Dear Parent

In light of the current COVID-19 outbreak that has resulted in contemplated school closures, **Atlantis (Beyond Imaginations) has introduced an online challenge** 'Creative Outcome from Recyclable Objects – National Activity (CORONA Challenge)' a novel long-holiday online event for educational institutions in India and abroad that brings together a unique opportunity for students to showcase their creativity and talents while being actively engaged within a confined, safe and secured environment of their homes.

The details for the same are attached for your further reference.
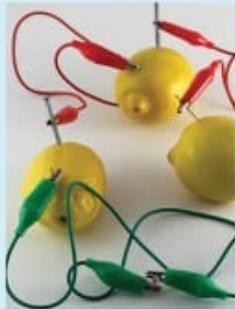

Regards
K.R. Mangalam World School

ATLANTIS going beyond...

REGISTRATIONS OPEN

Creative Outcome from Recyclable Objects - National Activity

Registration Fee : ₹400

Build A Lemon Battery

Constellation Geoboard

Mars Rover

Motorized Coloring Robot

Spacesuit

IMPORTANT

☑ Register Till: 15th April
☑ Submission Deadline: 20th April
☑ Result : 30th April
☑ Age Group 5-16 Years

WINNING PRIZE

☑ 1st Winner: ₹2000 + Certificate
☑ 2nd Winner: ₹1400 + Certificate
☑ 3rd Winner: ₹800 + Certificate

ATLANTIS going beyond...

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ThinkRobotics This is where you begin

Creative **O**utcome from **R**ecyclable **O**bjects – **N**ational **A**ctivity (CORO-NA Challenge)

In light of the current COVID-19 outbreak that has resulted in contemplated school closures, we are introducing a novel long-holiday online event for our educational partners in India and abroad that brings together a unique opportunity for students to showcase their creativity and talents while being actively engaged within a confined, safe and secured environment of their homes.

This challenge will be focusing on STEAM related content and activities. We will be complimenting the entire length of the activity with input from notable online guests that may include NASA/Boeing Engineers, Technical Science Advisors and University Students.

Why STEAM based Activities?
During these holidays students need to be engaged to learn. Our STEAM based CORO-NA Challenge is child centric that encourages inquiry based principles that will allow individual students to take ownership of their learning.

As mentors, Atlantis' educators will support them in following their passions by providing them a creative platform that is a result of our decade long experience in making such activities fun and interesting. With CORO-NA, Atlantis Research aims to impart practical real world skills and support students in their learning journey by inspiring and fostering their passion in creating successful, life-long learners.

Why CORO-NA?
In the previous section we mentioned inquiry based learning principles and strategies. CORO-NA activity will engage students by promoting inquiry and questioning, then letting that form the framework for the lessons and learning.

From structured, to controlled, to guided, to free inquiry, students that are educated through the various levels of inquiry based learning activities develops strong skills in self-motivation. They also develop the ability to guide their own learning and education. Essentially, they become their own best teacher. This is a fantastic skill for continued growth and success throughout a person's life.

Introduction:
The CORO-NA challenge would be a week long home activity that is designed with a specific intention to nurture our students wide-open curiosity about the world of STEAM (Science, Technology, Engineering, Arts and Math), regardless of their ability or history, while reinforcing important life skills and help to potentially spark a lifetime interest in this crucial field.

During holidays, individual students from various age-groups are initially required to register themselves by 15th April. Post registration, students must identify a Theme and concentrate on the following points:

1. Select particular STEAM theme, subject and topic

2. Identify primary specification: working model or stationary model

3. Identify secondary specification: mechanical, electronic or mechatronics

4. Identify at least three sources of written information on the topic

5. Determine specific equipments, materials and tools

Deliverable: The final project should contain one factor (variable) that student has changed in their standard experiment and at least one factor (variable) that can be measured.

These details will further be submitted across to the Atlantis' technical team for review by **April 20th..**

Post review and approval, each student will be granted about **4 days** to plan, build and present their projects that will be judged via 5 min video presentation where students are required to highlight and present the following points:

1. Project objective.

2. Use of resources.

3. Describe various phases in project development and their duration.

4. Identify use, purpose and source of data gathered at various milestone phase.

5. Specific outcomes and verifiable results.

6. Describe potential real world application.

Note:

1. Apart from submitting their respective project videos, participating students between the age groups of 11 to 16 are further required to complement and present a descriptive chart /PPT that highlights the key learning objectives, fundamentals and practical application of their project in real world.

