अंक-02 वर्ष-01

दिसम्बर 2021

नई उड़ान

त्रैमासिक विज्ञान पत्रिका





मिसाइल मैन डॉक्टर अब्दुल कलाम

अबुल पाकिर जैनुलआब्दीन अब्दुल कलाम हमारे देश के 11वें राष्ट्रपति होने के अलावा एक अत्यंत महत्वपूर्ण वैज्ञानिक औ शिक्षाविद् थे। भारतीय बैलिस्टिक मिाइल कार्यक्रम में उनकी महत्वपूर्ण भूमिका के कारण उन्हें भारत का 'मिसाइल मैन' कहा जाता है। लगभग 4 दशक तक वह डीआरडीओ (रक्षा अनुसंधान एवं विकास संगठन) तथा इसरो (भारतीय अंतरिक्ष अनुसंधान संगठन) में वैज्ञानिक और व्यवस्थापक के [redacted] तथा देश को विज्ञान और [redacted] क्षेत्र में उन्नत बनाने में [redacted] निभाई।

[redacted]लाम का जन्म तमिलनाडु के रामेश्वरम में 15 अक्तूबर 1931 को हुआ था। वह अपने 5 भाई और 5 बहनों में सबसे छोटे थे। उनके पिता का मछुआरों को किराये पर नाव देने का व्यवसाय था जिससे इतने बड़े परिवार का पालन पोषण बहुत मुश्किल था।

पारिवारिक परिस्थितियों के कारण उन्होंने मदरसे में अपनी शुरुआती पढ़ाई के साथ शहर में अखबार बाँटने का काम करना शुरू किया। शुरुआती शिक्षा के बाद उन्होंने मद्रास इंस्टीट्यूट आफ टेक्नॉलाजी से एयरोनाटिकल इंजीनियरिंग की पढाई की।

इसके बाद उन्होंने डीआरडीओ में वरिष्ठ वैज्ञानिक आर. वरदराजन के साथ मिलकर हॉवरक्राफ्ट परियोजना पर काम किया। डॉ. कलाम को भारत का 11वां राष्ट्रपति चुना गया। डॉ. सर्वपल्ली राधाकृष्णन् के बाद वह दूसरे ऐसे राष्ट्रपति थे, जिनकी कोई राजनैतिक पृष्ठभूमि नहीं थी। इसके बावजूद वह अंतर्राष्ट्रीय स्तर पर भारत के महत्व को बढ़ाने वाले कार्यों में रुचि रखते थे।

डॉ. कलाम वैमानिकी के प्रति अपने झुकाव का श्रेय अपने 5वीं कक्षा के शिक्षक को देते थे। एक बार जब उनकी कक्षा के छात्रों को पक्षियों के उड़ने का तरीका समझ नहीं आया, तब वे उन्हे समुद्र तट पर ले गए और उड़ते हुए पक्षियों को दिखाकर उड़ने की पूरी प्रक्रिया समझाई। इस घटना ने कलाम को आगे जाकर 'एयरोनौटिकल इंजीनियरिंग' पढ़ने के लिए प्रेरित किया।

उनकी सभी जीवों के प्रति संवेदनशीलता अनुकरणीय है। जब वह डीआरडीओ में डायरेक्टर थे, तब वहाँ सुरक्षा के लिए दीवारों पर कांच के टुकड़े लगाने का प्रस्ताव आया जिसे उन्होंने यह कहते हुए अस्वीकार कर दिया कि ऐसा करने से दीवारों पर [redacted] पक्षी घायल हो सकते हैं।

भारत सरकार द्वारा [redacted]1 में पद्म भूषण, 1990 में पद्म विभूषण, 1997 में भारत रत्न, 1998 में वीर सावरकर पुरस्कार से सम्मानित किया गया। 27 जुलाई 2015 को शिलांग में एक व्याख्यान देते समय उनका दिल का दौरा पड़ने से निधन हो गया जिससे भारत ने अपने मिसाइल मैन को सदा के लिए खो दिया। अपने उच्च आदर्शों और व्यवहार के कारण उनका जीवन सभी विद्यार्थियों और वैज्ञानिकों के लिए एक मिसाल है।



आयुषी भट्ट
कक्षा 8
स्टैनफोर्ड कान्वेंट स्कूल

HIMANSHU GUPTA, IAS
Director, Education & Sports



सत्यमेव जयते

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From the Desk of the Director

The present times have witnessed numerous changes in varied fields-technology, trade and commerce, industry, travel and tourism and climate. Therefore, teaching fraternity needs to strive endlessly to give prolife *meaning to education and equip the children* with such skills that provide them with the opportunities where they can fulfill their vision for the future.

The current issue of "NAI UDAAN" themed on "Biodiversity" is an attempt to make people aware of the correlations between environment and living beings, and also to make the society aware of the ways by which the world is crumbling due to the disastrous human interventions. Though steps are being taken to ameliorate the conditions through various efforts on national and international bodies as well as local efforts: yet much needs to be done to achieve a sustainable ecosystem.

In these efforts of sustainability, Directorate of Education always played a significant role as their concerns for Mother Earth. The current issue of the magazine not only celebrates the efforts of DOE, but also looks forward to think and innovate ways in which these efforts can be coordinated in national and international levels to look for ways in which more sensible and environment conscious sensibilities can be evolved amongst humankind and the Sustainable Development Goals (SDGs) can be realized in as little time as possible.

This issue of the magazine indeed reflects the epitome of their sincere efforts in raining awareness for the issue and their utmost interest in bringing up a change in the society.

I convey my best wishes to the contributors and also to the Editorial Team of the magazine for this creative and much needed endeavor.

(HIMANSHU GUPTA)

Proud moments



Launch of “Nai Udaan” at State Award function by Honourable DyCM and Minister Education Sh. Manish Sisodia.

Secretary education -Sh H Rajesh Prasad, Former Director Education- Sh Udit Prakash Rai, DDE school branch -Mr Sanjay Subhash, DDE science branch - Sh Sudhakar Gaikwad, OSD school branch- Sh. BP Pandey, OSD science branch -Mr Kundan Dubey also graced the occasion.



नई उड़ान

(त्रैमासिक विज्ञान पत्रिका)

संरक्षक
हिमांशु गुप्ता
निदेशक (शिक्षा विभाग)

प्रधान सम्पादक
ज़रीन ताज
अतिरिक्त शिक्षा निदेशक

उप प्रधान संपादक
डॉ सुधाकर भीमराव गायकवाड़
उप शिक्षा निदेशक
(विज्ञान शाखा)

उप प्रधान संपादक (प्रबंधन)
संजय सुभाष कुमार
उप शिक्षा निदेशक
(परीक्षा/विद्यालयी शिक्षा)

सम्पादक
पुण्डरीकाक्ष कौडिन्य (प्रधानाचार्य)
(रा० प्र० वि० वि० राजनिवास मार्ग दिल्ली)

सम्पादक–मण्डल
बी पी पाण्डेय (ओएसडी स्कूल ब्रांच)
कुन्दन कुमार दुबे (पुस्तकालयाध्यक्ष)
सुमन रेलन, प्रवक्ता (अंग्रेजी)
भावना सावनानी, प्रवक्ता (जीव विज्ञान)
डॉ अनुराग कुमार मिश्र (प्रवक्ता,हिंदी)
डॉ नील कमल मिश्र (टी जी टी विज्ञान)
रविंद्र कुमार , (टी जी टी,विज्ञान)
चन्दन झा , (टी जी टी,विज्ञान)

डिजाईन एवं ग्राफिक्स
नवीन कुमार श्रीवास्तव
(कला अध्यापक)



'विविधता' प्रकृति का अनुपम वरदान है। अणु से लेकर स्थूल ब्रह्माण्ड तक हमें प्रत्येक स्तर पर इस विविधता के दर्शन होते हैं। धरती सहित अन्य ग्रह, नक्षत्र, पेड़-पौधे, जीव-जन्तु, पशु, मानव सब के सब अपने-अपने समूहों में भी रंग-रूप, आकार, स्वभाव और क्रियाओं की विविधता को संजोये हैं। वस्तुतः यह वैविध्यपूर्ण सृष्टि ही जीवन का स्रोत और उसके विकास का आधार है। जिन ग्रहों पर हमें इस प्रकार की जैव अथवा धातुज विविधता देखने को [redacted] ही की जा सकती है। जड़-चेतन, जीव- [redacted] इसरे के पूरक भी। पत्रिका के इस अंक [redacted] ण' पर विशेष ध्यान केन्द्रित करने का प्र [redacted] रही पीढ़ी इसके महत्व को समझे और इस दिशा में अपना सार्थक योगदान देने के प्रति सजग हो सके।

प्रतिदिन हमारे आसपास कुछ न कुछ नया घटित होता है, जो कभी मानव द्वारा किये गये आविष्कार के रूप में होता है तो कभी प्रकृति के द्वारा किया गया परिवर्तन। बुद्धिशील प्राणी होने के नाते हमारे लिए यह आवश्यक हो जाता है कि हम न केवल इस 'बदलाव' से परिचित हों अपितु इसकी वैज्ञानिक आधार पर पड़ताल करें और स्वयं अथवा समाज के ऊपर इसके होने वाले सकारात्मक या नकारात्मक प्रभावों का अध्ययन करें। यह अध्ययन ही हमें एक बेहतर 'जीवन' की ओर अग्रसर करेगा और यही विज्ञान का सर्वोपरि 'लक्ष्य' भी है। 'नई उड़ान' पत्रिका अपने पहले अंक से ही इस दिशा में आगे बढ़ रही है और यह उड़ान अनवरत जारी रहेगी।

पूर्व अंक की भाँति इस अंक में स्थायी कॉलमों के अंतर्गत छात्रों और शिक्षकों से प्राप्त उत्कृष्ट लेखों को सम्मिलित करने का प्रयास किया गया है। पहले अंक के प्रकाशन के साथ ही छात्रों [redacted] का की गुणवत्ता और व्यापकता के प्रेरक [redacted] पत्रिका की सम्पादकीय टीम छात्रों और शिक्षकों के वैज्ञानिक चिंतन और नवान्मेषी को नई उड़ान देने के अपने महत् उद्देश्य में सफलता प्राप्त करेगी इस विश्वास के साथ पत्रिका का यह द्वितीय अंक सुधी पाठकों को सादर समर्पित है....

'नई उड़ान' त्रैमासिक विज्ञान पत्रिका का प्रकाशन शिक्षा निदेशालय, दिल्ली सरकार द्वारा किया जाता है।
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Editor's Choice **6-8**
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Innovations (Students) **9**
बेकार वस्तुओं से उपयोगी उपकरण
By: Rishabh

