

# Vigyan Ashram Status Report

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### A] Technovation : IBT project Exhibition

'Technovation' an annual 'Science & Technology exhibition' for IBT schools was organized at J.P Naik Centre (JPNC), Pune on 24<sup>th</sup> January. Total 41 schools had participated in the event with 43 projects. These projects are based on real life need of the community and are working-prototypes. The projects are on different topics viz farming, wild-life conflict, food-processing, waste recycling etc. Following were the winners.

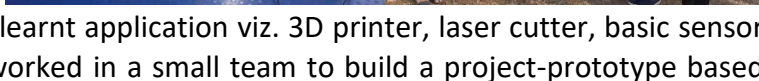
- First Prize: Prakash Devale School (Shirgaon): Project - Battery-operated mixer-grinder.
- Second Prize: Dhanaji Nana Vidyalaya Khiroda (Jalgaon): Project - Amla cutter.
- Third Prize: Rajapur high School (Sindhudurg): Project - Cashew cutter.

Mr. D V Suryawanshi (Directorate of Vocational Training & Education), Mr. Chaitanya Nadkarny (STARS Forum), Dr. Prakash Salvi (DG -IIE) and representative from CSR partners were present. Volunteers from M/S Schaeffler India, M/S Tata technologies also participated as jury for evaluating the projects. For more details on student's project please visit:

[www.technovation.online](http://www.technovation.online)

### B] Make-a-thon for girl students from rural science colleges:

A 3<sup>rd</sup> batch of Make-a-thon for girl students from rural science college was conducted from 12<sup>th</sup> to 16<sup>th</sup> January. 18 students of B. Sc. Physics & Electronics department of Annasaheb Awate College, Manchar (Pune) participated in this Make-a-thon on 'digital fabrication' skills. Students learnt application viz. 3D printer, laser cutter, basic sensor application & programming with Arduino. Students worked in a small team to build a project-prototype based



on real-life problem statement. We are very thankful to La-foundation (Dassault systems) for their financial & employee volunteering support for program.

### C] SIDBI Young Environmental Champions Challenge and Technology development updates:

DIC student Mahesh Shinde won 'SIDBI Young Environmental Champions Challenge' for groundbreaking innovations in cleanliness and waste management. Mahesh won award of Rs.25,000 & a certificate for Black-Soldier-Fly (BSF) based waste-recycling system.

Mahesh has formed Pratheen Eco Solutions LLP for commercializing BSF technology with the support of Vigyan Ashram. We are very thankful to Department of Science & Technology (DST, SEED division) and Eaton India Foundation for supporting BSF project. For more details on award, please visit -

[https://www.linkedin.com/posts/letsstartupweb\\_sidbi-young-environmental-champions-challenge-activity-7163498284957851649-itTi/](https://www.linkedin.com/posts/letsstartupweb_sidbi-young-environmental-champions-challenge-activity-7163498284957851649-itTi/)

#### 5. Pratheen Eco Solutions LLP

- Category: Waste reduction, upcycling, and repurposing
- Innovation: Focusing on innovative and sustainable waste management the team uses Black Soldier Fly (*Hermetia illucens*) cultivation as an eco-friendly approach for recycling kitchen and food waste.
- Impact: This method is odor-free and contributes to reducing waste significantly.



@letsstartupweb

### D] 'Shramdaan' using technical skills & Republic Day celebration @ 26<sup>th</sup> January:

Every year students and teachers @ Vigyan Ashram do 'Volunteering (Shramdaan)' on the eve of Republic Day. This year, we have decided to provide skill-based 'Shramdaan' in the village. We have done electrical maintenance work at 'Bhairavnath temple' & repair-replacement of taps at community water-filter area.

On 26<sup>th</sup> January - 75<sup>th</sup> Republic Day was celebrated with flag-hosting & cultural programs after flag-hosting. Students & staff enjoyed individual & group performances ranging from dances, folk songs, dramas etc. Mr. Sudarshan Hasabnis (Retired Lt. Gen.) shared his experiences in military service & inspired students.



