digital storytelling skills

🌱 Foster awareness of real-world scientific and technological issues, such as sustainability, eco-consciousness, and innovation for a better world

🤝 Connect students' learning with the United Nations Sustainable Development Goals (SDGs), especially:

- SDG 13: Climate Action – using science and technology to address environmental challenges
- SDG 12: Responsible Consumption & Production – promoting innovative solutions for sustainable living
- SDG 4: Quality Education – leveraging technology and innovation to enhance learning experiences

🧭 **THEME: 🌍 "A GREENER TOMORROW – CODE FOR SUSTAINABILITY"**

Students will create a short animated story that highlights:

- A problem related to pollution, waste, climate change, or deforestation
- A solution driven by innovation, teamwork, or environmental awareness
- A message of hope, eco-action, or community involvement

🛠️ **TOOLS STUDENTS CAN USE (CHOOSE ANY ONE):**

- Scratch Jr.
- Tynker
- Pencil2D / Krita / Synfig
- Blender

## 📝 INSTRUCTIONS / GUIDELINES

(CONT..)

👩‍💻 Students may participate in teams of up to 4. The number of teams will be based on the strength of the school in the Middle Section.

🧩 Using any of the suggested animation tools, create an animated story that is 2–3 minutes long, showcasing your creativity, storytelling skills, and animation techniques.

🌿 The story must reflect the theme of sustainability, eco-friendliness, or innovation for a better world.

🔁 Animations should include original coding or creative animation work, not just drag-and-drop prebuilt scenes.

🗂️ Submission must include:

- Final animation file or video (MP4 preferred, maximum file size 100 MB)
- Title and summary of the story (100–150 words)
- Tool(s) used and a brief description of how coding/animation was done
- Names and class(es) of the participant(s)
- Optional: Screenshots, storyboards, or sketches used in planning

⏰ Submission Deadline: Upload all entries via the Google Form link on or before the deadline, which will be shared after the school's registration.

🧩 Participants will also present their animated films to the judges on one of the event days.

**EVALUATION CRITERIA**

Creativity and Storyline

Relevance to Theme (Sustainability/SDGs)

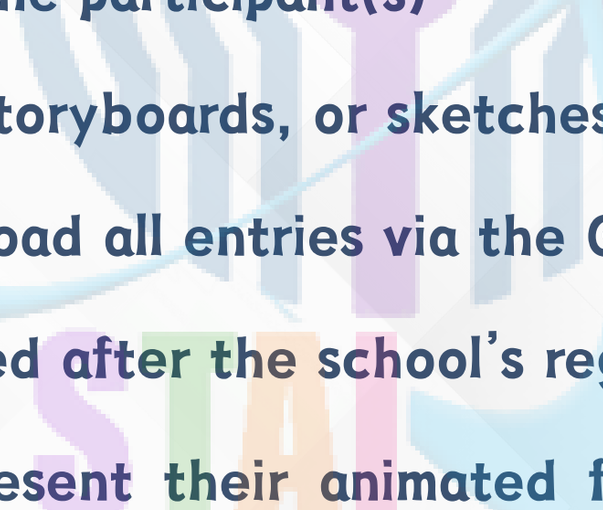
Technical Use of Coding/Tool

Animation Quality and Flow

Presentation and Clarity of Message

**Maximum Number of Teams Permitted for Registration (Middle Section)**

- Schools with a Middle School strength of 500 and above may register a maximum of 2 teams.
- Schools with a Middle School strength of less than 500 students may register 1 team.




The top three position holders will be honored with the Animation Artisan Award.

All other participating teams will receive Certificates of Merit/Participation.

TECHNO SAPIENS

# BUILD-A-BOT ARENA

**WHERE CREATIVITY MEETS CODING – BUILD, PROGRAM, PERFORM!**

## FOR: STUDENTS OF MIDDLE LEVEL – GRADES 6 – 8 – TECHNO SAPIENS

## EVENT CATEGORY: ON-SITE AT THE HOST SCHOOL

### OBJECTIVES

- Encourage hands-on robotics learning and real-time problem-solving.
- Develop critical thinking, engineering design, and coding logic.
- Promote interdisciplinary learning by combining science, technology, art, and environmental awareness.
- Align with SDG 9 (Innovation & Infrastructure) and SDG 12 (Sustainable Consumption & Production).

### 🌍 THEME: "BOTS FOR A BETTER WORLD"

Each team must build a robot that solves a problem related to:

- Sustainability
- Eco-cleaning
- Rescue mission
- Resource delivery
- Smart farming

Bots should be purpose-driven, creative, and align with the theme.

### 👥 TEAM COMPOSITION

1 team = 4 students

Roles recommended: Coder, Builder, Designer, Presenter

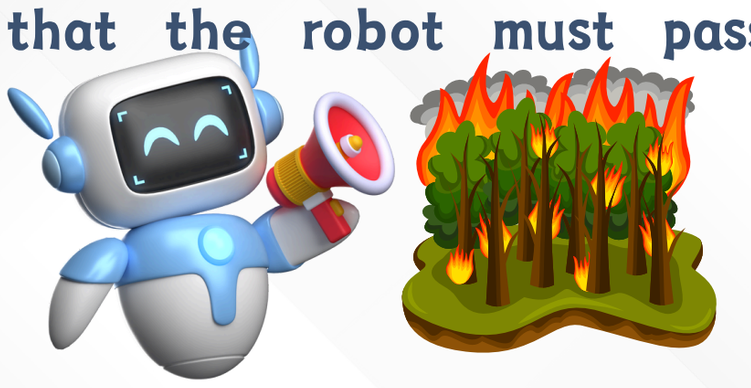
- Schools with a Middle School strength of 500 and above may register a maximum of 2 teams.
- Schools with a Middle School strength of less than 500 students may register 1 team.

### 🌍 TASK DESCRIPTIONS

- Each team will select and participate in only one of the following three tasks.

### TASK 1: FOREST FIRE FIGHTER

- Objective: The robot must act as a forest fire-fighting unit by following a black line path and alerting people when a fire is detected.
- Scenario: Along the path, "fire" is represented by a yellow light and real smoke from an incense stick.
- Robot's Action:
- The robot must be equipped with sensors to detect the yellow light (fire) and the real smoke. When it detects either, it must stop completely.
- Upon stopping, it should sound an alert using a buzzer or a similar sound output.
- There will be 2-3 designated checkpoints that the robot must pass through successfully before reaching the final fire zone.



