

Alone we cannot go far, together we raise the bar



DR A P J ABDUL KALAM
IGNITE AWARDS 2016



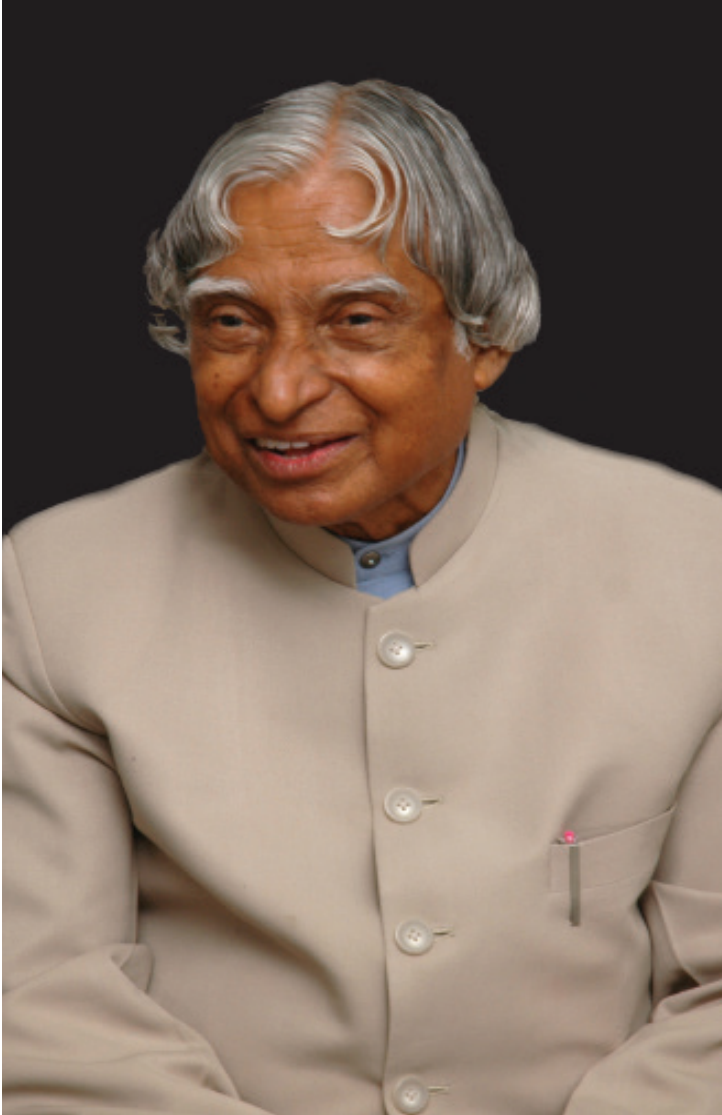
राष्ट्रीय नवप्रवर्तन प्रतिष्ठान – भारत
National Innovation Foundation - India



मंजिले और भी है आसमान के आगे
कुछ ख्वाब अधूरे अब भी है उम्मीदों के आगे

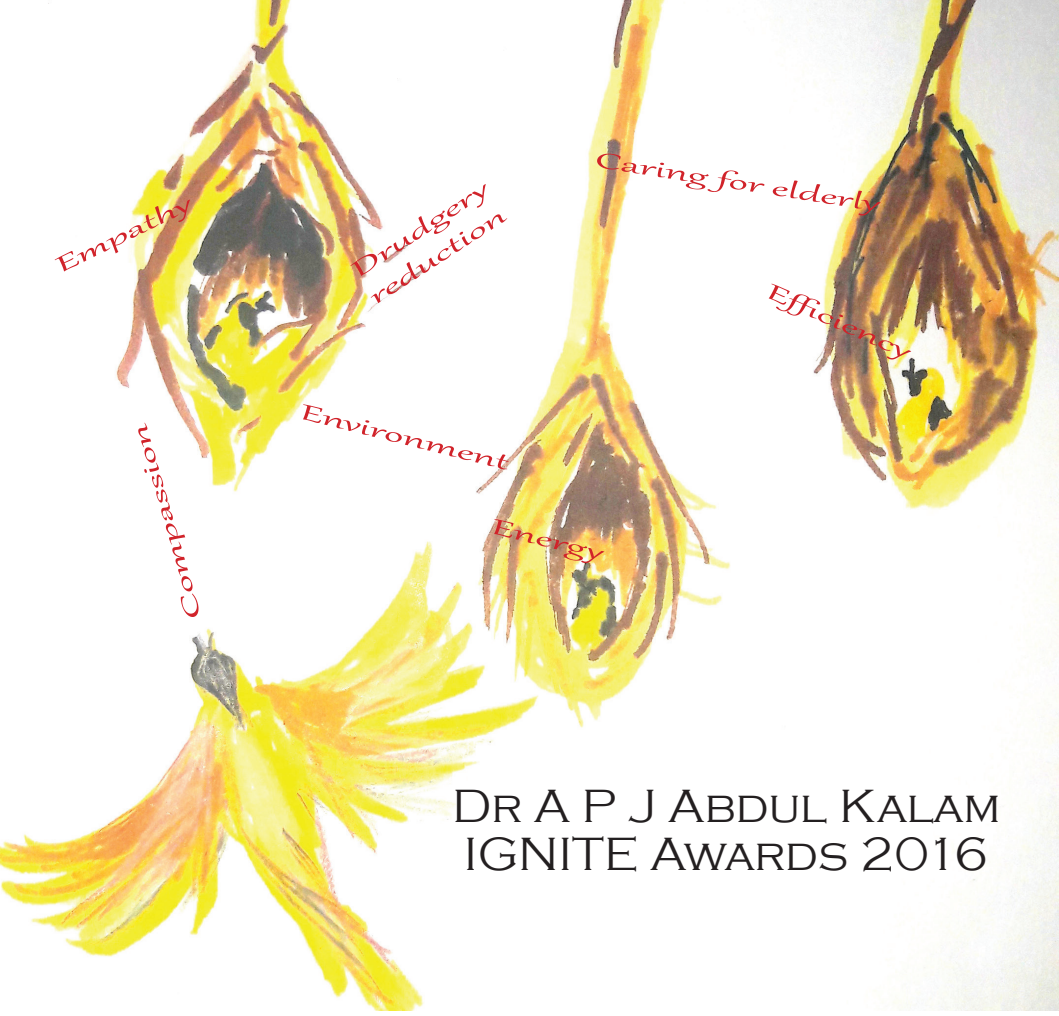


*Dr A P J Abdul Kalam IGNITE Awards at the hands of the Hon'ble
President Shri Pranab Mukherjee
November 7, 2016*



Remembering Dr A P J Abdul Kalam, Former President of India

1931 - 2015



DR A P J ABDUL KALAM
IGNITE AWARDS 2016



FOREWORD



I am extremely happy to share the joy of National Innovation Foundation (NIF), India and the Honey Bee Network for mobilising over 55,000 ideas from all the states and Union Territories (UT) of the country — a record of sorts. The award-winning ideas are an important source of inspiration. These indeed help in augmenting

motivation and personal as well as social aspirations of the children.

The 31 awardees represent 16 states and UTs of the country, and many of them come from rural, tribal, economically-backward and far-flung areas. This shows the tremendous potential we have in our country, which is waiting to be tapped fully. Many problems in the disadvantaged and conflict-prone areas can be overcome, if we are able to properly engage with the children and youth there. The Department of Science and Technology (DST) remains committed towards the well-being of the people of the country, especially in such areas, by providing science, technology and innovation-based interventions under its various schemes and, through different partners.

I appreciate NIF for being able to reach all the states and UTs of the country for the IGNITE 2016 campaign. This is indeed an apt tribute to the memory of Dr A P J Abdul Kalam. Despite various constraints, I realise that NIF has been able to successfully shoulder the various challenges faced by it. NIF

participated in the DST's Science Express — Climate Change Special — in its last run (2015-16), by putting up a small innovation exhibition, and organising platform and outreach activities at 19 stations in nine states. It was able to connect over 35,000 students directly and mobilise over 15,000 ideas. NIF has also recently partnered with the DST for the INSPIRE-MANAK (Million Minds Augmenting National Aspiration and Knowledge) scheme where it has facilitated regional workshops, provided exposure to the district and state nodal officers on innovation, and also participated in the district/ state-level jury process in many states. NIF will further be expected to incubate top 60 student projects, to be awarded under the scheme, which I am sure will help them make an entrepreneurial transition from a project to a socially-useful product.

I extend my heartiest congratulations to all the young awardees of the Dr A P J Abdul Kalam IGNITE Awards 2016. Similar to the students profiled in this book, there would be many other similarly-creative and talented children in our neighborhood. I urge the readers to link such children with NIF so that they can also possibly get a chance to showcase their creativity.

With my best wishes to all.



Prof Ashutosh Sharma
Secretary
Department of Science and Technology
Govt. of India

PREFACE



It is our great privilege that creative and innovative children of our country will get Dr A P J Abdul Kalam IGNITE Awards 2016 at the hands of the President Shri Pranab Mukherjee *ji* at the Rashtrapati Bhavan. NIF and the Honey Bee Network have been very fortunate to have had the blessings of the President in our march towards

making India innovative. The office of the President deserves special appreciation for its wholesome support to the inclusive innovation movement in the country.

The late Dr A P J Abdul Kalam, former President of India, had championed the cause of grassroots innovation like no one else. All the previous IGNITE awards were given by him till he was with us. Dr Kalam interacted with students with such a verve that it left a deep, indelible imprint on their hearts. This legacy has been taken to a new level by President Mukherjee *ji* through Innovation Scholars In-residence programme.

I congratulate the award winners and compliment all other 55,000 students, a record number so far, for their enthusiastic participation in the Dr A P J Abdul Kalam IGNITE Award 2016 competition. The submissions were received from all the states and Union Territories of the country. I am sure that the young team at NIF would have had to work very hard in screening these thousands of ideas to ensure that the best ones get selected. Disappointment may come naturally to many

other participants but I would urge them to feel happy for the 31 students who could finally make it, realising that the spirit of participation is some times more important than winning.

Every year, the experience of the IGNITE competition demonstrates the impatience of our children towards inertia, indifference and inefficiency. Let us resolve to provide ample creative space to our children so as to help them discover their innate creative tendencies, sensitivity, and ingenuity, for in them lies the bright future of our country.

With my best wishes and blessings.



Dr R A Mashelkar, FRS
Chairperson
National Innovation Foundation, India

INTRODUCTION



The Honey Bee Network has pioneered many models of inclusive innovations in the past three decades. One of the important models scaled up by National Innovation Foundation (NIF), in an unprecedented manner, is about harnessing the creative and innovative energy of children. Right from the first year in 2001,

NIF has been recognising innovations by children. But, it started paying concerted attention to the creativity of school and children out-of-school, from 2008 onwards.

While evaluating the rigour of imagination by children, it is important to underline that NIF focusses only on unaided ideas of children. It discourages ideas which may have been supported by teachers, parents or other sources. In some cases, that has been the constraint in our inability to recognise otherwise-worthy ideas because they were not an outcome of independent thinking by children. The Department of Science and Technology (DST), part of the parent ministry of NIF, has been particularly keen to stress on this issue. It is well known that many children were prepared by their teachers/parents to show ideas developed by elders in children's competitions. Obviously, it taught the children at an early stage that it was alright to claim somebody else's idea as one's own. I am happy to state that the new countrywide program of DST, INSPIRE-MANAK, in which NIF is a knowledge partner, has completely stopped this practice. It is a watershed moment in the Indian march towards a prosperous and peaceful society. By giving importance to originality and creativity, the

government and NIF are promoting competence of Indian children to stand on their feet and think about social and industrial problems on their own. The fruits of this kind of thinking will be apparent in coming decades. One may not notice the long-term impact of such a disruptive public policy in the near future.

Connect with society, and nature

This year, we have recognised a wide variety of ideas, touching different domains of our day-to-day lives, such as reduction of drudgery, personal hygiene, sanitation, improvement of farm and labour productivity, safety, enabling physically-challenged people, caring for the elderly, particularly their health, conservation of energy and biodiversity, greening the environment, service delivery, security, controlling corruption and tourism in remote areas like Northeast India, besides improving productivity of weaving in Jammu and Kashmir.

Connect with industry

India is going through a major transition in its worldview and developmental strategy. While we need to blend both entitlement and entrepreneurial approach to social development, boars towards entrepreneurial model is well poised for the future. NIF has succeeded in converting a few ideas of children into products and businesses. But, much more needs to be done. We need a very active partnership with Indian and global industry to make this possible. I hope that industry partnerships will be triggered soon so that we can celebrate these at the Festival of Innovation (FOIN), hosted by the office of the President of India, at the Rahstrapati Bhavan in New Delhi during March 4-11, 2017.

Connect with future leaders

Dr A P J Abdul Kalam IGNITE Awards are a celebration of the investment that our former President made in unleashing the aspirations of young children of our country. We need a lot of mentors who will guide and handhold each of the IGNITE winners as well as grassroots innovators, who are supported by the institutions like the Honey Bee Network, NIF, SRISTI and GIAN besides others. Majority of children and other young innovators are likely to lead India into the 21st century with a new self-confidence and sense of solidarity with disadvantaged sections of our society. Their spirit of conservation of nature will help in bequeathing a safer, happier, greener and more compassionate world for future generations.

Connect with the disadvantaged

NIF is joining hands with SRISTI, GIAN and other volunteers of the Honey Bee Network in ensuring that IGNITE winners work together with children from slums and other disadvantaged backgrounds in a Children Creativity Workshop, supported by UNICEF. The idea is that these children visit slums, identify unmet social needs and other problems faced by the children and their families, brainstorm together and find solutions to those problems.

One such problem found in an earlier, similar workshop has got this Dr A P J Abdul Kalam IGNITE award. It is likely that it may become part of public policy. More than generating the solutions, this workshop helps awardee as well as other children in learning about the need for humility in learning from each other, regardless of social class or background from which they come from. I hope that parents of children participating in these workshop and IGNITE function will encourage their children to develop *samevdana* (empathy) towards less privileged so that we work towards a more fair and just society together.

I will fail in my duty if I don't acknowledge the contribution of my colleagues from NIF who have had to process 55,000

ideas in a record time and do justice to all of them (the ideas). It is possible that we may have faltered in one or two cases. It is also possible that we may be found wanting by some. But, let me assure all concerned that within limited means of NIF, no effort was spared to be fair in judging all the ideas and recognise the worthiest ones. It does not mean that other ideas are not worthwhile. It is just that only a few could be recognised at the function. We are committed to support all unaided, original and innovative ideas of children and thus will incubate even some of those, which have not received awards but may seem worthwhile to explore.

I deeply appreciate the cooperation received at all stages from DST, Ministry of Science and Technology, Central Board of Secondary Education, Ministry of Human Resource Development, Ministry of Women and Child welfare, IIM-A and several state governments. The volunteers of the Honey Bee Network, SRISTI and GIAN deserve a special thanks for complete solidarity in all initiatives of NIF.

I am sure we will all feel proud of the contributions of the winning children now and in future when they will address even bigger problems.

May the spirit of creativity, compassion and collaboration sustain.



Prof Anil K Gupta
Executive Vice-Chairperson
National Innovation Foundation, India

A WORD FROM THE DIRECTOR



What a phenomenal response to the Dr A P J Abdul Kalam IGNITE campaign this year, with over 55,000 submissions from students across the country! I am sure that Dr Kalam would have been very happy to see such an enthusiastic response. This is the second time that we are having the IGNITE Awards without him. There is a certain void but we take solace in the fact that his spirit continues to guide us and drives us to perform better.