Shramdaan @ ZP High school, Zhodakwadi – Inverter repair



Shramdaan @ Bhairavnath temple - Electrical maintenance

## E] Technology Development updates:

i) Red-Chilly dryer: A field trial on red-chilly drying was conducted during 21<sup>st</sup> to 31<sup>st</sup> January. Trial was conducted at 'dome dryer' facility of Maa Annapurna Enterprise (Ozer, Nasik). For the trial, 500 kg red chili was sourced from Nandurbar region farmer. During trial, moisture of chilly was reduced by 67 % with 33.5 kg water-evaporation per day. Data on temperature & humidity at different levels of dome, inlet & exhaust were collected with the help of automated data loggers. The longer drying time was due to higher loading density (250 % more loading than standard open drying practice) & lower air exchange rate of dome dryer. Prasad & Abhishek are working on appropriate air-exchange rate & loading density for further trials.



## ii) Black-Soldier-Fly (BSF) based composting & poultry farming:

- Work of fixing weld-mess fencing wall & bird-net at 4800 ft<sup>2</sup> Rajgurunagar Municipal Council (RMC) waste dumping shed is completed. During January, 3.18 ton of waste was processed at RMC & Aundh (Pune). Abhishek is working on two-layer sieving mechanism for BSF larvae separator. The modifications are based on prototype developed at Pabal campus.
- Mahesh demonstrated BSF based composting technology in Start up Exhibition organized by Research Park Foundation on 13<sup>th</sup> January.
- Ranajeet & Ganesh conducted on-field training for tribal farmers at Malin (Tal-Ambegaon) and Pasli (Tal- Velha) on 13<sup>th</sup> & 20<sup>th</sup> January respectively. They guided farmers on economics of backyard poultry farming, technology adoption support etc.



BSF shed @ Rajgurunagar dumping shed

## iii) Polyhouse climate control system development:

- In polyhouse, Yellow Mite & Thrips count in relation to average day & night time temperature – Humidity was studied. During 30 days period (19<sup>th</sup> Dec to 19<sup>th</sup> January) mite population was increased by 317.63 % whereas Thrips count increased by 22 % for average day & night time temperature 26.00 (RH 69.30) & 17.36 (RH 96.73). Data will be useful in developing pest prediction algorithm for mite & thrips.
- Suhas visited 'Krushik agriculture expo-2024' on 19th January at KVK Baramati. On 29<sup>th</sup> January, Ranajeet, Suhas & Bhanudas visited Sai Roses (Kamshet, Pune) to collect base-line data & assess automation requirement of polyhouse farmers.

iv) Life-science lab update:

- Pranay is experimenting with soyabean recipe. He roasted soyabean with calcium chloride ( $\text{CaCl}_2$ ) as salting agent instead of common salt. He soaked soyabean twice in  $\text{CaCl}_2$  dried them for further frying. His trial failed due to bitter taste developed in the fried-soyabeans.
- Akshada & Arun Dixit conducted 1 day workshop for B.Sc. & M.Sc. students at Gramonnati Mandal's Arts Commerce Science College, Narayangaon on 4<sup>th</sup> January. Workshop was to conduct awareness about DIC programs and internship opportunities at Vigyan Ashram.
- Onkar & Vedica visited Krishi Vigyan Kendra, Narayangaon on 17<sup>th</sup> January to learn use of spectrophotometer for soil analysis.
- One day hands on learning workshop on 'Science of liquid Soap' was conducted on 13<sup>th</sup> January for 47 B.Sc. students of ACS College Narayangaon.
- Soil microbiology lab has prepared 100 lit. of composting culture, 50 bags of saw coated kitchen-waste composter and also tested 5 waste-water samples Chemical Oxygen Demand (COD).



**Science of Soap workshop**

v) Fab-academy updates: Fab academy-2024 batch started from 24<sup>th</sup> January. This year we have 2 students enrolled for 6-month digital fabrication & rapid prototyping-based program. The course will be taken by Dr. Neil Gershenfeld, Professor @ MIT, USA every week using video conference. Students will be doing hands on projects in the fab lab under guidance of local instructor. During January, Suhas conducted sessions on GIT repository, project management and website design.

vi) Annirudha Raut (B.E. E&TC) from NK Orchid College of Engineering & Technology (Solapur) joined 6 months DIC internship program from 16<sup>th</sup> January.

**F] DBRT activities:**

DBRT students had completed their 3<sup>rd</sup> section examination and moved to the last section of their course. They have completed 15 days elective 'crash course' during 15<sup>th</sup> to 31<sup>st</sup> January. They learned skills of their choice among CCTV installation, advanced carpentry, dairy product and baking skills.