2. The challenge requires students to practice the following material ratio while formulating their projects: 60% recyclable, 30% off the shelf material and 10% out-of-the-box material. Parental supervision is mandatory, if and when students plan to use electronic or sturdy tools like drill machine or hammer chemical or strong/corrosive lubricants or liquid like hot glue gun or super glue.

Below is a list of activities/categories to chose from as per your age group:

Theme option for Age Group: 5 - 7 years (Choose any 1)

1. Arts and Craft
Basic e.g. articulated grabber
   Rotational symmetry art
   Pendulum Painting

2. Energy and Power
Basic e.g. How to make lemon/potato battery
   Tiny dancer (A homopolar battery)
   Static electricity flyer

3. Creative Engineering
Basic e.g. Popsicle stick gears

Balloon powered bottle car

Straw roller coaster

4. Aerospace Science and Flight

Basic e.g. Straw Airplane

Balloon rocket

Balloon propelled CD hovercraft

5. Astronomy

Basic e.g. Build model spacecraft to explore solar system

Compare size and distance of planets

Make a galactic mobile

Theme option for Age Group: 8-10 years (Choose any 1)

1. Astronomy

Basic e.g. Antacid Rocket: vinegar and baking soda propellant

Air Powered Bottle Rocket

Make a constellation geo-board

2. Arts and Craft

Basic e.g. Space Station Role Play model

Flutter cards - flying butterfly cards

Make favourite action hero mask & body suit out of cardboard

3. Energy and Power

Basic e.g. Build a Solar oven

Renewable energy: Hydro power - create a water wheel that can lift a weight

Build a wind car

4. Creative Engineering

Basic e.g. A Gauss rifle (also called a magnetic linear accelerator)

Cardboard hydraulic robotic arm

Cotton ball launcher

5. Electricity or Electronics

Basic e.g. Paper circuit board game

Play dough circuit

Make homemade battery (Vinegar & aluminium foil)

6. Aerodynamics & Hydrodynamics

Basic e.g. Archimedes screw water pump

Paper airplane launcher

Paper coffee cup helicopter

7. Robotics

Basic e.g. Motorized colouring bot

Build a robot boat using plastic bottle

Fidget spinning robot

Theme Options for Age Group: 11-13 years (Choose any 1)

1. Geology

Basic e.g. Fantastic Fossilization! Discover the Conditions For Creating the Best Cast Fossils

Earthquakes: What are the perfect circumstances that cause tsunami?

Measuring the Diameter of the Earth's Core with Seismic Waves around the Globe

2. Astronomy

Basic e.g. Asteroid Mining: Gold Rush in Space?

How Old Is the Universe?

The James Webb Space Telescope's Amazing Multiple Mirrors and Sunshield

3. Robotics / Computer Science

Basic e.g. Flying disc machine

Design Your Own Vibrobots

Robots to the Rescue! Build & Test a Search-and-Rescue Robot

4. Photography, Digital Photography & Video

Basic e.g. Create your own animation zoetrope

Light bulb smart phone projector

Shoe box projector

5. Aerodynamics & Hydrodynamics

Basic e.g. How Far Will It Fly? Build & Test Paper Planes with Different Drag

The Swimming Secrets of Duck Feet

How Does a Hovercraft Work?

6. Exoplanets

Basic e.g. The history of exoplanets

What are the different scientific methods to identify exoplanets?

Using Kepler Space Telescope Data to Identify an Exoplanet

7. Electricity or Electronics

Basic e.g. LED Traffic Glove: Build a Safety Device to Direct Traffic

LED Dance Glove: Get the Party Started with Your Own Interactive Light Show

Build a Simple Electric Motor

Theme options for Age Group: 14-16 years (Choose any 1)

1. Geology

Basic e.g. Astrogeology: Can you make a map or model of another planet? What minerals are found on other planets?