This year, 31 students of 25 districts, from 16 states and Union Territories, are being recognised for 28 ideas. With awardees from Jammu and Kashmir, Northeast, Andaman and Nicobar Islands and numerous other interior areas, we are celebrating the diversity and solidarity of the nation. I am very happy to mention that like previous years, this year also girls comprise about half the total number of awardees. It has been tough for the colleagues at NIF to review all the submissions within the stipulated time. However, I am happy that they rose to the occasion and did well to identify the best ideas. Not only did the engineering team at NIF develop prototypes of a large number of student ideas in the Fab Lab but also prepared technical documents and Preliminary Specification (PS) documents for the filing of patents in the name of the student winners, all in about three weeks time. I compliment them for their wonderful efforts. My other colleagues at NIF, SRISTI, GIAN and HBN family, including IP firms/attorneys, who extended *pro bono* support in filing patents also deserve much appreciation for their untiring efforts to make the campaign successful.

NIF entered into an agreement with Artificial Limbs Manufacturing

Corporation of India for commercialisation of technologies for physically-challenged people. The technologies of previous IGNITE awardees, like crutches and adjustable walker, have been selected for large-scale manufacturing through this collaboration. This is just a beginning and I am sure that future will see many such success stories.

I express my deepest gratitude to the Hon'ble President, Shri Pranab Mukherjee *ji* and his office for hosting the award function at the President's House. Such encouragement at the highest level to our young inventors and innovators would not only motivate them but, also inspire them throughout life. I also wish to convey my sincere regards to the Hon'ble Minister of Science & Technology and Earth Sciences, Dr Harsh Vardhan *ji* and the Hon'ble Minister of State for Science & Technology and Earth Sciences, Shri Y S Chowdary *ji* for their continued support and guidance to NIF. My earnest gratitude to the Executive Vice-Chairperson of NIF, Prof Anil K Gupta; Secretary, DST, Prof Ashutosh Sharma; Chairperson of NIF, Dr RA Mashelkar and Governing Board members of NIF for their guidance, support and feedback from time to time. Central Board of Secondary Education, Board of School Education Haryana, Nagaland Board of School Education, Directorate of Higher Education, Himachal Pradesh, West Bengal Board of Secondary Education, Lok Sikshan Sanchalanalaya, Madhya Pradesh, Rajiv Gandhi Shiksha Mission, Department of School Education, government of Chhattisgarh and Mizoram Board of School Education also deserve our deep appreciation for supporting the campaign actively. I wish to acknowledge the contribution of Shri Hari Om Ashram, Surat for constituting Poojya Mota Prerit Awards for best student ideas for everyday use and for children coming from tribal and far-flung areas.

I congratulate the young awardees and their families, and hope they will stay engaged with NIF and the cause of inclusive innovations forever.

With my best wishes to all.



Dr Vipin Kumar
Director & Chief Innovation Officer
National Innovation Foundation, India

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Dr APJ Abdul Kalam IGNITE Awards 2015

IGNITE 2014

IGNITE 2013

IGNITE 2012

IGNITE 2011

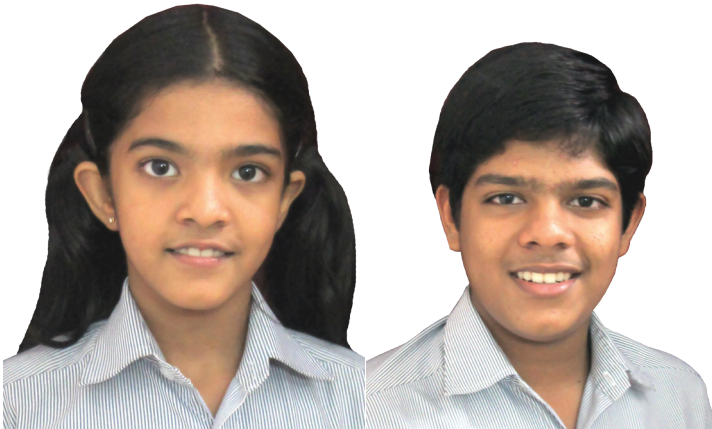
IGNITE 2010

IGNITE 2009

IGNITE 2008

EMERGENCY INDICATOR IN TWO WHEELERS

1



*Gayatri S, Standard IV
Navy Children School
Naval Base, Kochi, Kerala*

*Pranav S, Standard X
Navy Children School
Naval Base, Kochi, Kerala*

The siblings, Pranav and Gayatri, believe that even a small step in the right direction can make a huge difference. They had often heard stories of road accidents, involving two-wheelers. Their mother would worry every time they had to travel by a two-wheeler with their father.

In most cases of such mishaps, the two-wheeler rider is knocked down and run over by other passing vehicles. They observed that the major cause for such accidents is the fact that approaching vehicles are unaware of the mishap that has already occurred. This could be due to speed, bad weather or lack of adequate light.



Pranav and Gayatri have come up with the idea of installing a system with an emergency light or siren on the two-wheeler. It would get activated upon accident and alert approaching vehicles about the same. The system can be connected to impact sensors which will activate the hazard lights even if the engine shuts down, thus preventing the accident.

Pranav wishes to pursue mechanical engineering and considers Dr A P J Abdul Kalam to be his idol. Gayatri, on the other hand, enjoys playing the keyboard and is inspired by Helen Keller.



TIFFIN BOX THAT REMINDS ONE TO WASH HANDS

5



*Sheereen Shaikh, Standard VII
SDMC Primary School,
Nizamuddin West, Delhi*



Many times, children forget to wash their hands before and after eating food. It obviously affects their personal hygiene and causes possible health hazards. Sheereen developed her idea during a Children Creativity Workshop, organised by SRISTI at the Rashtrapati Bhavan, during the Festival of Innovation 2016. Her idea is to



have “wash hands before lunch” written on the cover of the lunch box, and on the inside cover, “wash your hands after eating your food”. May be, it could be made mandatory for manufacturers to print this in lunch boxes.

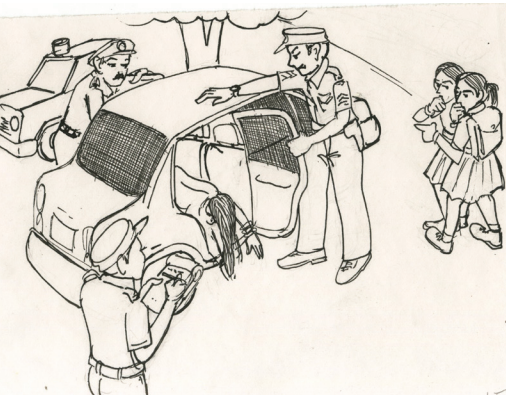
Sheereen has always wanted to be an engineer. She enjoys travelling and is interested in dancing and singing.

MONITORING DEVICE TO STOP MISHAPS IN VEHICLES

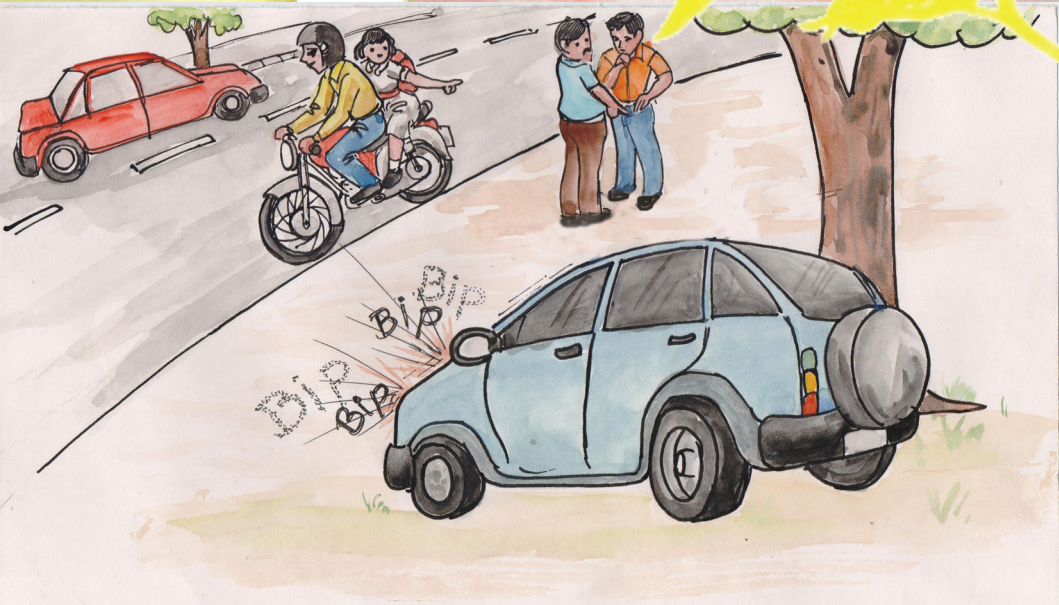
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*Arijita B Patra, Standard VI
Baji Rout Chhatrabas Ashram School,
Angul, Odisha*



The Nirbhaya gangrape incident, reported in December of 2012, deeply bothered Arijita. It led her to think of a device that could be fitted inside a vehicle to detect any sort of mishap. It would alert anyone within a range of one kilometre that inmate of the vehicle, say a woman, is in danger. Hopefully,



nearby people, commuters and/or police may come to rescue the person, thus preventing any untoward incident.

Arijita has been regularly reading different instances of rape, theft and other mishaps that happen inside closed vehicles. “These are very disconcerting. I want to teach lesson to the wrongdoers by this device,” she says.

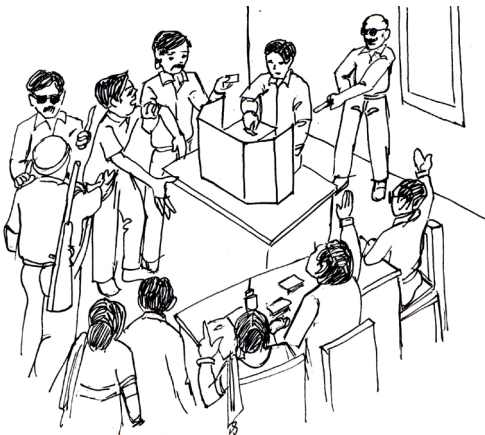
Arijita believes that nothing is impossible. She wishes to become a scientist.

REAL-TIME DATA TRANSMISSION SYSTEM IN ELECTRONIC VOTING MACHINES (EVMs)

9



*Rosban Sodi, Standard VI
Shaskiya Balak Awasiya Vidyalaya,
Sukma, Chhattisgarh*



Roshan overheard his teachers discussing how voting numbers in many areas are rigged. He thought of a button in the EVMs which can transmit the total number of votes directly to the cloud server as the voting proceeds and also to district Election Commission office, if required, at regular intervals. A software can



be developed for this which will prevent any untoward happening during/after voting. The rate of voting will be recorded per minute and any suspicious activity will alert the monitoring agencies.

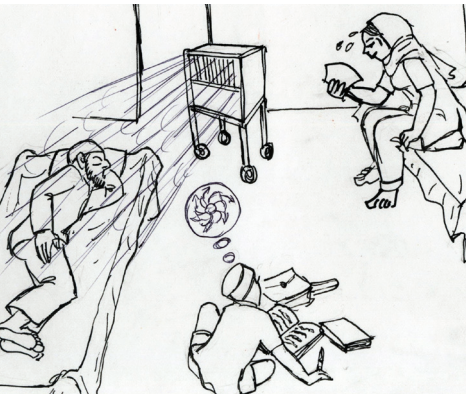
Roshan is fond of computers and has started learning how to use one. Besides, he draws inspiration from Dr APJ Abdul Kalam and Kalpana Chawla. He wants to become an engineer.

OMNI-DIRECTIONAL AIR COOLER

11

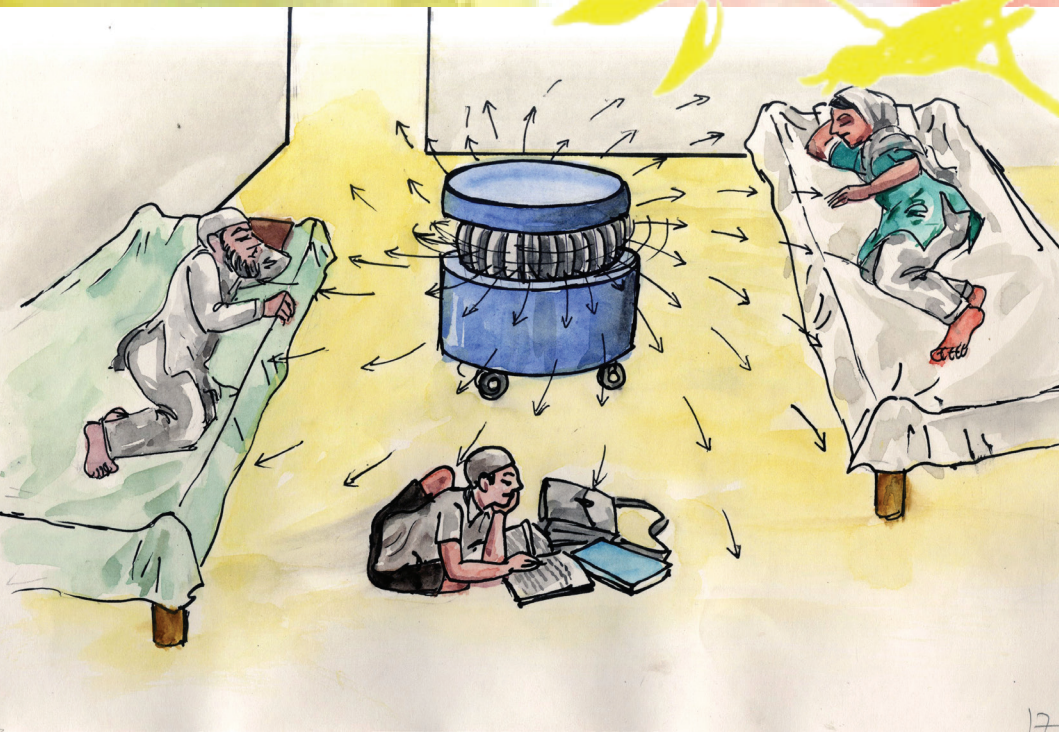


*Muskan Jawalkar, Standard VII
Govt Gyanodaya Residential School,
Hoshangabad Madhya Pradesh*



“One hot summer day, all members of my family were sitting in the room but not everyone was able to get cool air of the cooler. This made me think of an alternative,” shares Muskan. Her idea is to make an alternative cooler with throws cool air in all directions.

Muskan’s biggest inspiration is



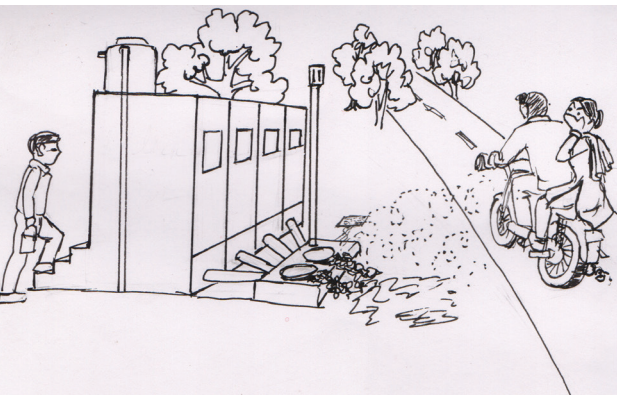
Dr A P J Abdul Kalam and she aspires to become an IAS officer.