Here are some of the highlights of learning activities of DBRT students during the month of January –

- i) **Energy & Environment:** Students in Energy & Environment section learnt installation of CCTV camera in the workshop section. Students installed CCTV cameras as per order in private home and also repaired CCTV system of Bhairavnath Mandir in Pabal village.



**Learning CCTV installation**

Students carried out service & maintenance of lead-acid batteries. They replaced battery of diesel generator.

Students started doing electrification work of newly constructed soil-microbiology laboratory. Total value of community service work provided by students was Rs. 55683/- during January month.

ii) **Workshop section:** We have got new tools in the carpentry section. Students have made four office tables. They have also made a product display (show-case) for entrepreneurship section. They learnt wood cutting, polishing, Sunmica laminate sheet fixation etc. skills. Total value of community service provided by student was Rs. 53116/-.



**Wood working @ Workshop**

iii) **Home & Health section:** Ten students of Home & Health section visited 'Kunjir bakery & dairy processing' unit on 14<sup>th</sup> January to learn veg-puff, khari and bread making skills. As a part of bakery training students prepared Khari (15 kg), veg-puff (5 kg), paneer roll (7 kg), bread (49 kg). Students also prepared multi-grain ladoos (44.77 kg) and moringa chikki (21 kg) for distribution during evening snacks & sales. Total value of community service provided by students during January month was Rs. 53683/-.

iv) **Agriculture & Animal husbandry section:** In the farming section, students learnt primary first aid & fodder management of dairy animals. They visited BAIF research & development center at Urali-Kanchan for studying different fodder crops & Artificial Insemination (AI) technique. On 8<sup>th</sup> January, local veterinary doctor demonstrated AI technique while inseminating 'Gauri' cow at campus. Students learnt dairy processing by preparing 1.5 kg paneer & 1.5 kg shrikhand from cow milk.



**DBRT students @ Kunjir Dairy**

v) **Graphic Design:** DBRT students Tanmay More designed 15 posters for IBT schools during his 15 days crash-course tenure.

DBRT students learning can be found on their online-diary (blogs) -

<https://alumni.vigyanashram.blog/dbrt-batch-23-24/>

vi) Ms. Jyoti Gawade from Asha for Education (Seattle, USA) visited Vigyan Ashram on 5<sup>th</sup> Jan. She interacted with students on their progress, projects and future plans.

vii) Health & Safety Executive Mr. Hemant Girsawle from M/S MAHLE Engineering conducted session on 'Safety awareness' on 19<sup>th</sup> Jan.

## G] IBT Updates:

**IBT Maharashtra updates:** In the month of January, IBT-students participated in various science exhibitions and community service activities. Following are some of the highlights -

i) IBT school exposure visit to KVK-Narayangaon: A visit to Krushi Vigyan Kendra (Narayangaon) was organised for 6 IBT schools on 13<sup>th</sup> January. The visit was organized as part of 'SEED-the-Future-Entrepreneurs' competition. IBT students from Gawadewadi, Tulapur, Nirgudsar, Hiware, Chikhali, and Mukhai schools are working on 'project-ideas' related farming sector. The aim of the visit was to show latest farming technologies and get guidance from agriculture-scientist for student's projects. Mr. Hemand Gadgil, Mr. Huzefa Salim and Mr. Sushil Patil from La-fondation were present on the occasion. They guided students on their project prototypes.



ii) Impact assessment for IBT project: On 18<sup>th</sup> January, third party evaluation team of BIMTECH, appointed by LTI-Mindtree visited IBT schools at Chikhali (Pune) for impact-assessment survey. LTI-Mindtree had provided financial assistance to 36 schools during 2016 to 2023. The visit was aimed to document impact of IBT program on students learning outcomes, school's capacity-building, community involvement etc. The conclusion of the report is very positive and satisfying.

iii) Yogesh participated in the Curricular Area Group (CAG) on Vocational Education from 8<sup>th</sup> – 12<sup>th</sup> Jan 2024 at CIET (NCERT), New Delhi.

iv) Students learning activity:

- IBT student team at Tulapur school won awards for their 'farm-irrigation-alarm' & 'automated railway pedestrian bridge' project at block-level science exhibition on 11<sup>th</sup> January. These teams are now qualified for district level exhibition.
- In Home & Health section, Students of 9<sup>th</sup> class in Prakash Devale Madyamik Vidyalay, Shirgaon organized blood-group testing camps in different schools. Students tested blood samples for 90 students in schools & gave them blood-identity cards.
- IBT students at Chhatrapati Shivaji Madhyamik Vidyalaya, Shivali, prepared Dhoop-sticks from



**Blood group testing**



**Dhoop Stick from waste flowers**

waste flowers. Students collected waste flowers from village temple. They dried them by open sun drying and prepared dhoop-sticks by using cow-dung & other required ingredients. Students learnt drying, dhoop-stick preparation and waste up-cycling skills through this activity.