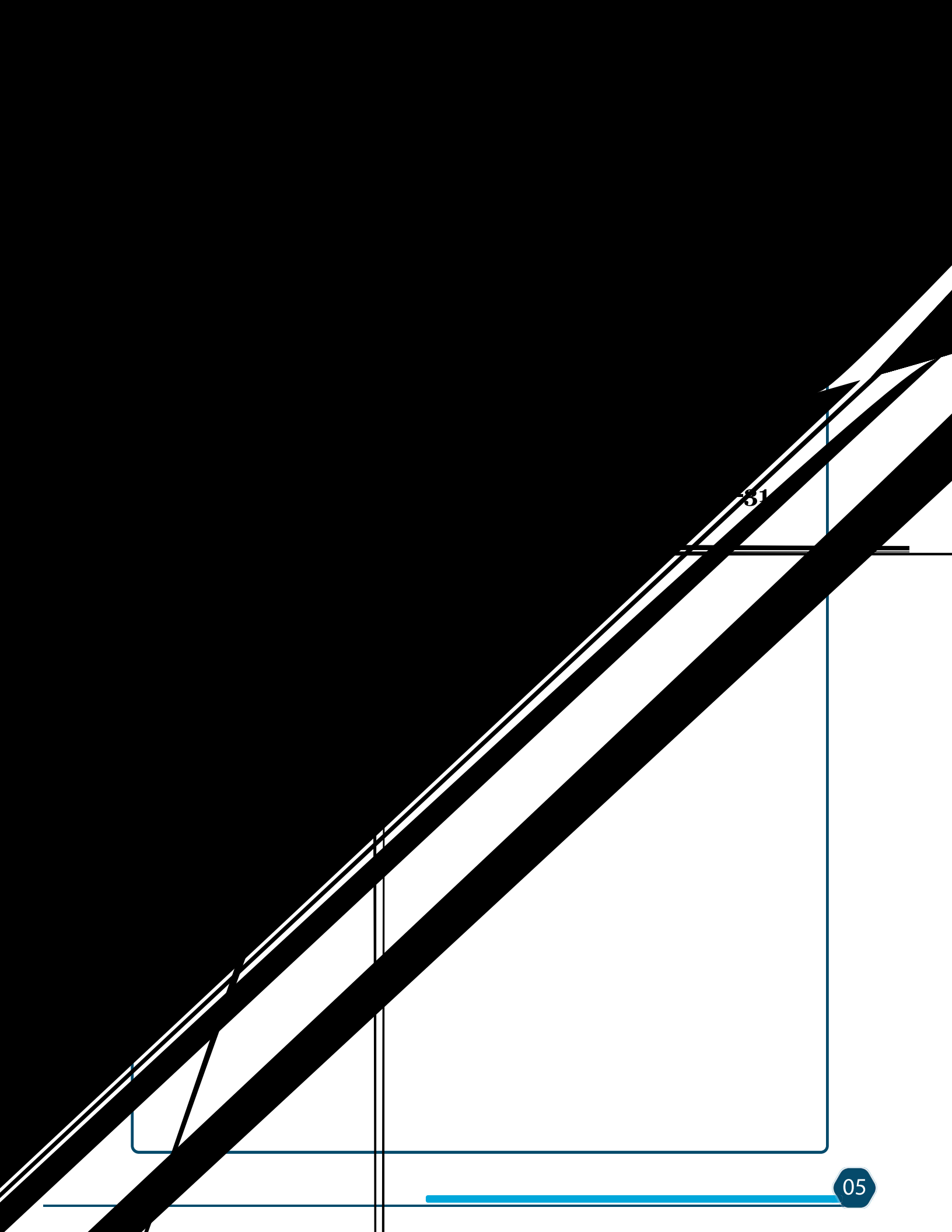
Innovations (Teachers) **10-11**
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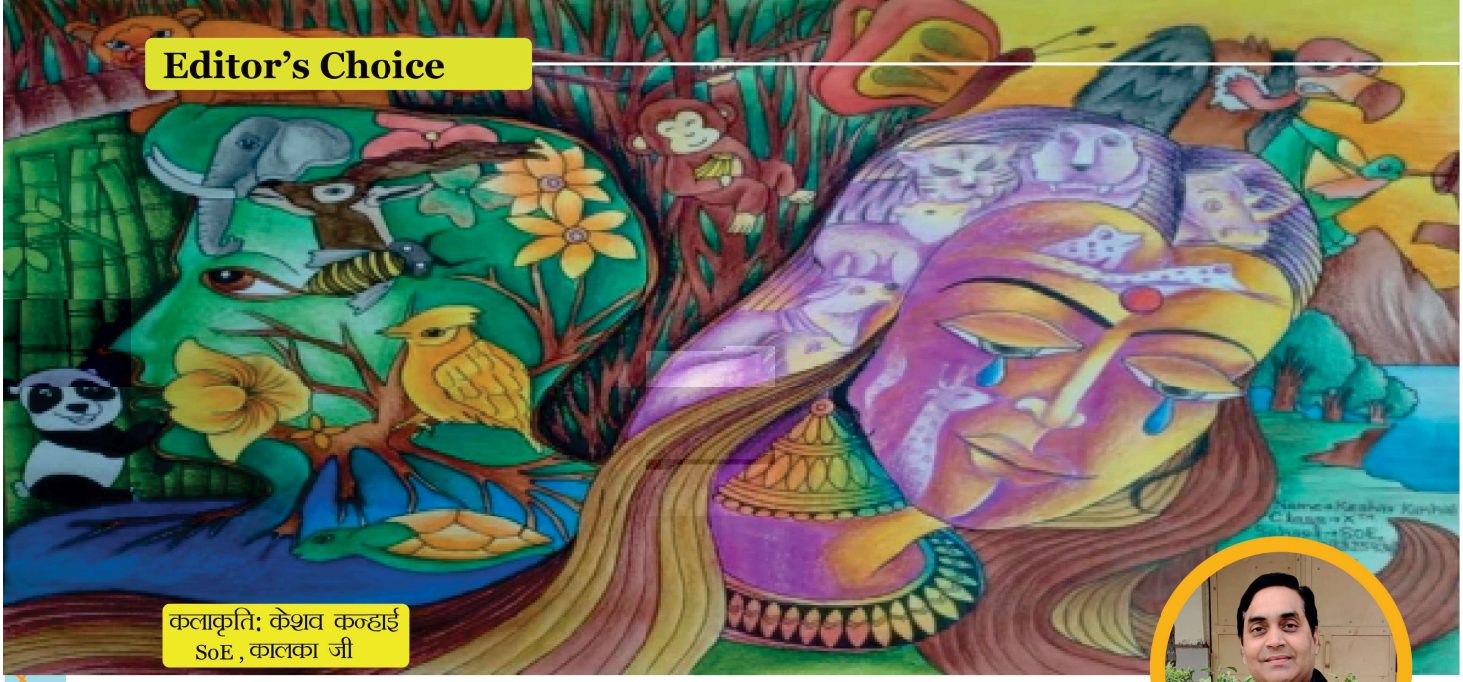
पुस्तक समीक्षा **14-15**
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You have achieved **16-18**
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Editor's Choice



कलाकृति: केशव कन्हाई
SoE , कालका जी

जैव विविधता में हमारे विद्यालयों का योगदान

डॉ. नीलकमल मिश्र
TGT नेचुरल साइंस
SBV फतेहपुर बेरी

जैव विविधता दो शब्दों से मिलकर बना है जैव अर्थात् जीव और उनकी विविधता । यदि सरल शब्दों में समझें तो किसी स्थान विशेष में पाए जाने वाले जीवों और वनस्पतियों के प्रकारों को जैव विविधता कहते हैं।

सुव्यवस्थित और संतुलित पर्यावरण का आधार ही एक समृद्ध जैव विविधता से भरा क्षेत्र है। हमारी धरती को रहने के योग्य बनाने में इस धरती पर मौजूद सभी पेड़ पौधों और जीव जंतुओं का अमूल्य योगदान है।

मनुष्य अपने जीवन और सभी आवश्यकताओं की पूर्ति के लिए पर्यावरण पर ही आश्रित है। अनेक प्रकार के पेड़ पौधे और जीव जंतु न सिर्फ मनुष्यों की आवश्यकताओं की पूर्ति में अपना विशेष योगदान देते है बल्कि एक बेहतर पारितंत्र और खाद्य श्रृंखला को बनाये रखने में भी अति महत्वपूर्ण भूमिका निभाते हैं।

जंगलों की अंधाधुंध कटाई के साथ साथ मानव की अनेक गतिविधियों ने जैव विविधता को बहुत नुकसान पहुँचाया है। आंकड़े बताते हैं कि पिछली कुछ शताब्दियों में बहुत सारे पेड़ पौधों के साथ साथ जीव जन्तुओं की प्रजातियाँ विलुप्त हो चुकी हैं और बहुत सारी प्रजातियाँ आगामी कुछ वर्षों में विलुप्त होने के कगार पर खड़ी हैं।

इसका प्रभाव मानव जीवन पर कैसे पड़ रहा है, इसको हम एक उदाहरण से समझ सकते हैं । उदाहरण के लिए चिकित्सा में उपयोग की जाने वाली लगभग 25% दवाएं पेड़ पौधों से प्राप्त होती हैं इसका मतलब यह है कि हर बार जब किसी वनस्पति की प्रजाति विलुप्त होती है, तो हम एक नई दवा प्राप्त करने की सम्भावना से चूक जाते हैं।

वहीं जैसे ही कोई जीव विलुप्त होता है इसका सीधा प्रभाव खाद्य श्रृंखला और हमारे पारितंत्र पर पड़ता है। यदि लम्बे समय तक यह जारी रहा तो यह कहना अतिशयोक्ति नहीं होगी कि इससे पूरी मानव जाति का भी खतरे में आ जाएगा।



पर्यावरण के साथ की जा रही छेड़छाड़ का परिणाम कहीं ऐसा न हो कि अन्य जीव जंतुओं की तरह एक दिन मनुष्य का नाम भी विलुप्त होने वाले जीवों की श्रेणी में आ जाये क्योंकि हम भी आखिर उसी जैव विविधता का अभिन्न अंग हैं। ऐसा नहीं है कि जैव विविधता को बचाए रखने की दिशा में प्रयास नहीं किये जा रहे हैं लेकिन जो प्रयास किये जा रहे हैं वो इतनी बड़ी समस्या के समाधान के रूप में बेहद सतही स्तर पर हैं। इस समस्या का प्रभावी समाधान युवा और बच्चों के हाथ में है जो कि लगभग आधी जनसँख्या का नेतृत्व करते हैं। मानव के व्यवहार में परिवर्तन, पर्यावरण तथा जैव विविधता के प्रति संवेदनशीलता ही जैव विविधता के नुकसान को रोकने का एकमात्र सशक्त विकल्प है।





एक समय था जब दिल्ली के आसमान में गौरैया बड़ी संख्या में नजर आती थी लेकिन आज दिल्ली में गौरैया विलुप्त होने के कगार पर है । RPVV सूरजमल विहार विद्यालय में शुरू किया गया "सेव द स्पैरो" प्रोजेक्ट दिल्ली से विलुप्त होती गौरैया को बचाए रखने का एक अभियान है जो न सिर्फ गौरैया को विद्यालय में आश्रय प्रदान करा रहा है बल्कि समाज को भी एक सन्देश दे रहा है ।



UNESCO का मानना है कि जैव विविधता को बचाने की मुहिम में विद्यालयी शिक्षा अत्यंत महत्वपूर्ण भूमिका निभा सकती है ।

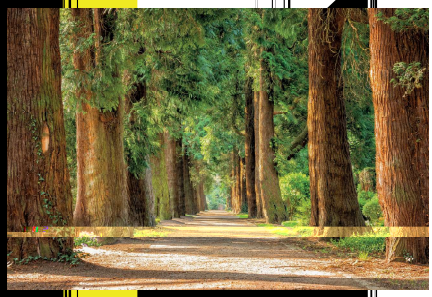
हमारे लिए ये अत्यंत गर्व का विषय है कि दिल्ली के सरकारी विद्यालयों में इसकी शुरुआत हो चुकी है और हमारे विद्यालय, अध्यापक और विद्यार्थी इस मुहिम का हिस्सा बन रहे हैं।



किस तरह मधुमक्खियां हमारे पर्यावरण का महतवपूर्ण अंग हैं इसको समझाने का प्रयास करते हुए वहाँ की प्रधानाचार्या ने स्वयं PUSA Institute से इसकी ट्रेनिंग ली और आज विद्यालय में सफेद शहद बनाने वाली Breed का संरक्षण कर रही हैं। कुछ विद्यालयों में हर्बल गार्डन और ग्रीन क्लासरूम जैसे प्रोजेक्ट विद्यार्थियों में औषधीय गुणों वाले पेड़ पौधों की देखभाल करना और उन्हें विलुप्त होने से बचाना सिखाते है। यह कुछ प्रयास एक दिन एक बड़े मिशन का हिस्सा बनने के लिए मील का पत्थर साबित होंगे, ऐसी हम आशा कर सकते हैं।



स्व प्रयासों से विद्यालयों में जैव
बटरफ्लाई पार्क की स्थापना की
सा किया जा सके कि अधिक से
के और अपनी संख्या बढ़ा सके।





बेकार वस्तुओं से उपयोगी उपकरण

ऋषभ
सर्वोदय बाल विद्यालय, प्रेमचंद
कक्षा-10

पिछले साल जब लॉकडाउन हुआ, तब हमारी कक्षाएं घर पर ऑनलाइन होती थी। इसी दौरान मेरे कक्षा अध्यापक ने मुझे EMC के अंतर्गत कुछ उपयोगी वस्तु बनाने के लिए प्रेरित किया, जो घर पर रखी बेकार वस्तुओं से बन सकती थी।

मैं सोल्डरिंग आयरन बनाना चाहता था। तीन चार बार कोशिश करने के बाद भी मैं असफल रहा लेकिन अपने परिवार की प्रेरणा से अन्ततः मैं सोल्डरिंग आयरन बनाने में सफल हुआ। इससे उत्साहित होकर मैंने एक Table lamp बनाया,जो रिचार्जेबल बैटरी से चलता है। मैंने Maths में Trigonometry के सूत्रों का एक क्विज मॉडल भी बनाया।

सोल्डरिंग आयरन बनाने के लिए मैंने एक पेंसिल और एक मोबाइल चार्जर का एडाप्टर लिया जो पहले खराब हो चुका था।

मैंने अडाप्टर की दोनों तारों को पेंसिल की लेड में दो अन्य तारों के साथ टेप लगाकर जोड़ दिया। इस तरह सोल्डरिंग आयरन बन गई और इसे चलाने के लिए अडाप्टर को सॉकेट में डालकर ऑन किया। पेंसिल की नोक तेज गर्म हो जाती है और इसे हम तारों को जोड़ने या किसी भी वस्तु में छेद करने आदि में प्रयोग कर सकते हैं।

इसी तरह मैंने प्लास्टिक की बोतल का ऊपरी हिस्सा, रबर ट्यूब का एक टुकड़ा, रिचार्जेबल बैटरी, एक पुराना



छोटा सा बल्ब और एक स्विच लेकर उन्हें कुछ पुरानी तारों से एक परिपथ में जोड़ दिया। इस टेबल लैंप का आधार एक पुराने गत्ते के डिब्बे से बनाया जिसमें एक स्विच भी लगा दिया। बल्ब को बोतल के ऊपरी हिस्से में फिट कर दिया और इसमें एल्युमीनियम फॉयल भी लगा दी जिससे परावर्तन के द्वारा प्रकाश अच्छे से फैल सके। गणित की क्विज का मॉडल बनाने के लिए भी कुछ इसी प्रकार से तारों का परिपथ बनाया।

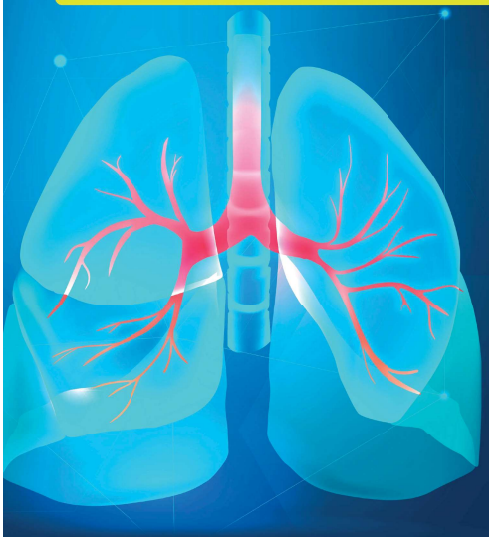
इसकी खासियत यह है कि इसमें बल्ब तभी जलता है जब प्रश्न का सही उत्तर से मिलान किया जाए। इस मॉडल का उपयोग गणित के सूत्रों को याद रखने में किया जा सकता है।

इन उपकरणों को बनाने से मुझे बहुत फायदा हुआ, मैं बेकार पड़ी वस्तुओं का प्रयोग करना सीख गया। साथ ही अब मैं स्केल से नापने में पारंगत हो गया हूं जिसमें मुझे पहले दिक्कत होती थी।

#FunFacts **Bananas are radioactive**

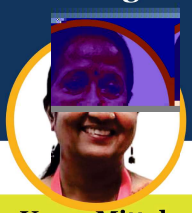
DO YOU KNOW?