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## TASK 2: SEED BALL PLANTER

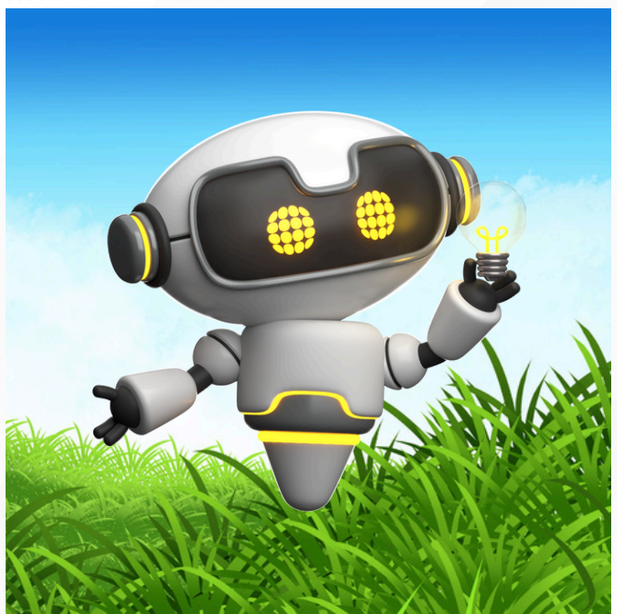
- Objective: The robot must act as a farming assistant to plant new seeds to reforest an area.
- Scenario: The robot starts at a "loading zone" with a manually-loaded "seed ball" (a small plastic ball or cube) and must follow a line to a "farm field."
- Robot's Action:
- The robot follows the line from the loading zone to the farm field.
- Upon reaching the field, it must place the seed ball in the correct designated area.
- After placing the seed ball, the robot must autonomously return to the loading zone.

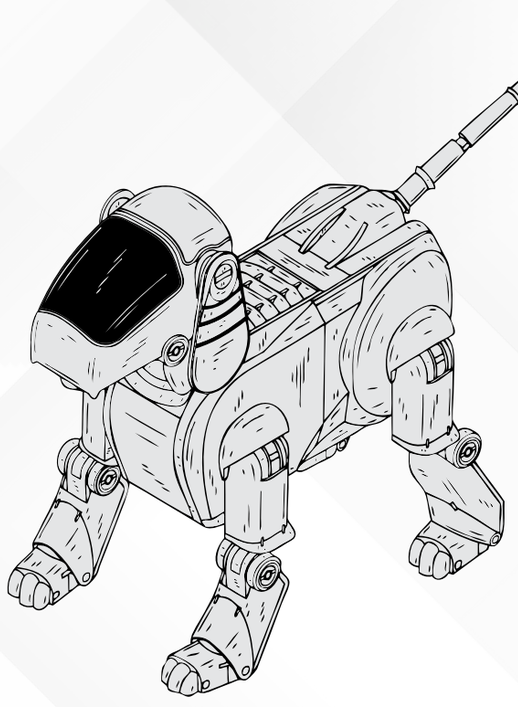
## TASK 3: SMART TRASH COLLECTOR

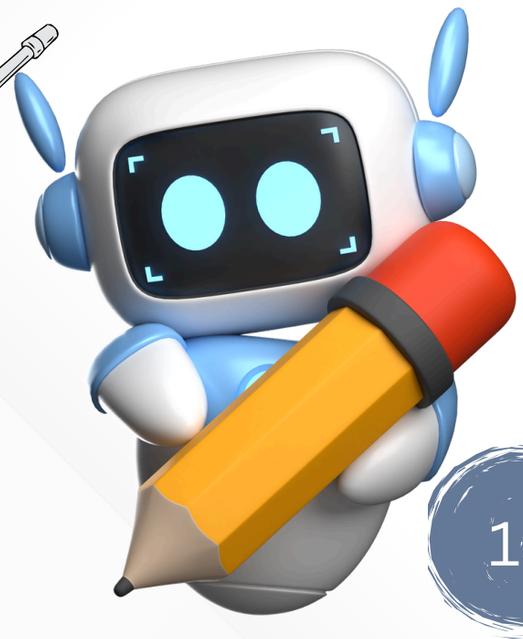
- Objective: The robot car must act as a recycling unit, cleaning up litter.
- Scenario: The robot car will follow a line around a community area. "Trash" will be represented by small objects placed next to the line.
- Robot's Action:
- The robot follows the black line.
- Using an ultrasonic sensor, it must detect "trash" objects (e.g., small blocks, bottle caps) placed within a specific range of the line.
- The robot must stop, collect the trash, and then proceed.
- It must then place the collected trash in a designated "recycling bin" area before continuing its patrol.

## COMPETITION RULES

- Robot Size: The robot must fit within a 25 cm × 25 cm × 25 cm cube at the start of each round. It may expand after the run begins.
- No Touching: Once a round has started, team members are not allowed to touch the robot. Touching the robot will result in a penalty.
- Autonomous Operation: The robot must operate autonomously. No remote controls or direct human intervention is allowed.
- Technical Malfunctions: In the event of a technical malfunction, a team may retrieve their robot and restart the round, but they will be penalized and the timer will not be reset.
- Robot Readiness: Teams must arrive at the venue with their robots already built and prepared for their chosen task.







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## SCORING

- The winner of each individual game will be the team with the highest cumulative score from all three rounds.

