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CODING MECHANICS

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Brainiacs Coding Olympiad Mechanics

The Brainiacs Physics Olympiad is a globally renowned competition aimed at encouraging creativity, innovation, and academic excellence in students from Grade 3 to Grade 12. The Olympiad is structured into two main stages: the Preliminary Round and the Global Round.

Preliminary Round Registration

Students can register for the Olympiad through the official Brainiacs Olympiad website or via authorized representatives in their respective countries.

Dates

The online qualifying exams for the Preliminary Round are scheduled for:

- Online I: - November 15, 2025 (Registration deadline: November 14, 2025) - Online I Results: November 20, 2025
- Online II: - December 20, 2025 (Registration deadline: December 19, 2025) - Online II Results: - December 25, 2025

The two online rounds are the same, but feature different challenges. Those who did not qualify for the global round in the first online round, along with those who were absent from the first round, can participate in the second round.

Format

The exam consists of 5 challenges divided into three levels of difficulty:

- Easy: 2 problems
- Medium: 2 problems
- Hard: 1 problem

The exam consists of 5 coding challenges to be completed within 75 minutes. Problems are tailored to the participant's educational level and divided into the following categories:

- Category 1: Grades 3 and 4
- Category 2: Grades 5, 6 and 7
- Category 3: Grades 8 and 9
- Category 4: Grades 10, 11 and 12

Participants in Categories 1 and 2 will solve challenges on the block-based programming platform Scratch, while participants in Categories 3 and 4 will solve text-based challenges using C++, Python, or JavaScript.

Scoring

For Category 1 and 2

- Easy Challenges: +10 points
- Medium Challenges: +20 points
- Hard Challenges: +40 points
- Incorrect Answer: No negative marking
- Unanswered Problem: No points deducted

For Category 3 and 4

- Easy Challenges: +10 points (points awarded proportionally to the number of test cases passed)
- Medium Challenges: +20 points (points awarded proportionally to the number of test cases passed)
- Hard Challenges: +40 points (points awarded proportionally to the number of test cases passed)
- Incorrect Answer: No negative marking
- Unanswered Problem: No points deducted

Note: Each problem contains multiple test cases. Students earn points for each test case passed, so partial solutions are scored fairly.

Qualification

Participants scoring at least 40% in the Preliminary Round qualify for the Global Round. Every participant receives a Certificate of Participation.

Recognition

In the Preliminary Round, medals are awarded based on the points earned by the participants:

- 40 to 49 : Honorable Mention Certificate
- 50 to 74 : Bronze Medal
- 75 to 89 : Silver Medal
- 90 to 100 : Gold Medal

Global Round

The Global Round is the final stage of the competition, where participants showcase their knowledge and ability.

Registration

Students can register for the Olympiad through the official Brainiacs Olympiad website or via authorized representatives in their respective countries.

Dates and Venue

Global Round of the 2nd Brainiacs Olympiad will take place in Xiamen University Malaysia from March 24 to 30, 2026.

- Standard Registration Deadline: February 1, 2026 ($1200 per participant)
- Late Registration Deadline: March 1, 2026 ($1400 per participant)

Exam Days

Global Round exam format is different from Preliminary Round. For Category 1 and 2 it has both Theoretical and Practical parts separated in two consecutive examination days. For Categories 3 and 4, both examination days will be practical, focusing entirely on solving programming challenges.

Category 1 and 2

Day 1. Theoretical Part

This is the structured portion of the coding exam on Scratch — it tests understanding of programming logic, problem-solving skills, and the ability to use Scratch blocks correctly and efficiently.

Examples:

- Solving practical tasks (e.g., drawing shapes, moving a sprite, working with variables and mathematical operations)
- Multiple-choice questions (e.g., describing what a program does, identifying errors)

Purpose:

To assess students' foundational programming knowledge, logical thinking, understanding of Scratch features, and ability to create simple programs within the platform.

Day 1 Exam Format

The exam consists of 15 problems divided into three levels of difficulty:

- Easy challenges: 2
- Medium challenges: 2
- Hard challenge: 1
- Multiple-choice questions: 10

The exam consists of 10 multiple-choice problems and 5 coding challenges to be completed within 120 minutes.

