

VANDA
SCIENCE GLOBAL FINALS

STEAM AHEAD 2020

IJMO and Science Global Finals

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OVERVIEW

STEAM stands for Science, Technology, Engineering, Arts and Mathematics. STEAM AHEAD is our initiative to combine our international academic competitions to educate students and bring them international exposure about possible career choices in these fields.

So, STEAM AHEAD is the first to combine 2 international academic competitions in one location and offer multiple opportunities for students to win awards in IJMO and VANDA Individual and Team plus Overall Champion in each grade level for IJMO and VANDA, and President's Award for Excellence in STEAM (PAES) winners in IJMO/VANDA.

About IJMO



The International Junior Math Olympiad (IJMO) is an international mathematics competition which is held annually in different countries across Asia. IJMO is organised by SIMCC in collaboration with the National Math Societies in Asian countries to identify and encourage potential young math talents in every SIMCC participating country.

To be eligible for participation in IJMO, **Gold and Silver** awardees from AMO 2019, VTMO, SASMO, and SMKC 2020 from each country are selected annually to represent their country.

Objectives

IJMO aims to provide a global platform for students to interact and compete against their worthy opponents. IJMO is the ideal platform to showcase every student's potential and talent in math in the international math competitions arena!

IJMO empowers students with deep conceptual understanding and logical thinking skills beyond Grade-level. This effectively stretches every student's potential beyond Grade-level, allowing them to better apply much higher level logical and analytical skills to solve challenging Math Olympiad problems. Questions in IJMO are carefully designed to develop every student's higher level of conceptual understanding and logical thinking skills.

Pre-Requisite for the Competition

Candidate needs to obtain the following award before qualifying for IJMO:

- Gold or Silver award winner for VTMO, SMKC, SASMO 2020 or AMO 2019

Format

This year, due to COVID, and safety concerns for all students, parents and teachers, we are hosting Steam Ahead ONLINE using our Online Contest System (OCS) to continue helping our students and teachers to Acquire Skills and Recognition for SUCCESS.

Duration: 90 minutes

Contestant starts with 20 bonus points at the start.

Section A
Questions 1 to 10 Correct = 2, No Answer = 0, Wrong = -1
Section B
Questions 11 to 20 Correct = 3, No Answer = 0, Wrong = -1
Section C
Questions 21 to 30 Correct = 5, No Answer = 0, Wrong = 0



Syllabus

IJMO reserves the rights to change the syllabus without any prior notice.

GRADES 2-4 (PRIMARY 2-4)

Arithmetic and Statistics

Geometry and Mensuration

Solving word problems using model method (or any other non-algebraic methods)

Non-routine problem solving (including number patterns, divisibility tests, spatial visualisation, logic problems and simple cryptarithms)

GRADES 5-6 (PRIMARY 5-6)

Arithmetic and Statistics

Geometry and Mensuration

Solving word problems using model method (or any other methods including algebra)

Non-routine problem solving (including number patterns, divisibility tests, spatial visualisation, logic problems and cryptarithms)

GRADE 7 (SECONDARY 1)

Arithmetic and Algebra

Geometry, Graphs and Mensuration

Statistics

Non-routine problem solving (including number patterns, divisibility tests, spatial visualisation, logic problems and cryptarithms)

GRADE 8 (SECONDARY 2)

Arithmetic and Algebra

Geometry, Graphs and Mensuration

Pythagoras' Theorem

Statistics

Non-routine problem solving (including number patterns, divisibility tests, spatial visualisation, logic problems and cryptarithms)

GRADES 9-10 (SECONDARY 3-4)

Arithmetic and Algebra

Geometry, Graphs and Mensuration

Pythagoras' Theorem and Trigonometry

Statistics and Probability

Non-routine problem solving (including number patterns, divisibility tests, spatial visualisation, logic problems and cryptarithms)

About VANDA Science Global Finals



Vanda is an International Science Competition held annually around the globe. It focuses on the student's ability to think critically and creatively to pick out hidden information to aid them in solving the question.

Vanda is for students from primary 3 to secondary 4 (Grade 3 to Grade 11). It follows closely with the Singapore School Science Syllabus and tests students based on their level of content that they have learned. This allows participants to do better compared to pure-Olympiad papers since they are familiar with some of the questions.

Vanda has a very strong teamwork component in the competition, and the Gold-winning group will demonstrate high levels of collaboration and mutual support. Questions in the competition have a strong foundation in scientific knowledge and methodology which include the development of reasoning and analytical skills, decision and problem solving skills, flexible to respond to different context and possessing an open and inquiring mind that is willing to explore new territories and learn new things which are aligned to the desired 21st century competencies.

Objectives

IGNITE YOUR PASSION

Vanda ignites students' hidden passion for science! Vanda provides a range of interesting content in questions to spark their curiosity and encourages them to venture deeper into the world of science.

AN OPPORTUNITY FOR ALL

Vanda exposes students to a Science Olympiad Competition that follows closely to their syllabus and their level of content learned. This gives them the confidence to take part in more challenging science competitions and start scoring A* in Science.