## SCORING FOR TASK 1: FOREST FIRE FIGHTER

- Successfully following the line: 10 points
- Passing each checkpoint: 5 points per checkpoint (15 points total)
- Stopping and alerting at the fire zone: 20 points

## SCORING FOR TASK 2: SEED BALL PLANTER

- Following the line to the field: 10 points
- Successfully placing a seed ball: 15 points per seed ball
- Returning to the loading zone: 5 points per return

## SCORING FOR TASK 3: SMART TRASH COLLECTOR

- Following the line: 10 points
- Successfully detecting and collecting trash: 10 points per trash item
- Placing collected trash in the designated area: 10 points per trash item
- PENALTIES (Deducted from Total Score)
- Touching the robot during a run: -10 points
- Robot exits the competition track/line: -5 points per instance
- Re-running a task due to malfunction: -15 points

## REQUIRED MATERIALS

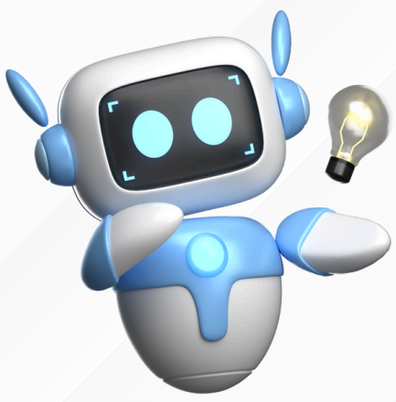
- The required materials are to be brought by the respective teams:
  - Robotics kits (e.g., LEGO, Arduino, ESP32, Makeblock, VEX)
  - Sensors (color/line, ultrasonic, smoke, light)
  - Motors, actuators, batteries
  - Laptops or access to programming software
  - Hand tools (screwdrivers, cutters, etc.)
  - Craft materials for building (cardboard, eco-friendly decorations, tape, etc.)

## ATTRACTIONS

**ECOBOT SUSTAINABILITY AWARD**

**1ST, 2ND AND 3RD POSITION**

**All other participating teams will receive Certificates of Merit/Participation.**



**Students from schools in the interior regions of Oman requiring support in Robotics will be provided with a dedicated training session by the host school.**

TECHNO SAPIENS

IDEA CRAFTERS

# FUTURE LABS EXPO

## INNOVATING TOMORROW – TODAY!

**FOR: STUDENTS OF MIDDLE SCHOOL GRADES 6 – 8 AND SECONDARY LEVEL GRADES 9 – 12**

**EVENT CATEGORY: ON-SITE AT THE HOST SCHOOL**

**OBJECTIVES**

- Encourage Scientific Curiosity and Exploratory Thinking: Inspire students to ask questions, experiment, and explore real-world challenges through the lens of science and innovation.
- Promote Real-World Application of Emerging Technologies: Provide a platform for learners to explore and demonstrate how technologies such as AI, IoT, robotics, assistive tech, and clean energy can solve problems in everyday life.
- Instill Future-Ready Skills Across Disciplines: Integrate science, technology, engineering, environment, space, agriculture, and digital safety to nurture interdisciplinary knowledge and application.
- Support Values of Sustainability, Inclusivity, and Resilience: Engage students in creating purposeful solutions aligned with global concerns such as climate change, accessible education, disaster readiness, and equality.
- Build Collaboration and Communication Competencies: Develop 21st-century skills like teamwork, problem-solving, and effective presentation through peer learning and project-based showcasing.
- Align with Global Goals: Reinforce connections to the United Nations Sustainable Development Goals, particularly:
- SDG 4 – Quality Education
- SDG 7 – Affordable and Clean Energy
- SDG 9 – Industry, Innovation and Infrastructure
- SDG 10 – Reduced Inequalities
- SDG 11 – Sustainable Cities and Communities
- SDG 12 – Responsible Consumption and Production

## TEAM COMPOSITION

- Each team must consist of 4 students.
- All team members must actively participate in the setup and explanation.

| Category | School Strength in the respective segment | Maximum Teams Allowed |
|---|---|---|
| Techno Sapiens (Middle School) | 500 and above | 2 teams |
| | Less than 500 | 1 team |
| Idea Crafters (Secondary School) | 500 and above | 2 teams |
| | Less than 500 | 1 team |

(CONT..)

## SCIENCE THEMES

1. Energy Exploratorium
   - Focus: Future energy technologies
   - SDG Link: SDG 7 – Affordable and Clean Energy
2. Waste Warriors Lab
   - Focus: Waste reduction and circular economy
   - SDG Link: SDG 12 – Responsible Consumption and Production

## TECHNOLOGY THEMES

1. Tech for Tomorrow's Classroom
   - Focus: EdTech tools and innovations in learning
   - SDG Link: SDG 4 – Quality Education
2. Disaster Busters
   - Focus: Technology for disaster prediction, response, and recovery
   - SDG Link: SDG 11 – Sustainable Cities and Communities
3. Inclusive Tech: Breaking Barriers with Technology
   - Focus: Assistive technology for differently-abled individuals
   - SDG Link: SDG 10 – Reduced Inequalities

## INNOVATION THEMES

1. Transport of the Future
   - Focus: Eco-friendly and smart transportation
   - SDG Link: SDG 9 – Industry, Innovation and Infrastructure
2. Food Futures: Smart & Sustainable Nutrition
   - Focus: Innovative solutions for future-ready food systems – urban farming, smart agriculture, alternative proteins, and food security technologies
   - SDG Link: SDG 2 – Zero Hunger & SDG 9 – Industry, Innovation and Infrastructure

## 📝 INSTRUCTIONS TO PARTICIPANTS

- All participants should not be from the same grade within a category.
- Select one theme only for your exhibit.
- Working models must be safe, age-appropriate, and demonstrable onsite.
- Teams must prepare:
  - Exhibit title and concept
  - One A2-sized poster with explanation and key features
  - Live demo (2–3 minutes)
- Models must be constructed onsite, though basic materials may be pre-prepared (no fully finished kits).
- All materials including display charts/foam boards, white cloth for tables, extension cords, double sided tape etc. for the exhibition should be arranged by the respective schools.
- Any tech component must be clearly explained by students.
- Teams should also prepare answers to possible visitors/judge questions.

(CONT..)

## ❌ DO'S AND DON'TS

### DO'S

- ✅ Prepare a simple, clear explanation.
- ✅ Use safe materials (no toxic chemicals or sharp tools).
- ✅ Be ready for live interaction.
- ✅ Keep the setup interactive and student-led.
- ✅ Clearly display sustainable innovation, creativity, and relevance.

### DON'TS

- 🚫 Pre-built or commercially bought models are not allowed.
- 🚫 No use of open flames, pressurized gas, or electrical hazards.
- 🚫 Do not exceed 4 students per team.
- 🚫 Don't allow mentors or adults to present on behalf of the team.

