



National Innovation Foundation – India

Autonomous Body of Department of Science and Technology, Govt. of India

**Builds bridges between formal and informal
science, technology and innovation**

Incubates ideas, innovations and outstanding
traditional knowledge practices for diffusion
with or without value addition through
commercial and non commercial channels as
public goods

Key Achievements :

- Scouted and documented over 310,000 innovations from 610 districts of country
- Supported over 1200 projects for value addition and product development
- Setup 61 community workshops
- Filed over 1000 patent applications in India, 68 patents have been granted. Also filed 8 patent applications at United States Patent and Trademark Office (USPTO), out of which 5 have already been granted. NIF also applied for registration of 70 farmer's plant varieties under PPV&FR Act, 2001. Out of these 9 plant varieties have been successfully registered.
- Recognized 976 innovators, students and traditional knowledge holders in national award functions

NIF has proved that Indian innovators can match and in some cases outperform, anyone in the world when it comes to solving problems creatively, frugally and sustainably.



The Festival of Innovation and Entrepreneurship

organized in month of March at the NIF Campus, Grambharati, Gandhinagar where grassroots innovations were displayed for the public. The events were inaugurated by Hon'ble President and were visited by many dignitaries



“Innovation Scholar In Residence” Programme

- Empathetic model of supporting innovation by Honourable President of India
- The Rashtrapati Bhavan would host writers, artists and grassroots innovators for a month or two and provide them mentoring and other necessary support.
- Innovators will interact with the President Shri Pranab Mukherjee and other senior policy makers, scientists in technology institutes like IITs and regulatory agencies like Bureau of Indian Standards.
- NIF coordinated with The President House and helped in screening of entries, coordination with innovators, technical institutions, government departments, ministries etc.,
- A clear message has been given by The President that Innovations matter and he expects every institution in the country to give similar importance and respect to the creative people.