Get Some Practice at 'Fossil' Reconstruction with bird feathers

Is There a Whole Lot of Shaking Going On? Make Your Own Seismograph and Find Out!

2. Astronomy

Basic e.g. Design a space habitat in Low Earth Orbit (LEO) for a population of 300 residence

Design a space settlement in orbit around the Moon

Design a space habitat on the surface of Mars

3. Robotics / Computer Science

Basic e.g. Make a Greeting Card Come to Life!

Create and View Your Own 3D Models in Virtual Reality

Artificial Intelligence: Teaching the Computer to Play Tic-Tac-Toe

4. Photography, Digital Photography & Video

Basic e.g. Measuring Height Or Distances with a Camera

Seeing Beyond the Visible: Photography with Near Infrared Illumination

Picture This: Building a Cell Phone Microscope

5. Aerodynamics & Hydrodynamics

Basic e.g. Study six aerodynamic attributes of airfoil design and understand how they affect lift and drag forces

Why do wind turbines have three narrow blades, but ceiling fans have five wide blades?

Build, demonstrate and research automatic irrigation systems

6. Aerospace Science and Flight

Basic e.g. Research parachutes by building one and performing different experiments

How to make a model of the Lunar Lander

What shape parachute (circle, square, rectangle, triangle or ellipse) will slow your fall down the best?

Is the procedure employed by air traffic controllers to control air traffic efficient?

7. Exoplanets

Basic e.g. What are the properties of exoplanets and what the habitable zone is and how that relates to places where we might discover life.?

Find out more about our own Solar System so you can compare it with these more distant and less understood objects.

Planet Hunters Transiting Exoplanet Survey Satellite (TESS)

8. Environmental Engineering

Basic e.g. Cleaning Up Oil Spills in Ocean

Terraforming Mars, do we have the technology?? Is it even legal?

Fish + Food = Science of Aquaponics

Preparation:

We have listed a series of consideration that will provide students better opportunity to plan, build and succeed. Given the relatively time period involved participants will need to be well prepared.

- Participating schools will be sent detailed guidelines for students at least one week before the event.
- With the above in mind it will be possible for participants to access numerous online resources to learn more about various STEAM based themes mentioned above.
- Individual student will be responsible to identify and gather primary material for their projects.
- Individual pupil can complement their projects with limited range of accessories. This may include electric motors, lighting, servo controllers, Arduino or Raspberry Pie devices, low voltage power supplies or battery banks, screens, laptops etc.
- Throughout the challenge, individuals are not allowed to utilize pre built structures of any sort.

Safety:

High priority should be given to safety at all times. To ensure that safe working environments are created and properly managed throughout the course of the online activity the following measures needs be adopted.

- A detailed safety briefing will be provided as part of the online video introduction. This may include an advisory handout.
- Each student is required to assign one individual family member designated as safety officer who will be responsible for overseeing the correct usage of tools,

power tools and implements. Special supervision will be given to any cutting involving razor sharp tools.
- When required protective gloves and eyewear is advised.

Event Itinerary

April 1st – Introduces the CORO-NA challenge amongst students through social media/ official emails

15th April – Final Registration (Till 6:00pm)

20th April – Final date of submission

30th April – Results announced

Fees:

Rs. 400 per student inclusive of taxes.

Registration email to be sent at abhinav@atlantisresearch.in or contact@atlantisresearch.in.

Results and Prize

The below mentioned results and prize will be awarded to students from the above four age category

1st Place Winner - ₹2,000 + Official Medal + Certificate
2nd Place Winner - ₹1,400 + Certificate
3rd Place Winner - ₹800 + Certificate
All the remaining participating students will be receiving an official certificate of participation.

Payment Modalities :
- Paytm @ 9911683627
- Google Pay @ 9911683627
- Bank Transfer
  Account Number : 07112320000162
  IFSC Code : HDFC0000711
  Bank Name : Hdfc bank
  Company Name : Atlantis Research
  Account Type : Current
  Bank Address : Pushpanjali Enclave, New Delhi

We look forward to your child's participation and providing a great learning experience!

Sincerely
Pallavi Agarwal
Director, Atlantis