SEPTIC TANK LEVEL AND PRESSURE INDICATOR

13



*Indu Manikpuri, Standard VII
Aastha Vidya Mandir English Medium School
Dantewada, Chhattisgarh*



“Nowadays, people in rural areas are getting aware about cleanliness. They are constructing lavatories but overflowing of the septic tank often results in pollution of nearby areas,” says Indu. Her



idea of a septic tank pressure record aims to warn of the impending problem well in time so that the tank can be drained before it is too late.

Indu wants to become an IAS officer and believes that one is destined to become what s/he decides to be.

MANUAL HAND LEVER-BASED TAPIOCA PLANT UPROOTER/DIGGER

15



*S Vanchinathan, Standard VII
Swamy Vikenandha Matric Higher Secondary School
Tirupur, Tamil Nadu*



Tapioca farming is common in India. The roots of tapioca are embedded deep into the soil which makes extraction difficult and requires tedious manual labour. Seeing the everyday struggle of farmers, Vanchinathan thought of designing a device with an easy



hand lever-based digger. It will not only reduce the burden of uprooting tapioca but will also save time.

Vanchinathan considers Dr A P J Abdul Kalam as his biggest inspiration. He wishes that India becomes a superpower without corruption, poverty or disasters. He loves making mechanical gadgets to address local needs. He wishes to promote this idea to improve agricultural practices and reduce drudgery.

CONTAINER CLEANLINESS INDICATOR

17

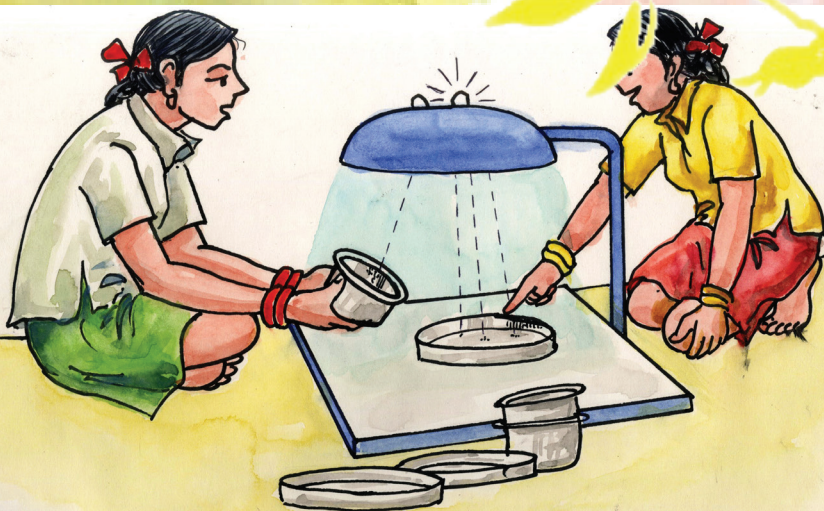


*Maidari Devi, Standard IX
Government Girls High School,
Rajamahendravaram, Andhra Pradesh*



Utensils with some residues of cleaning soap or even with other marks makes one wash them before use. One also has to wash them if they have been lying on the shelf for some time. Can one ensure that the utensils that are visibly clean are actually clean?

“The thought of a machine



that predicts cleanliness of utensils struck me when I observed that my mother was cleaning the dishes twice to ensure they were completely dirt-free,” recalls Maidari. Such a device would not only indicate the level of cleanliness of utensils but also reduce manual work. This is also beneficial for maintaining good health and keeping the environment safe.

Maidari believes that everyone should share their ideas for the betterment of society. Her biggest inspiration is Dr A P J Abdul Kalam and she is motivated to undertake activities for the betterment of the environment.

PEDAL-OPERATED VEGETABLE-CUTTING MACHINE

19



*Dhanurjaya Debury, Standard VIII
Kalinga Institute of Social Sciences
Bhubaneswar, Odisha*



“My elder cousin is a tailor by profession. Many a times, she gets late for work in the process of preparing food,” says Dhanurjaya. He realised that the reason behind her being late is the long time taken in chopping vegetables. He replaced the needle of the tailoring machine with a knife or a cutter.

This improvement can be used



where a large amount of food is prepared on a daily basis (for example in a joint family, canteen, temples or marriages, etc.). This machine would be cost-effective and help minimise drudgery.

Dhanurjaya believes in working for the betterment of the society and is inspired by Dr A P J Abdul Kalam. He wants to become a scientist and his hobbies include drawing and playing flute. ■

MACHINE TO DIG OUT SWEET POTATO

21



*Sehati Kutruka, Standard VIII
Kalinga Institute of Social Sciences,
Bhubaneswar, Odisha*

“My father, along with other farmers of the village, worked very hard. For long hours, they would all be digging sweet potatoes. The difficulties faced by them in using a hand digger disturbed me. I wanted to help my father and other farmers,” says Sehati. She came up with a digger, operated by spring mechanism with a rod, so that using lever mechanism, sweet potatoes can be dug easily.

Sehati wants to improvise the machine for other vegetables, such as yam. She is passionate about helping others and wishes to teach poor children when she grows



up. She writes stories in Odiya and is currently learning tailoring.

SYSTEM TO PROTECT TURTLE EGGS

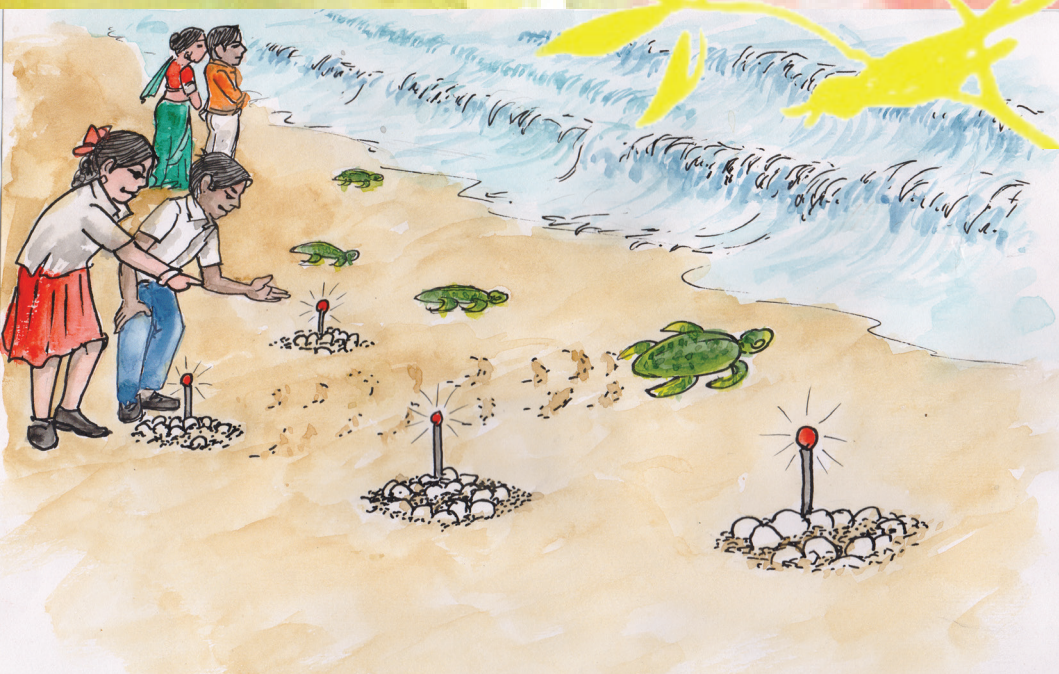
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*Sumit Biswas, Standard XI
Govt Senior Secondary School, Diglipur
Andaman and Nicobar Islands*



Every year, in the coastal regions of India, different species of sea turtles lay eggs. Most of these are preyed upon by animals such as dogs or snakes and even humans. This has resulted in an alarming decrease in the population of turtles. Sumit's idea is to insert a buzzer or light-indicating sensors into the breeding pits. These sensors will be connected to the regional forest department and will alert them in case of any



disturbance. The buzzer or sensor can be solar-powered which is in abundance in the coastal area. “To achieve great things in life, one must start with the spark, I CAN!” says Sumit. He has always considered his science teacher to be his inspiration. He likes to critically analyse his ideas and loves converting them into prototypes. He wants to become a marine biologist and unveil the secrets of sea.

PROXIMITY ALERT SYSTEM IN NON-TRANSPARENT DOORS

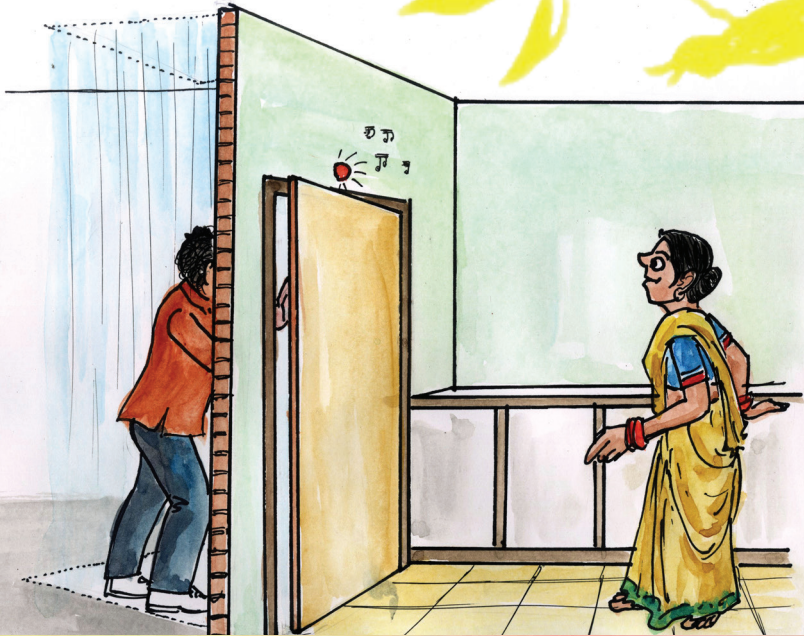
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*Sayan Sain, Standard IX
Pailan World School,
Kolkata, West Bengal*

Sayan quotes Dr A P J Abdul Kalam: “All birds find shelter during the rain. But, eagle avoids rain by flying above the clouds. Problems are common but attitude makes the difference.” Sayan is interested in pursuing medical science research to invent low-cost medicines for critical diseases and wants to become a doctor. He plays guitar, violin and the synthesizer, and also likes painting.

“One day, while getting ready for school, I suddenly opened the door of my father’s room who was coincidentally standing behind the door. He was hit but fortunately the injury was not severe,” recalls Sayan.



After this incident, he started thinking about how such incidents can be prevented from happening. This led him to the idea of an alarm/sensing system that can sense any physical presence on the other side of the door and give indication to the person opening the door. Once he successfully experiment this idea at home, he plans to contact concerned authorities to implement this in schools and offices.

SAFETY DEVICE FOR DOORS, SPECIALLY IN AUTOMOBILES

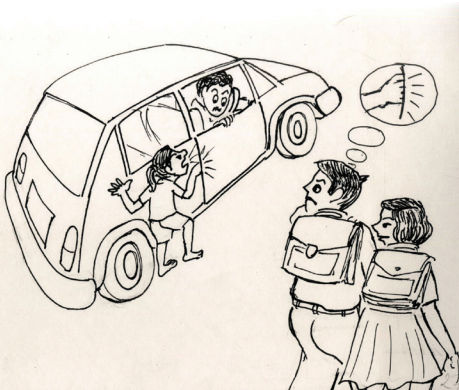
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*Munni Kumari
Standard VII
Rajkiya Madhya Vidyalaya
Dhibra, Patna, Bihar*



*Dev Umang Desai
Standard IX
Wisdom High International
School, Nashik, Maharash-
tra*



“My fingers would frequently get trapped between the door and the frame, which always hurt. I realised that this could be risky for my younger siblings as well,” says Munni. An idea surged in her mind, which was to develop a safety device which prevents such mishaps. One solution



could be making doors with rubber frames.

Dev also faced a similar problem and thought of developing a sensor, to be attached on the car door, which would prevent the door from closing if there is any obstruction.

Munni has a special interest in solving Math problems and enjoys playing kabaddi. She wants to become an engineer. While Dev wants to become a researcher in future and wishes to pursue a career as a virologist. Besides school activities, he plays harmonium and synthesizer. He loves reading and is particularly fond of J K Rowling.

ECO KITE: DISPERSING SEEDS RANDOMLY

29



*Manodnya S Vaidya, Standard X
Sandipani School, Hazaripahad,
Nagpur, Maharashtra*

“We spend our lives waiting for the ideal path to appear in front of us. But, what we forget is that *paths are made by walking, not by waiting*,” remarks Manodnya. She talks about the kite-flying tradition during the Makar Sankranti and points out that the thread (*manjaa*) used for flying kites is razor sharp and poses dangers to birds and two-wheeler riders. She thought of an alternative kite which can be attached to a harmless cotton thread and also act as a carriage of seeds.

The design is simple. Two or more straws filled with seeds are fixed near the vertical axis of the kite. The mouth of straws should be closed with paper knobs, which will



automatically release due to heavy high-altitude air flow. The kite soaring high in the sky would help in dispersal of seeds in inaccessible areas. She experimented the eco kite with tulsi seeds and her experiment was successful.

Manodnya has created a tiger crossword too, used for educational awareness about the national animal of India. She is interested in environmental innovations and has achieved two national and two world records for the same.

UTILITY STICK FOR PARKINSON'S PATIENTS

31



*Parth Bansal, Standard IX
Apeejay School, Noida,
Uttar Pradesh*

Parth was deeply saddened when his father disclosed his grandmother's illness (Parkinson's disease) to him. Parkinson's patients face difficulty in taking first steps straight, but can use stairs and cross obstacles easily. Parth conceived an idea to project a laser light from a walking stick, in front of patients on the ground, which will appear like an obstacle. He believed that patients may be able to take their first steps this way.

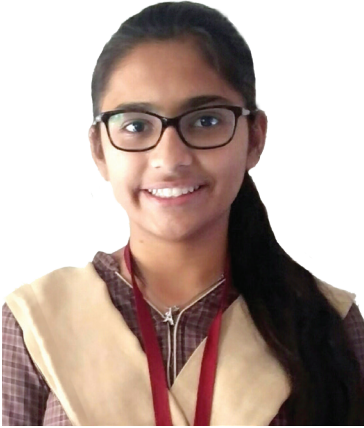
Parth believes this technological improvement will help countless Parkinson's patients and make their lives easier. There are sticks available with simple line to be crossed.



He loves watching educational programs on science and technology, and is interested in making models, robots and gaming apps.

HOME-MADE COCKROACH-ICIDE GEL

33



*Jahnvi Ruparelia, Standard IX
Gyan Ganga Education Society,
Rajkot, Gujarat*

To control multiplication of cockroaches, Jahnvi has prepared a home-made low-cost paste. This paste attracts cockroaches and can kill a whole colony of the pest. She plans to take her idea to production level where the formulation will be made available in the market at an affordable cost.

Jahnvi is a trained *upantya visharad* in Kathak and loves Harry Potter and Nancy Drew.