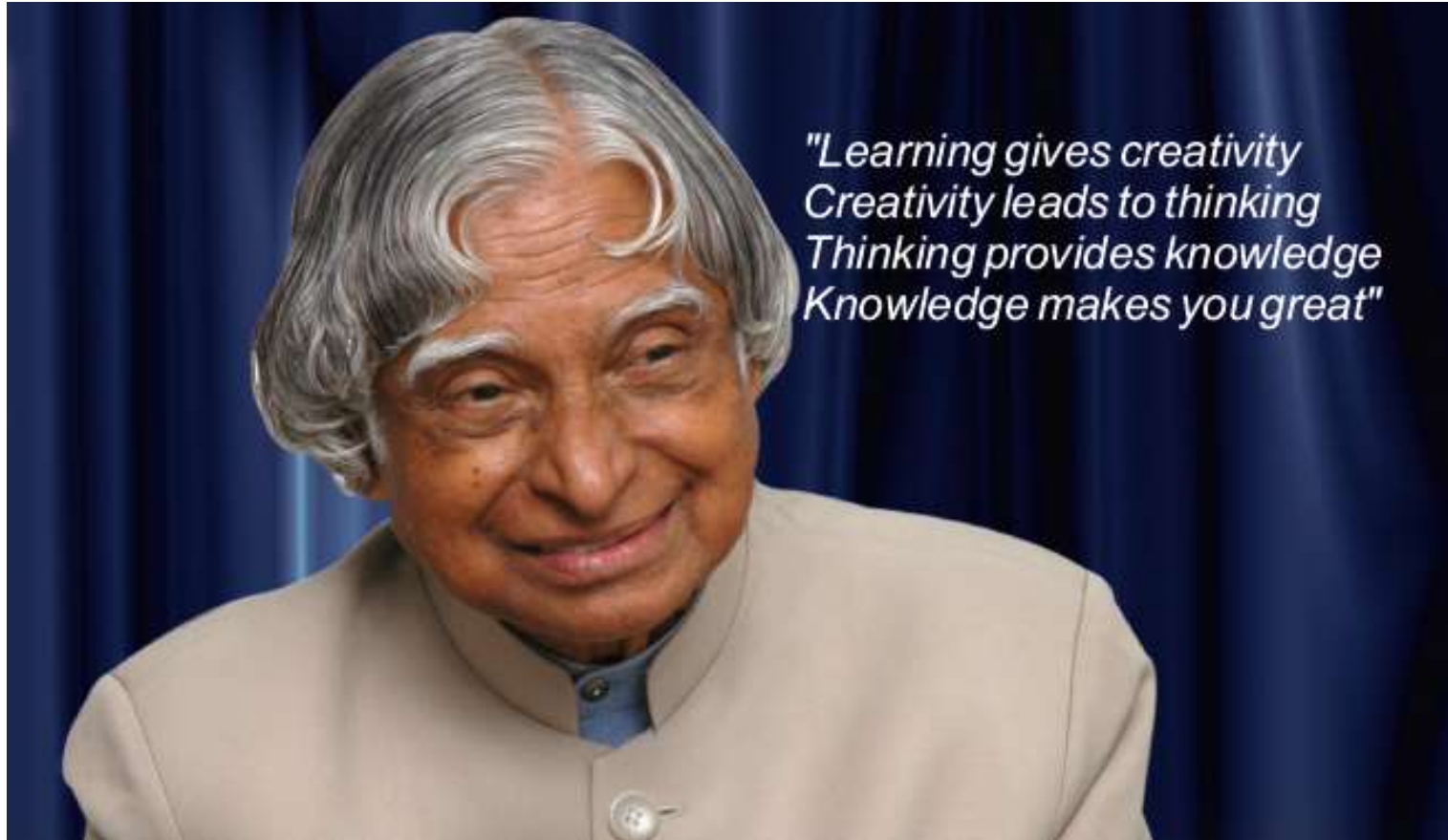


Dr. A P J Abdul Kalam IGNITE Awards



IGNITE is an annual national competition to harness the creative and innovative spirit of school children. Students are invited to send their original creative technological ideas and innovations for the same

Dr. A P J Abdul Kalam IGNITE Competition



Honey Bee Network



SRISTI

Gian

GIAN

Participation of other State Education Boards/Bodies

- Board of School Education Haryana
- Nagaland Board of School Education
- Goa Board of Secondary and Higher Education
- Directorate of Higher Education, Himachal Pradesh
- West Bengal Board of Secondary Education
- Madhya Pradesh Board of Secondary Education
- Rajiv Gandhi Shiksha Mission, Dept of School Education, Govt. of Chhatisgarh
- Directorate of School Education, Govt. of Puducherry
- Mizoram Board of School Education
- Council of Higher Secondary Education, Manipur
- Punjab School Education Board, Punjab
- Meghalaya Board of School Education, Meghalaya
- Chhattisgarh Madhyamik Siksha Mandal, Chhattisgarh

The students from any board and any schools can participate in the competition. Boards mentioned above are those who have supported us in various IGNITE competition since 2008 in circulating the message of this National Campaign.

What is invited for the competition?

We are asking children

- to imagine improvement in existing product or service used by them, their parents, grandparents or community members or anyone else in the world, which are urgently needed.
- to visualize any new product or service which does not yet exist in the world as per their knowledge.
- to come out with the creative technological solutions of ignored persistent problem of the society.