## 📊 EVALUATION CRITERIA

- Innovation and Originality
- Demonstration & Functionality
- Relevance to Theme
- Clarity of Presentation
- Team Participation & Collaboration
- Sustainability and Real-World Impact

## 🏆AWARDS FOR THE BEST EXHIBITS

(FOR EACH CATEGORY)

SCIENCE

HOMI J BHABA STELLAR SCIENCE AWARD

TECHNOLOGY

VINOD DHAM TRAILBAZING TECHNOLOGY AWARD

INNOVATION

E.SREEDHRAN INGENIOUS INNOVATION AWARD

**All other participating teams will receive Certificates of Merit/Participation.**

IDEA CRAFTERS

# INNOVATEX: THE SCITECH-BUSINESS FUSION

## WHERE SCIENTIFIC DISCOVERY MEETS ENTREPRENEURIAL VISION

## FOR: STUDENTS OF SECONDARY LEVEL GRADES 9 -12 - IDEA CRAFTERS

## EVENT CATEGORY: ON-SITE AT THE HOST SCHOOL

### OBJECTIVES

- To empower students to apply scientific knowledge in real-world business contexts.
- To develop entrepreneurial thinking by designing scalable, tech-driven solutions.
- To encourage economic reasoning, cost-benefit analysis, and financial planning.
- To enhance communication, critical thinking, collaboration, and creativity.
- To integrate skills from Science, Business Studies, Economics, ICT, Environmental Studies, and Design Thinking.
- To align with Sustainable Development Goals:
- SDG 8 – Decent Work & Economic Growth
- SDG 9 – Industry, Innovation & Infrastructure
- SDG 12 – Responsible Consumption & Production
- SDG 10 – Reduced Inequalities

### STARTUP CATEGORIES

🧪 Science

- Health & Wellness – Preventive health tech, Wearable diagnostics, Assistive devices
- Agri-BioTech – Vertical farming, Hydroponics, Organic alternatives
- Environmental Science Solutions – Air/Water Purification systems, Pollution Monitoring
- Food & Nutrition Science – Plant-based foods, Lab-grown alternatives

💻 Technology

- Tech-Based Startups – AI tools, EdTech, smart devices, apps
- FinTech – Digital wallets, Micro-savings apps for students/youth
- Cybersecurity & Data – Child-safe browsers, Data privacy tools
- Smart Cities & IoT Solutions – Connected infrastructure, Smart energy grids, Traffic management, IoT for homes & schools

💡 Innovation

- Eco-Innovation – Renewable energy solutions, upcycling startups, zero-waste products
- Social Impact Ventures – Startups targeting inclusion, accessibility, rural innovation
- Transport & Mobility Innovation – EV-based school buses, Smart cycling systems
- Creative Economy & Lifestyle Innovation – Sustainable fashion, Eco-friendly stationery

(CONT..)

## WHAT TO INCLUDE IN YOUR PRESENTATION (SUGGESTION)

Your pitch can cover the following points in order:

1. INTRODUCTION
   - Startup name, logo, and tagline.
   - Problem statement: What issue are you solving?
2. SCIENTIFIC/TECHNOLOGICAL FOUNDATION
   - Explain the science or technology behind your idea.
   - Highlight the innovation or unique feature.
3. PROTOTYPE / MVP (MINIMUM VIABLE PRODUCT)
   - Present your model, simulation, or demo.
   - Show how it works in practice.
4. BUSINESS MODEL
   - Target market (who will use it).
   - Revenue model (how it makes money).
   - Startup costs & expected returns.
   - Branding elements (logo, slogan, identity).
5. MARKET FEASIBILITY
   - Market demand and potential.
   - Competitors and how you are different.
6. IMPACT & VISION
   - How will your idea make a difference?
   - Link to sustainability or SDGs (if applicable).

## PRESENTATION GUIDELINES

- Each team will get 5 minutes to present their startup/business idea.
- The presentation must be in PowerPoint/Google Slides or equivalent format.
- Slides should be clear, concise, and visually engaging (avoid too much text).
- A prototype, model, simulation, or digital demo (video/animation) must be shown.

## SUBMISSION REQUIREMENTS

- Slides (PPT/PDF/Google Slides) must be submitted before the event.
- Prototype/demo video (if used) should be in MP4 format, max 150 MB.
- File names should include Schoolname_TeamNo_Category

## EVALUATION CRITERIA

- Scientific/Technological Depth
- Innovation & Creativity
- Business Viability
- Prototype/Model Quality
- Pitch Delivery & Teamwork
- Q & A Session

## TEAM STRUCTURE

(CONT..)

Team Size: 4 students per team

Teams Based on School Strength in the Secondary School (Grades 9 – 12):

- 500 and above: 2 teams
- Less than 500 students: 1 team

All members must be actively involved in idea creation and pitch.

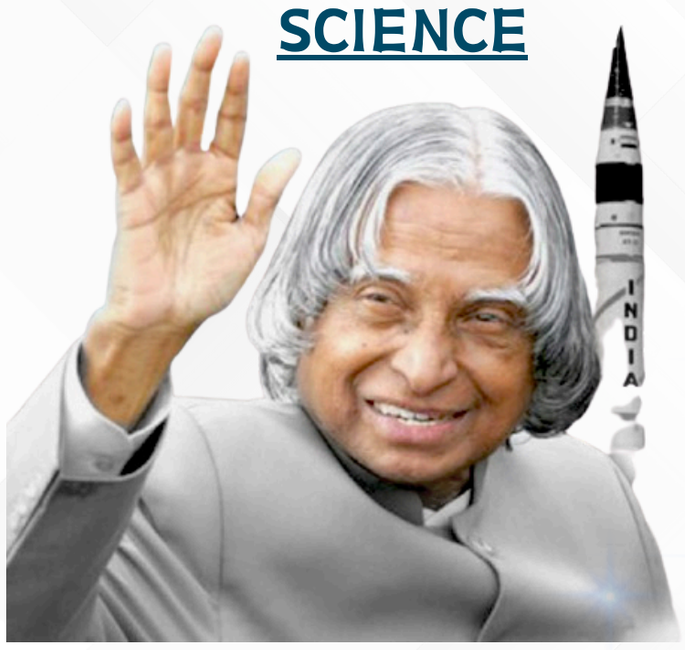
## INSTRUCTIONS

- Each team must choose one category only.
- A working model or visual prototype is mandatory.
- Each team will have 5 minutes for the presentation, followed by a 2-minute Q&A with the judges.
- Originality is key. Copied ideas will be disqualified.
- All presentations must be student-led.
- After the pitch, there will be Q & A session by the judges.