Day 1 Exam Scoring

- Easy challenges: +10 points
- Medium challenges: +20 points
- Hard challenge: +30 points
- Multiple-choice questions: + 1 point
- Incorrect Answer: No negative marking for any problem
- Unanswered Problem: No points deducted

Day 2. Practical Part

The practical part evaluates how students apply their Scratch knowledge to create projects based on a given topic. Participants develop their own unique approach to solving the selected problem and implement it in a format provided by the organizers, such as an animated story, cartoon, or interactive game (e.g., quest, quiz, shooter).

Examples:

- Interactive Animation

Make a scene where sprites react to clicks or key presses.
Can include simple background changes, movement, or dialogue.

- Mini-Game: Catch the Falling Object

Player controls a sprite to catch falling items.
Use score variable to track points.

- Quiz Game

Create a 3–5 question quiz with multiple-choice answers.
Show correct/incorrect responses and a final score.

Purpose:
To evaluate problem-solving, creativity, and the ability to design functional, engaging, and visually appealing projects.

Day 2 Exam Format and Scoring

The exam consists of 1 project worth 100 points:

- Technical Skills (40 points)
- Creativity & Design (30 points)
- Problem-Solving & Logic (30 points)

Technical Skills involve the correct use of Scratch concepts, functionality, debugging, and working code. Students demonstrate understanding of motion, looks, sounds, events, loops, conditionals, ensuring their project runs correctly without critical errors.

Creativity & Design requires originality, visual appeal, and engagement. Students are evaluated on the uniqueness of their idea, attractive visuals (sprites, costumes, backgrounds, and pen drawings).

Problem-Solving & Logic focuses on planning, sequencing, and the effectiveness of solving the chosen problem. Students must organize steps logically, implement efficient solutions to achieve the project goals.
The project is to be completed within 120 minutes.

Category 3 and 4
Day 1.
This part tests students' understanding of programming logic, loops, conditions, functions, and basic data structures.
Examples:

- Calculating the sum, average, or factorial of numbers
- Reversing strings or counting vowels/consonants
- Finding maximum/minimum in a list or filtering elements
- Using loops to generate simple patterns
- Writing small functions for repeated tasks

Purpose:
To evaluate students' foundational Python skills, problem-solving ability, and accuracy in writing code.

Day 1 Exam Format
The exam consists of 12 problems divided into three levels of difficulty:

- Easy challenges: 6
- Medium challenges: 4
- Hard challenges: 2

The exam consists of 12 problems to be completed within 120 minutes.

Day 1. Exam Scoring

- Easy Challenges: +5 points (points awarded proportionally to the number of test cases passed)
- Medium Challenges: +10 points (points awarded proportionally to the number of test cases passed)
- Hard Challenges: +15 points (points awarded proportionally to the number of test cases passed)
- Incorrect Answer: No negative marking
- Unanswered Problem: No points deducted

Note: Each problem will have multiple test cases. Students earn points for each test case passed, so partial solutions are scored fairly.

Day 2.
This part focuses on larger, multi-step programming problems that require combining several Python concepts to solve complex tasks.
Examples:

- Creating a simple text-based game (e.g., guessing number, rock-paper-scissors)
- Implementing mini-projects using lists, loops, and functions
- Solving problems involving string and list manipulation together
- Processing input data and producing a summary or report
- Combining conditions, loops, and functions to solve multi-step tasks

Purpose:
To assess students' ability to plan, implement, and debug more complex programs while applying problem-solving and programming skills.

Day 2 Exam Format
The exam consists of 8 problems divided into two levels of difficulty:

- Medium challenges: 6
- Hard challenges: 2

The exam consists of 8 problems to be completed within 120 minutes.

Day 2 Exam Scoring

- Medium Challenges: +10 points (points awarded proportionally to the number of test cases passed)
- Hard Challenges: +20 points (points awarded proportionally to the number of test cases passed)
- Incorrect Answer: No negative marking
- Unanswered Problem: No points deducted

Note: Each problem will have multiple test cases. Students earn points for each test case passed, so partial solutions are scored fairly.

Global Round Recognition
In the Global Round, medals are awarded based on the percentage distribution according to the number of participants.

- The top 10% (0-10%) of participants receive gold medals.
- The next 20% (11-30%) of participants receive silver medals.
- The next 30% (31-60%) of participants receive bronze medals.
- The next 15% (61-75%) receive honorable mentions.

Languages
All of the problems in Preliminary and Global Rounds will be in 4 languages: English, Russian, French, and Spanish.