IGNITE 19 is accepting submissions till 31st August 2019

The journey of IGNITE Awards

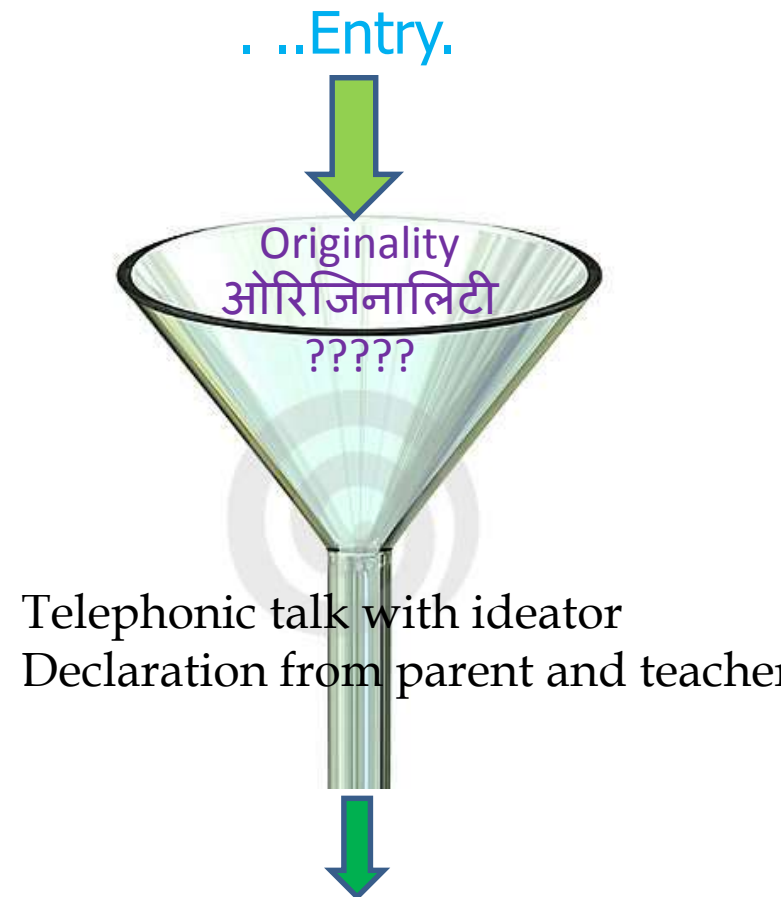
S. No.	Competition	No. of Submissions	No. of awardees	Submission from States & UT
1	IGNITE 08	961	25	19
2	IGNITE 09	1344	18	21
3	IGNITE 10	2139	22	29
4	IGNITE 11	4104	32	25
5	IGNITE 12	14889	36	30
6	IGNITE 13	20836	44	33
7	IGNITE 14	27123	28	35
8	APJ Abdul Kalam IGNITE 15	28106	41	36
9	APJ Abdul Kalam IGNITE 16	55089	31	36
10	APJ Abdul Kalam IGNITE 17	65000	56	36
11	APJ Abdul Kalam IGNITE 18	Over 90000	31	36

"....implies a case where school children will ideate, college students will fabricate and the entrepreneurs and companies will commercialise or diffuse solutions socially as open source...." anil k. gupta, evc, nif



In the last eleven years, 251 awards have been given to 364 children. The total number of submissions from school children received during the various IGNITE campaigns are about 309591.

Evaluation of entries



Nisha Chaube, NOIDA – Travelling Bag with folding seat

Image source: http://indianblogworld.com/wp-content/uploads/2010/03/railway_station-1.jpg



Modified Walker with adjustable Legs

Innovator :

Shalini Kumari,

Patna, Bihar



Category :

Mobility aid division

Unique Properties:

- Adjustable legs
- Adaptable to height of stairs.

Patent No. :

Application number 1434/KOL/2011)



Some More Examples of Observation and Innovation by Children

Tactile cum Braille signage to help visually challenged in public buildings

Supriya Jagadala, Odisha



Supriya, a visually challenged girl herself, has suggested using tactile and braille signage for the visually challenged in the hospitals. Facing the problems herself she got the idea.

Innovative and low cost bed with detachable wheel chair

Arushi Tandan, West Bengal



Arushi has designed a modified bed where a wheelchair has been incorporated. With a few easy adjustments, this integrated wheelchair can be separated from the bed, thereby making it easy for the patient or bed ridden person to be moved. Moreover, this wheelchair is built to slide over the commode so as to eliminate another transfer. This idea is her effort to help her grandmother who was immobile.

Bamboo basket weaving machine

Sumit Murari, Jharkhand



Bamboo basket weaving is a time and labor intensive task where weavers can hardly prepare 3 to 4 baskets in a day and thus earn very less. The idea behind this machine is to boost the production so that earnings can be maximized drudgery reduced.