REACHING GREATER HEIGHTS

Vanda helps students to be comfortable with various science olympiad papers in the right environment. Vanda wants students to utilize this experience to continue to take part in more challenging Science Olympiad Competitions in the future.

Pre-Requisite for the Competition

Candidate needs to obtain the following award before qualifying for VANDA Global Finals:

- Gold, Silver or Bronze award winners for VANDA International Science Competition

Website: <https://vanda.sg/>

Format

This year, due to COVID, and safety concerns for all students, parents and teachers, we are hosting Steam Ahead ONLINE using our Online Contest System (OCS) to continue helping our students and teachers to Acquire Skills and Recognition for SUCCESS.

Round 1 - Written Paper

Duration: 60 minutes

Section A

Questions 1 to 5
2 points each
0 points for unanswered question
Deduct 1 point for wrong answer

Section B

Questions 6 to 10
3 points each

Section C

Questions 11 to 20
4 points each

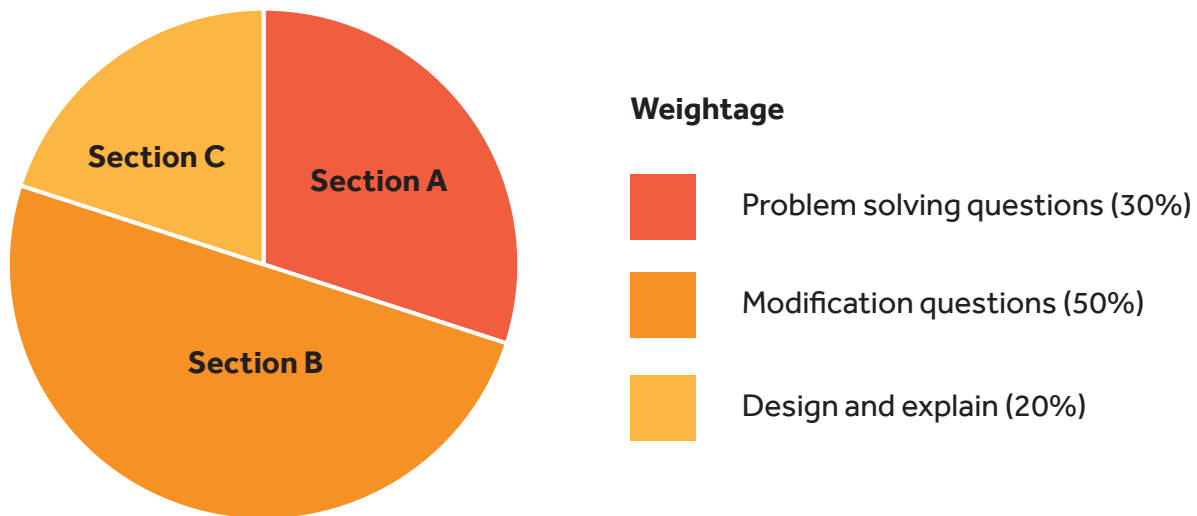
Total marks:

70

The paper starts with 5 points

Round 2 - Cherrr Team Challenge

Duration: 3 hours



All participants will be placed into teams of 9 during the whole of Round 2. Each team must elect one leader to upload the team's answers into our system. All team members will be graded according to the team leader's submission.

Every team will be presented with an online experiment and will have to answer different questions about the experiment based on the different sections.

Section A - Problem-solving questions

The team will answer free response questions based on the experiment they are presented with.

Section B - Modification questions

The team will answer questions on what modifications they will make to the experiment based on the scenario(s) given.

Section C - Design and explain

The team will design their modified experiment based on Section B and explain their modifications.

Syllabus

VANDA reserves the rights to change the syllabus without any prior notice.

GRADES 3-4 (PRIMARY 3-4)

Diversity of living and non-living things
Diversity of Materials
Cycles in plants and animals
Cycles in matter and water Plant system
Human system
Solar system Interaction of forces
Energy forms and uses

GRADES 5-6 (PRIMARY 5-6)

Diversity of living and non-living things
Diversity of Materials
Cycles in plants and animals
Cycles in matter and water Plant system
Human system
Cell system
Electrical system
Solar System
Interaction of forces
Interaction within the environment Energy forms and uses
Energy conversion

GRADE 7-8 (SECONDARY 1-2)

Exploring Diversity of Matter by their Physical Properties
Exploring Diversity of Matter by its Chemical Composition
Exploring Diversity of Matter Using Separation Techniques
Understanding Diversity of Living Things Model of Cells – the Basic Units of Life
Model of Matter – The Particulate Nature of Matter
Model of Matter - Atoms and Molecules
Ray Model of Light
Transport System in Living Things
Human Digestive System
Human Sexual Reproductive System
Electrical Systems
Interactions through the application of forces Energy and Work Done
Transfer of Sound Energy through Vibrations
Effects of Heat & its Transmission
Chemical Changes
Interactions within Ecosystems