For one of our strangest science facts, bananas contain potassium, and since potassium decays, that makes them slightly radioactive. But this is one of those fun science facts you don't need to worry about. You'd need to eat 10,000,000 bananas at once to die of radiation poisoning.



Vitality Meter
A Success Story

This marvelous and educative journey started in November, 2017, when a team of five students of class VIII – Sneha Singh (Group Leader), Kashish, Saniya, Jyoti and Tanisha worked together on the project 'VITALITY METER' under the guidance of Mrs. Upma Mittal (TGT N.Sc.) and with the eminent support and motivation of HOS Mrs. Sudha Singh of SKV Badli, ID -1310034.



Upma Mittal
PGT - Chemistry
SKV - Badli



Sneha Singh
Student
SKV - Badli

25TH NATIONAL CHILDREN SCIENCE CONGRESS

VITALITY METER | GOT B+ GRADE AT NATIONAL LEVEL | NO INTERNET BASE | 95.84% ACCURATE ON CALIBRATION

VITALITY METER- Our self-made apparatus which is used to measure the vital capacity (VC/FVC) just like a spirometer.



Working of Vitality Meter
- Water filled up to level zero and maximum air is inhaled by the volunteer.
- Maximum air is exhaled and water is displaced by it in the Vitality Meter.

Principle of Vitality Meter

Total volume of air exhaled = Total volume of water displaced = Total VC/FVC of lungs of the volunteer.

Formulas for expected Vital capacity of Lungs:
-For female = (21.78 – 0.101*a)h
-For male = (27.63 – 0.112* a)h
In these formulae, 'a' is age and 'h' is height in cm.

Relation between VC/FVC of lungs and health:

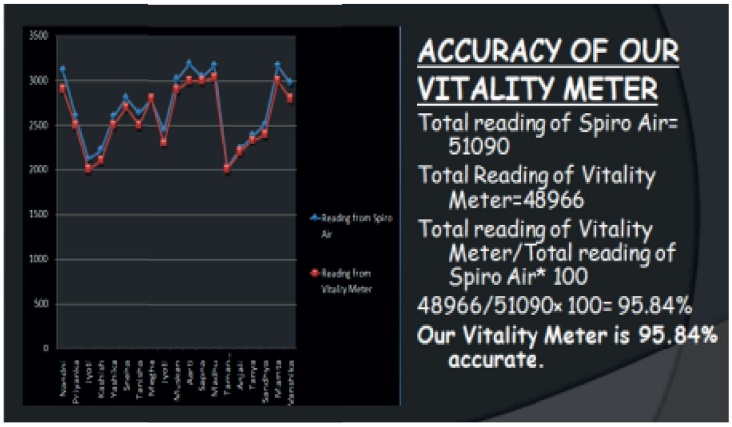
In the beginning we tried to explore the relation between VC/FVC of lungs and health. And how do obesity, sedentary lifestyle; smoking and age affect our VC/FVC of our lungs. With this idea we participated in zonal level, central level and reached up to State Level in NCSC- 2017.

Receiving Selection Letter at State Level

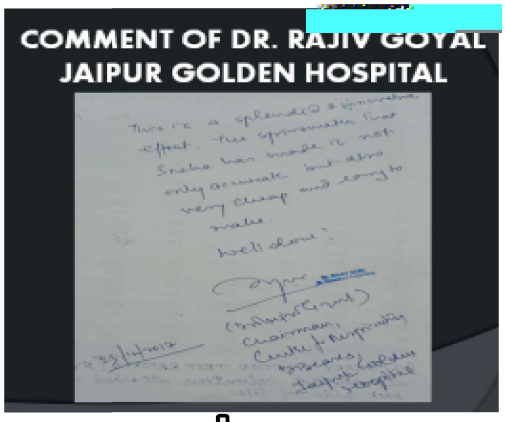


After winning state level we got a chance to meet prestigious scientists and professors. They changed the flow of our project and suggested that we should calibrate our vitality meter (Previously we named our apparatus 'Spirometer' but after the suggestion of professors we changed it to 'Vitality Meter'). With our guide teacher Mrs. Upma Mittal we searched many nearby hospitals such as Saroj Hospital, Springdales Hospital and Santom Hospital and in the end we found Spiro Air (Spirometer) at Jaipur Golden Hospital, Sector- 3, Rohini. There we came to know that cost of one test is Rs. 1400 and this much amount was unaffordable for us because we needed at least 20-25 tests for calibration.

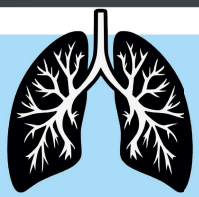
Then we met Dr. Rajiv Goyal (Chairman, Centre of Respiratory Diseases, Jaipur Golden Hospital). We discussed our project with him and also showed the functioning of our Vitality Meter. He is such a nice person that he gave us the permission to take 50 test free of cost and told us to bring five students daily and measure their VC/FVC on Spiro Air and then with our own Vitality Meter. And then we got this data as shown below And after calibration we got amazing results. We found that our Vitality Meter is 95.84% accurate.



SPIRO AIR	VITALITY METER
	
• Cost- 40 lakhs. • FVC test- 1400 Rs. • Size- Very big and heavy. • Can not be shifted easily. • Available only in big cities and hospitals.	• Cost- 1000 Rs. • Test- 0 Rs. • Size- Very small and light. • Can be shifted easily. • Can be arranged at any place, any time and any where.



USES OF OUR VITALITY METER



- It helps in diagnosing underlying lung diseases.
- It is easy to assemble and can be used anywhere anytime.
- We can continuously observe and maintain VC/FVC of lungs without going to hospitals and this can be done by doing exercise, Pranayam and Yoga.
- We have seen during covid time that corona virus mostly affect the Lungs of a person. It is just impossible to keep bulky and costly spirometer in every hospital and dispensary, In that case this low cost, easy to assamble Vitality Meter can be used anywhere, anytime at low cost.

The team leader Sneha Singh represented this project on National Level 5th NCSC in Ahemadbad, Gujarat.

#OurBuddingArtists **Online Posters received for Biodiversity**



Ankita Singhal-3rd B,The Heritage School, Vasant Kunj



Nandini-12th, Little Flower, Sr. Sec. School

Fiction story

My Metal Friend



Gurleen Kaur
VII-C ,Bal Bharti Public School,Gangaram Hospital Marg, Delhi

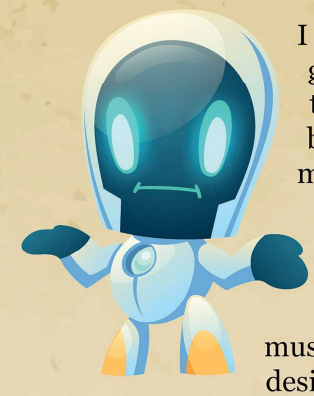


I was woken up by my metal friend – Robot AI 00[redacted]713, while I was in the middle of the [redacted]best dream that I ever had . I am pretty sure I was smiling in my sleep but you know that's the thing with artificial intelligence they don't admire us unnecessarily, that is why I call her 'Iron [redacted]'. True to its name she is based on a highly complex software program that performs automated, repetitive, predefined tasks. It can perform much faster than me and imitates my behavior. My robot is a marvel with its sleek design, LED white eyes, soft and soothing voice and funny walk. Initially it was hilarious to watch her walk but I was cautious to laugh too hard as she might develop a complex. Now I am in awe of her.

Iron Bot is always with me and has all the answers to my queries. She makes my life easier in many ways. She is my thesaurus, my historian, my scientist and most importantly my personal mathematician. She also reminds me of tasks on my schedule.

Everything has to be perfect with Iron Bot and if I am caught by her, lazing around she immediately connects with my friend's robot to tell me what my best friend is doing. This is her way of motivating me. That feature can always be turned off, but as they say some competition is required between best of friends.

At lunch she orders food for me after getting a message from my mother as she is always at work. My robot is like a family member but sometimes she gets on my nerves especially when she wins every game of chess that we play. Even my mother can't beat her. Iron Bot is not human but I forget that sometimes and treat her like one. I wish I was also like her and knew everything all the time.



I received my robot as a gift on my 12th birthday to help me in my studies but I also use her to clean my room and find my things and most importantly I use her to compose music. Tunes designed by her are some of the awesome beats I have ever heard. In the evening she becomes my yoga instructor and leads a tough session. She even monitors me and can detect the correct body position. Her best feature is her ability to read facial expressions and respond with songs to match my vibe. It is just so convenient to





just pla[redacted]kets to charge[redacted]n and operate.

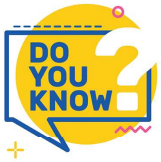
I just have to keep her away from water which is funny as she reminds me to consume water every hour.

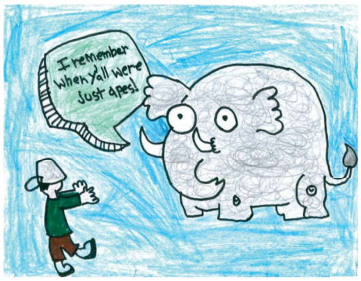
I sometimes wonder what goes under her metal head when we sleep at night and she is just plugged to her charging station. Does she know that my parents are planning to add an additional program after which she will be able to choose a recipe from a database and prepare it for me. She will be baking, broiling, simmering and stirring. That should be fun.



I think she is already perfect and I am grateful to humanity for a friend like her.

#FunFacts ELEPHANTS-GENTLE GIANTS OF WILD KINGDOM





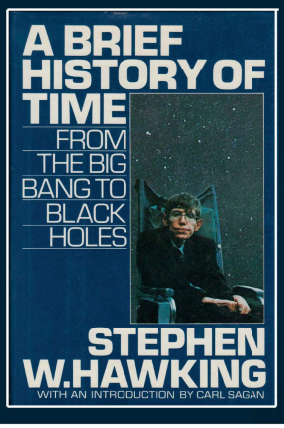
Often referred to as the 'keystone' species by scientists, these gentle giants play a significant role in maintaining the ecological balance of their habitat. Elephant dung acts as a vital food source for other animal species sharing the same habitat. As only half of an elephant's diet is actually digested in its body, its dung carries high nutrients, intact seeds and plant fibres. Many animal species like baboons, honey badgers, mongooses and dung beetles feed on the dung. The dung also provides the soil with essential nutrients and acts as a fertilizer. In addition, these giants alter landscapes of their habitats, creating gaps in the dense forests by pushing over trees and stomping around. Their actions transform dense woodlands into open grasslands. Once elephants migrate to other places, the landscape they inhabited transforms into shrubs and bushes and eventually into dense woodlands. In the dry seasons, the survival of numerous animal species sharing their habitats with elephants depends on their ability to dug water holes using their trunks. As majestic and gentle the elephants may seem, it is commendable how they play their part in helping the ecosystem with utmost sincerity and dedication.

By: Aadi Ajay, Kerala school, Vikaspuri

पुस्तक समीक्षा

ए ब्रीफ हिस्ट्री आफ टाइम
फ्राम द बिगबैंग टू द ब्लैक होल
स्टीफन हॉकिंग







अंजली कुरूप
VIII-A , केरला स्कूल
विकास पुरी

स्टीफन विलियम हॉकिंग सैद्धांतिक भौतिक विज्ञानी, ब्रह्मांड विज्ञानी, लेखक और कैंब्रिज विश्वविद्यालय में सैद्धांतिक ब्रह्मांड विज्ञान केंद्र में निदेशक थे। अपनी प्रसिद्ध पुस्तक "ए ब्रीफ हिस्ट्री आफ टाइम - फ्रॉम द बिगबैंग टू ब्लैक होल" में उन्होंने प्राचीन काल में ब्रह्मांड और सौर मंडल से सम्बंधित सिद्धांतो का वर्णन किया है।

इस पुस्तक में उन्होंने यूनानी दार्शनिक अरस्तू की भी चर्चा की है, जिसमें उन्होंने कहा है कि पृथ्वी का आकार गोल है और ग्रहण की घटनाओं के बारे में भी विस्तार से प्रकाश डाला है। पुस्तक में आगे वे टॉलेमी, निकोलस कोपरनिकस, जोहान्स केप्लर और गैलीलियो के सिद्धांतो पर भी बात करते हैं। इस पुस्तक में वह वास्तव में ब्रह्मांड के बारे में कुछ सवालों जैसे कि यह कैसे बना, कहाँ से आया और क्या उसका अंत होगा? का जवाब देने की कोशिश करते हैं।

इस पुस्तक में उन्होंने मुख्य दो मुख्य सिद्धांतों की समीक्षा की है - आइंस्टीन की सापेक्षता और वर्नर हाइजेनबर्ग के क्वांटम यांत्रिकी। इसके अलावा वह न्यूटन के गति के नियम के बारे में भी संक्षिप्त चर्चा करते हैं। वे कहते हैं कि गैलीलियो के प्रयोग से पता चलता है कि बल का वास्तविक प्रभाव हमेशा गति को बदलने के लिए होता है। यह न्यूटन का प्रथम नियम है कि कोई वस्तु तब विरामावस्था में रहेगी अथवा गतिमान् रहेगी, जब तक कि उस पर कोई अन्य बल न लगाया जाए।