Pesticide spray pump with mandatory protective mask

Parth Patel, Aditya Chauhan, Rahit Manavadiya and Jaydip Raval, Gujarat



The children suggest attaching a system in the spraying pump that does not allow pesticide to be sprayed if the farmer is not wearing a protective mask. The students got this idea during the field visit of children creativity workshop 2018 organized by SRISTI when they saw farmers spraying pesticides without protective masks.

Low cost shellac processing technique

Debangshu Kumar, West Bengal



The filtering process of shellac in traditional handmade method needs charcoal as a fuel. In large scale processing system the filtering is through hydraulic press. The present technique uses house hold items viz. pressure cookers, hollow cylinder, one double burner gas oven, one shuraksha gas pipe, cloth filter, etc. In this process steam produced in one cooker is transferred to another containing shellac (seed lac), which melts it. The wastage of heat in the traditional method of shellac processing where large quantity of charcoal is used gave him this idea.

Smart cervical collar

Digantika Bose, West Bengal



The smart cervical collar is an improvisation in the original collar where a small fan at the front is attached. The fan serves to regulate the temperature and humidity in the gap between the neck and the collar. An additional air channel has been provisioned to allow fresh air to be released at the back of the neck. This idea is a result of her effort to help her grandmother who was suffering from cervical spondylosis.

Wearable indicator to ensure body hydration

Harsha A Satpathy, Tamil Nadu



Dehydration is something, which most people do not get much concerned about. However, optimum hydration is important for proper functioning of vital functions of the body. Harsha has thought about a device which could monitor and report the degree of hydration of the body.

Harsha, who wants to become a surgeon, has varied interests in tennis, poetry, food, music and singing. She plays carnatic violin and can sing in French, Tamil, English and Hindi and is planning to learn Arabic and Japanese.

Detection system in vehicles for speed breakers much in advance

Iqrar Ahmad Dev, Jammu and Kashmir



Iqrar realised that sometimes vehicle drivers may not be aware of a speed breaker especially if white stripes are not painted on it. As a result mishaps may occur. The situation may be more problematic if an ambulance driver fails to recognise a speed breaker and jumps over it. To solve this, Iqrar has suggested a device that can identify the presence of a speed breaker ahead from a few meters and alert the driver.

Eldest of four siblings, Iqrar has an interest in electronics and wants to become a scientist. He is good in academics and mentions that the level of concentration during studies matters more than the duration of the study.

Omni-directional air cooler

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 her think of an alternative”. Her idea is to make an alternative cooler with throws cool air in all directions.

Manual hand lever-based Tapioca plant uprooter/digger

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 harvesting very difficult and it 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.

Proximity alert system in non-transparent doors

Sayan Sain, Standard IX

Pailan World School, Kolkata, West Bengal



“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.

Adjustable wheelchair and walker

Joseph John, Standard XI

St Berchman's HSS Changanacherry, Kottayam, Kerala



“In his 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.

Automatic light intensity-adjusting system for study

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.

Automatic blanket covering mechanism

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.

Paan delivery and processing machine

Lahar Jyoti Das, Standard XII

Transition Academy, Dadara, Kamrup, Assam



His father 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

Helmet as signal for starting ignition in two wheelers

Arthi, Vinotha & Laila , class 11, Tiruvarur Tamil Nadu



wearing helmet facilitates any two wheel vehicle in its ignition.

Fourth light (blue) to reduce traffic Jams Adarsh Barnwal, Class 10, Katihar, Bihar



The idea is that in addition to the three signals in the traffic light pole, there should be provision of fourth signal in blue colour. If this signal is on people would understand that the road ahead has a traffic jam and thus take alternate ways. This will also help not congesting the jam further.