WATER SUPPLY LINE WITH FLOW FEEDBACK SYSTEM

35

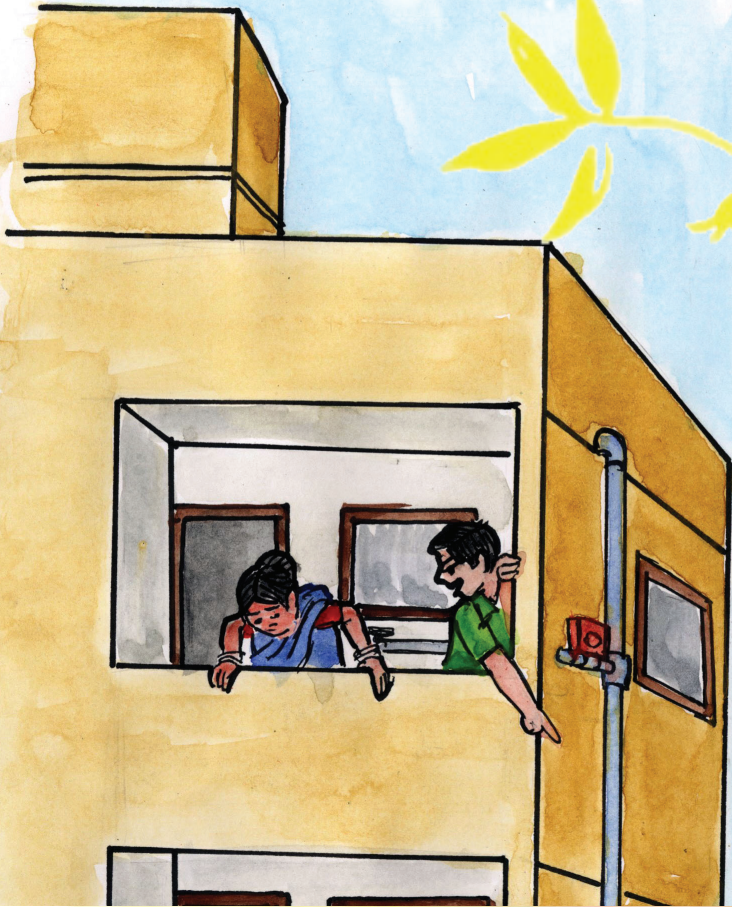


*Adyasha Dash, Standard XI
Demonstration Multipurpose School, Bhubaneswar, Odisha*

*Sagar Kumar, Standard VII
Shri Chandra Madhya Vidyalaya, Patna, Bihar*

Sagar wants to prevent wastage of water by developing a water supply system design that will stop leakage. The system proposed by him would be fixed in houses and offices, and will have a siren that will indicate any leakage from the pipes. He wants to develop this idea into a prototype.

‘Keep innovating and keep improving the world’ is Adyasha’s mantra. She is a budding artist who takes interest in drawing and aspires to become a doctor, a familial wish. One day, a water tap broke in her house resulting in wastage of water for hours. Being aware of the scarcity of natural resources, Adyasha was deeply



concerned and started thinking of ways to improve the water flow system, which can regulate and control the flow if the tap breaks or gets damaged.

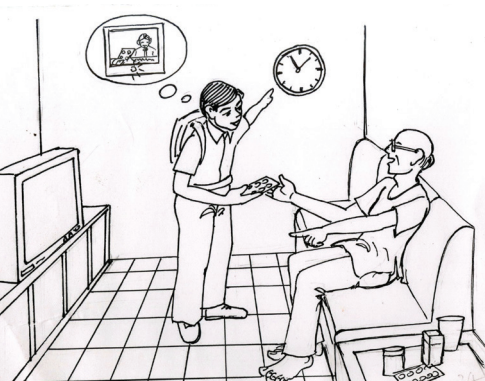
Sagar wants to become a soldier and serve the nation. "Being from a humble background has always motivated me to achieve more. My parents are my inspiration; they have worked very hard for livelihood and I want to help them," says Sagar.

TELEVISION WITH PROGRAMMABLE ALARM SYSTEM

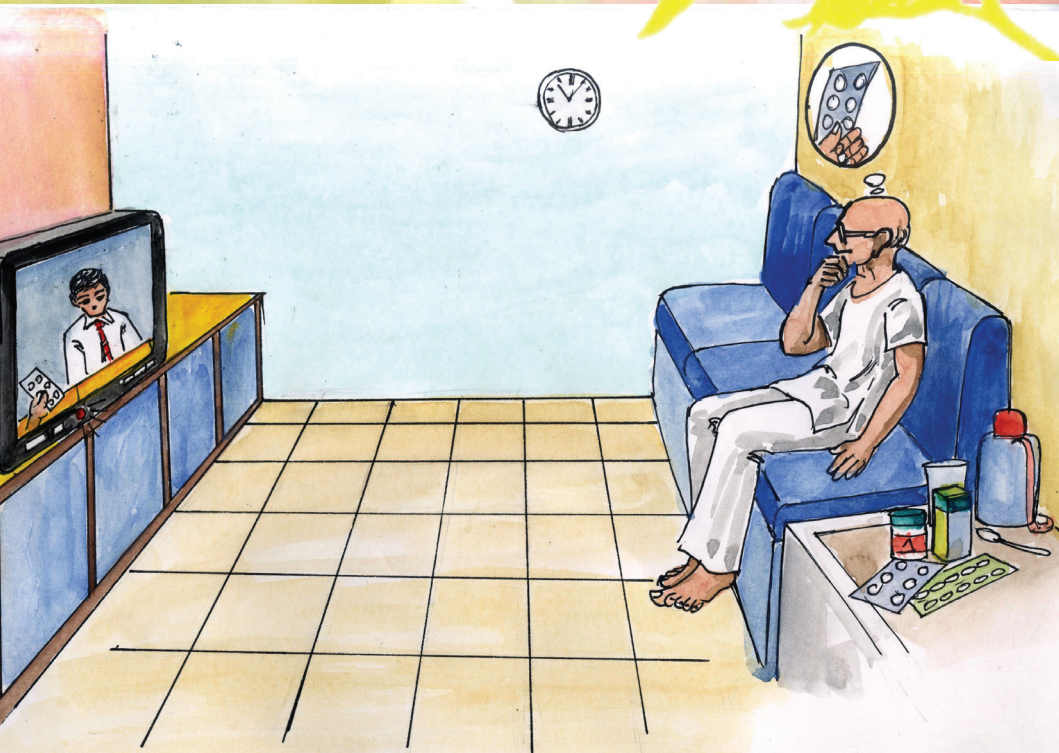
37



*Himanshu Rateria, Standard XI
KIIT International School,
Bhubaneswar, Orissa*



Himanshu's grandparents often forgot to take their medicines. He observed that grandparents are very fond of TV shows and serials. So, he thought of a system in the television that could give reminders to its viewers. The reminder would pop up multiple times on the screen, blocking the faces of the TV



actors thus irritating the viewer. This will help in timely consumption of medicines for the viewer.

Himanshu wishes to become a scientist and is inspired by Sir Issac Newton. He is fond of reading novels and sketching.

FUEL WASTAGE ALERT SYSTEM IN VEHICLES

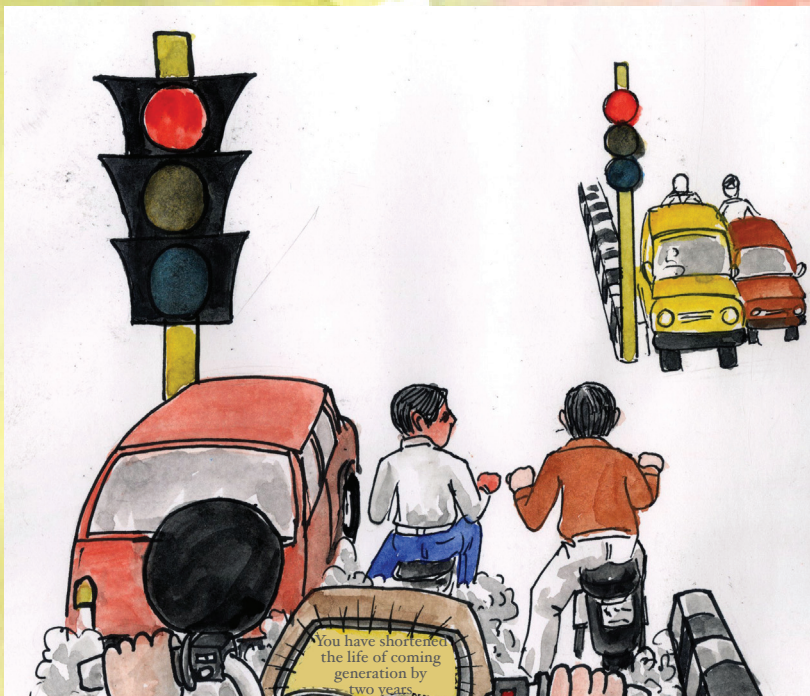
39



*Priyanka Panda, Standard XI
DAV Public School,
Bhubaneswar, Odisha*



“Most of the times, while travelling, people do not care to turn off the car’s engine while at red light or during short halts. This releases harmful pollutants in the air and wastes fuel. So, I thought of ways in which this could be prevented,” says Priyanka. She suggests that whenever a vehicle’s engine is idling, a message/alert should be displayed next to the odometer. The space near the odometer could be used to set up a



digital screen which would display a warning message and trigger the rider's conscience. The messages could be: "You have spoilt two years of a child's life" or the likes. The number of years may be calculated by estimating the amount of pollutants released during that interval of time.

Priyanka plans to suggest this idea to various vehicle manufacturers. She wants to become a doctor and considers Dr A P J Abdul Kalam to be her biggest inspiration.

SHOES WITH SEED DRILL FOR FARMERS

41



*Subhra Suchismita Patel, Standard XI
KIIT International School,*

Shubhra's idea was inspired by her maternal uncle, a farmer. He suffers from acute backache due to long working hours. Her idea is to have shoes with drills fitted into them so that farmers can simply walk and dig holes in the field simultaneously. The shoes may also contain seed compartments so that they can be easily sown. The rear part of the shoes may have brushes to cover up the holes in which seeds have been sown.

Shubhra plans to prepare a model based on her idea and turn it into a product which could be beneficial for farmers. Her interest lies in archaeology, history and



learning new facts. Her hobbies include reading novels, poetry, painting, and jewellery design.

ADJUSTABLE WHEELCHAIR AND WALKER

43



*Joseph John, Standard XI
St Berchman's HSS Changanacherry,
Kottayam, Kerala*

“In our church, there is an old woman whose legs are paralysed. She has been using a wheel chair for years. It was very difficult for her to enter the car from her wheelchair,” says Joseph. Her struggle with the chair inspired Joseph to think of a special wheelchair with a motor which can adjust its height. The features of the chair could help in aligning it with the seat of the car. The tiny wheels under the seat will make it almost a trolley, thus making movement less stressful.

Joseph wants to become an engineer. “I can make



different things 'differently', with my own hands,"
remarks Joseph.

NAMDA ROLLING MACHINE

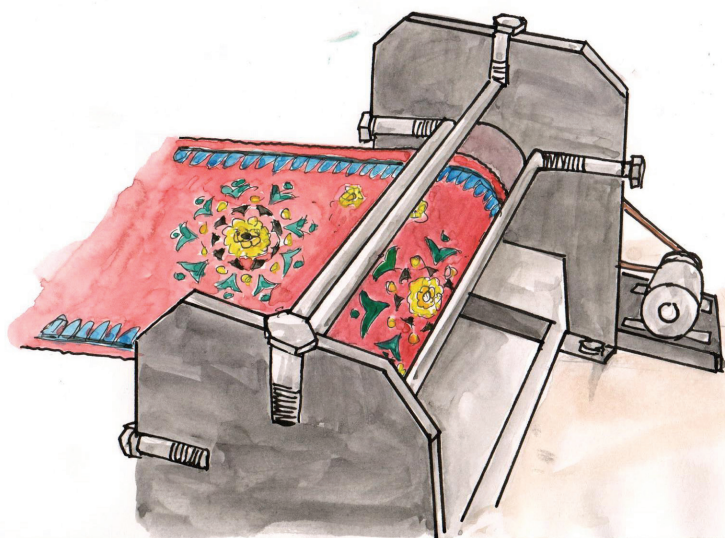
45



*Zufa Iqbal, Standard XII
Presentation Convent Higher Secondary School, Srinagar,
Jammu and Kashmir*

Zufa's grandfather believed that every person is born for some purpose, and he wanted her to realise the purpose of her life and have faith in the Almighty. "My beloved grandfather wanted me to become a doctor. His only dream was to see me wearing that white coat and serve people," says Zufa. She claims to be a science fiction lover and loves to write.

Since the introduction of manual technique of *namda* (woolen carpet) making, there has not been any technological intervention in this regard. The *namda* rolling machine is the first of its kind for automating



the process of *namda* production. This machine takes almost seven to eight minutes to make a simple *namda*. The washing and designing process is also finished within 15-20 minutes. Zufa plans to refine her innovation and commercialise it as a cost- and time-efficient machine.

AUTOMATIC LIGHT INTENSITY-ADJUSTING SYSTEM FOR STUDY

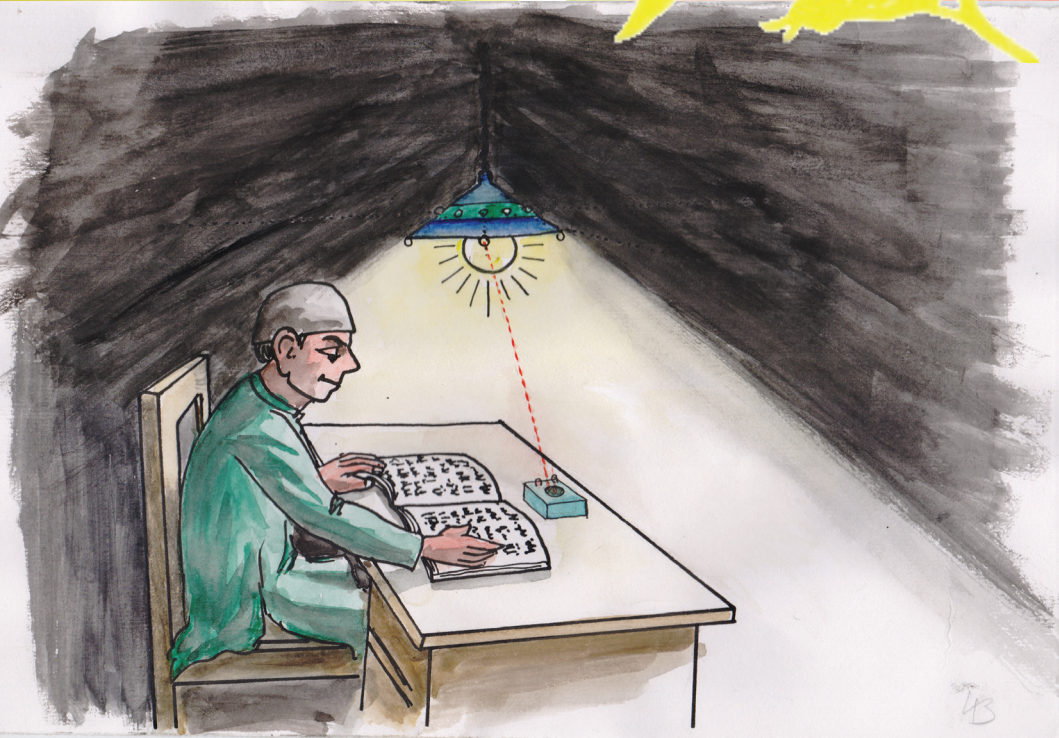
47



*Gulshan Kumar, Standard XII
Hanuman Intermediate College,
Kushinagar, Uttar Pradesh*

“My mother once warned me against studying in poor light as it would damage my eyes,” says Gulshan. He also noticed that majority of students wear spectacles nowadays and realised that one reason behind this could be that students are unable to judge the requisite intensity of light needed to study. To rectify this, he thought of an idea where a useful device can be innovated which can assess the surrounding quality of the light. This device can alert students if the intensity of light is inappropriate for studying, thus maintaining the health of the eyes.