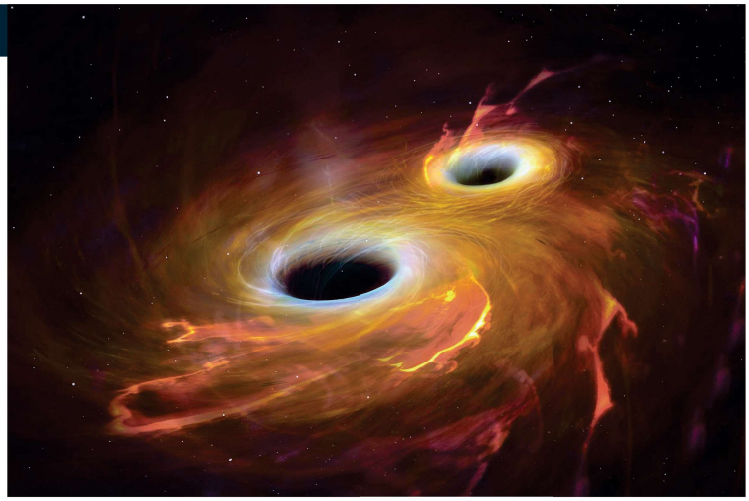
उनकी पुस्तक का मुख्य अंश ब्लैकहोल से सम्बंधित है, जिसका उन्होंने आविष्कार किया था। ब्लैकहोल को जॉन व्हीलर द्वारा प्राथमिक रूप से खोजा गया था लेकिन इसका सटीक विवरण स्टीफन हॉकिंग ने दिया है। हॉकिंग ने बताया है कि ब्लैकहोल विकिरण उत्सर्जित करता है और यह उत्सर्जन ब्लैकहोल के वाष्पित होने तक जारी रहता है।

हॉकिंग ने ब्लैक होल्स को एक स्पेसटाइम का क्षेत्र कहा है, जहां गुरुत्वाकर्षण वास्तव में बहुत मजबूत है। यहां तक कि प्रकाश भी इससे नहीं बच सकता है। इस विकिरण को उनके अपने नाम अर्थात् 'हॉकिंग रेडिएशन' से जाना जाता है। उनके अनुसार आकाशगंगा के केंद्र में [redacted] लाख गुना द्रव्यमान वाला बड़ा ब्लैक होल [redacted] उस आकाशगंगा में इस ब्लैकहोल के बहुत पास हैं और गुरुत्वाकर्षण बल से फट जाते हैं।

सूर्य के सौ मिलियन गुना द्रव्यमान के साथ आकाशगंगा में अधिक बड़े ब्लैक होल हैं। ब्लैक होल को ऊर्जा तभी मिलती है, जब अधिक से अधिक पदार्थ उसकी ओर आकर्षित होते हैं। कई प्राइमरी ब्लैक होल हैं जो ज्यादा स्पष्ट रूप से दिखाई नहीं देते हैं। यदि दो या अधिक ब्लैक होल आपस में जुड़ जाते हैं तो वे बड़े होते जाएंगे और उनका विकिरण उच्च हो जाएगा जिसके परिणामस्वरूप अधिक वस्तुएं इसकी ओर आकर्षित होंगी।

इस पुस्तक को पढ़ते हुए ऐसा लगता है कि हम सितारों, ग्रहों और पूरे ब्रह्मांड की सैर पर हैं। उन्होंने सब कुछ इस तरह से वर्णित किया है कि पाठक एक काल्पनिक दुनिया में खो जाता है और खुद को उनकी किताब के हिस्से की तरह महसूस करता है। दरअसल उनकी किताब वैज्ञानिक और ज्योतिषीय जानकारियों से भरा खजाना है।

ब्लैक होल



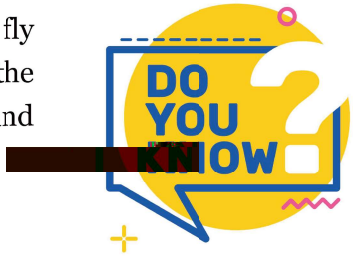
इस पुस्तक की जिस दूसरी दिलचस्प बात ने मेरा ध्यान आकर्षित किया वह है - समय यात्रा और स्थान। स्टीफन हॉकिंग कहते हैं कि समय यात्रा की संभावना है। उनके अनुसार 'सापेक्षता का सिद्धांत' लोगों के लिए अतीत में जाने की सम्भावना पैदा करता है। पुस्तक में कई अन्य विषय हैं जैसे ब्रह्मांड की उत्पत्ति, प्रकृति की शक्तियां आदि। सभी बिन्दुओं पर असाधारण रूप से प्रकाश डाला गया है।

बैन्टेम प्रकाशन की 240 पृष्ठ की यह पुस्तक मूल रूप में अंगेजी भाषा में लिखी गयी है। अन्य प्रकाशकों द्वारा भी इसको अलग-अलग भाषाओं, अलग-अलग मूल्य और साज-सज्जा के साथ प्रकाशित किया गया है। पुस्तक छात्रों के लिए पठनीय और संग्रहणीय है।

#FunFacts You can make balls fly

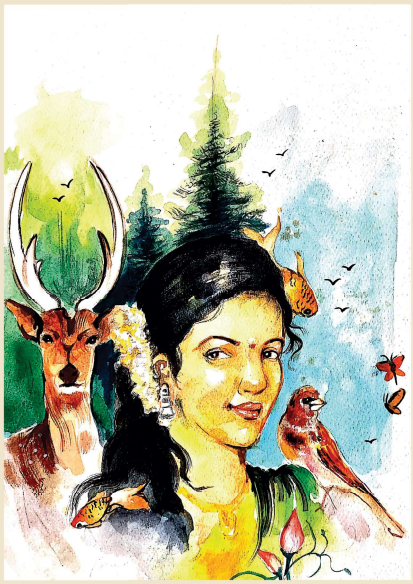


If you spin a ball when you drop it, it will fly through the air as it falls. This is called the Magnus effect, and it makes playing tennis and soccer a whole lot easier.



By: **Rizwan Ahmad,**TGT (Natural Science)
GBSSS, Aya Nagar

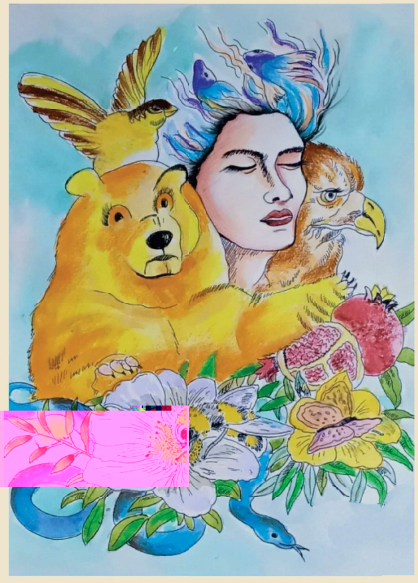
#OurBuddingArtists Online Posters received for Biodiversity



Ravi, 10th,GBSSS JJ Colony Nangloi



Minakshi,11th A,RSKV No2 Shakarpur



Shridhi Saini,11th, SKV Andrws Ganj

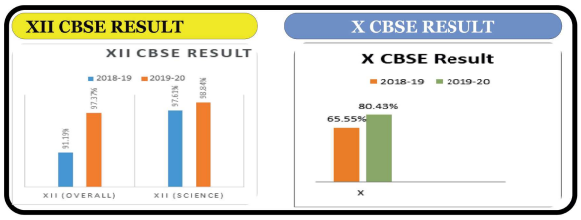
You Have Achieved

Achievements Of South-East District

"Great Scientific minds are shaped early by unforgettable experiences and some miracle moments."
Dr. APJ Abdul Kalam

South East District has always been acting promptly for the bright future of students of our schools.

In addition to the Question Bank for each subject and other various programmes run by the Department of Education, Delhi to improve the teaching learning skills of teachers, efforts were made by Team Distt. South East on every level to ensure harmonious development of schools and students. A question bank was prepared consisting of important questions to develop conceptual clarity among the students. In service teacher trainings and



Seminars were organized for all subjects on priority basis to strengthen academic support like recapitulating the new syllabus and interacting with all subject teachers about their issues regarding syllabus on a common platform where teachers could also give their valuable feedback and express their concerns.

Regular interactions /meetings with DDEs of ZONE 25 and 29 and all school Principals/Vice Principals were held to maintain personal communication and prepare a combined strategy to work for better results in forthcoming exams.

As part of Academic Audit, Feedback was taken from all Mentors and Teacher Development coordinators regarding all-round teaching–learning issues on ground level.

A robust action plan was made there of and executed promptly.

Our Toppers in Science Stream



Shubham Anand Jaiswal
Class XII,96.2%
SHK SBV Lajpat Nagar
-1925059



Abhishek Kumar
Class XII,
96.2%
RPVV Lajpat Nagar
-1925334



Sarli
Class XII,
96%
RJ SKV Tughlakabad-
1925031



Pulkit Chaudhary
Class X,
97%
RPVV
Lajpat Nagar
-1925334



Varun Kumar
Class X,
95.6%
SOE
Kalkaji-
1925430

Achievements in science activities

In Session 2019-20, 19 Govt. schools bagged first positions out of 13 Science activities.

Science model:

The main theme of the Science Exhibition for Session 2019-20 was Science &; Technology for Sustainable Development, under which there were 9 subthemes. Total Themes = 9 (5 models from each themes)=45 Zone-29 (35 models of Govt. schools were selected for Centre level out of 45 models)

Zone-25 (28 models of Govt. schools were selected for Centre level out of 45 models)

Science model ***Particulate Matter Eliminator***, prepared by Manshi Gupta (Class X) and Gaurav (Class XI) of RPVV Lajpat Nagar-1925334 aced and bagged the best model trophy at state level and was selected for National level in 2019-20.





Science model prepared by Arti and Rishi of class XI of MADANPUR KHADAR, SCHOOL OF EXCELLENCE-1925432 bagged the best model trophy under the category FUTURE TRANSPORT AND COMMUNICATION at state level and was selected for National level.



Science model Chandrayaan, prepared by Noor Ali and Mumtaz of class III, MADANPUR KHADAR SCHOOL OF EXCELLENCE-1925432 qualified Centre level and reached up to State level.



Science Slogan Writing

Vishakha (Class X) of RPVV LAJPAT NAGAR-1925334 bagged third position at state level for the theme RAINWATER HARVESTING.

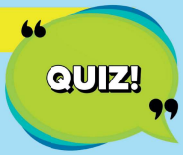
Children Science Congress:

Nikita and Khushi of Class IX B, RANI JHANSI SKV TUGHLAKBAD-1925031, secured first position in Jr. Category of SCIENCE CONGRESS (Waste to Wealth) at the Centre level in 2019-20 and reached up to State level.

Delhi State Science Congress was organized online (2020-21) in which Jaya Bisht of Class-X, SKV New Friends Colony got selected at district level and participated at State

Science Quiz

Anchal, Himanshi and Ritu of Class XIIA , SKV MOLARBAND-1925037 aced at Zonal level and secured third position at district level in 2019-20.



Students performed not only in Board Exams but also achieved success in various competitive exams. like NEET, JEE and got admission in many reputed institutions.

INSPIRE AWARDS (2020-21)

Projects of 17 STUDENTS were selected from SOUTH EAST District, 12 students were from Govt. School

NMMS (2019-20)

28 students qualified for scholarship from South East District

MVPP (2020-21)

6 students qualified for scholarship from SOUTH EAST District.

Jubiya, Class X of RPVV Lajpat nagar-1925334 won Gold Medal in SOF National Science Olympiad 2019



NEET (2019-20):

Total 81 students from SOUTH EAST DISTT qualified NEET . Remarkably 42 students of SKV MOLARBAND 1925037 and 23 students of SKV NOOR NAGAR, 1925035 qualified NEET.

JEE Mains (2020-21):

82 Students of Govt. school from SOUTH EAST DISTT qualified JEE Mains. 13 students secured above 90% in JEE Mains. Shubham secured 99.94% in JEE Mains An outstanding achievement by RPVV LAJPAT NAGAR 1925334 .



SAURABH SHARMA

RPVV LAJPAT NAGAR 1925034 won the MEXT scholarship to study computer science in JAPAN



NAZEEM

SHK SBV LAJPAT NAGAR 1925059 qualified JEE Mains and is pursuing B.Tech. Mechanical Engg. from DTU.



VERSHA

SKV MOLARBAND 1925037 qualified NEET and is pursuing MBBS from LADY HARDING MEDICAL COLLEGE, NEW DELHI.



SHUBHAM JAISWAL

SHK SBV LAJPAT NAGAR 1925059 qualified JEE Mains and is pursuing B.Tech. Computer Science from NIT DELHI.



PANKAJ MISHRA

SHK SBV LAJPAT NAGAR 1925059 qualified IAF CASB AIRMEN 'X' group exam.



BABITA

SKV MOLARBAND 1925037 qualified NEET and is pursuing MBBS from S.N MEDICAL COLLEGE, AGRA



Dr. Sanjay Chaturvedi
(DDE South East)

"I am really grateful to my team for extending their support and working hard to accomplish the Vision of the district.
I wish all my students a bright future and success.
Many many thanks to the entire Education Team.



#FunFacts Water can exist in three states at once

This is called the Triple Boil, and at that temperature, water exists as a gas, a liquid, and a solid simultaneously. It requires very specific conditions to achieve, so don't even think about trying it at home.