Pen to check concentration

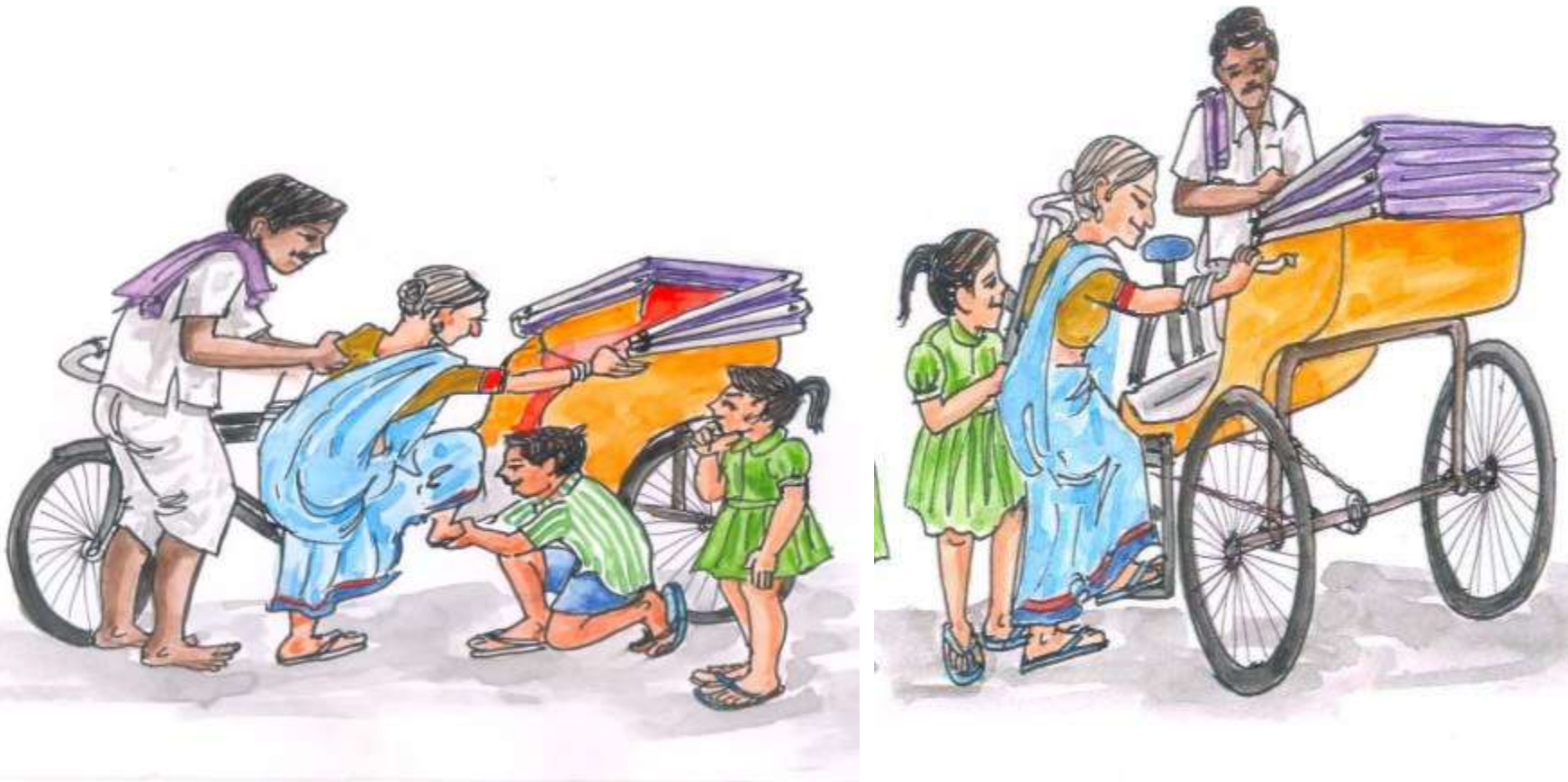
Rudra Prasad Goswami, Class 11, DAV Kapildev Public School



Sometime we get distracted while studying and loose our concentration. The idea is to have a pen with pressure sensors on the grip. Whenever the student will not concentrate the grip on his pen will loosen, indicating that he is not concentrating.