- IBT students in workshop section of Tung Madhyamik Vidyalaya, Tung fabricated 4 units of display hoarding frames. These frames will be given on rent.

**Learning by doing (LBD) @ Uttar-Pradesh updates (STARS Forum):**

i) Schools in U.P are on winter holiday till 20<sup>th</sup> of Jan. We had given assignment to instructors to develop lesson plan on new activities. Instructors were asked to visit different enterprises in the surrounding and prepare lesson plan based on them. Now we have more than 45 new activities for introducing in next academic year.



ii) Field officers also visited different schools and helped them in setting up of LBD labs. Government has supplied materials to 45 schools. We are helping schools to organise it.

**H] Entrepreneurship Development Program (EDP) update:**

i) Millet processing enterprise: A 2-day hands-on training on 'millet-processing enterprise' was organized on 6<sup>th</sup> & 7<sup>th</sup> January. Training was attended by 24 aspiring entrepreneurs from all over the Maharashtra. Training was conducted in association with Millet-Adda (Agro Zee Organics PVT LTD, Urli Kanchan, Pune).



**Millet processing**

ii) Poultry farming workshop: A one day awareness workshop was organized on back-yard poultry farming on 19<sup>th</sup> Jan at Phansi village in Velhe block of Pune. This workshop

was part of on-field training & technical support to farmers associated with Raintree Foundation in 9 villages of Velha block near Sakhar town. Training was attended by 45 farmers. Ranajeet & Ganesh guided farmers on various technical aspects like poultry-cage design, breed selection, feeding management, vaccination etc. Farmers discussed challenges in backyard-poultry. After the training, 25 farmers registered for 2<sup>nd</sup> phase of training. They booked 1200+ birds for practicals at home.

ii) Exhibition: EDP team had participated in 'Farmers Exhibition' organized by Manchar Krushi Utpanna Bajar Samiti at Manchar during 26<sup>th</sup> to 29<sup>th</sup> January. EDP program mentee Mr. Pramod Pansare (Ashirvad Home Industry) and Mahesh Shinde (Pratheen Eco Solutions LLP) participated in the exhibition with their products. Nearly 3000 farmers and eminent personalities like MLA Shri. Dilip Walse-Patil, Ex-MP Shri. Shivaji Adhalrao Patil visited our stalls to know more on EDP initiative & technology development work.



**Exhibition @ Manchar**

Field visits & mentoring support:

- Yogesh visited Mr. Pratik Rasal (Vadgavan Sheri) and Mrs. Maya Yewale (Kanhe-Phate) on 4<sup>th</sup> & 19<sup>th</sup> January for on-field guidance for poultry & food-processing enterprise respectively.
- Yogesh visited Khadi-Gram Udyog Ahmednagar office for getting information on PMEGP scheme & detailed project report requirements.
- Ganesh visited Yogesh Bhoze (Ranjangaon), Jivan Bhapkar (Kedgaon-Chauphula) and Santosh Darekar (Baramati) on 12<sup>th</sup>, 18<sup>th</sup> and 31<sup>st</sup> January for helping them in their flour-mill, desi-cow farming and poultry enterprise respectively.
- In this month, EDP provided registration support to 4 new enterprises (Udyam Certificate-2, FSSAI-1, Pan Card-1)



**Mr. Sharad Punde (Shivraj Poultry)**

**Hero of the month:**

**Mr. Sharad Punde** started "Shivraj Poultry Farm" at- Kanhur Mesai, Tal-Shirur Dist.-Pune. Sharad is student of poultry training & EDP mentoring program. Presently we are providing him technical & marketing guidance. He has invested Rs.12 lacs for poultry-shed construction & contract farming.

**Mrs. Deepali Tak** has started ice-cream parlor with the name of 'Govinda Ice Crème and Kulfi' at her native town Mantha (Dist-Jalna). At present Deepali is operating under franchise model but also plans to start cottage-scale ice-cream & kulfi manufacturing. She has invested Rs.8 lacs for new enterprise.