Remember: This is your chance to think like scientists, engineers, and entrepreneurs all at once. Be bold, be innovative, and inspire the world with your vision!

## AWARDS FOR THE BEST BUSINESS PITCH

### SCIENCE



DR. A.P.J. ABDUL KALAM STELLAR SCIENCE AWARD

### TECHNOLOGY

SUNDAR PICHAI TRAILBLAZING TECHNOLOGY AWARD

### INNOVATION

RATAN TATA INGENIOUS INNOVATION AWARD

All other participating teams will receive Certificates of Merit/Participation.

UNBOUND UNISONS

# ELEMENTS ALIVE: SCIENCE ON STAGE

## WHERE SCIENCE DANCES, SINGS, AND SPEAKS!

## FOR: STUDENTS OF MIDDLE AND SECONDARY LEVEL GRADES 6 –12 – UNBOUND UNISONS

## EVENT CATEGORY: ON-SITE AT THE HOST SCHOOL

**OBJECTIVES**

- To enhance conceptual understanding of key science topics through artistic expression.
- To encourage creative thinking, communication, and performance-based learning.
- To develop teamwork, public speaking, and presentation skills in a cross-disciplinary context.
- To promote science communication by simplifying complex ideas for diverse audiences.
- To align with NEP 2020 goals of integrating arts with STEM education, promoting joyful and experiential learning.

**TEAM GUIDELINES:**

- The number of teams a school may enter in the competition will be based on the combined student strength of the Middle and Secondary Sections. Schools with a strength of 1500 and above may register up to 2 teams, while those with a total of fewer than 1500 students may register 1 team.
- Each team must consist of a maximum of 7 students and a minimum of 5 students.

**PERFORMANCE GUIDELINES:**

**TYPE OF PERFORMANCES ALLOWED:**

- Musical Performance: Songs, rhythm, or sound effects illustrating the topic (e.g., creating sounds of wind or water).
- Dance/Movement: Choreographed sequences embodying the science concept (e.g., flowing water, bouncing forces).
- Live Experiments: Simple, safe demonstrations that showcase scientific principles on stage.
- Theatrical Storytelling: Short skits or narratives explaining the science behind the topic.
- Mixed Media: Combine two or more of the above creatively.

📝 **SUGGESTED THEMES**

- Quantum Physics Phenomena
- The Journey of Data Through AI
- Microbiology & Ecosystem Interactions
- Environmental Science & Global Warming
- Human Organ Systems
- Astronomy & Space Technology

(CONT..)

## ⏱️ PERFORMANCE DURATION:

- Total time: 5 minutes
- Mandatory Science Explanation: 1 minute included within the performance or as a separate segment.
- Teams must ensure clarity and relevance of the science concept for both the jury and audience.

## 📋 INSTRUCTIONS FOR PARTICIPATION

- Each team must select a topic and prepare a clear performance concept.
- Simple props and setups are permitted; however, all required items (including USBs with music) must be arranged and brought by the team.
- The identity of the school must not be disclosed at any point during the performance.
- The use of hazardous materials, fire, or unsafe chemicals on stage is strictly prohibited.
- Performances must be completed within the allotted time; exceeding the time limit will lead to deduction of points.
- Pre-recorded music is not permitted. All singing must be performed live on stage.
- The medium of presentation will be English.
- Content, costumes, and dialogues must respect the culture and traditions of the Sultanate of Oman.
- Each team must include participants from both categories: Techno Sapiens (Grades 6–8) and Idea Crafters (Grades 9–12).
- Reading from or referring to scripts during the performance is not allowed.

## 📊 EVALUATION CRITERIA

Scientific Understanding & Accuracy

Creativity & Originality

Performance Quality (Voice, Movement, Stage Presence)

Audience Engagement & Impact

Use of Props/Visuals (Relevance & Appeal)

**CREATIVE CATALYST TROPHY**

**1ST, 2ND AND 3RD POSITION**

**All other participating teams will receive Certificates of Merit/Participation.**

# SCITECHNOVA QUIZ

## QUEST FOR KNOWLEDGE, DRIVE FOR DISCOVERY

**FOR: STUDENTS OF ALL SEGMENTS**

**EVENT CATEGORY: AT THE RESPECTIVE SCHOOL**

**OBJECTIVES**

- To ignite curiosity and interest in Science, Technology, and Innovation among students.
- To encourage critical thinking, logical reasoning, and problem-solving skills.
- To provide a platform for students to showcase their scientific knowledge and technological awareness.
- To inspire students by highlighting the contributions of eminent scientists and innovators.
- To foster a spirit of inquiry and innovation aligned with the vision of a Viksit Bharat.
- To strengthen students' understanding of real-world applications of scientific and technological concepts.

**TOPICS:**

**Foundation Level 2 (Grades 1 & 2)**

**Focus: Curiosity, basic science awareness, and recognition of everyday technology**

🔬 **Science**:

- Living and non-living things
- Our five senses
- Basic body parts and their functions
- Day and night
- Seasons and weather
- Plants and animals around us

💻 **Technology**:

- Gadgets we use at home
- How things move (wheels, pulleys, etc.)
- Simple uses of electricity

🚀 **Innovation**:

- "Who made it?" – Basic association of inventors with their innovations
- Problem-Solving Inventions
- Smart homes – Introduction to sensors (lights turning on, etc.)

(CONT..)