Gulshan’s favourite subject is physics and he wishes to



become an astronaut. He shares one of his favourite quotes, “Everybody is a genius. But, if you judge a fish by its ability to climb a tree, then it will live its whole life believing that it is stupid.”

AUTOMATIC BLANKET COVERING MECHANISM

49



*Govind Kailash Sharma, Standard XII
Gramshala Grambharti, Amrapur,
Gandhinagar, Gujarat*



One morning during the winter season, Govind's blanket slipped and fell off the bed. This left him cold and he realised that this happened very often. He was struck by an idea to develop a bed with a mechanism that covers the person with blanket automatically. He suggests that there be a temperature-controlled



device which will activate this mechanism. This idea will prove to be useful for the aged, differently-abled and the patients.

Govind desires to serve the nation by becoming a soldier. He plays volleyball and enjoys listening to music.

PAAN DELIVERY AND PROCESSING MACHINE

51



*Lahar Jyoti Das, Standard XII
Transition Academy, Dadara,
Kamrup, Assam*

Lahar Jyoti is pursuing science in his school and aspires to become a scientist. Besides a bed and a table, his room is occupied by numerous things made from scrap. “You will mostly find him breaking old, scrap electronic parts and re-assembling them into something new,” says Lahar’s father Bhabes Das.

Bhabes runs a *paan* shop. “Every day after work, *deuta* (father) would complain about fatigue from continuously serving customers. Bothered by *deuta*’s pain, I started thinking about ways to help him,” says Lahar. The machine can deliver seven sweet *paans* in about four to



five seconds. The processing system prepares the mixture within 10 seconds, after which the *paan* is folded manually and automatically served to the customer through the delivery system.

One major concern of Lahar is the increasing pollution of the environment and majority of his innovations are created from re-usable materials.

SECURED CURRENCY NOTES

53



*Madhur Gupta, Standard XII
Sri Guru Gobind Singh Senior Secondary School
Chandigarh, Punjab*

“I love to learn something new every day” says Madhur. He enjoys reading about successful people and companies and watches TED talks during his free time and aspires to be a trendsetter. He wishes to pursue computer science. Music is of great importance to him and he is learning to play the flute and guitar.

One day, he was discussing tax policies in India with his father. He was concerned by the fact that mostly, when people purchase any item, they do not take the bill and simply exchange money. The shopkeeper then easily saves significant amount of tax. This made him wonder if it was possible to print a simple QR code on the currency note,



similar to courier companies. By printing a unique QR code on every high-valued currency note, one can easily track records of transactions.

Whenever any note is legally transferred to someone, the QR code is scanned and the information is uploaded on a secured cloud-based server. In case of a burglary or bribe, the notes will be blacklisted through the server and whenever the culprit spends them, an alert message will be displayed on the screen.

CROSS-PLATFORM MOBILE APP FOR ENCOURAGING TOUR IN NORTH-EAST INDIA

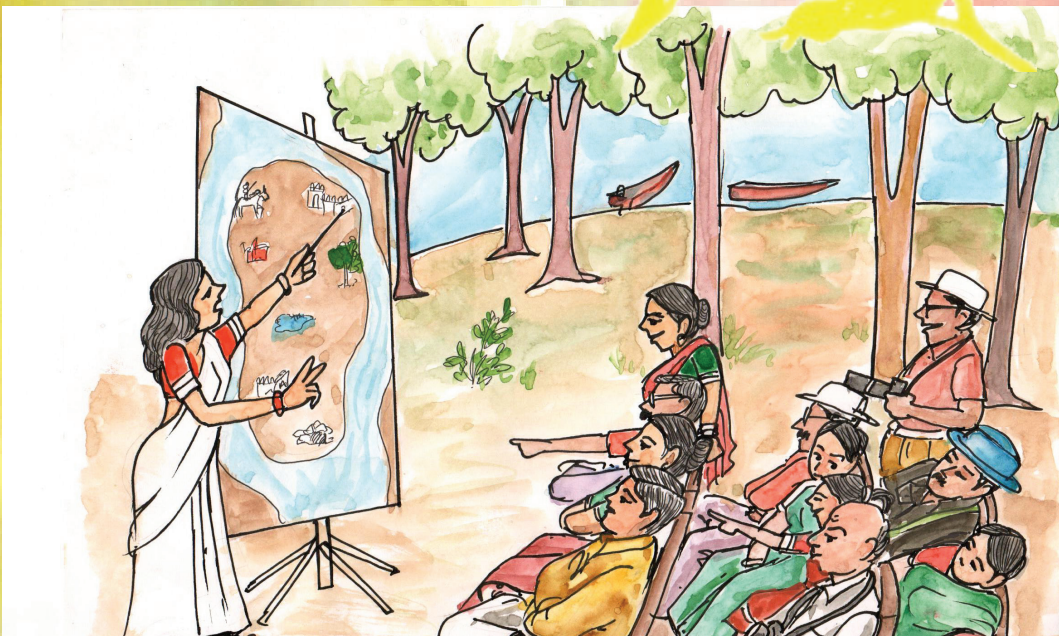
55



*Bilash Dutta, Standard XII
Saint Capitanio School,
Cachar, Assam*

According to Bilash, northeast India has the potential to become one of the most favoured tourist destinations in the world. We only need to spread more knowledge about the region. He has thought of a cross-platform, mobile app-based game (running on Android, Windows and iOS), designed in a manner that would tempt the players to visit the region.

The game will engage players in a mission set in the background of North-east India, or can be a simple mind game in which the players get information about the region at regular intervals. Also, there needs to be a



mechanism (by either using Facebook or Google Plus) in the game which can help various stakeholders (tourists, travel agencies, tourist guides) come together and interact with one another so that everyone is benefitted.

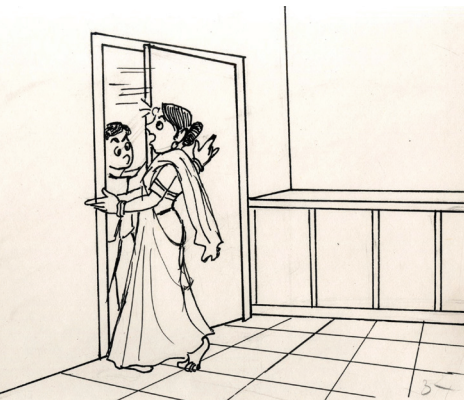
Bilash wants to ensure that the game is available on all major platforms. If implemented, this would serve the function of acting as a bridge between the outer world and remote NE region. His biggest inspirations are Google co-founders Larry Page and Sergey Brin. He desires to become a teacher who would help shape the next generation of children towards a better society.

DEVICE FOR DATA MANAGEMENT TO ENHANCE CELLULAR EFFICIENCY IN RURAL AREAS

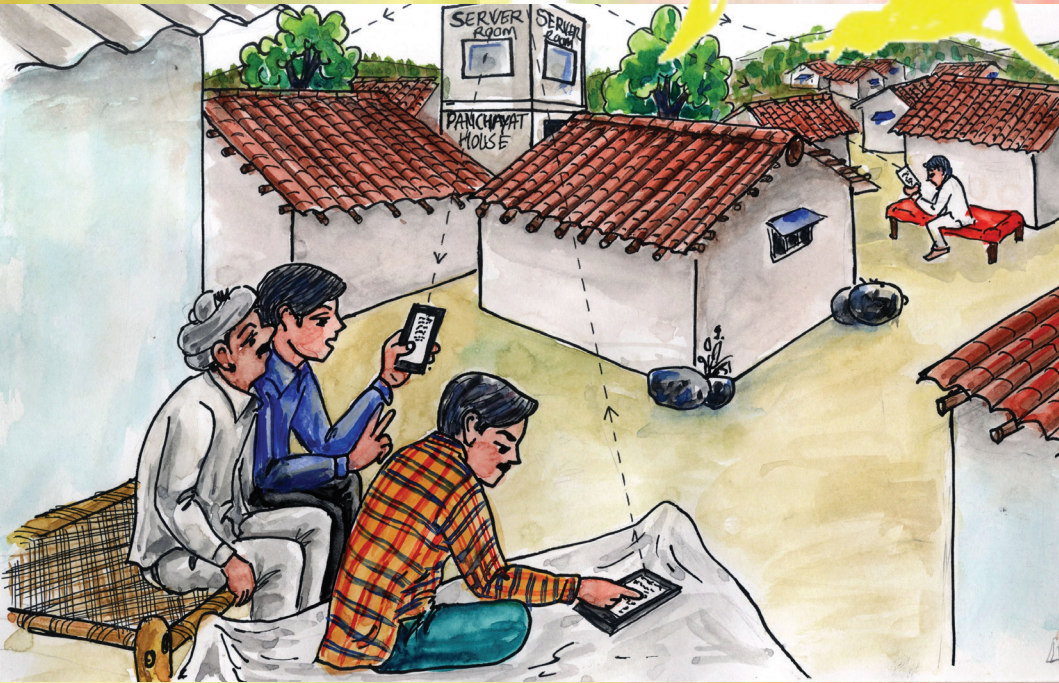
57



*Sayan Chaudhary, Standard XII
Delhi Public School,
Robini, Delhi*



The idea struck him when he was designing a human settlement in space which needed internet. While planning, he realised that it may not be possible to download information from earth every time in space, which made him develop a caching mechanism. This mechanism may also be used for rural areas, where a reliable



cellular connection is not present. So, each village can have an active cache which can store pages that are required from the internet. If someone has to access something new, s/he submits a request to the local server. Once the server is upgraded after taking it to the city, the information is updated and made available to the users.

Moreover, when users go to the city, their phones get some information that is fed into the server. So, everyone feeds information into the server and downloads each

59 other's information. Until proper internet connectivity reaches villages, this could make the World Wide Web with a sort of lag more accessible to the poor. Essentially, everyone can contribute to a local internet by detached uploading and downloading. So, even without a cellular connection, people will be able to get information. This makes the internet more accessible since the satellite is not being used every time.

This cheap, effective and detached method is foolproof and can bring an information revolution in many villages across the country. Sayan believes that technology will shape our future. He wants to develop new products as an entrepreneur and change the world for better, in his own small way.



IGNITE 2015

SOLAR THRESHER

Dipankar Das, Diglipur, Andaman & Nicobar Islands

A solar thresher for efficiently threshing pulses and grains such as green gram, black gram, pigeon pea and horse gram, without using electricity or fossil fuels.

FRUITS - NATURAL OR POISONED?

Neha, Jalandhar, Punjab

Neha made a paper, which looked like a litmus paper, to distinguish between artificial sugar and natural sugar.

A COLOUR-CODED THERMOMETER

Janmejay Singh Rathore, Bengaluru, Karnataka &
Jaspreet Kaur, Jalandhar, Punjab

A colour-coded thermometer, which not only gives temperature — red for emergency, orange or intermediate and green for normal temperature — but also gives out precautionary measures and even dials an ambulance in case of an emergency!

ALERT SYSTEM FOR INJURED ANIMALS

Diva Sharma, Vasant Kunj, New Delhi

An application which records the respiratory rate, temperature, pulse rate and heart beat of animals through sensors attached to their bodies, making it easier for doctors to detect an emergency.

FOOT-OPERATED DOOR OPENING MECHANISM

Jayprakash B Rathava, Gandhinagar, Gujarat &
Tanmay Takale, Pune, Maharashtra

A mechanism through which a door can be opened by activating a sensor using a leg. While this mechanism is most useful in public toilets, it can also be used elsewhere and may be useful for the physically-challenged or someone carrying load in both hands.

A PUNCHING MACHINE WITH HOLE REINFORCEMENT MECHANISM

Tanmay Takale, Pune, Maharashtra

Tanmay proposed a punching machine with a hole reinforcement mechanism so that the punched holes last longer and do not tear off from inside. The machine not only punches holes in the paper but also attaches a ring-like sticker on the hole to keep the paper from tearing.

BIONIC BODY SUIT

Ayush Gupta & Arnov Sharma, Haridwar, Uttarakhand

The duo has designed a mechanical body suit that can provide support to a physically-challenged person or aid orthopaedic patients. The suit supplements the movement of the upper skeleton system. The students used recycled materials, motor parts and other scrap to make the prototype.

LOW-COST GRASS AND LEAF-CUTTING MACHINE

Sapir Debbarma and Klishan Debbarmal, Champahour, Tripura

The duo proposed a hand-held cutting machine for grass and leaves which can be carried easily and used anywhere.

SMART WALKING STICK

Siddhant Khanna, New Delhi

A walking stick with many features like counting of steps, fall detector, emergency alarm, automatic torch and even medicine reminder and locator

CARRY YOUR OWN DOOR LATCH WHILE TRAVELLING!

P S Senthur Balaji, Erode, Tamil Nadu

A portable latch, which can be carried by people travelling frequently

SOUNDPROOF HAMMER

Prithwish Dutta, Howrah, West Bengal

Prithwish came up with the idea of a soundproof hammer through which the noise level of a hammer can be reduced to its minimum. The sound proof hammer would be covered with a foam-like substance which would absorb the impact when struck against any object.

WATER FILTER/PURIFIER AT SOURCE

Soring Lepcha & Subash Prodhan North Sikkim, Sikkim

Both the children have given an idea to have filter/purifier at the source of water so that everyone has access to clean water, without having to make an investment in purchasing a filter/purifier individually.

WATCH WITH MEDICINE DELIVERY SYSTEM

Navjot Kaur, SAS Nagar, Punjab & Vaishnavi Patra, Khorda, Odisha

Two students, Navjot and Vaishnavi, have individually suggested the idea of a watch which can store and timely deliver the appropriate dose of medicine to the requested person.

LAC EXTRACTION MACHINE

Sourav Dey, Barajamda, Jharkhand

A machine that peels lac from branches of trees and plants without breaking them. As a result, the amount of impurities is lesser in the extracted lac and it takes lesser effort to clean it.

PAY AS YOU WEIGH

Rishab Mallick, Kolkata, West Bengal

One needs to pay only as much as s/he weighs

LOOM FOR PHYSICALLY-CHALLENGED

R Elakkiya and R Pavithra, Erode, Tamil Nadu

A loom for lower limb physically-challenged. In their loom, they have replaced the pedal-operated system with a motor and a gearbox attached to a pulley mechanism.

MACHINE TO PLUCK *TENDU* LEAVES

Bharat, Dantewada, Chhattisgarh

A *tendu* leaf-plucking machine which can cut the leaves and collect them in a container. He also suggests a sorter which can separate the leaves according to their sizes.

A DEVICE TO COLLECT *MAHUA* FLOWER FROM GROUND

Lipsa Pradhanl, Kamgaon, Odisha

The device, which looks like a lawn mower, has a handle to help pick up the fallen *mahua* flowers.

PASS CODE-BASED LOCKING SYSTEM IN GAS STOVE

Nim Lhamu Lepcha, North Sikkim, Sikkim

A manual or digital pass code system to switch gas stoves on, thus preventing mishaps involving children.