User-friendly pedal rickshaw

Mansi Priya Class 11, DAV Kapil Dev Ranchi, Jharkhand



Old people have a lot of problem climbing the rickshaws, she suggest having a small folding stair in the rickshaw which will help old people to climb rickshaw easily

Water taps at public places arranged on an incline

Chhaya Thakor, class 7 , 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 at appropriate height.



Modified cart with steering mechanism and brakes

Nidhi Kumari Gupta, 8, Muzaffarpur, Bihar, Md. Usman Hanif Patel , 3, Jalgaon, Maharashtra and Pavithra, 7, Erode, TN & Vidya Ramesh, 12, Bangalore, Karnataka



We have seen that vendor has to lift the cart for turning it; to avoid this, mechanism should be incorporated so that it becomes easier for the person using cart to maneuver it easily.

A support with a handle fitted at the rear side of the vehicles, which can be moved/put down whenever cart puller wants to arrest the sliding of the vehicle.

Cylindrical shaped refrigerator with rotating trays

Sarthak Shukla, class 8, 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 front of taking out the stuff from the refrigerator.



Bulb/CFL remover/connector

Gautham Praveen A, 11, Andhra Pradesh



She has made a long stick device with adjusting button to remove the bulb easily from holder. She has used a stretchable long rubber, long hollow stick, clasp to hold the CFL bulb . For using we required to take it close to CFL bulb and when clasp will hold the bulb, pull the string and bulb get detached.

Detachable device for the bicycle enabling user to ride with one leg

Shubh Dholakiya , 8, Rajkot, Gujarat



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



Wrapper picker

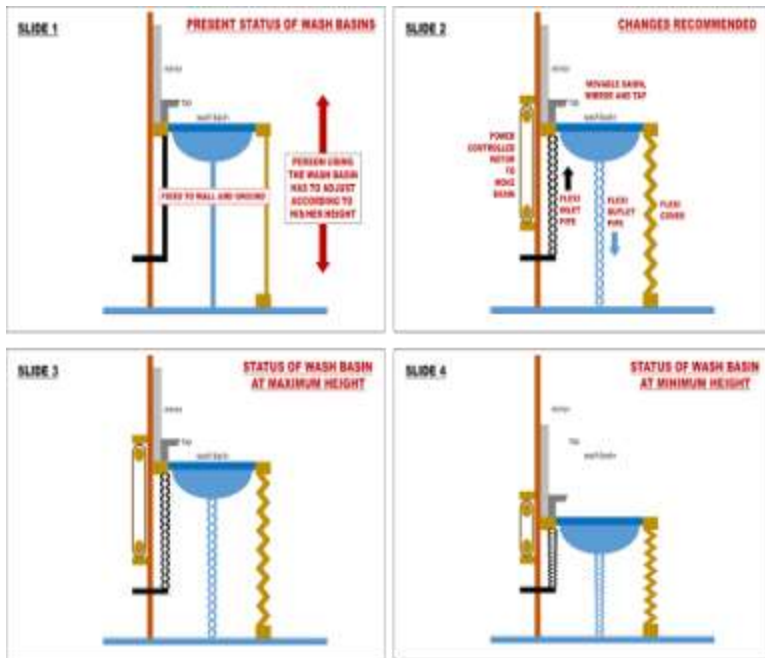
Mukul Malviya & Diptanshu Malviya, class 12 & 9, Sirohi, Rajasthan



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

Height adjustable wash basin

Akanksha Guha, class 10, Pauri Garhwal, Uttarakhand



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



Manual Page Turning Machine

Swapnanil Talukdar, Class 11, 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.

Technology Transfer and Recognition



NIF transfers technology of Walker with



The Indian EXPRESS

... .. 'ker to hit
gulfnews.com limb stairs

Indian teenager invents adjustable walker for the elderly

Ahmedabad based organisation identifies talent and cultivates research temperament in students

By Nilima Pathak, Correspondent
Published: 17:07 September 18, 2014

GULF NEWS



THE HINDU

Think beyond the ordinary

SHALINI KUMARI (modified walker) from Bihar had invented a modified walker with adjustable legs. She has taken this invention to exhibitions in various other places and there are talks of her being featured on Zee TV.