## TOPICS:

## Preparatory Stage (Grades 3 to 5)

**Focus: Exploration of nature, early scientific principles, and introduction to technology**

🔬 **Science**:

- The Solar System
- Parts of a plant and their functions
- Water cycle
- States of matter
- Introduction to energy forms
- Magnets

💻 **Technology**:

- Simple machines
- Electricity in daily life
- Computers – parts and uses
- Communication tools – past vs present (letters to smartphones)

🚀 **Innovation**:

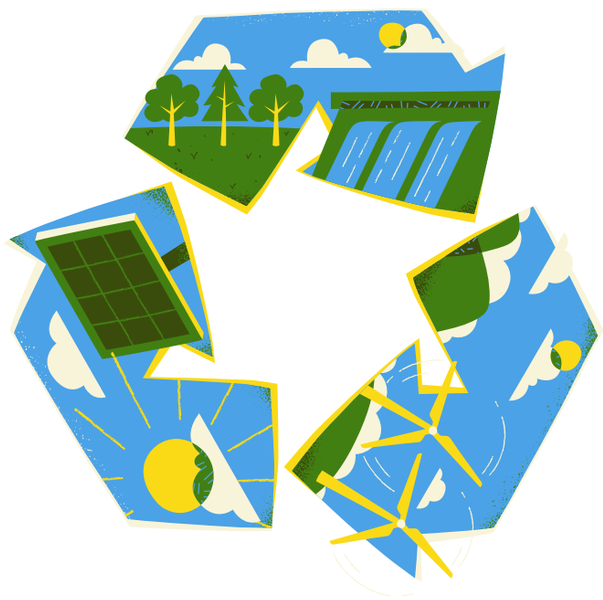
- Great Indian scientists and their inventions
- Women in science
- Inventions that changed the world
- Renewable energy examples

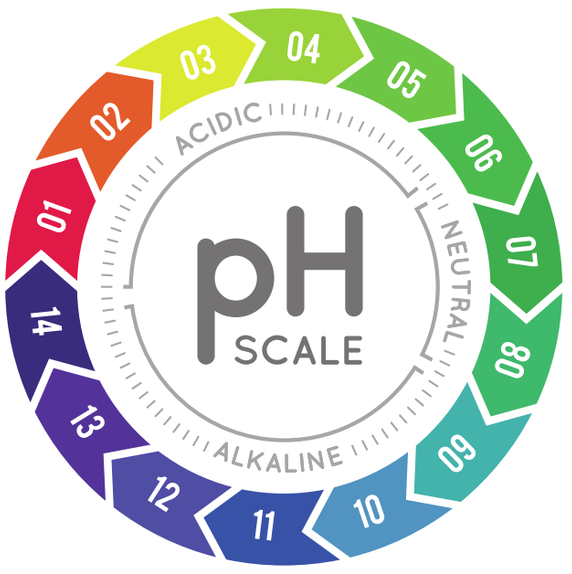
## Middle Stage (Grades 6 to 8)

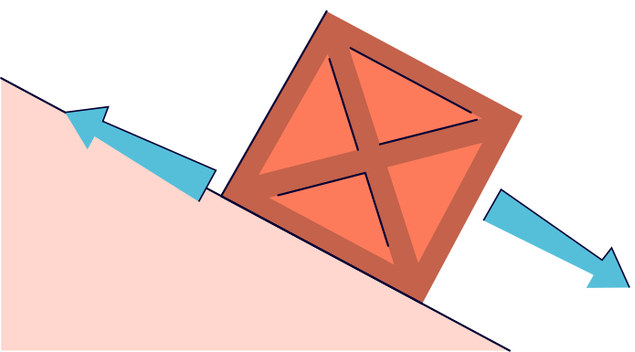
**Focus: Conceptual science, emerging technologies, innovation with application**

🔬 **Science**:

- Force, motion, and energy
- Ecosystems and food chains
- Human body systems
- Properties of light and sound
- Acids, bases and salts
- Environmental awareness and pollution





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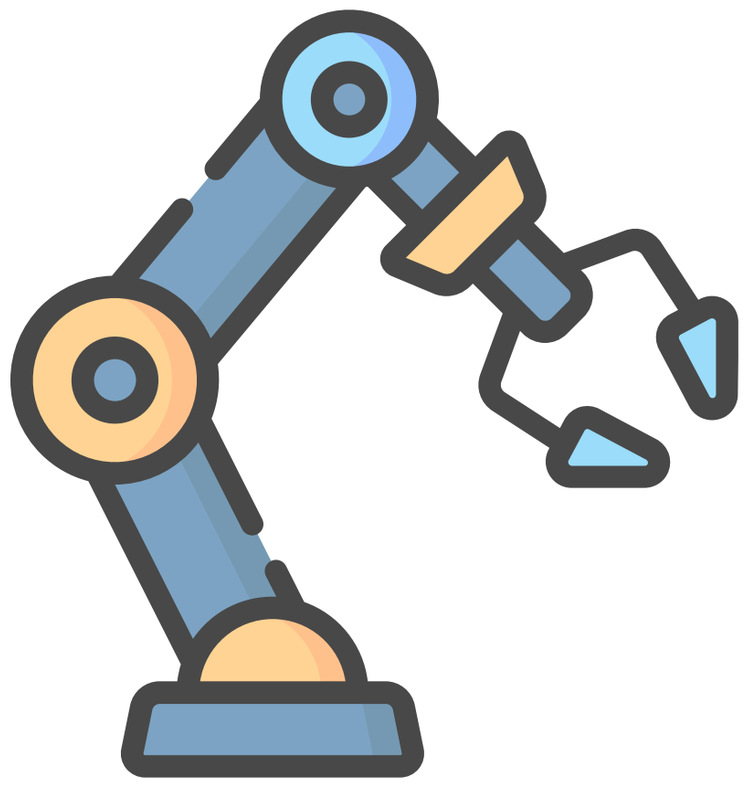


💻 Technology:

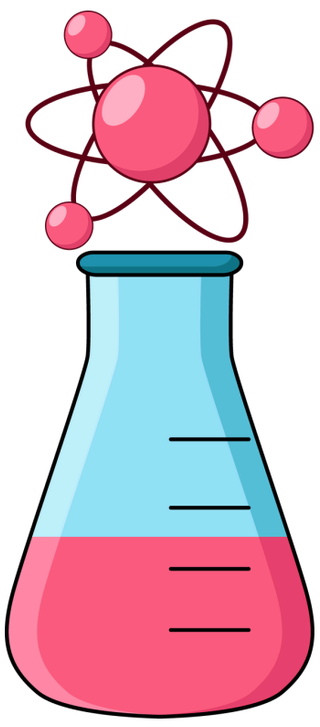
- Electricity and electric circuits
- Satellites and GPS
- Internet and cybersecurity basics
- Robotics and automation (basic concepts)
- Mobile technology evolution