SPECTACLE MICROSCOPE

Hadasha Rongmei, Dimapur, Nagaland

A mini microscope that can be worn like spectacles

PEBBLE-INDICATING SYSTEM FOR COOKING VESSEL

Mohammad Tawseef Thokar, Kulgam, Jammu and Kashmir

A vessel with sensors which can indicate the presence of pebbles or similar impurities in rice or other food grains being cooked.

GAS LIGHTER WITH GAS LEAK ALARM

Nilesh Raj, Patna, Bihar

A gas lighter which can sense and indicate gas leakage before it is lit, thereby preventing accidents.

INNOVATIVE DUSTBIN

Prem Ranjan Singh, Shivani Singh, Ankush Pal, Daman, Daman & Diu

A dustbin with separate slots for biodegradable and non biodegradable waste, with a message-sending facility to the municipality once dustbin is filled up to a preset level.

SEED CONTAINER THAT INDICATES GROWTH OF GERMS

Dipti Manjari Dakua, Nayagarh, Odisha

A seed container which can detect the decrease in temperature of the container, thereby indicating the growth of organisms inside it.

AN UMBRELLA YOU CAN SHARE

Tarna Joy, Dhalai, Tripura

A large umbrella which could be held by two children from two sides under which other children can stand and go to school together without getting

PARK BENCHES THAT CAN FLIP

Simran Chadha, Ludhiana, Punjab

Reversible benches which can be flipped using a handle so that the other side comes up

SOLAR SEEDER

Subash Chandra Bose, Pudukkottai, Tamil Nadu

A solar-powered seed drill which can work for different size of seeds at variable depth and space between two seeds while planting

ALERTING SYSTEM FOR BUS DRIVERS

Pradyumna Pal, Bhubaneswar, Odisha & Rahul Kumar, Patna, Bihar

An alerting system for the bus driver which enables him to know which passenger has put his hand or head outside the bus window

DRAWBRIDGE DOOR FOR TRAINS

Ram Akash, Kanyakumari, Tamil Nadu & Nimisha Katyayan, Ranchi, Jharkhand

The drawbridge door, when opened onto the railway platforms, acts like a ramp, making it easy for passengers to walk aboard the train with their

PRINTED PAPER - RECLAIMING MACHINE

Aravind Gopalakrishnan, Chennai, Tamil Nadu

A printer-like device which can erase all data on a printed page fed to it, thus making it plain and reusable

HAND REST FOR FRACTURED HAND

Adi Kumar, Bengaluru, Karnataka

A waist worn appendage which can provide support to a fractured hand instead of the sling

IGNITE 2014

CYLINDRICAL-SHAPED REFRIGERATOR WITH ROTATORY TRAYS

Sarthak Shukla, Ghaziabad, UP

The idea is to have cylindrical refrigerator with rotating trays which will be helpful in picking up the things placed at the backside of tray, without disturbing the things placed in the front while picking out stuff from the refrigerator.

HYGIENIC CLOTH HANGER

K B S Suresh, Prakasam, Andhra Pradesh & Kota, Rajasthan

The idea is to have a hanger which would release UV or any other anti-bacterial rays that will kill bacteria of the clothes keeping our clothes always fresh and germ-free.

MICROPHONE THAT ADJUSTS THE VOLUME ACCORDING TO USER'S VOICE

Sharvari Tambat, Nashik, Maharashtra

The idea is to have a microphone which catches the sound waves produced by our voice and according to our loudness/pitch, it will adjust the sound output automatically to a preset decibel level.

APP FOR MUTUAL CALLING INTIMATION

Jenish Shah, Surat, Gujarat

An application which sends message that "Do not call, I am calling back", when both receiver and caller try to call each other simultaneously and the number appears to be busy.

VOICE MODULATION SYSTEM

Rinku S Rajpal, Ahmedabad, Gujarat

A voice modulation system that can be fixed near our mouth and neck so that if we speak loudly beyond a certain level, in anger or while shouting, then it pinches our ears and reminds us to check our voice and bring it back to the normal.

PROVISION OF FOURTH (BLUE) LIGHT TO REDUCE TRAFFIC JAMS

Adarsh Barnwal, Katihar, Bihar

The idea is that in addition to the three signals in the traffic light, there should be a provision of fourth signal, may be blue in colour, which would tell commuters that the road ahead has a traffic jam. one may thus take alternate routes then. This will also help in checking that the jam is not further congested.

HEIGHT - ADJUSTABLE WASH BASIN

Akanksha Guha, Pauri Garhwal, Uttrakhand

The idea is to move the complete set up of wash basin vertically up and down so that persons of different heights or children can use it comfortably according to their height.

INCLINED INSTALLATION OF WATER TAPS AT SCHOOLS AND OTHER PUBLIC PLACES

Chhaya Thakor, Gandhinagar, Gujarat

The idea is to have taps fitted on an inclined pipe so that they are at different heights. This will enable people of different heights to drink water easily from tap according to their reach.

MOBILE/LAPTOP-CHARGING ADAPTER WITH INBUILT POWER PACK SYSTEM

Rohit Tiwari, Bokaro, Jharkhand & Abid Khurshid, Kulgam, J&K

The idea is that the charger/adapter may have an inbuilt battery so that it may also get charged while charging the devices.

AUTOMATIC RAILINGS AT RAILWAY PLATFORMS

Ram Nikash, Kanyakumari, Tamil Nadu

The idea is to have automatic railings at the edge of railway platforms so that people can be prevented from crossing the railway tracks.

MOVABLE SEAT FOR PHYSICALLY-DISABLED IN CARS

Khushkumar Patel, Ahmedabad, Gujarat

The idea is to have movable seats in four-wheelers so that they can be rotated on their axis and pulled outside. Person can then sit on it easily, push the seat inside and rotate back to the normal position.

MODIFIED LIFE-SAVING DEVICE FOR SWIMMING BEGINNERS

Yatharth Saxena, Samraddh Saxena, Pantnagar, Utrakhhand,

The idea is to have a device which can set off an alarm if the swimmer is under water more than a preset duration, which is based on his/her breath-retention capacity.

THE BIOFERTILISER FROM COCKROACHES

Ananya Jain, Chandigarh

She has done an experiment wherein she has obtained better growth of potted plants by using excreta of cockroaches as fertiliser.

FOOT-OPERATED MANUAL PAGE-TURNING MACHINE

Swapnanil Talukdar, Kamrup, Assam

This is a machine that can turn or flip the pages of book. The operation is controlled manually by foot and requires no power. It provides efficient solution to people who are unable to use hands to read book.

WRAPPER PICKER

Mukul Malviya, Diptanshu Malviya, Sirohi, Rajasthan

It is a motor-operated device with brushes/combs at the base which helps picking up wrappers from the ground and collecting them in a bin.

DETACHABLE DEVICE FOR THE BICYCLE, ENABLING USER TO RIDE WITH ONE LEG

Shubh Dholakiya, Rajkot, Gujarat

One pedal is replaced by a clamp attached to a piston rod assembly. The rider has to move only half the rotation of the pedal, the remaining half is rotated automatically due to the attached piston where a spring gets coiled during the first rotation.

“

PORTABLE WI-FI STICK WITH RECHARGEABLE BATTERIES

Hrishit Shah, Vadodara, Gujarat

The idea is to have small rechargeable batteries in a wi-fi dongle so that they can be used anywhere easily.

ADVANCED WIND TURBINE

Vidit Laad, Indore, Madhya Pradesh

It is a multi-directional windmill which has a wind concentrator to create high wind speed.

MODIFICATION IN SHOES TO ALLEVIATE KNEE PAIN

Shaik Muzammil Pasha, Hyderabad, Telangana

A new and improved version of shoes with a negative heel (by lowering down the region of the sole where heel is placed) to move the gravity line on the strong muscles behind the knee cap from the patella, which is the primary cause of knee pain.

IMPROVED BATTERIES WITH FAST CHARGING

Yash, Kolkata, West Bengal

He has experimented and developed batteries which can be easily charged at a much faster rate than the conventional ones. He claims to have achieved this using 2D graphene.

ADVANCED HELMET FOR MINE WORKERS

Preyansh Kotecha, Karan khatri, Vadodara, Gujarat

The students suggest a helmet for mine workers, using which their location inside the mine can be identified. The same can also be used for communication purpose if required.

ALL-IN-ONE STAPLER (FOR ALL SIZES OF PINS)

G Vasanth & D Keerthivasan, Thiruvarur, Tamil Nadu

The idea is to have a stapler where pins of all sizes can be used and one does not need to change the stapler for pinning paper stack of different thickness.

IGNITE 2013

PUNCTURING MECHANISM FOR WATER BOTTLES

Shibajyoti Choudhury, Rajashree Choudhary, Jabalpur, Madhya Pradesh
A stay-tab like mechanism, like the one in juice cans, at the bottom of water bottle to puncture it. This will make the bottle unusable and prevent refilling/misuse.

POSTURE-CORRECTING CHAIR

Kulsoom Rizavi, Lucknow, Uttar Pradesh Tarun Anand, Ghaziabad, Uttar Pradesh

A chair with sensors at appropriate places which may alert if the user is sitting in a bad posture. Now, your chair will only allow you to sit straight on it!

AIR-CONDITIONING SYSTEM IN SCOOTER/ MOTORCYCLE

Masira bi Hanif Patel, Jalgaon, Maharashtra

A small modified AC, connected to engine, which provides cool air circulated through tubes woven into a wearable jacket. Beat the summer heat while travelling on your two-wheeler using this cool AC jacket.

MODIFIED HAND-CART WITH STEERING MECHANISM AND BRAKES

Md Usman Hanif Patel, Jalgaon, Maharashtra; Nidhi Kumari Gupta, Muzaffarpur, Bihar; Pavithra R, Erode, Tamil Nadu & Vidya Ramesh, Bengaluru, Karnataka

Incorporating easy-steering mechanism and brakes to make turning hand-carts easy and arrest slide on inclines respectively.

DEVICE TO INDICATE SUDDEN FALL OR ONSET OF CONVULSIONS/SEIZURES

Soumya Ranjan Behera, Jagatisinghpur, Orissa

A wearable device that alerts if user falls suddenly; useful for old people and those suffering from fits, convulsions, seizures, etc. This will help keep an electronic eye (if integrated with mobile) on your loved ones and find out if they are okay or not.

AUTOMATIC SPIKE SYSTEM NEAR TRAFFIC SIGNAL

S Siva Mahima, New Delhi & Shameet Badarla, Hyderabad, Andhra Pradesh

Retractable spikes before the zebra crossing that come out when the traffic signal is red, to prevent signal jumping by vehicles. Now, wait till the traffic light gets green or risk getting your vehicle punctured.

SENSOR TO CORRECT BODY POSTURE/REGULATE VIEWING DISTANCE

Sunvi Agarwal, Chandigarh

Light/touch sensors integrated in a seat. When user bends forward or moves to take an alternative posture, the sensors detects the motion and put the TV on standby mode.

INDICATOR FOR 'DEAD' LANDLINE PHONES

Nidhi Gupta, Ahmedabad, Gujarat

Light/sound alert that informs user when the phone gets 'dead' so that something could be done quickly without missing important calls.

MULTICOLOUR HEADPHONE WIRES

Swetleena Zenith, Allahabad, Uttar Pradesh

The cords/wires of the headphone may be of different colours so that untangling them becomes easy. A simple solution to an everyday problem faced by many of us.

MOBILE PHONE WITH INBUILT CHARGER

Siddharthan and Karan, Vellore, Tamil Nadu

A charger pin unit built in a mobile which can be plugged in directly or through thin extendable wires. Hence, one does not need to remember carrying the charger now and also need not worry about accidents caused due to talking while charging.

A TORCH WITH AN ADDITIONAL BULB

Md Alisher, Begusarai, Bihar

Having another bulb below the main bulb so that light is available near the feet of user and for people following the user. A simple and practical idea!

HILLY TERRAIN CART

Vidya Ramesh, Bangalore, Karnataka

Three equidistant wheels on a single axle, attached to two similar sets in different planes, allowing flexibility in movement with respect to each other. A compassionate idea aimed at alleviating the suffering of mountain dwellers

AUTOMATIC BLADE-SWINGING CEILING FAN FOR EASY CLEANING

Atheerth Chandran, Thiruvananthapuram, Kerala

When switched off, the blades loop downwards so that they can be cleaned and when switched on, they become horizontal.

PEN TO CHECK CONCENTRATION

Rudra Prasad Goswami, Ranchi, Jharkhand

A pen with pressure sensors on the grip to indicate loss of concentration when the grip loosens. Your pen will now tell everyone if you are attentive or not!

ELECTRONIC PURSE WITH PAIRED WATCH

Phamnya Konyak, Mon, Nagaland

Password-protected purse and an electronically-paired watch, which alerts if user gets away or someone steals the purse. Now, you cannot forget your purse and no one can run away with it!

REDUCTION OF AC ENERGY WASTAGE THROUGH CLAMP METER

Aman, Mihiraan, Udai, Varun, Gurgaon, Haryana

Clamp meter, connected to an AC, monitors the current flow and indicates usage (range) through green, orange and red colour codes.

REMINDING THE OWNER IF KEYS ARE FORGOTTEN IN THE VEHICLE

Chandramouly K Kandachar, Bangalore, Karnataka

A system in vehicle which intimates the driver through a phone call if the keys have been forgotten in the vehicle; prevents cases of theft.

KEEPING STUDENTS FRESH WHILE READING

Mahirah Akhter and Morifat Wani, Kupwara, Jammu & Kashmir

An ink or a paper (for books) which emits certain radiations and keeps the reader fresh and fatigue-free

OXYGEN/CARBON DIOXIDE-LEVEL INDICATORS IN CAR

S R Valava, Kalpakam, Tamil Nadu, Pratyush Kumar Sahoo and Bikash Kumar Mallick, Khurda, Odisha

System to detect levels of oxygen/carbon dioxide and opens windows when oxygen level drops or carbon dioxide level rises, thereby preventing accidental deaths of children or pets locked inside the car.

STEP-LOCK SYSTEM IN BUS

R Santhosh, J Rajasekar, A Nivashini, K Rathna, Thiruvavur Tamil Nadu

Mechanism which would not allow the bus to move if people are standing on its stairs, thereby preventing accidents.

WHEEL CHAIR CONVERTIBLE TO CRUTCHES

S Ramakishore, Sanjay Srinivas, Tamil Selvan, Chennai, Tamil Nadu

The idea is to have a modified wheelchair that can be folded and converted into a crutch so that it is easy to take stairs as well for the user.

LOW-COST BRAILLE PRINTER

Y Santosh Singh, Khushwant Rai, Jalandhar, Punjab

A dot-matrix printer modified at a low cost to work as a Braille printer

NEW DESIGN OF SERVING TRAY

Alok Singh, Ghazipur, Uttar Pradesh

Serving tray with a release mechanism to put cup/glass on the table along with a coaster without touching

ADJUSTABLE ELECTRICITY EXTENSION BOARD

Tenith Adithyaa, Virudhunaga, Tamil Nadu

Electricity extension board without plug points so that one can put any type of electric plugs wherever space is available.