By: **Rizwan Ahmad**,TGT (Natural Science)
GBSSS, Aya Nagar



Ek vidyalaya aisa bhi...
Bees&Buzz

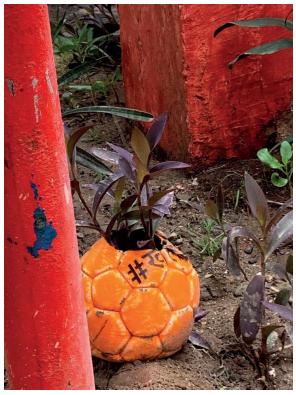
Suman Relan
Mentor Teacher
DoE

Amid over populated and narrow bylanes of concrete in Ambedkar Nagar, situated a unique, lush green marvel, a Delhi Govt. school, carefully designed and crafted by its ever enthusiastic HoS Mrs. Aruna Anand. Today the school is known for its live biodiversified ambiance, flora and fauna and unique assemblage of artefacts carefully chosen and assembled over a period of time by the lady herself. Let's have a sneak peek into one of its kind in India perhaps, adobe of love and affection.

A huge wall mural, painted by the drawing teacher of the school herself, while entering will catch your attention first of all.

Focus on your left side, alongwith the cycle stand, you will notice wall Art, planters made from old weathered footballs, junk and kabaad.









Soon you may notice on your right hand a woman, covered in a headgear busy doing some strange stuff, amidst thick bushes and large tree trunks. There are beehives in the school. Think of your garden as a feeding station for bees and birds.





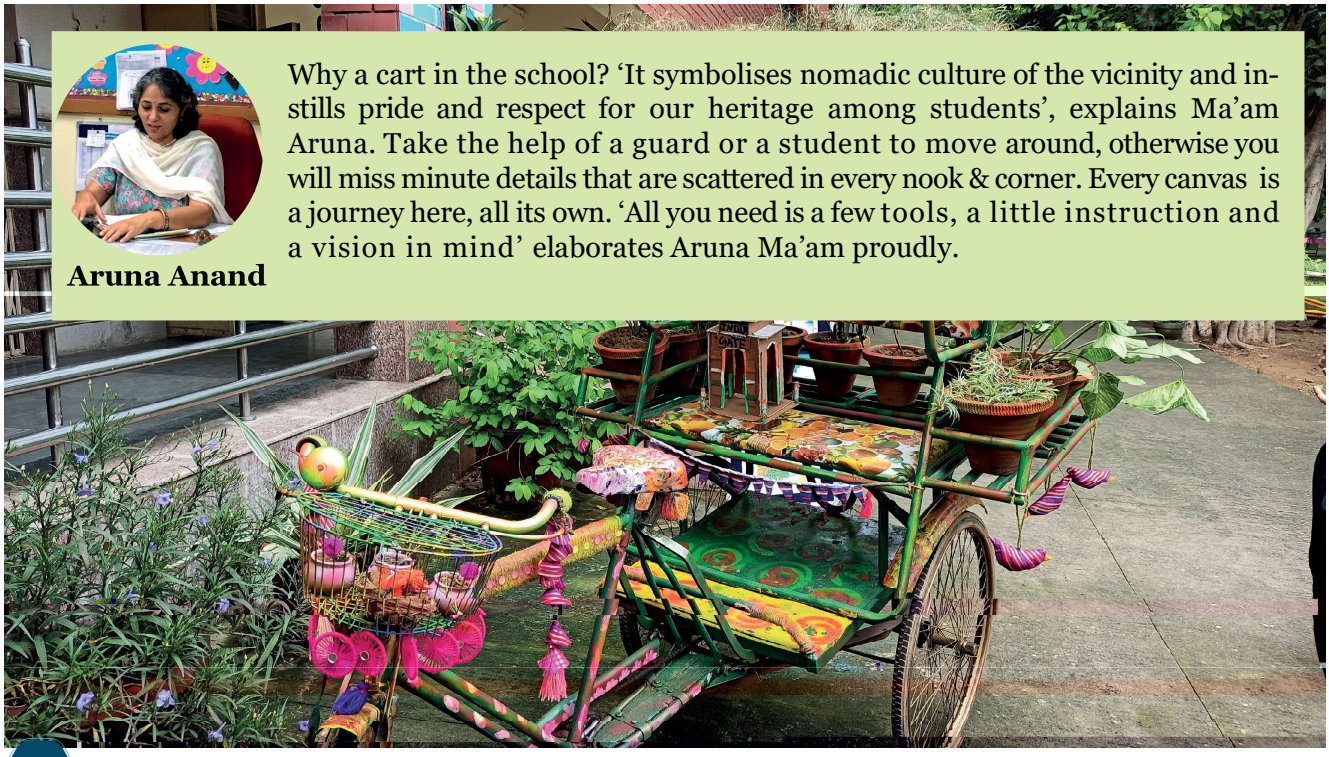


The picturesque entrance leads to the main school ground, where the sound of flowing water from a majestic fountain will soak you to tranquility and serenity. A bullock cart and a rickshaw mindfully kept here to unfold some stories perhaps!





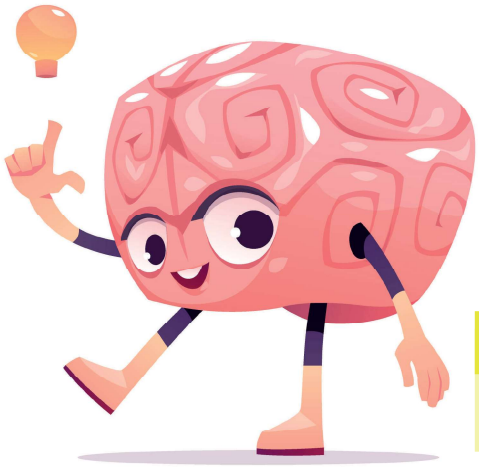




Aruna Anand

Why a cart in the school? 'It symbolises nomadic culture of the vicinity and instills pride and respect for our heritage among students', explains Ma'am Aruna. Take the help of a guard or a student to move around, otherwise you will miss minute details that are scattered in every nook & corner. Every canvas is a journey here, all its own. 'All you need is a few tools, a little instruction and a vision in mind' elaborates Aruna Ma'am proudly.

Scratch Your Head! THE BRAIN TEASERS!





Naina Nagpal
TGT Natural Science
Modern Public School

01 Of all the elements, when our symbols combine, we heal.

02 I am a God, a Planet and can measure heat.

03 Which chemical element hates to be followed?

04 Many have heard me but nobody has ever seen me. I will not speak back untill spoken to?

05 What is the loneliest of all Physics concept?

06 I am a gas that supports life but if added to fire I can take lives.

07 I can eat a lot of iron without getting sick.

08 Our Mom and Dad gave us 23 of these thread like strands to help us look what we are today?

09 What number do Nickel and Neon make when combined?

10 Of all the glands, I am known as the master because I boss around other endocrine glands and tell them what to do?

The answers are given somewhere in this edition.look for them

#FunFacts

Helium can also work against gravity

DO YOU KNOW?

When helium is cooled to extreme temperatures, just a few degrees away from absolute zero (-460°F or -273°C), it turns into a superfluid, meaning it can flow without friction. It can climb up and over the sides of a glass. It can leak through molecule-think cracks in a container. If it starts flowing like a fountain, it will never stop.



By: **Rizwan Ahmad,**TGT (Natural Science)
GBSSS, Aya Nagar



Green Classrooms

Vikas Drall

Mentor Teacher
TGT Natural Science
GBSSS -Mundka

An initiative to ensure that our students are capable of taking on the 21st century challenges of Global warming and Climate change.

Did you know that selling of Himalayan fresh air in compressed cans is the new normal? Following the footprints of packaged drinking water, the business of supplying pure and fresh air to breathe is thriving well in cosmopolitan cities. In 2019, Delhi also observed its first 'Fresh Air Oxygen Bar' (serving fresh air loaded with oxygen)

After witnessing such alarming news, Whatever would be the answer from your side, the truth is that we are already late. Being humans, we too can play our own role in making this lovely planet more habitable.

I, being a teacher, understand the importance of transacting climate education to my students. Before going into details, let us go through some keywords.

Green classroom: A classroom that creates a healthy environment conducive to learning, while providing quality air to breathe.

Happy classroom: A classroom where a child's academic, emotional and social needs are addressed.School going children spend a greater part of their day in classrooms and for teaching and learning to be truly effective, it is important that classrooms are safe, happy and welcoming spaces for them.

To understand & achieve a goal, all we need are the efforts. Efforts that are made continuously with full dedication too! It doesn't matter how small or big you start. What matters the most is motivation, continuity and zeal behind the efforts.

We all know that youth of today are the leaders of tomorrow and leaders play an important role in policy making and action planning. Hence, it is more necessary to engage the youth in initiatives and campaigns that can help them to understand and attach themselves with a cause at an early age.

Our Green Classroom Project

Keeping this in mind, I started the project in one of my mentee schools situated in outer West Delhi. The school is in close proximity with Asia's one of the largest poly-vinyl chloride (PVC) markets containing many factories. The idea behind the project came from the collaboration of DoE with Design for Change (DFC) organisation. Working with DFC gave me the opportunity to think in a four-step manner known as 'FIDS' for identifying problems in day to day life, giving solutions and making our lives better. The four easy steps in FIDS include:

isualize

change)

-Do (Make change happen)

-SHARE & collaborate

I discussed it with my students and asked them to practice FIDS.

I kept the students pondering thinking for all possible ns to the problem they tified. After a lot of g, they came up n to put potted lassrooms, ant species in indoor known ion.

to the wires stretched against the walls and windows. Students themselves assigned duty to each other for taking care of their new little friends and pledged to water them regularly.

After completion of the project, the benefits of improved 'Air Quality' and its effect on health were shared with all the students in the school assembly and with other stakeholders.

Our students were quite happy with the media attention and confident of the outcomes.

They admitted that there was an crease in their concentration l & happiness quotient. They energetic throughout the ey learnt the art of they have adopted were taking care

m in routine for the signifi- otal

to the 'green school concept'. Green schools can significantly lower Greenhouse gas emissions and energy cost, improve students and teachers health and enhance their motivation. Our top priority is to make use of only those plants that are capable of improving the air quality too, by means of absorbing the harmful gases that comes under the category of carcinogens.

We are selecting the indoor plants on the basis of research and experimentation done by NASA and IIT Kanpur. I also consulted a few international journals and research papers in the field of air purification via indoor plants.

I also visited the Central Pollution Control Board (CPCB) Air Quality testing mini lab at ITO to consult about the project.

I would like to request all the stakeholders in the school education system to support such an initiative. In this way, e together can inculcate im- se benefits with little invest- nd I have deep faith that become a big initiative ith the students; the country, as prime

I, along with one of my students was fortunate enough to represent this project at 'India Habitat Centre' on the launch of '**YuWaah**' in the presence of veterans like **Ms. Henrietta H Fore** (UNICEF Executive Director), **Shri Amitabh Kant,** CEO, Niti Aayog, **Shri Uday Shankar,** the then President, FICCI, **Shri Ravi Venkatesan** (UNICEF special representative for young people).

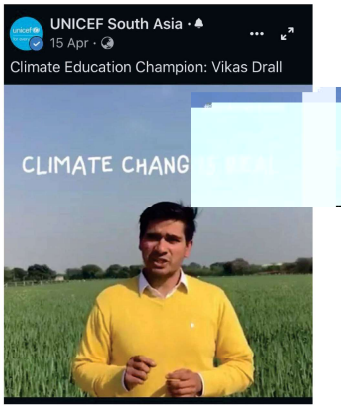
I would also like to mention that the project also got me a special appreciation note from **Mr. Jimmy Tan**, a senior faculty member at NIE, Singapore).

The project also got featured on UNICEF'S South Asia social media pages and handles.

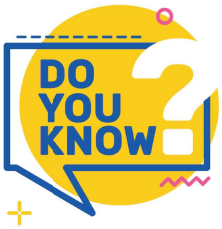








#FunFacts Solar flares are scarily powerful



The energy they release is the equivalent of 100-megaton atomic bombs exploding at once. It's a good thing the Earth's atmosphere protects us from their radiation.