🚀 Innovation:

- Green technologies (solar cookers, rainwater harvesting)
- India's scientific achievements (ISRO, DRDO)
- Invention of the wheel to AI – timeline of innovation
- Scientific thinking in solving daily problems
- Basics of Design Thinking (Empathize – Define – Ideate – Prototype – Test)

Secondary Stage (Grades 9 to 12)

Focus: Deep understanding, critical thinking, global tech awareness, and innovation mindset



🔬 Science:

- Structure of atoms
- Chemical reactions and bonding
- Genetics and biotechnology
- Newton's laws and applications
- Thermodynamics and energy conservation
- Environmental science and climate change

💻 Technology:

- Artificial Intelligence (AI) and Machine Learning (ML)
- Cybersecurity, digital footprint, and data privacy
- Blockchain, Big Data, Cloud Computing
- 3D Printing and its applications
- Space technologies – Chandrayaan, Gaganyaan, Mangalyaan

🚀 Innovation:

- Frugal innovation (Jugaad) in India
- Sustainable technologies (EVs, solar roads, vertical farming)
- Science startups in India (AgriTech, HealthTech, EdTech)
- Patents and intellectual property basics
- Nobel laureates and breakthrough inventions
- Viksit Bharat @2047 – India's innovation mission

(CONT..)

- The quiz will be conducted in online mode.
- The quiz will consist of 20 questions (Grades I – V) and 30 questions (Grades VI – XII).

⏱️ Time Allocation

- Total Time: 20 minutes (Grades I – V) or 30 minutes (Grades VI – XII)
- Each question carries 1 mark.
- No negative marking for wrong answers.

💻 Access Instructions

1. All registered students will receive the quiz link via their registered school email or class group.
2. The quiz can be accessed only once per student.
3. Use a laptop, desktop, or tablet with a stable internet connection.
4. Ensure you have a quiet space and avoid any disturbances during the quiz.
5. You must submit the quiz before the timer runs out. Late submissions will not be accepted.

⚠️ Important Rules

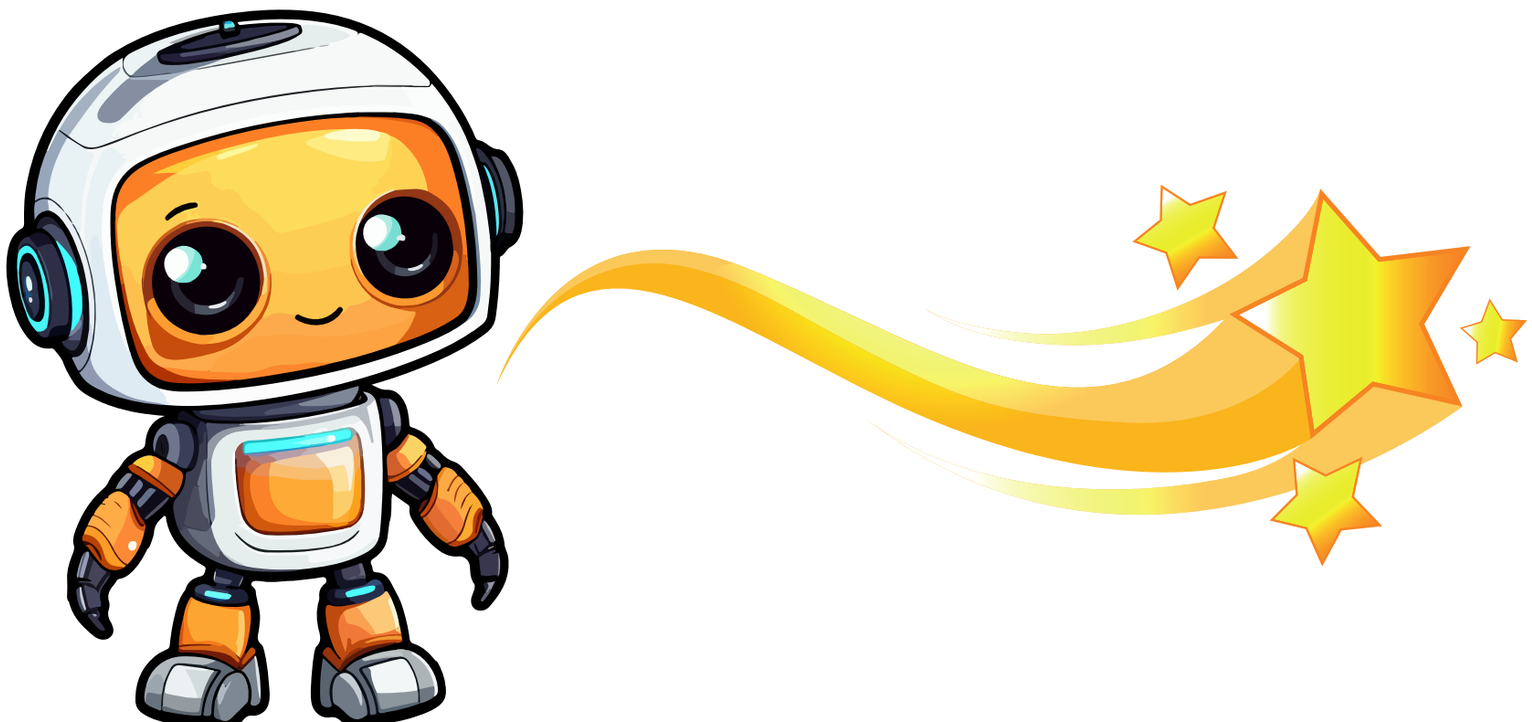
- Do not refresh the page while attempting the quiz.
- Do not switch tabs or use multiple devices. Suspicious activity will be monitored and such attempts may lead to automatic disqualification.
- Students must attempt the quiz individually without any external help.
- Use of calculators or online search is strictly prohibited.

🏆 Evaluation and Results

- The top scorer from each category per school (1-2, 3-5, 6-8, 9-12) will be recognized.
- In case of a tie, the student with the fastest completion time will be given preference.
- Results will be shared by the host school in two days time from the conduct of the quiz.

**PRIZES**:

The top winner from each category of each school will be felicitated with the SciTechNova Awards.