BULBS/CFL REMOVER/CONNECTOR

Gautham Praveen A, Tirunelveli, Tamil Nadu and Shweta Sharma, Jalandhar, Punjab

Hand-held rod with a clutch at the grip and a clasp at the further end to hold the bulb, making is easy for anyone to change the bulb without needing a chair or a ladder for it

DEVICE TO COOL DOWN ANGER

Shweta Sharma, Jalandhar, Punjab

A head-worn device that cools down our nerves within a quick time after wearing

IGNITE 2012

SPRAY-ON, STAY-ON GLOVES AND SOCKS

Aditya Joshi, Pune, Maharashtra

The idea is based on a fast drying, resistant, non-abrasive, water-proof liquid formula, which can be filled in spray can. When socks or gloves are required, liquid can be sprayed and left to dry. This can be peeled off later when not required.

SYSTEM TO PREVENT PEOPLE WITHOUT LICENSE TO DRIVE A VEHICLE

Ravi Ranjan, Aditya Kumar, Varsha Kumari and Shiv Ranjan Kumar, Patna, Bihar, Durgesh Kumar, Begusarai, Bihar, Jyoti Dhillon, Rewari, Haryana, G Krishna Kumar, Thiruvar, Tamil Nadu

A slot should be provided in vehicles where the driver/rider may insert his/her driving license. The system would not allow him/her to drive if the license is not present, is invalid or has expired.

HEADPHONES WITH SENSORS TO DETECT EXTERNAL SOUNDS

Lakshya Kaura, Naman Jain, Manav Mitra, Utkarsh Hora, Amrit Dang, New Delhi

These are headphones which pick up any external sounds like horn, alarms, etc. so that a person using them gets alert and is not totally oblivious to his/her surroundings.

DOOR BELL WITH USER CODE

Rajashree Choudhury, Jamshedpur, Jharkhand

It is difficult to identify the visitor as the door bell gives only one sound. A numeric pad may be provided where friends and family members are given a code. When the person presses the digits of the code (eg 1-2-3), the bell (through ring or any other means) will identify the visitor.

PREVENTING MOBILE USAGE WHILE DRIVING

Rajashree Choudhury, Jamshedpur, Jharkhand

A device with a place for inserting a mobile can be fixed on the car dashboard or handle of a two-wheeler. The vehicle moves forward only if the mobile is inserted into this device. In other words, the driver can't talk on the phone while driving.

WIND-OPERATED CEILING FAN

Md Usman Hanif Patel, Jalgaon, Maharashtra

A fan on the roof, directly attached to the ceiling fan through gears and shafts

HANDPUMP FOR FLOOD-AFFECTED REGIONS

Kripesh Swain and Kumar Biswajeet, Bhubaneswar, Odisha

Generally, in flood prone areas, wells and hand pumps become unusable as muddy water gushes in. Kripesh and Biswajeet suggested a hand pump whose upper portion may rise with increase in the level of flood water, thus ensuring that it remains usable.

MOVABLE ROAD DIVIDERS

S Charisma, Hyderabad, Andhra Pradesh and Siddhartha Pal, Dehradun, Uttarakhand

All of us may have observed that vehicular traffic load on either side of the divider at different times during the day (specially during peak hours) varies. They suggested having movable road dividers that can be shifted to the left or right, depending upon the incoming traffic from a particular side, thereby easing congestion on roads.

ARTIFICIAL ASSISTANCE FOR BLIND PEOPLE

B Survesh, Chennai, Tamil Nadu

Sunglasses with inbuilt camera to capture images of people and places and tagging them through voice commands and storing everything in an in-built database. The same is retrieved when a person is face-to-face by image comparison, giving a sound in the headphones.

DUAL - PURPOSE HELMET

G Jeevan Siddharth, Vellore, Tamil Nadu

A helmet with a cushion support on the top for labourers at construction sites

DEVICE TO MONITOR MENTAL STRESS

Ankita Arora, Jalandhar, Punjab and Parmar Himanshu Jiteshbhai, Ahmedabad, Gujarat

Device to monitor mental stress in students and others

CHARGING MOBILE FROM MOBILE

Ravi Duhan, Sanjay Raghav, Manoj Kumar

Sometimes, our mobile's battery gets discharged when we need to make an urgent call. In such a situation, it may be difficult to immediately get a charger or locate an electricity point for charging. But we could always find someone with a mobile phone. Ravi, Sanjay and Manoj suggested a handy device, using which a mobile can directly be charged from another mobile.

RETRACTABLE TOILET POT WITH CLEANING SYSTEM

Shweta Verma, Jhansi, Uttar Pradesh

With increasing living space constraints, mechanisms are being evolved to optimally utilise whatever space is available, including washrooms. Shweta suggested a mechanism wherein the toilet pot can be enclosed in a closet like space and taken out whenever needed; with all the cleaning being undertaken inside automatically.

MODIFIED PAINTING BRUSH

Ektapreet Kaur, Jalandhar, Punjab

For painting, brushes of different sizes are needed. Ektapreet's brush would have a slider that will move to cover the bristles, thereby limiting their movement. The brush has alphabets in different sizes on it. When the slider moves over the brush, these alphabets are visible through an open slit, thus indicating the size selected.

MULTIPURPOSE TENT

Rishabh Gupta, Jammu, Jammu & Kashmir

Keeping minimal gear is important while camping. Accordingly, Rishabh proposes a multipurpose tent that can also turn into a raft. The tent has embedded solar panels to keep it warmly lit at night.

RICKSHAW WITH FOLDABLE STAIRS

Mansi Priya, Ranchi, Jharkhand

The pedals are placed just below the passenger's seat and connected to the rear wheels. The rickshaw puller retains control over the brakes so that safety is not compromised. A simple lever is attached to make this system optional. So, when the pedals are not in use, they work as a comfortable leg rest.

CHARGING MOBILE WHILE TALKING

Gautam Kumar, Patna, Bihar

A device to charge mobile while talking on the phone

MACHINE TO SUGGEST WHAT TO EAT AND HOW TO COOK IT

Sharvay Harish Tiwari, Pune, Maharashtra

In his machine, you simply select a particular vegetable and the monitor displays a list of different ways in which it can be cooked, along with the ingredients required and their quantity.

DEVICE TO RELOCATE CLOUDS

Shweta Sharma, Jalandhar, Punjab

A device that could help relocate clouds

GLOVE WITH IN-BUILT MOBILE PHONE

Rohan Jolly, Delhi, New Delhi

In the icy region, the mobile sometimes get covered with snow and water entered inside, damaging it. Rohan thought of solving these problems by fixing the phone within the gloves, so that one can talk comfortably while remaining warm.

SHIRT THAT WAKES YOU UP

Jatin Kumar Bhoi, Sundargarh, Odisha

A special shirt with a mechanism for ensuring that the person wearing it remains awake. We can also have buttons that can tell time.

PORTABLE SHIFTER AND LIFTER

Rishab Gupta, Jammu, Jammu & Kashmir

A portable shifter to easily move heavy things. With this device, heavy items like furniture and refrigerators can be comfortably shifted by attaching a set of wheels to slide them from point to point.

MODIFIED CYCLE RICKSHAW

Arnab Chakraborty, Kolkata

A cycle rickshaw with extra pedals for passengers who may wish to help by co-pedaling the rickshaw.

IGNITE 2011

MANUAL BEDSHEET SQUEEZER

Dhavala, Udipi, Karnataka

A simple machine, which has one fixed arm and another one with a handle. The bed sheet or any such cloth is attached to the machine, and as the handle is rotated, the water gets squeezed out of the bed sheet.

DEVICE TO ASSIST PEOPLE WITH LOW VISION

Jyoti Ranjan Sahu, Bhubaneswar, Odisha

His system makes use of a zoom camera and an LCD. The camera zooms in distant images, which get displayed on the LCD present in front of the eyes. This camera and LCD arrangement is attached to a helmet worn by the person.

RICE GRAIN-SEPARATING/CLEANING MACHINE

Sajid Ansari, Ranchi, Jharkhand

This automatic electric machine separates broken rice grains and other physical impurities from unbroken rice grains.

POSTER WRITER PEN WITH ADJUSTABLE STROKE TIP

Rimjhim Baruah, Jorhat, Assam

A poster-writing pen, using which one can easily write in different thick and thin strokes between a certain range (mm).

MODIFIED WALKER WITH ADJUSTABLE LEGS

Shalini Kumari, Patna, Bihar

Shalini came up with the idea of the modified walker with adjustable legs. She has also thought of including a folding seat so that the user can rest for a while when required and fitted a horn and a light to it as well.

EASY CAR COVER

S R Poobesh Gowtham, Krishnagiri, Tamil Nadu

A simple idea of using covers rolled inside a rectangular frame. The frame is simply put on top of the car and pulled down when needed. It is held at position by gear locks. Open zips are used to join the ends of the cover as a single piece. After unzipping, gear locks are released, which makes the covers roll back into the frame.

FOLDABLE WATER BOTTLE AND HOE-CUM-SPADE

Ishaq Ahmad Wani and Refaz Ahmad Wani, Anantanag,
Jammu & Kashmir

They have thought about a foldable water bottle where the size of the bottle can be reduced by folding-in as per the quantity of water remaining in the bottle. They have also developed a spade, the scoop of which can be rotated at the hinge to be converted into a hoe.

INNOVATIVE MEDICINE PACKING

Shweta Sharma and Jaskiran Goraya, Jalandhar, Punjab

Change of colour in medicine packing to indicate expiry by putting a layer of liquid that disintegrates the covering membrane and soils the tablet after expiry time

MEDICINE BOX WITH REMINDER FACILITY, TAPS WITH DIFFERENT TIMER SETTINGS

Mohit Singh Sidhi, Madhya Pradesh

A timer and an alarm on the medicine box which would alert him of the time to take his medicines.

SHOES WITH DEVICE TO CALCULATE TIME SPENT IN PHYSICAL ACTIVITY AND REGULATE TV-VIEW- ING TIME ACCORDINGLY

Chhavi, Jalandhar, Punjab

Idea of making shoes communicate with the TV in such a way that it regulates and monitors TV watching time to match the amount of time that has been spent outside walking or playing.

STAPLER THAT INDICATES PIN ARE FINISHING

Ankita Nagarkar, Pune, Maharashtra

It may help in indicating that the pins are coming to an end. It saves time and is easy to use at no extra cost.

HEALTHY AIR MACHINE

G Brahadees, Kalpakkam, Tamil Nadu

A portable machine which can be carried around in the house. This is an energy-efficient, cost-effective multipurpose machine which can be used for all the air-related functions like cooling, heating and purification, and has air curtain and spot-cooling effect which saves energy.

Additionally, it can also be used for air blowing, winnowing and vacuum cleaning for domestic, commercial, industrial and agricultural purposes.

SYSTEM TO INFORM COMPUTER VISION SYNDROME

Vignesh R, Chennai, Tamil Nadu

A system to detect computer vision syndrome which can detect the number of eye blinks per minute. It gives an alert to consult a doctor, if the number of blinks per minute gets reduced below a medically accepted limit.

FOLDABLE AND PORTABLE MULTIPURPOSE DEVICE THAT CAN BE USED AS CHAIR, HAMMOCK, TABLE, STAIRS, ETC.

Pankit B Gami and Ekta Patel, Tapi, Gujarat

A multipurpose device which can be used in a number of ways like table, chair, stairs, hammock, rocking chair, relaxing chair, etc. This device is foldable and portable. You can even attach your stroller to it and carry both along wherever you go.

USE OF HELMET AS AN IGNITION SWITCH TO START TWO-WHEELERS

SM Arthi, Lailaa andVinotha, Thiruvar, Tamil Nadu

It effectively means that until the rider has worn the helmet, the vehicle would not start.

STROLLERS WITH FOLDABLE LUGGAGE CARRIER AND SEVERAL OTHER IDEAS

Himanshu Verma, GB Nagar, Uttar Pradesh

Stroller can be modified so that other luggage may also be loaded. It would first of all reduce the number of articles to be taken care of and secondly, will make it easier to move the luggage.

PIPE-CLEANING DEVICE

Bhanwar Malviya, Sirahi, Rajasthan

A small robot-like device with brushes and water outlet which could negotiate the turns and help clean blockages. He also thought of putting a mini drill device at the front, in case there were any stones or concrete blocking the pipes.

BHAMA AUTO-DIAGNOSIS MACHINE

Akshay Shrivdas, Ghaziabad, Uttar Pradesh

Machine works like an ATM. The person has to stand in front of it and it asks you certain questions, as a doctor would ask during a physical consultation and then runs the required tests. This way it can diagnose the problem the patient is suffering from and prescribe medication accordingly.

ANTI-MOLESTATION DEVICE FOR WOMEN, TO BE WORN ON WRIST

Manu Chopra, Delhi

This is a watch-like device, capable of monitoring pulse rate and nerve impulse. Any significant increase in both the parameters (due to an emergency, especially when someone is trying to trouble) will activate electricity in the upper portion of the device. When the person trying to molest will catch hold of the wrist, he would get a shock that would give sufficient time to the girl to run away.

SYSTEM TO PREVENT DRUNK PERSONS FROM DRIVING

Satyam Agarwal, Jhansi, Priya Rawat, Dehradun, R Lakshmi, Kalpakkam and Arpna verma, Jalau, Uttar Pradesh

System to ascertain alcohol level of the driver through palm contacts on the steering/handle grip. Sensing that the driver has consumed alcohol, the onboard system is going to ask the driver some questions. If the driver is not able to answer the questions correctly, then the system will prompt for the password. If still the driver does not manage to get it correct, the system will lock the ignition. Another idea to achieve this is to use an on-board breath analyser to find out alcohol content and accordingly jam the ignition, if the detected range is beyond a certain limit.

JACKET THAT SENSES BODY TEMPERATURE, BLOOD PRESSURE AND ALERTS

Sheikh Sipai Farhinbanu Makbul Ahmad, Ahmedabad, Gujarat and Amlan Anupam, Bhubaneswar, Odisha

A jacket that could monitor some basic physiological processes like temperature, blood pressure, heart beat, etc. and store all the parameters in a digital device, like a mobile. This device then can be programmed to send an alert signal to a doctor/hospital if there is a marked deviation in the parametric readings from the normal.

IGNITE 2010

MECHANICAL PORTER

Masha Nazeem, Namakkal, Tamil Nadu

It is a jack-like device which can help people, especially women, old and children, to lift and move heavy objects from one place to other. This can be hand- or foot-operated.

MULTIPLE PHYSIOTHERAPY DEVICES

Ashok Aasrani, Jaipur, Rajasthan

He has designed many simple and low-cost exercising devices that help in rehabilitation after accidents or for people with limb disorders

WASTE WATER MANAGEMENT IN URBAN AREAS

Parth Vaidya, Indore, Madhya Pradesh

Developed a system to process waste water, both domestic and industrial, so that it can be used for different purposes

COMPOSITE MATERIAL FROM WASTE PLASTIC

Hetal Vaishnav, Rajkot, Gujarat

She has processed plastic to obtain composite material which can be used to make different things like moulded furniture

READING ASSISTANT FOR THE BLIND/ PEOPLE WITH LOW VISION

Mayank Walia, Jalandhar, Punjab

A gadget that uses sensors on the fingers that scan text and Braille and convert it into audio signals for the blind/visually-challenged .

PEEL GROVE KNIFE FOR PINEAPPLE

Vishan Papat, Vadodara, Gujarat

A knife that could peel off the tough skin and then groove out the 'eyes' of a pineapple

NOISELESS HORN

Manibhushan Kumar, Dhanbad, Jharkhand

Each vehicle to have signal (may be IR) emitters and sensors. When horn is pressed by the driver in the following vehicle, signals are transmitted, which are picked up by the car in front and a beep is there in the dashboard along with a light signal.