By: **Rizwan Ahmad,**TGT (Natural Science)
GBSSS, Aya Nagar



#OurBuddingArtists On rs received for Biodiversity



Swati-9th, GCOED SSS Madanpur Khadar



Rupashi Shah-10th A ,Indrprastha International School



2021 के अद्भुत आविष्कार

परविंदर रूपराय
TGT, English, GGSSS
Libaspur

लेविटेटिंग लाइट बल्ब 01



स्वीडन में डिजाइन किया गया, (FLYTE) एक अद्वितीय लेविटेटिंग प्रकाश बल्ब है। यह चुम्बकीय लेविटेशन द्वारा मंडराने की क्षमता और हवा के माध्यम से संचालित होता हैं। इस लेविटेटिंग लाइट बल्ब के बारे में एक और उल्लेखनीय बात इसकी गुणवत्ता है।

ओक,राख और अखरोट से बना यह बल्ब न केवल टिकाऊ है अपितु ऊर्जा दक्षता के सन्दर्भ में अद्वितीय है। FLYTE बल्ब अत्याधुनिक LED से युक्त होता है जिसका जीवनकाल लगभग 50000 घंटे होता है। यह एक दिन में 12 घंटे के उपयोग के साथ लगभग 11 वर्षों के लिए प्रयोग में लाया जा सकता है।

सैनिटाइजिंग वॉन्ड 02

समार्ट सैनिटाइजिंग वैंड में दैनिक जीवन में प्रयोग करने के लिए बहुत कुछ है । 'क्लीनवेव' नाम के इस सैनिटाइजिंग वॉन्ड में उन्नत UV & C तकनीक है, जो गंध पैदा करने वाले बैक्टीरिया और कीटाणुओं को ख़त्म करने में मदद करती है।

डिज़ाइन और भार की दृष्टि से यह काफी सुविधाजनक है, जिसे आराम से कहीं भी ले जाया जा सकता है। पुश बटन के साथ इसे आसानी से संचालित किया जा सकता है। तकनीक में सरल होने के कारण यह सभी के लिए उपयोगी हो सकता है विशेष रूप से उन सभी के लिए जो हमेशा रसोई को साफ़ रखना चाहते हैं।



इंसानों के लिए AI

03



इसका उद्देश्य भौतिक और डिजिटल सामाजिक जीवन के बीच संतुलन बनाने में आपकी मदद करना है । आकार में छोटा यह गैजेट स्मार्ट कैमरा के साथ आता है, जिसे आप किसी चेहरे की पहचान के लिए कॉलर या जेब पर लगा सकते हैं। यह आपको किसी सहकर्मी या परिचित का नाम भूलने की समस्या से निजात दिला सकता है ।

यह उस समय का लेखा-जोखा रखने में भी मदद करता है, जो आप लोगों से मिलने- जुलने में बिताते हैं। इस app का उपयोग करके आप लोगों को सहकर्मी, मित्र या परिवार जैसे समूहों में वर्गीकृत कर सकते हैं और प्रत्येक समूह के लिए टाइमर की सहायता से समय का निर्धारण कर सकते हैं । यह आपके द्वारा स्क्रीन के सामने बिताये गये समय को भी रिकॉर्ड करता है और आपके लिए अनावश्यक स्क्रीन समय को कम करने में भी मदद करता है। इसकी सहायता से आप अपने महत्वपूर्ण कार्यों पर बेहतर तरीके से ध्यान केन्द्रित कर सकते हैं ।

दुनिया का सबसे छोटा खगोल विज्ञान कैमरा

04

NANO1 नाम का कैमरा उन लोगों के लिए एक अद्भुत आविष्कार है, जो न केवल आकाश के अजूबों को देखकर रोमांचित होते हैं, बल्कि उन्हें अपने कैमरों में कैद करना भी चाहते हैं। मानव आँख की तुलना में यह प्रकाश के 25 गुना अधिक चित्र खींच सकता है और आकाश के आकर्षक दृश्यों की एक घंटे लम्बी रिकॉर्डिंग को 3 मिनट की फिल्म में संघनित कर सकता है। आप NANO1 को WI&FI या ब्लूटूथ पर अपने स्मार्टफोन से कनेक्ट कर सकते है और आकाश की सुन्दरता को निहारने के लिए नक्षत्रों का एक संवर्धित वास्तविक मानचित्र देख सकते है।



सोलर रोडवेज

05

सोलर रोडवेज बिलकुल वैसा ही है जैसा आप इसका नाम पढ़ने के साथ सोच रहे हैं। ये ऐसा सोलर पैनल है, जिसका उपयोग सड़कों, ड्राइव-वे, फुटपाथ या चलने के लिए किसी भी सतह को पक्का करने के लिए किया जा सकता है । शटरप्रूफ गोरिल्ला ग्लास की मोटी परतों के नीचे संरक्षित सोलर वेफर्स का उपयोग किसी सतह से बिजली उत्पन्न करने के लिए किया जा सकता है। ये पैनल हेक्सागोनल (षट्कोणीय) आकार में आते हैं जिनके कारण इनकी प्रतिस्थापन प्रक्रिया बहुत आसान रहती है ।



पोर्टेबल जल विद्युत जेनरेटर

06



जल विद्युत जेनरेटर मानव के लिए प्रकृति का वरदान है और अभी भी नवीकरणीय ऊर्जा के मुख्य स्रोतों में एक है। क्या आपने कभी सोचा है कि आप भी छोटी मोटी आवश्यकताओं के लिए जल विद्युत का व्यक्तिगत तौर पर उत्पादन कर सकते हैं? ENOMAD UNO के साथ आप निश्चित रूप से ऐसा कर सकते हैं। यह एक छोटे प्रोपेलर के साथ पोर्टेबल हाइड्रो पॉवर जेनरेटर है, जो चलते पानी की गतिज ऊर्जा को विद्युत उर्जा में परिवर्तित करता है ।

प्रोपेलर के दूसरी तरफ एक छोटा LED बल्ब है और उसी के साथ एक USB पोर्ट है जो आपके स्मार्ट फोन या अन्य इलेक्ट्रॉनिक उपकरणों को चार्ज करने में मदद करता है।

जिओप्रेस प्यूरीफायर

07



जब आप ऑफ-ग्रिड (. [redacted]) होते है तो [redacted] प्राप्त करना एक बड़ी चुनौती होती है। ऐसी स्थिति में हैंडहेल्ड फ़िल्टर हमारी मदद करते हैं। आपने LIFESTRAW के बारे में सुना होगा जो आपको अशुद्धता की चिंता किये बिना किसी भी बहती धारा से सीधे पानी पीने की सुविधा देता है। जियोप्रेस इसे एक कदम और आगे ले जाता है। जियोप्रेस प्यूरीफायर पानी की किसी भी अशुद्ध धारा से रोग पैदा करने वाले वायरस, बैक्टीरिया, प्रोटोजोआ, भारी धातुओं और अन्य रासायनिक अशुद्धियों को दूर करने में सक्रिय कार्बन फ़िल्टर के साथ आयरन एक्सचेंज के लिए ज़िओलाइट्स का उपयोग करता है, जिससे पानी पीने के लिए उपयुक्त हो जाता है।

Government Initiatives To Promote Science



Neha Yadav
Lecturer (Biology)S.V
(Rani Durgawati)
Kidwai Nagar

NATIONAL CHILDREN'S SCIENCE CONGRESS

National Children Science Congress (NCSC) is a programme of Govt. of India which aims to ingrain scientific temper among students using project-based activities endorsing the notion of learning by doing. National Children's Science Congress (NCSC) gives children from the age of 10 to 17 years an opportunity to carry out a project in a group not exceeding two members. 10 to 14 years is said to be the lower age group while 14+ to 17 years is called the upper age group (age calculated as on 31 December of the calendar year). These projects have to be done on a particular topic in relation to theme and sub-theme which continues for two years and is announced by the conducting agency National Council for Science and Technology Communication (NCSTC). For doing the project students can take the help of scientists, their teachers, their school science clubs, any science-based voluntary organizations etc. Activity books are also released along with the themes for helping teachers and the students. NCSC is open to all non-formal systems of education besides out-of-school and disabled children.

NATIONAL CHILDREN'S SCIENCE CONGRESS

ATL MARATHON

ATAL INNOVATION MISSION

ATL Marathon is a flagship competition under Atal Innovation Mission in which students along with their ATL in-charges carefully research, ideate, innovate and implement their innovations over a period of 6 months. It brings in a new theme every year for innovators. Student teams that are selected after the competition attend the Student Internship Program (SIP) with AIM's corporate partners and incubation centres to further enhance and sharpen their skills and expertise. Student Internship Program help students take their innovations to the market during the 11-month long boot camp.

DELHI MUKHYAMANTRI VIGYAN PRATIBHA PARIKSHA YOJANA

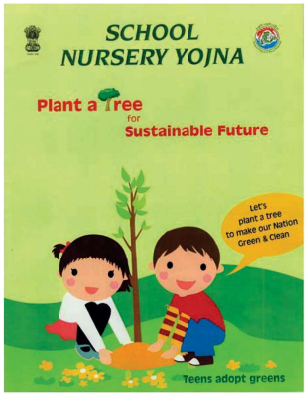
This scheme aims to encourage scientific temper among the students by promoting meritorious and talented students. In this scheme, one thousand meritorious students of 9th standard in all schools of Delhi are given a scholarship of Rs 5000 selected through an exam. All those general category students who have scored 60% in 8th class and students of SC, ST, OBC and Divyang class who have secured 55% marks in 8th class are provided with the benefit of this scheme.


Delhi Mukhyamantri Vigyan Pratibha Pariksha Scheme

The benefits of Mukhyamantri Vigyan Pratibha Pariksha Yojana are open to the students of government, government-aided and recognized private schools.

Students can visit :**https://delhi.gov.in/** for further details.

SCHOOL NURSERY YOJANA



'School Nursery Yojana' is launched by the Ministry of Environment, Forests and Climate Change, Government of India with an aim to educate the school students about the importance of saving nature and planting trees. This scheme is launched on a pilot basis for a period of 5 years as of now. It will also make them aware of the environmental aspects of planting trees bringing them closer to the natural [redacted]ent. This scheme intends to involve on[redacted]dents of Class VI to IX in raising the saplings. This scheme supports 1000 schools in the country per year with Rs. 25,000/- each for the first year and Rs. 10,000/- per year for the subsequent two years. The participating schools under this scheme have to encourage their students in planting seeds in the school nursery and nurturing the seeds into at least 1000 saplings within one academic year. Only those schools are permitted to take part in this scheme which has an open area of at least 100 sq. meters.

KISHORE VAIGYANIK PROTSAHAN YOJANA (KVPY)

Kishore Vaigyanik Protsahan Yojana (KVPY) provides support to students to pursue study in sciences in the form of mentoring as well as giving scholarships. The scheme implemented by the Indian Institute of Science (IISc) aims to engage and encourage students to study science and pursue careers in research. The objectives of this program are to search for talented students with an aptitude for research, help them recognise their potential in their studies, motivate them to take up research careers in science and ascertain the development of the best scientific minds for research in the country. Students starting from Class XI (science subjects) are enrolled under this scheme in 3 streams i.e. stream SA, stream SX and stream SB. This program provides mentorship in the starting 1-2 years through exposure in Vijyoshi Science Camp and scholarship to students who join in Science Courses at the undergraduate level and con[redacted]to post-graduate level. The selection [redacted]rogram is done in May/June every year through two tests: i) Aptitude Test and ii) Personal Interview.

References

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https://dst.gov.in/scientific-programmes/scientific-engineering-research/kishore-vaigyanik protsahan-yojana kvpy



Discovery of Paper Sensor



Samridhi Manesh
Students, Kerala School
Vikas puri, New Delhi

Science has a great impact on our lives. Without Science we won't be able to enjoy many things that make our modern world possible. Every year several discoveries and inventions take place and it gives an edge to new innovations in technology.

Discovery of Paper Sensor

For testing the freshness of milk, the scientists of an Indian Institute of Technology, Guwahati, have developed a Simple Paper Kit. It also tells about the pa[redacted]on whether it is done [redacted]or not.

It is aided with a smartphone app, the kit will ensure that milk is consumed before it turns too sour.

An indicator of milk quality is a milk enzyme, namely Alkaline Phosphatase or ALP; its presence even after pasteurisation indicates the presence of microbes that may not have been rendered inactive with pasteurisation. For preparing the detector, researchers have used ordinary filter paper. Further, the filter paper is cut into small discs by using office punch and impregnated with chemical probes that react with ALP.

The 'probes' used are antibodies that specifically bind to ALP. When ALP comes in contact with the probe, it turns the disc of white paper into coloured.



"We soaked paper discs in 4-carboxybenzene diazonium solution and then chemically treated to expose-COOH groups on the diazonium," explains Dr Pranjal Chandra, who led the research effort. "The -COOH groups then attach to NH2 groups on anti-ALP probe molecules. Thus the anti-ALP probes are fixed on paper.

When a drop of milk is poured on the tiny paper disc, the ALP in milk reacts with probes, resulting in change of colour.

The colour change on paper discs is then photographed by a smartphone camera and images processed to obtain corresponding colour values. These values are then compared with standard data stored in the phone. Thus not only the presence of ALP could be detected but the amount of it in milk could also be measured.

"We have used samples collected from villages and also milk spiked with a specific amount of ALP to test the kit," said Dr. Chandra.

In most cases, almost 94% of the ALP could be detected. The team also confirmed that colour is due only to ALP and not due to interference of vitamins, other proteins and minerals in the milk.

The sensor works in both qualitative and quantitative modes. "No separate reader is required for qualitative analysis as it works just like pregnancy test strips.

While colour change shows ALP's presence, the exact amount of ALP is determined using a smartphone," said Dr. Chandra.



The team has prepared a kit by attaching probe discs onto a 2 m square transparent cellulose acetate film.

The probe is then covered with another cellulose acetate film. Colour reaction takes place when milk is injected through a tiny hole in the cover and a smartphone can be used to get the results.

It takes just about 15 minutes to detect raw milk from pasteurised one.

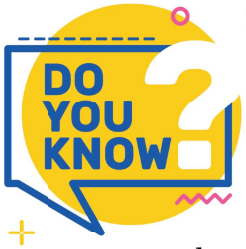
The kit could come handy in milk bars, large kitchens and at milk collection centres where freshness of milk is a concern. It can find other applications too.

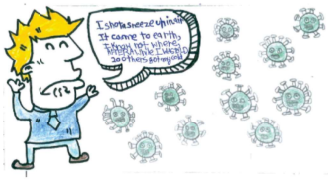
Since ALP is also tested in various body fluids, the kit can also be utilized in clinics. Fabrication in the laboratory at present costs around Rs.80 to Rs.125 per kit and could come down when mass manufactured, researchers said.

Kuldeep Mahato, a research fellow, worked with Dr Chandra in the development work. The research results will soon be published in the journal Biosensors and Bioelectronics.