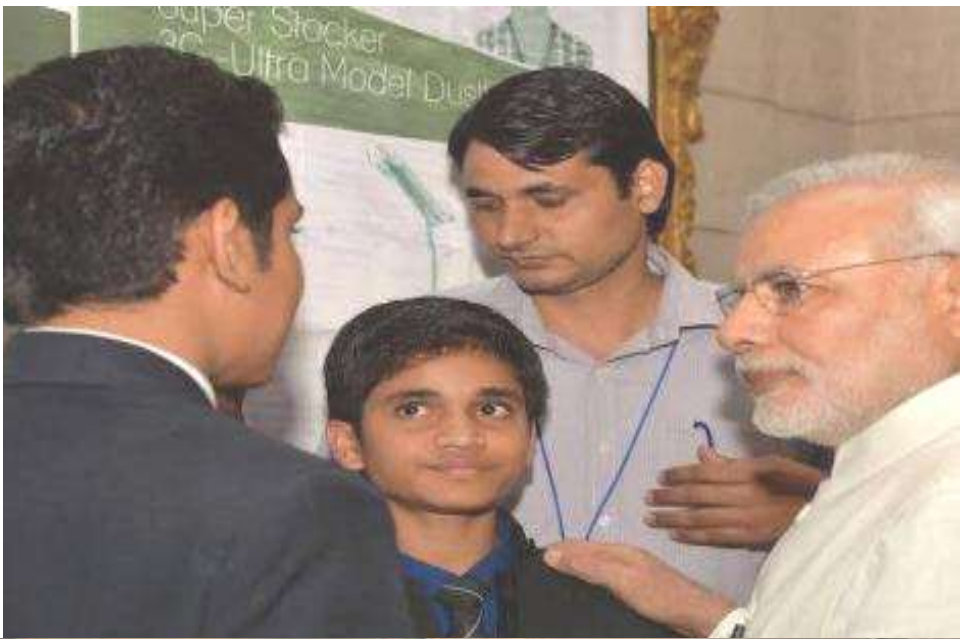
dna SYNDICATION INDIAN CONTENT LICENSING

Student innovator's 'walker with adjustable legs' gets commercial push



Image Credit: Courtesy: National Innovation Foundation
Shalini Kumari with Former President APJ Abdul Kalam and Anil Gupta of National Innovation Foundation.

Recognitions



Recognitions



SCIENTIFIC FEAT
Suffering inspires students' in

Alimuz Nigam
 alimuznigam@gmail.com

NEW DELHI: The 17-year-old and 16-year-old brothers, Anshu and Anshu, have been awarded the 1st and 2nd prizes in the 1st International Science Olympiad. The brothers, who are students of the 11th and 10th grades respectively, have been selected to represent India in the 1st International Science Olympiad. The brothers, who are students of the 11th and 10th grades respectively, have been selected to represent India in the 1st International Science Olympiad.

THEY DECIDED TO MAKE A DEVICE WHICH CAN SET OFF AN ALARM IF THE SWIMMER IS UNDER WATER AFTER A SET NUMBER OF SECONDS.

TEENAGE INNOVATORS
 They decided to make a device which can set off an alarm if the swimmer is under water after a set number of seconds.



Samriddhi Saxena and Yashraj Saxena of their device

THEY DECIDED TO MAKE A DEVICE WHICH CAN SET OFF AN ALARM IF THE SWIMMER IS UNDER WATER AFTER A SET NUMBER OF SECONDS.

TEENAGE INNOVATORS
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4 amazing innovations from young Indians

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National Innovation Foundation - India

Grambharti, Amrapur,

Gandhinagar-Mahudi Road

Gandhinagar, Gujarat, India

Pin: 382650

Tel: 02764261131 / 32 / 38 / 39

Email: ignite@nifindia.org

Online submission: <http://nif.org.in/submitidea>

Web: <http://nif.org.in/announcement/ignite-competition>