TALKING WALL-MOUNTED CALENDAR WITH REMINDER FACILITY

Shruti Tyagi, Jalandhar, Punjab

Electronic calendar which has an in-built organiser and reminder facility so that one doesn't miss any event or an engagement

PEN THAT CAN RECHARGE BATTERIES WHILE WRIT- ING

Rahul K Singh, Ranchi, Jharkhand

The pressure on the tip of the pen while writing is used to charge a small battery

VIBRATOR-BASED OVERTAKE ALARM, LIGHT-SENSITIVE TV REMOTE, TRANSPORT VEHICLE WITH ROTATORY LUGGAGE CARRIER

Aditya Parashar, Hoshangabad, Madhya Pradesh

A microphone in the side view mirror to identify horn frequencies. When door window glass is closed and music is playing, it is difficult to hear the horn. The microphone will get activated when the glass is closed, it will send signals to a vibratory pad on the steering and alert the driver.

CRUTCH WITH SPRING-SHOCK ABSORBER AND AUDIO/LIGHT ALARM

Archana Konwar, Dhemaj, Assam

The idea is to have a crutch with spring shock absorber for the comfort of the user and also an audio/light alarm to alert others.

VACUUM CLEANER IN SHOE

T Chris Ananth, Thirunelveli, Tamil Nadu

Small sucking device and dust bag may be fitted inside the shoe so that when a person walks his shoe can collect dust. Similar device may be connected to a cycle so that when one cycles, it can collect dust.

THE CYCLE-O-CLEANER

Riya Kothari, Nimran Kang, Kaamyia Sharma, Mehr S. Mehta, Delhi

A cycle with two cylindrical brooms attached to the back wheel. This rotates due to the gears that connect the rods. The brushes are closed together so when they rotate the dust slips through and is pushed to the sides of the road, making the walk/drive way clean. This cycle may include an extra dust

TRICYCLE FOR VISUALLY-CHALLENGED

Rashmi Maruvada, Kolkata, West Bengal

Tricycle with pre-programmed routes for the visually-impaired .

EUPHORBIA CONTIFOLIA AS TERMITE/TIC REPELLING

Varsha Singh, Jalandhar, Punjab

Use of the mentioned plant to repel termites and ticks .

SYSTEM TO PREVENT PEOPLE FROM USING MOBILE PHONE WHILE DRIVING

Divyam Gupta, Bulandshaher, Uttar Pradesh

In order to prevent use of mobile phone while driving, he has suggested to place touch sensors on gear handle and steering. This means that both the hands need to be either on the steering or on steering or gear handle. When one will use mobile phone, he will drive using one hand.

PROCESS OF REELING CUT OR PIERCED *MUGA* CO- COONS TO OBTAIN CONTINUOUS FILAMENT

Kaushik Boruah , Golaghat, Assam

This process helps to obtain continuous filaments from the cut or pierced *muga* cocoons, which otherwise get wasted. .

IGNITE 2009

AUTOMATIC FOOD-MAKING MACHINE

Abhishek Bhagat, Bhagalpur, Bihar

Kitchen King has 12 boxes containing different ingredients, with a display screen to select options to cook different items. The required quantity of each ingredient will be fed into the machine in the sequence one has pre-planned recipes to cook the desired dish.

PRESSURE DETECTOR FOR WATER PIPELINES

Himala Joshi, Nainital, Uttarakhand

She has designed a pressure detector fitted in the pipeline. It rings an alarm immediately on sensing the flow of water, thus alerting people.

FLAMELESS SEAL MAKER

Masha Nazeem, Namakkal, Tamil Nadu

The traditional way of covers or boxes is using lac, heated at a very high temperature. It is a hazardous job. It has been used in India since the Mughal Era. The flameless seal maker eliminates the use of fire to melt lac and also ensures uniform treatment or seal imprint. Just fill the device with lac, plug it into power supply and one can then control the flow of the lac with a piston. There is little chance of getting burns this way.

LAVATORIES WITH AUTO-WASHING PIPE

Sasmita Nayak, Kendujhar, Odisha

A toilet fitting connected to a door by a spring mechanism, splashes water on the floor and in the toilette when a person opens the door. This way, toilets in railway bogies can be kept clean with minimal water wastage.

BREATHING SENSOR APPARATUS TO ASSIST PHYSICALLY-CHALLENGED

Susant Patnaik, Bhubaneswar, Odisha

This system consists of a circuit, which uses the changes in breathing patterns to select several options such as food, water, etc. It thus enables paralyzed/physically-challenged people articulate their wish and be self-reliant in routine activities. The technology has a range of applications.

FIRE HOSE SUPPORTER

Abhishek Srikanth, East Core Campus, Singapore

The jet of water that shoots out of a hose is very strong and the reaction force on the fire-fighter is difficult for him to handle. Hence, a foldable stand could be developed which is connected to the fire-hose by a spring mechanism. The angle of the hose is also flexible. This enables less strain and ensures a steady spraying of water jet at desired targets.

PREVENTING CLOTHES FROM GETTING DRENCHED IN RAIN

Piyush Agarwal, Hazaribagh, Jharkhand

When it rains, a motor may get triggered by salt that absorbs atmospheric moisture/sensor. It would pull the rope inside on which clothes are hung. This may save housewives, an additional chore!

BODY HEAT AND PULSE TO CHARGE CELL PHONE

Sarojini Mahajan, New Delhi

A gadget can be developed to utilise the body heat or the stimulus of pulse to charge a cell phone. Interestingly, this idea was picked up by a Stanford University faculty for exploring its feasibility for charging batteries of e-book.

BUS WITH APPROACH-ALERT SYSTEM

Pallavi Sharma, Jalandhar, Punjab

An idea about a high-tech school bus which can give alert signal as it approaches the bus stop. No one would miss any bus this way!

INTEGRATING GAIT WITH SECURITY SYSTEMS IN MOBILES

Anurag Rathore, Jalandhar, Punjab

The idea is to intergrate gait of person with mobile. As walking style differ from person to person, the software will be able to identify the signals based on the body movements while walking. If the mobile will sense a different movement once activated, it will lock itself and send a message about its location to a predefined number.

TRIANGULAR WHEELS

Yatharth Saxena, Pantnagar, Uttarakhand

This is an arrangement of three wheels on both the side of an axle. This may be used in carrying luggage strollers on the stairs.

RAIN WATER-HARVESTING UMBRELLA WITH FILTER

Saihiel Bakshi, Delhi

Integrating funnels in an umbrella, Saihiel has made a model which can harvest rain water. The water from the funnels is led into a filter and then collected in a bottle. This can then be used later .

TRAVEL BAGS WITH FOLDING SEATS

Nisha Chaube, Noida, Uttar Pradesh

Considering the problem that commuters have to face while waiting for buses/trains at stations, Nisha has suggested incorporating light-weight folding seats in traveling bags so that the same can be used when needed.

AMBULANCES/FIRE BRIGADES WITH INTEGRATED GPS

Meenakshi Padhi, Angul, Odisha

In order to stay clear of traffic during emergencies, Meenakshi suggests that ambulances/fire brigades, fitted with GPS, are integrated with traffic system so that path is cleared for them by appropriate light witching. For instance, as the ambulance comes near a traffic junction, lights will turn green for it to pass.

CLOCK WITH A WATER ALARM!

Airam Khatoon, West Champaner

This is a simple idea about a clock that sprays water after a preset time.

SYSTEM TO PROVIDE A MIRROR WITH EXTENDED VIEW WHILE OVERTAKING A VEHICLE

Ujjwal Jain, Bangalore, Karnataka

This device mainly shifts the area of view along the axis of the mirror. This is done in order to extend the view behind the vehicle and also to enable the driver view what is besides him.

PUTTING TO USE WASTE WATER FROM RO SYSTEMS

Ramya Ahuja, New Delhi

It is suggested to use the waste water from RO system for different domestic purposes.

APPARATUS TO INCREASE THE LIFE OF MOSQUITO COILS

Prakhar Parashar, Hoshangabad, Uttar Pradesh

This is a tested apparatus that increases the life of a mosquito coil considerably. Without apparatus, five inches of the coil burns in one hour, while with apparatus only four inches burn in the same time. Thus, 20 per cent extra life helps in controlling mosquitoes for that much time extra.

IGNITE 2008

DOUBLE-DOOR DUSTBIN

Annaya Sheel Khosla, Mrudang Mathur, Shreyas Kadaba, Abhiveer Arjun, New Delhi

The upper portion of the dustbin is like normal dustbin where we put waste. The lower part has a drawbridge-like system wherein a side can be lowered, enabling a person to sweep dust directly into the dustbin.

RAIN WATER-HARVESTING UMBRELLA

Ojasvi Goel, New Delhi

It is an umbrella that protects from rain and at the same time collects water falling on the umbrella and makes it available for drinking by channeling it in a bottle.

AUTOMATIC GARBAGE COLLECTION

Atulya Gupta , New Delhi

The empty wrappers of eatables should have a thin layer of magnetic material. Correspondingly, the public dustbins should also have a similar magnetic material. These wrappers, when thrown near the dustbins or even randomly flying in the air, will get attracted to the bin.

PORTABLE AND SAFE COOKER

Venkatesh Jindal, Viraj Nanda, Ashrant Kohli, New Delhi

It is a small, portable wooden cooker that weighs approximately a kilogram. It is aluminium foil covered and can be put over a flame for cooking.

SENSOR-BASED AUTOMOBILES TO PREVENT ACCIDENTS

Susant Pattnaik, Bhubaneswar, Odisha

Sensor-based system on automobiles to detect vehicles, obstacles and potholes.

IPL BUSINESS TWENTY-20

Siddharth Somani, Ahmedabad, Gujarat

IPL Business Twenty-20 is a board game for children of 6+ years of age. This game can be played by two to four players. This game teaches a child to a) invest to get higher returns (b) Strategise to save the cost and help run profitable businesses. The game is designed using the concept of PIL Twenty-20 cricket matches.

SINGLE-PUSH PIZZA CUTTER, SIDE-WINDOW WIPERS FOR CARS AND MANY OTHER IDEAS

Vishan Deepak Papat, Vadodara, Gujarat

He has come up with a pizza cutter that can cut a pizza upto 20 inch in diameter, into eight equal pieces. He also has a lot of other ideas. He has conceived an idea of side-window wipers for cars to enable people sitting on the sides see clearly.

AUTOMATED TRAFFIC SIGNAL SYSTEM

Girish S and Ashwin Nagarajan, Chennai, Tamil Nadu

The normal signal has been modified to auto-set the timing interval based on the traffic volume .The principle behind this is to make use of the increased weights due to additional traffic, triggering a sensor. In schematic model, weights (instead of vehicles) have been used to trigger the switches (instead of sensor in the normal signal).

LPG EXHAUSTING INDICATOR

Ullas Keshav, Poornesh A S, Amogh M Hooli, Vignesh D Nernekar, Akshay Tulasigeri

An electronic device that informs the user that the LPG in the gas cylinder is going to exhaust. When the weight of the cylinder decreases beyond a certain fixed weight, the signal gets activated.

AUTOMATIC GARBAGE DISPOSAL

Riya Misra and Seerat K Dhillon, New Delhi

A dustbin/garbage can that can take garbage till a particular weight, once the weight exceeds, the bin tilts and throws the garbage into the garbage bin outside.

ACCIDENT PREVENTER

Abhin Phillip, Palakkad, Kerala

Use of reflecting mirrors at turns to enable the vehicle approaching the turn to see vehicles coming from the other sides

LOAD-CONTROLLING SYSTEM

Anubhav Haldiya, Jaipur, Rajasthan

This system using sensors and weight measuring system, checks overloaded vehicles and does not allow them to cross the check point.

ELECTRICITY-SAVING STREET LIGHTS

Yashvir Surana and Dev Agnihotri, Jaipur, Rajasthan

The concept used here is the scattering of light by a convex mirror. The plan is to put two-density lights and on the opposite, putting four convex mirrors as reflectors. .

NATIONAL INNOVATION FOUNDATION-INDIA

The National Innovation Foundation (NIF), India, set up by the Department of Science and Technology, is built upon the the Honey Bee philosophy of inclusive empathetic innovations. It is a national initiative to serve the knowledge-rich, economically poor people of the country and is committed to making India innovative by documenting, adding value, protecting the intellectual property rights of the contemporary unaided technological innovators, as well as of outstanding traditional knowledge holders and disseminating it on a commercial as well as non-commercial basis by expanding the public domain of frugal affordable solutions.

With major contribution from the Honey Bee Network volunteers, NIF has been able to build up a database of more than 2,25,000 technological ideas, innovations and traditional knowledge practices (not all unique, not all distinct) from over 585 districts of the country. NIF has till date recognised more than 816 grassroots innovators, communities and school students at the national level in its various award functions. Through the collaborations with various R&D and academic institutions, agricultural and veterinary Universities and others labs in public and private sector, NIF has helped in validating thousands of grassroots technologies and also adding value to them. It has also set up a Fabrication Laboratory (Fab Lab) with the help of MIT, Boston, for product development apart from strengthening in-house research and development facilities for the initial validation of herbal technologies. Pro bono arrangement with patent firms has helped NIF to file over 743 patents (including eight filed in USA and 27 PCT applications) on behalf of the innovators and outstanding traditional knowledge holders of which 39 patents have been granted in India and five in the USA. In addition, 38 farmers' developed plant varieties are registered at the PPV&FR Authority. Micro Venture Innovation Fund (MVIF), set up at NIF with the support of SIDBI, has provided risk capital to 193 projects, which are at different stages of incubation. NIF has received over 950 product inquiries from around 55 countries for various technologies. It has succeeded in commercialising products across six continents. NIF has transferred 89 technologies to different licensees and setup a Joint Venture Company with BVG India. NIF has set up 37 community workshops at innovators place throughout country. It has also set up NIF Incubation and Entrepreneurship Council (NIF-ientreC), an incubator which provides in situ incubation support to innovators at their doorstep, only incubator to do away with residency requirement and supporting innovators where they live and work.

NIF has proved that Indian innovators can match and, in some cases, outper-

form anyone in the world when it comes to solving problems creatively, frugally and sustainably. The grassroots to Global (g2G) model that NIF is propagating is all set to change the way the world looks at the creativity and innovations at grassroots. That's why we don't consider poor people at the bottom of all pyramids. They are only at the bottom of economic pyramid (BoEP) but may be at the top of innovation, ethical and creativity pyramids.



the philosophy

Honey Bee is a metaphor indicating ethical as well as professional values. Cross-cultural fertilization of ideas, innovations and initiatives to build a knowledge network is one of the fundamental tenets of the Honey Bee Network. Collaborative efforts of Honey Bee Network members during the last 14 years in carrying out the documentation of people's knowledge systems have been pursued on the basis of following principles:

- Whatever is learnt from people must be shared with them in their own language so that people to people connections can be made and they can validate our understanding of their creativity.
- All practices/innovations must be identified by the names and addresses of the individuals/communities in order to acknowledge their contribution and pursue protection of IPRs of grassroots innovators.
- Whatever gains are made by those who document or add value to the local knowledge, innovations or practices should be shared with the providers of knowledge and others who have contributed to value addition in a fair and equitable manner.



Honey Bee

THE GOLDEN TRIANGLE

Technological

Institutional

Educational

Formal

Informal

Innovation

KNOWLEDGE
NETWORK

Investment

Enterprise

Intellectual

Material

Financial

Ecopreneurship

Social

Contact us at info@nifindia.org if you are interested in product development, mentoring, investing and/or commercialising any idea.