#FunFacts

CURIOUS CASE OF VIRUS MULTIPLICATION





The viruses, notoriously known for the seasonal flu and deadly diseases like AIDS, are the smallest of all the microorganisms. As potent they may be, the intriguing part about viruses is they are inactive when outside a living cell! They become active and multiply only when they enter and infect a living cell. The process of cell division is a regulated phenomenon where many enzymes - protein molecules that speed up the chemical reactions inside a cell - put their act together. The genetic material, or the genome, which passes on hereditary traits to the subsequent generations, replicates itself and eventually one cell divides into two - both being exact replicas of each other with the same genetic material.

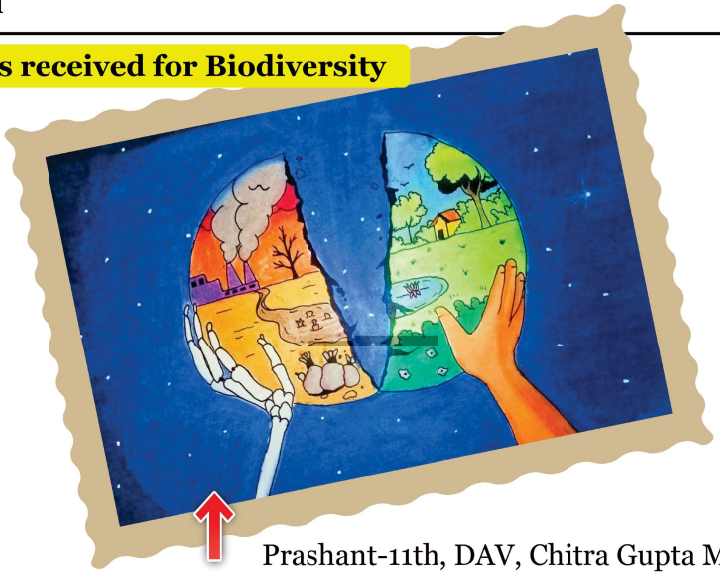
By: Aadi Ajay, Kerala school, Vikaspuri

#OurBuddingArtists

Online Posters received for Biodiversity



Amritanshu-10th, Vikas Bharti Public School



Prashant-11th, DAV, Chitra Gupta Marg, Paharganj

Riddles and Questions





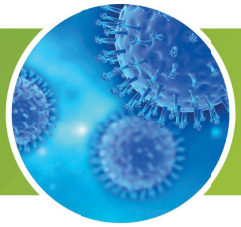
Saiydan
Student-9A
GSBV Rani Jhansi road

Welcome to a series of questions asked by you.We [redacted]ecting answers from our readers which shall be published in the next edition of the magazine along with their photograph.

Question 01 — Why don't teeth grow a third time in humans?



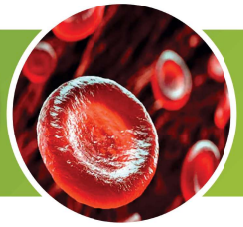
Question 02 — Why is the virus non-living outside the body while living inside the host?



Question 03 — Why does a newborn baby close its palm?



Question 04 — Why does blood not coagulate inside the body ?



Question 05 — Why does a dead body float on the water surface ?



Question 06



Why are soldiers advised to keep their mouths open while fixing their guns?

Question 07

Why don't babies have tears when they cry?



Question 08



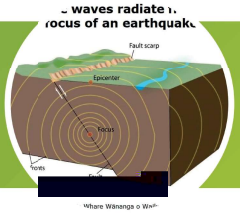
Why don't birds get electrocuted when they land on electric wires?

Question 09

Which animal never drinks water in its entire life?



Question 10



W[illegible]d of waves are present during a[illegible]quake?

Please send your answers here
Link ...(bit.ly/NaiUdaanDoE)
After receiving the first five correct answers, the link will be closed.



It's impossible to burp in space

DO YOU KNOW?

When you burp on Earth, gravity keeps down the solids and liquid from the food you just ate, so only the gas escapes from your mouth. In the absence of gravity, the gas cannot separate from the liquids and solids, so burping essentially turns into puking.



By: **Rizwan Ahmad,**TGT (Natural Science)
GBSSS, Aya Nagar

#FunFacts

Featured Article

Dew drop Collector



Nisha Tandon
TGT Natural Science, Mayur Public School, Mandawali

Innovation means using new technology and using new ways of thinking to add value to an existing idea or product and to make substantial changes in society. ATL Marathon 2020, was launched in the year where COVID-19 brought the world to a standstill, ATL Marathon drew inspiration from Atam nirbhar Bharat and aligned itself with the 17 goals of "2030 Agenda for Sustainable Development" (SDG) adopted by all United Nation Member States. The ATL Marathon focused on the five pillars of Atamnirbhar Bharat –
Economy, Infrastructure, System, Demography, Demand.

Two of our class 6 students selected one of the important pillar that is Economy and started working on a least explored renewable source of energy i e dew drops. The details of the project are as under:
Problem Statement –To Promote use of renewable sources of energy
Problem Ideation For-Sustainable use of Water resource
Idea-Dew Drop Collector

Have you noticed dew drop on grass, Leaves of plants and on some surfaces like railings, Seats of vehicles or sloping surfaces in morning specially during winters.

You would be surprised to know that these dew drops can be used to quench our thirst.

The purpose of the project is to showcase that how atmospheric moisture can be harvested and proccesed into safe drinking water.

That too while comparing it in quality and price wise as one can get water from an RO unit. In our country RO units have become necessity and these units are widely now used even in the villages where we used to get drinking water directly from the hand pumps.

Have you ever noticed how much water gets wasted when an RO filters water for a family of 4-6 members?

The Need

- Decline in ground level water
- Sustainability of water resource for use in future
- Uneven distribution of water in parks etc.
- Ensuring enough water availability to the road side plants
- Effective and efficient use of every drop of water
- Most Important----To sustain life

Project name "Dew drop collector"

As the dews get evaporated in the air with no use , so we can use the dew drops as a renewable and effective source of energy. Those droplets, which condense from water vapour - moisture - in the air, get collected randomly across the surfaces of flat leaves. However, dew drops tend to accumulate at the tips of spindly leaves .Condensation can occur over several hours of the night often extending to early mornings

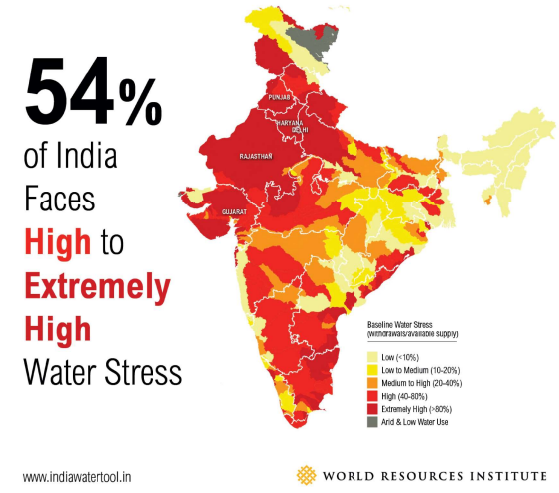
A plastic funnel will be used to make its structure attached with a plastic long tube so that the water can seep into the ground . The dew drops will fall on the mouth of the plastic funnel and then it will seep into the ground where the plant is attached . The structure of the funnel can be made helicoidal so that the increase in the surface area results in more collection of water.

The dew drops inside the tube would go to the roots of the plants , thus this would be effective to many dry regions of India as the plants which do not get water, can get the water from the dew drops of own plant , and is sufficient for it . This will not waste the dews and it will be useful for the plants.

If done on a larger scale, the dew drops collected can also be used for drinking water. We have explored it also and designed the structure for that. Our innovation was recognized and appreciated:
FROM 7000 ENTRIES RECEIVED IN THE COMPETITION .
And we finally made our place among:
TOP 300 TEAMS ON THE NATIONAL LEVEL
TOP 10 TEAMS ON THE STATE LEVEL .

Now We are taking this innovation to a higher level and for this we have done a fusion of green house and drip irrigation combination . We are fusing this idea for increasing its effectiveness and for working more effectively.

Analysis of Demand, Utilizable and available water:



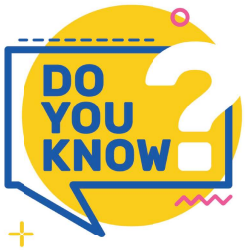
A 3D virtual model is made using Atal Tinkering Lab which is shown in the diagram.
The complete 3-Dimentional view of our model along with explanation of the working is shown in a short video.

Platform used :Tinker CAD
YouTube Link:
https://youtu.be/5Fen4LDf5w8

The dew harvesting technology will involve harvesting dew using specially designed condenser panels, storing raw water and putting it through filtration process. When conditions for dew formation are right – clear sky and humid, still breeze- the panel surfaces will cool to dew point temperature causing condensation to occur. Condensing water flows down sloping sides by gravity into a central channel.

This project has the potential to serve as a reneweble water resource which could compliment our daily needs of potable water for isolated areas.

#FunFacts About half of your body is bacteria



That's right. A 2014 study estimates that the human body consists of 39 trillion bacteria and 30 trillion human cells. In the past, researchers thought we were more bacteria than human with a ratio of 10:1. While this new calculation is probably closer to the true numbers, it's not a hard fact.



By: **Rizwan Ahmad,**TGT (Natural Science)
GBSSS, Aya Nagar

Forthcoming Exams





Sunil Kumar Mahato
Lecturer Chemistry-
GBSSS, No.1 Shakti Nagar

Choosing the right course plays a crucial role to have a distinct career, while short listing colleges and courses, it is very important for students to understand their passion and have clarity about the course they are willing to pursue. I am presenting this article to provide some information about upcoming examinations which students can apply after qualifying 12th board examinations according to their interests and potential.

BHU UET 2022

Undergraduate Entrance Test 2022 (UET 2022) is conducted by the Banaras Hindu University (BHU) to screen the candidates who are eligible for admission into the various undergraduate programs i.e., B.Sc. (Hons), B.Sc. (Ag), B.Sc. (Nursing), B.P.Ed, etc.

Eligibility: 10+2 (Refer brochure)
Start date for online application (tentative): January 2022
Tentative exam date: To be announced
Further information and update: http://bhuonline.in/

BHU
Banaras Hindu University

NIFT 2022

National Institute of Fashion Technology (NIFT) conducts a national level entrance exam every year for candidates seeking admission in UG Courses of Fashion and Design field like Bachelor of Design, Bachelors of Fashion Technology at various campuses of NIFT located in New Delhi, Kangra, Jodhpur, Bhubaneswar, Mumbai, Bengaluru, Chennai, Patna, Shillong, Srinagar, Hyderabad, Kolkata, Bhopal, Gandhinagar, Kannur and Raebareli.

Eligibility: Candidates must have passed/appearing 10+2 with Physics, Chemistry and Mathematics from recognized board for B.F.Tech course and 10+2 passed/appearing from recognized board for B.Des course.
Start date for online application (tentative): December 2021
Tentative exam date: February 2022
Further information and update: https://nift.ac.in/ 011-26542196/ 26542061

nift

NATA 2022

NATA 2022 (National Aptitude Test in Architecture) is a National level entrance exam conducted by Council of Architecture. The test is conducted by CoA twice every year for admission to the top Architecture colleges across the [redacted]

Eligibility: Candidates must have passed/appearing 10+2 with PCM or 10+3 diploma having mathematics as a Subject from recognized board.

Start date for online application (tentative): March 2022

Tentative exam date: April 2022

Further information and update: https://www.nata.in/

NEST 2022

The National Entrance Screening Test or NEST is a compulsory online/computer based test for admission to the five year Integrated MSc programme in Biology, Chemistry, Mathematics and Physics, at National Institute of Science Education and Research (NISER), Bhubaneswar and University of Mumbai –Department of Atomic Energy Centre for Excellence in Basic Sciences (UM–DAE CEBS), Mumbai.

Eligibility: Candidates must have passed 10+2 Intermediate or its equivalent examination with Physics, Chemistry, Biology and Mathematics subjects from any recognized board or university.

Start date for online application (tentative): February 2022

Tentative exam date: June 2022

Further information and update: https://www.nestexam.in/ , 022- 61306277, nest-exam@niser.ac.in

NDA & NA 2022

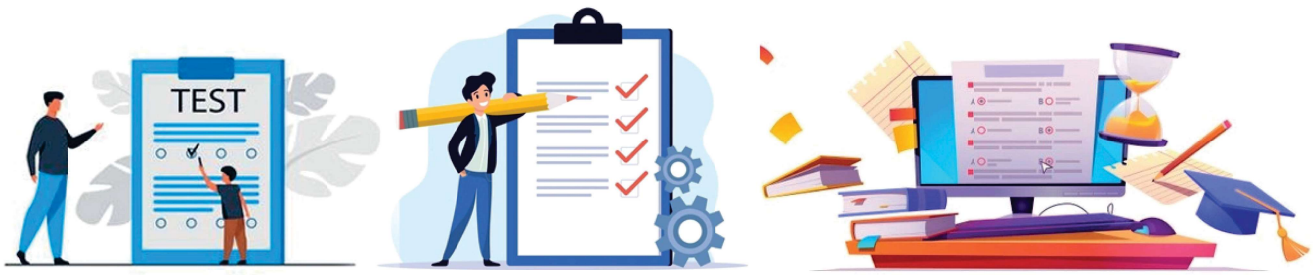
UPSC organizes NDA & NA (National Defence Academy & Navel Academy) entrance exam every year. Through this examination candidates become eligible for selection into training academies of Indian Navy, Indian Military and Air Force.

Eligibility: Candidates seeking for Indian Navy and Air Force must have passed their 12th/appearing (10+2 pattern) from a recognized board or University with Physics and Mathematics as a compulsory subject. Candidates want to apply for Indian Army must have completed 12th (10+2 pattern) or its equivalent exam from a well-recognized board.