# MERITS IN MOTION: EVALUATION & CERTIFICATES

## 🎯 GENERAL GUIDELINES AND EVALUATION PROTOCOL

- All events are designed under the core domains of Science, Technology, and Innovation, encouraging interdisciplinary and hands-on learning experiences.
- Participating schools are advised to inform and prepare students well in advance to ensure meaningful participation.
- Each participation will be assessed by a panel of expert judges.
- Final scores will be aggregated and categorized into grades, based on statistical quartiles relative to the mean score.

## 🏆 GRADING SYSTEM:

| Grade | Performance Descriptor | Eligibility |
|---|---|---|
| **A+** | Outstanding | Top 25% above the mean score |
| **A** | Excellent | Next 25% above the mean score |
| **B+** | Very Good | Third 25% above the mean score |
| **B** | Good | Fourth 25% above the mean score |
| **Participation Only** | - | Scores below the mean |

📌 NOTE: "MEAN SCORE" REFERS TO THE STATISTICAL AVERAGE OF ALL PARTICIPANT SCORES IN A GIVEN EVENT.

## 🎖 CERTIFICATES

- Certificates of Merit will be awarded to participants securing grades A+, A, B+, and B.
- Certificates of Participation will be provided to all eligible participants who fall below the mean score threshold.

## ⚖IMPORTANT NOTE

The judges' decisions are final and binding. No requests for re-evaluation will be entertained.

# QUICK RECKONER – IMPORTANT DATES FOR STAI 2025

| Event | Date | Remarks |
|---|---|---|
| Release of STAI 2025 Handbook | 31st August 2025 | Release of the Handbook to all participating schools<br>Request participating schools to confirm the STAI Coordinators |
| Orientation to the schools | 3rd September 2025 | An orientation session will be conducted for the STAI Coordinators of the participating schools. |
| Registration Opens | 3rd September 2025 | The Registration Form is shared with the participating schools. |
| Last Date for Registration | 15th September 2025 | All the details of participants are to be duly fillled in and shared with the host school. |
| Submission of Project Files (If applicable) | 2nd October 2025 | For events requiring pre-submission |
| STAI 2025 – Inaugural Ceremony | 17th October 2025 | Formal opening of the event |
| On-site Events Begin | 17th October 2025 | As per event-wise schedule |
| Other events, Awards /Certificate Distribution & Valedictory Function | 18th October 2025 | As per event-wise schedule<br>Includes final showcase and awards and certificate distribution |

# STAI BUDDY

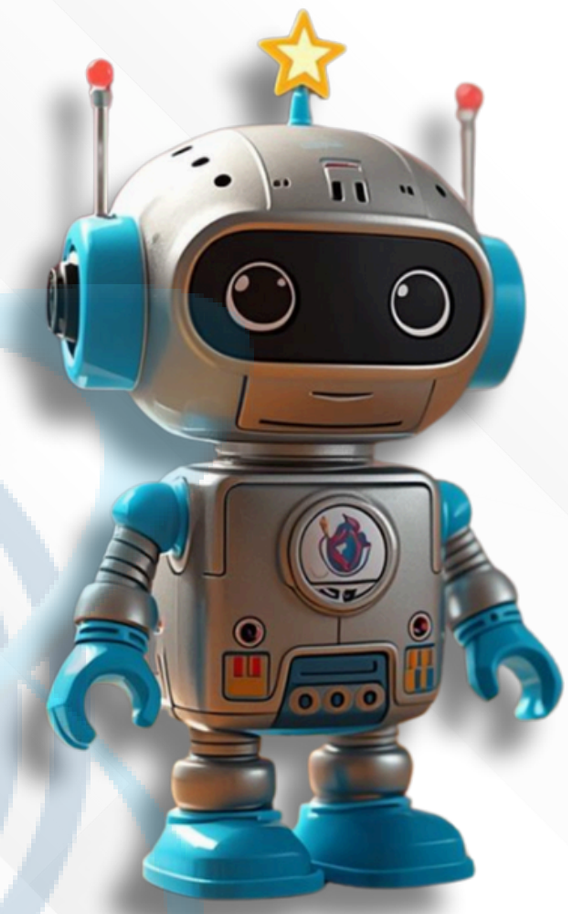
## PICK YOUR STAI BUDDY!

**The mascot designs are coming to our social media!**

**Check out the creative entries, and give a like to your favourite. The design with the most likes by the deadline will be crowned the official STAI Buddy!**

**Don't miss your chance to have a say in choosing the mascot for STAI 2025!**

SCITECHNOVA: BRIGHTENING IDEAS, POWERING INNOVATION



STAI-BOT: POWERING THE FUTURE WITH SCIENCE, TECHNOLOGY & INNOVATION

OWLCHEMY:Transforming Curiosity into Discovery through STAI

SCITECHNOVA BEE: SPREADING THE BUZZ OF SCIENCE, TECHNOLOGY AND INNOVATION

## WHICH IS YOUR FAVOURITE?

## STAY TUNED – THE ANNOUNCEMENT IS COMING SOON!

# CONTACT DETAILS

For queries or support, reach out to us at stai2025@isboman.com

**For any specific event-related questions, Whatsapp the following numbers for quick assistance.**

| | |
|---|---|
| SCITECHNOVA IN ME! | +968 7727 3020 |
| SCITECHNOVA CROSSWORD | +968 9504 7915 |
| ANIMATE A STORY CHALLENGE | +968 9624 6910 |
| BUILD A ROBOT ARENA | +968 7886 1660 |
| FUTURE TECH EXPO | G 6-8: +968 7858 6614<br>G 9-12: +968 7115 2547 |
| INNOVATEX | +968 9624 3436 |
| ELEMENTS ALIVE: SCIENCE ON STAGE | +968 9523 7563 |
| SCITECHNOVA QUIZ | G 1-2: +968 9101 5411<br>G 3-5: +968 7937 2573<br>G 6-8: +968 9821 2814<br>G 9-12: +968 9483 5386 |

## OVERALL INCHARGE FOR STAI 2025

**MS. AMBIKA PADMANABHAN**

**VICE PRINCIPAL**

**INDIAN SCHOOL BOUSHER**

VICEPRINCIPAL@ISBOMAN.COM