Syllabus

GRADE 9 (SECONDARY 3)

Experimental Chemistry
The Particulate Nature of Matter
Formulae, Stoichiometry and the Mole
Electrolysis
Energy from Chemicals
Chemical Reactions
Cells Structure and Organisation
Movement of Substances
Biological Molecules
Nutrition in Humans
Nutrition in Plants
Transport in Flowering Plants
Transport in Humans

GRADES 10 (SECONDARY 4)

Acids, Bases and Salts
The Periodic Table
Metals
Air
Organic Chemistry
Excretion in Humans
Homeostasis
Co-ordination and Response in Humans
Reproduction
Cell Division
Molecular Genetics
Inheritance
Organisms and their Environment

Schedule Overview

Activity	Session 1	Session 2	Duration (minutes)
Registration	10am	8pm	30
Opening speech by Henry Ong and VIP	10.30am	8.30pm	5
IJMO rules and instructions	10.35am	8.35pm	15
Participants to log in and obtain access	10.50am	8.50pm	15
Start of IJMO	11.05am	9.05pm	90
Break	12.35pm	10.35pm	60
Briefing for VANDA Round 1 (Individual)	1.35pm	11.35pm	15
Start of VANDA Round 1 (Individual)	1.50pm	11.50pm	60
Break	2.50pm	12.50am	10
Briefing for VANDA Round 2 (Team)	3.00pm	1.00am	20
Start of VANDA Round 2 (Team)	3.20pm	1.20am	180
End of STEAM Ahead	6.20pm	4.20am	

*** All timings above are in Singapore time**

There will be 2 sessions:

Session 1: starts at 10am (Singapore time)

Session 2: starts at 8pm (Singapore time)

SIMCC will assign you a session to attend based on your timezone. Kindly take note that **all timings in the schedule are according to Singapore timezone.**

Session 1	Session 2
All participating countries not listed in Session 2	Azerbaijan Brazil Bulgaria Egypt Ghana Iran Mexico Turkey

SIMCC reserves the rights to make changes to the above schedule without prior notification.

Awards

All participants are invited to attend the award ceremony for STEAM AHEAD held on 27 December, 7pm-10pm (Singapore time). The award ceremony will be held online. Participants will be given links to join any Zoom session hosted by SIMCC management and our country partners.

IJMO AWARDS

Individual Awards

Awards	
Perfect Score*	Full marks
Gold award*	Top 10%
Silver Award*	Next 15%
Bronze Award	Next 25%
Honorable Mention	Next 20%
Certificate of Participation	Next 30%

* qualifies as a significant award for IJHS

IJMO Overall Championship Awards

IJMO Overall Championship awards are given to the top 3 winners per grade level from Grades 2-10/11 **based on the Math Olympiad Individual Score**. Winners will be announced during the award ceremony.

Awards (Cash)	
Overall Champion	SGD250
Overall Runner-up	SGD150
Overall 2 nd Runner-up	SGD100

In the event of any ties, we will give the winners the same position. For example, if two contestants score 90 points and the third contestant scores 87 points, we will grant 2 overall champions and an overall 2nd runner-up.

VANDA GLOBAL FINALS AWARDS

Individual Awards - Round 1 (Written Paper)

Awards	
Perfect Score*	Full marks
Gold award*	Top 10%
Silver Award*	Next 15%
Bronze Award	Next 25%
Honorable Mention	Next 20%
Certificate of Participation	Next 30%

* qualifies as a significant award for IJHS

Team Awards - Round 2 (Cherrr Team Challenge)

Award	
Gold award	Top 10%
Silver award	Next 15%
Bronze award	Next 25%

VANDA Overall Championship Awards

Vanda Overall Championship awards are given to the top 3 winners per grade level from Grades 2-10/11 **based on the VANDA Individual Score from Round 1 (must be Gold Award) and team score from Round 2**. Winners will be announced during the award ceremony.

Awards (Cash)	
Overall Champion	SGD250
Overall Runner-up	SGD150
Overall 2 nd Runner-up	SGD100

In the event of any ties, we will give the winners the same position. For example, if two contestants score 90 points and the third contestant scores 87 points, we will grant 2 overall champions and an overall 2nd runner-up.

OVERALL AWARDS - President's Award for Excellence in STEAM (PAES) and Award Badges

PAES awards are given to the top winner from each grade who has scored the highest across all individual competition categories (IJMO and Vanda Global Finals - Individual).

For Grades 2 to 10/11 (1 winner per grade)



- Trophy
- Certificate
- IJHS induction
- YALA Scholarship (for grades 5 and above)
- S\$300 cash prize



Award badges

Limited-edition badges are given to award winners (Bronze, Silver, Gold, Perfect Score and 2nd Runner-up, Runner-up and Champion).

IJMO Award Badges Samples



Important Dates

November	15	STEAM Ahead Registration closes
December	5	Online Competition day
	27	Online Award ceremony