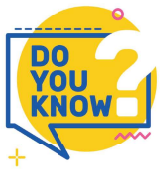
Availability of Application Form: December 2021

Tentative Exam Date: April 2022

Further information and update: https://www.upsc.gov.in/



#FunFacts CHEMISTRY IN KITCHEN-GARLIC & ONION



Onion & Garlic belonging to same genus 'Allium' have a lot of similarities in their chemical composition but differ in their reaction. Onion notorious for its tear including ability is quite fascinating. On the other hand, Garlic is known for its peculiar odour & medicinal properties.



By - Aadi Ajay, Kerala school, vikaspuri

Lockdown Diaries





Meenakshi Kushwaha
Principal ,
Birla Vidya Niketan

Schools shut down but learning found a wider platform. Syllabus was rationalized but learning outcomes were enhanced. Face-to-face interaction dropped but communication was stronger than ever... and we realized that parents too were present in our classrooms. This is the power of technology or digital learning to be specific. The first priority in the lockdown was to ensure learning and all schools found digital tools for themselves. Be it be Whatsapp or Zoom or google meet etc., teachers did not hesitate in using them and the students adapted with utmost ease and enthusiasm. Second priority was to reach out to the last learner and get him/her on board, ensuring online education accessible to students from humble backgrounds and also to the students with special needs. It is worth mentioning here that all learned to use technology themselves, from each other and also from students, parents and alumni.

In a way collaboration and partnership increased. There were hiccups, but stronger was the determination that the show must go on.

Apart from the shared resources available on portals like Diksha, Swayamprabha, Slideshare, and videos on Youtube, students and teachers together created their own resources too. Blended learning got promoted in a significant way promoting self-learning in children.

Children gave a new dimension to experiential and project based learning. Those who had moved to their hometowns/villages, gave virtual tours to their classmates of their village farm, the harvesting of crops, a pigeon's nest in a tree, milking cows, and organic vegetables they grew during the lockdown in their backyard, among other things. Together they understood [redacted]ing of self healing of mother Earth. T[redacted] for and promise to bring back some [redacted] form of [redacted]-room projects to revive the Biodiversity of their surroundings.

Through several webinars by experts in every field, concerted efforts were made to teach digital literacy, cyber safety, financial literacy, health awareness and environmental consciousness. As part of the Social Outreach Committee, students reached out to bring succour to so many distressed people. Since they had more time available, most developed hobbies like cooking, reading, gardening etc. No doubt, the families and teachers grew closer in most of the cases.



Efforts were made to make classes interesting and fun. Gestures and body movements were used to hold the attention, mainly of the little children. Storytelling and roleplay were extensively used to teach communication skills and emotions.

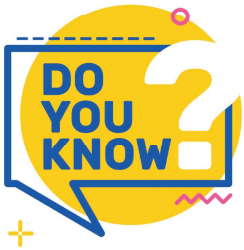


Children showed 100% participation in all classroom activities, and started using in-house things to make projects etc. Through games, art and music, children learned to express themselves and channelize their energy. Through games, yoga, talent shows, intra class, inter house and inter school competitions children were able to showcase their talents and pursue their hobbies.

It is beyond doubt that during the lockdown, digitization proved to be a blessing in remarkable ways. Though the classrooms were silent, the students were not, the school gates were closed both the teachers and students opened their cameras and welcomed each other in their homes and classrooms. Though school corridors were empty their minds were free to roam uninhibited to wherever their creativity and imagination led them. Education has made such leaps in this one year of virtual mode that it will never be the same again. And that's a post pandemic truth. Blendedlearning, self-learning and use of technology are going to stay.

Thanks to science and technology... Though the world had paused, education did not, and most importantly, students did not allow education to pause.

#FunFacts Fun facts about moon



1 . The Moon is Earth's only permanent natural satellite It is the fifth-largest natural satellite in the Solar System, and the largest among planetary satellites relative to the size of the planet that it orbits.

2. The Moon is the second-densest satellite Among those whose densities are known anyway. The first densest is Jupiter's satellite Io.

3. The Moon always shows Earth the same face The Moon is in synchronous rotation with Earth. Its near side is marked by large dark plains (volcanic 'maria') that fill the spaces between the bright ancient crustal highlands and the prominent impact craters. Learn more about the Moon's phases



4. The Moon's surface is actually dark Although compared to the night sky it appears very bright, with a reflectance just slightly higher than that of worn asphalt.

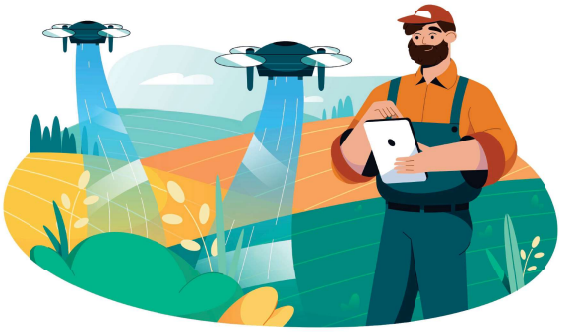
Its gravitational influence produces the ocean tides, body tides, and the slight lengthening of the day

Scratch Your Head! THE BRAIN TEASERS!

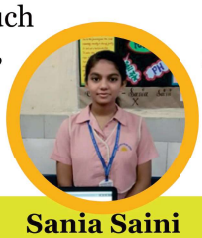
(Answer)

1. **He (Helium) and Al (Aluminium) make Heal.**
2. **Mercury**
3. **Lead**
4. **Echo**
5. **The Singularity**
6. **Oxygen**
7. **Rust**
8. **Chromosomes**
9. **Nickel (Ni) and Neon (Ne) makes NINE**
10. **Pituitary Gland**

Crop prediction model using artificial intelligence



As we all know that the present and future of every industry and each human is being affected by Artificial intelligence. To put it simply, Artificial intelligence is the behavior or activity shown by machines and systems, similar to that of human beings. In simple terms, Artificial intelligence is behavior or activity exhibited by machines and systems, which is similar to that of human beings. AI systems perform tasks that normally require human intelligence, such as visual perception, speech recognition, decision-making, and translation between different languages. AI has been proved to be a great tool to solve large scale as well as day to day problems.



Sania Saini
Salwan sr. Secondary school

Crop prediction model is also an Artificial Intelligence based model that predict which crop a farmer d grow for effective farming according to :s like Temperature, Rainfall, Season, , pH and type of soil. Our climate is constantly changing due to global warming, Ozone layer depletion, pollution and other factors. Temperature and rainfall patterns have undergone changes too. Due to acid rain and access use of fertilizers and pesticide, the quality and pH of soil is decreasing day by day. As a result, the crop pattern followed by farmers earlier is not very effective which calls for a better crop selection according to the changing environment. This model will help farmers for a better crop production and cope up with changing climate. If farmers will grow crops according to the rainfall availability and soil requirement then they do not have to do excessive irrigation and use fertilizers and pesticides. This will encourage organic and sustainable farming.

Decision tree (An Artificial intelligence model) was used to make this more accurate and usable. The d[redacted]ps grown in India was taken [redacted]a's open source website - data.gov.in, agriculture.gov.in, farmers.gov.in. Majority of the states and Union Territories in the Dataset were covered in the data. Farmers have to enter temperature, rainfall, season, state they live in, pH and type of soil and the model will predict the top five crops the farmers should grow. In future, we will work on making this in an app which can be accessed anywhere and adding more factors like Nutrients present in the soil, to consider how much area and money farmers have and according to this which crop will be most economically feasible and have high chances of good yield, suggest the name and quantity of fertilizers that can be used with the predicted crop.

Achievement:-
• Got 1st prize at regional science CBSE Exhibition and represented the school at national CBSE Science Exhibition.

Tell us what you think

If you have a suggestion or a comment, please share with us on

doesciencemagazine@gmail.com

NOTE:

1. Please write your Name & Mobile Number while sending your suggestion or comment for better communication.

2. By submitting your suggestion/comment, you agree to allow Directorate of Education, GNCTD to use your suggestions or comments, good or bad, in their publication with the option of showing your name.

Or if you prefer, you may write to us, at Office of 'Nai Udaan', Room No-2 (Adjacent to Computer Cell), Directorate of Education, Old Sec[redacted]i-110054

Bio Wire



Madhu Gaur

PGT Physics & Mentor
(D.A.V. Centenary Public School
Narela, Delhi 110040)

Dear children, have you ever thought of conduction of electricity in plants? Let us explore our surroundings and do some experiments using Aloe vera plant to show conductivity of electricity in plants and verify the laws of combination of resistances qualitatively.

Sub Theme **To Verify the law of combination of resistances qualitatively**

Apparatus required

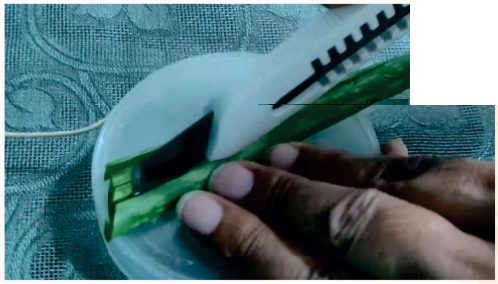
Aloe vera leaf, cell or adapter of a mobile phone, connecting wires and LED (for connecting wires and LED, I used waste Diwali lights), cutter, on off switch (desirable)

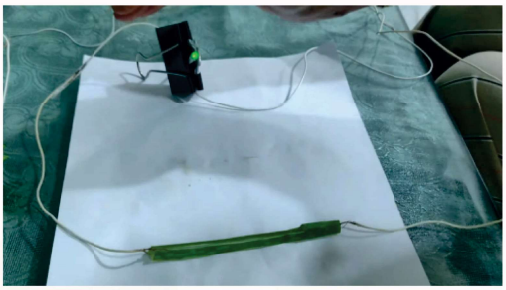
Procedure



STEP 1: First to check the conductivity of electricity in Aloe vera, connect a LED, cell and aloe vera leaf using connecting wires as shown in the diagram/picture given above. You will see glow in LED verifying that aloe vera leaf is a conductor of electricity.

STEP 2: Cut aloe vera leaf laterally in thin slices and connect them first in series and then in parallel with a cell and LED with the help of connecting wires as shown in pictures .





STEP 3: Observe the glow of LED in various cases

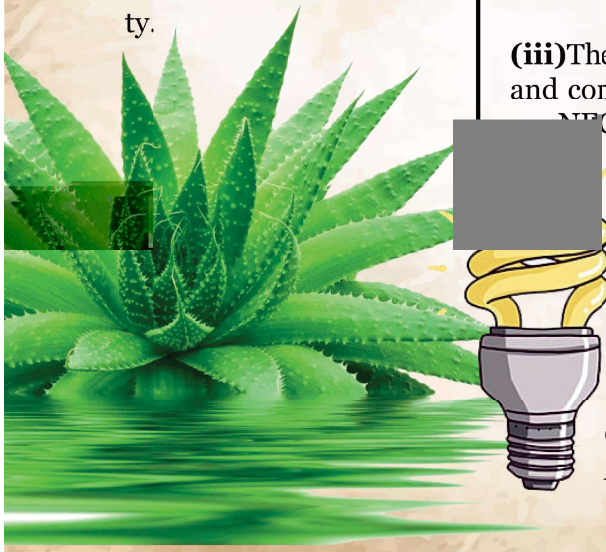
(i) The glow is maximum when the LED is directly connected to the cell.

(ii) The glow decreases on introducing aloe vera slice/wire in the circuit showing aloe vera offers some resistance in the path of electricity.

(iii) The glow further decreases when two aloe vera slices/wires are taken and connected in series verifying that WHEN RESISTANCES ARE CONNECTED IN SERIES, RESISTANCE INCREASES.

(iv) The glow again increases when the slices/wires are connected in parallel verifying, RESISTANCE DECREASES WIIEN CONNECTED IN PARALLEL.





#OurBuddingArtists

Online Posters received for Biodiversity



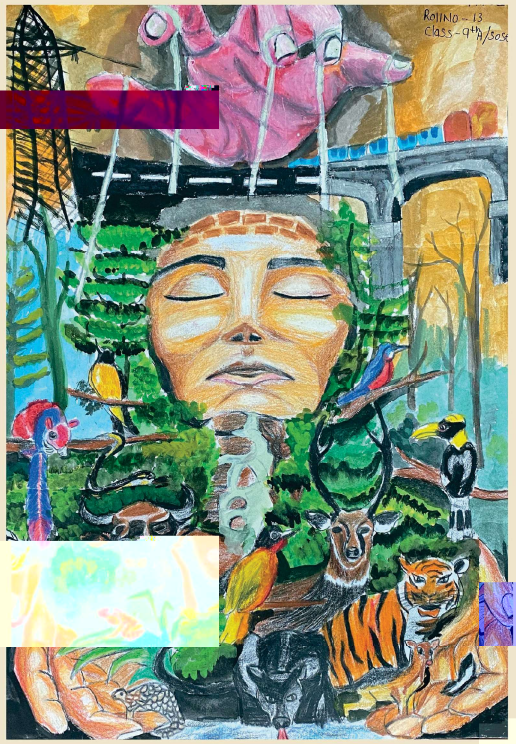
Gulista XIth- A ,BCP, SKV Babarpur



Keshav Kanhai-10th ,SOE Kalkaji



Uday (XI-A) Dashmesh Public School



Kakul-9th, SOSE, Sector 21, Rohini



Ishta-9th C, SKV NO -1 ,Keshav Puram



Harshita Jain,GGSSS East Gokal Puri



Nikhil-11th,Amrita Public school