Mathematical Model Competition

Key Informations:

Registration Fee: Free

Eligibility: Open to Students from Grade 8 to 12

Registration Deadline: August 15,2023

Submission Deadline: August 22, 2023

(Models should be submitted to your school so that it is taken to Kathmandu University to be exhibited at the main event)

Exhibition Date: August 29,2023\

Prizes:

Exciting Gift Hampers, Certificate for Top 3 winners, E-Certificate of participation for all participants Winners will be notified via email, messages and our official facebook and instagram page

Examples of Mathematical Models:

Here are some inspiring examples of mathematical models, sorted from easiest to hardest, to ignite your creativity:

1. **Pythagorean Theorem Demo:** Create an interactive model that visually demonstrates the Pythagorean theorem using basic shapes and sizes.
2. **Mathematical Origami Art:** Explore origami designs inspired by geometric shapes and mathematical principles, showcasing symmetry and precision.
3. **Platonic Solids Sculptures:** Build 3D sculptures representing the five Platonic solids, showcasing symmetry and elegance.
4. **Impossible Objects:** Challenge visual perception by constructing impossible objects like the Penrose triangle or Escher's waterfall, exploring optical illusions in three dimensions.
5. **Makedo Windball:** Design a windball, a spherical structure made from recycled materials, using geometric principles for stability.
6. **Möbius Strip Creations:** Craft intriguing sculptures based on the Möbius strip, a non-orientable surface with fascinating mathematical properties.
7. **Mathematical Chessboard:** Create a 3D chessboard with customizable dimensions and explore chess piece movements in three-dimensional space.

8. **Fractal Landscapes:** Build 3D landscapes inspired by fractals, such as the Sierpinski pyramid or the Mandelbrot set, using repeating patterns and self-similarity.

9. **Spherical Geometry Art:** Dive into the world of spherical geometry by creating models based on great circles, geodesics, or polyhedra on a sphere's surface.

10. **Hyperbolic Sculptures:** Experiment with hyperbolic geometry to sculpt models that exhibit hyperbolic surfaces and negative curvature, exploring the wonder of non-Euclidean geometry.

Remember, these examples are just a starting point. Feel free to explore any mathematical concept that fascinates you, whether it's related to geometry, calculus, statistics, number theory, or any other branch of mathematics. The possibilities are limited only by your imagination!

Rulebook:

Here's the rulebook for the Mathematical Modeling Competition - 3D Edition:

1. **Eligibility:**
    - The competition is open to students currently enrolled in grades 8 to 12.
    - Participants can enter as individuals or in teams of up to four members. Collaborative efforts are encouraged.
2. **Themes:**
    - Participants are free to choose any theme that relates to mathematics in the real world. The theme should inspire and challenge them to apply mathematical concepts in a 3D model.
3. **Materials and Size Restrictions:**
    - Participants can use a wide range of materials, such as paper, cardboard, wood, plastic, or any non-hazardous materials that meet safety standards.
    - The model's dimensions should not exceed 50cm x 50cm x 50cm. The models must be easily transportable and displayable.
4. **Safety Considerations:**
    - Models involving hazardous materials, chemicals, or any unsafe mechanisms will be disqualified.
    - Ensure that the models are sturdy and safe to handle during transportation and display.
5. **Registration:**
    - Participants must register for the competition by August 15,2023. The registration should be done in the following link. [insert link]
6. **Documentation:**
    - Along with the physical model, participants must provide a written description (maximum of 250 words) explaining the mathematical concepts behind their model.

7. **Submission:**

    - The final 3D models and accompanying documentation must be submitted by August 22, 2023. Models should be submitted to your school so that it is taken to Kathmandu University to be exhibited to the main event.

8. **Judging Criteria:**

    - Entries will be evaluated based on creativity, mathematical complexity, aesthetics, craftsmanship, adherence to the chosen theme, and the effectiveness of communication of mathematical concepts.
    - 50% score is given by the audience who visit the exhibition and 50% score is given by the judging panel.

9. **Prizes:**

    - Exciting cash prizes, gift hampers, and certificates will be awarded to the top three entries.
    - The winners will also receive certificates of participation and appreciation for their efforts.

10. **Exhibition and Awards Ceremony:**

- All the entries will be displayed at a public exhibition for the audience to judge them.
- We will be coming to your school to give you the awards if you win.

11. **Model Ownership and Use:**

- All submitted 3D models and accompanying documentation become the property of KUCMC, and they will not be returned to the participants.
- By entering the competition, participants agree that the models and documentation may be used by KUCMC for educational and promotional purposes, including but not limited to display at exhibitions, publication on the competition website, social media channels, and printed materials. Appropriate credits to the creators will be given whenever the models are used.
- The models may also be used in educational settings, workshops, or events to promote mathematical learning and inspire future participants.

We hope this competition will ignite a passion for mathematics and inspire the participants to explore the endless possibilities of mathematical modeling. Let's embark on this exciting journey together!