**Ms Dipali Tak – Govinda Ice crème & Kulfi**



## I] Atal-Tinkering-Lab (ATL) & DIY lab update:

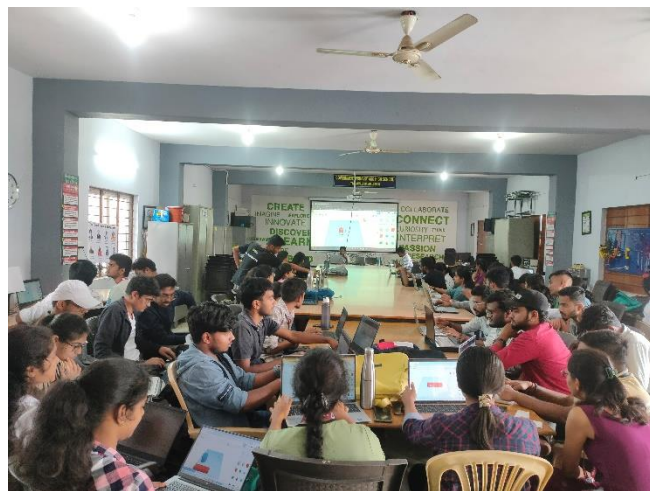
Low-Cost-Maker Labs (LCM) are installed in 10 schools of Telangana state. A manual on details of each tool, user protocol, safety precautions along with Youtube video link is also developed and shared with the schools for effective implementation of tool-kit. Following are some of the highlights ATL program –

i) ATL Andhra-Pradesh: Two Make-a-thon's were conducted for ATLs in January.

- Government High School, Anantapur: Total 35 students and 7 teachers from six schools had participated in this Make-a-thon from 27<sup>th</sup> – 31<sup>st</sup> Jan.
- APMS high school Dharmayaram (Dist-Sri Sathya): Total 62 students, 7 teachers and six schools had participated in the make-a-thon event. Venkatesh conducted the Make-a-thon with 4 volunteer students from Engineering colleges. These students were trained by Vigyan Ashram to conduct ATL activities.



ii) ATL Karnataka: Capacity building workshop for engineering students: A two days Capacity building workshop on design-thinking and tinkering was conducted for RNSIT engineering college (KPS Uttarhalli, South Bengaluru) on 3<sup>rd</sup> & 4<sup>th</sup> January. Total 73 engineering students (35 female and 38 male) from ECE, AI and ML, Civil engineering departments participated in the workshop. Students learnt use of CAD software for designing electronics circuit, 3D designing for printing, methodology on problem-definition & prototyping etc. skill in these two days hands-on learning activities. Students were also introduced with Atal-Tinkering-Lab (ATL) initiative and internship opportunities for engineering students.



iii) Online training sessions for ATL students: Following online session were conducted.

ATL labs	Date	Topic	YouTube link
ATL-Andhra Pradesh	17 <sup>th</sup> Jan	Make a Rotating Water Fountain with PVC Pipe	<a href="https://www.youtube.com/watch?v=Lj6VY_XPR7Y">https://www.youtube.com/watch?v=Lj6VY_XPR7Y</a>
ATL – Telangana	24 <sup>th</sup> Jan	Learning mechanisms using automata toy	<a href="https://youtu.be/lc5lu9J-7O8">https://youtu.be/lc5lu9J-7O8</a>
ATL – Telangana	3 <sup>rd</sup> Jan	Introduction to ATL inventory- Electronics, IoT devices and tools	Not Available
ATL – Karnataka	5 <sup>th</sup> Jan	Plant emotion expessor	<a href="https://youtu.be/mF_F6iPqgZc?si=o2s8EaC-tesOXtlk">https://youtu.be/mF_F6iPqgZc?si=o2s8EaC-tesOXtlk</a>
ATL – Karnataka	12 <sup>th</sup> Jan	Learning mechanisms using automata toy	<a href="https://youtu.be/lq8B-MVVyK4?si=9Y_RYc8BaUlPaoDg">https://youtu.be/lq8B-MVVyK4?si=9Y_RYc8BaUlPaoDg</a>

### Do-It-Yourself (DIY):

- Tinkering workshop @ PMC schools: During January, two tinkering workshops were conducted for 9<sup>th</sup> standard students of Yashwantrao Chavan PMC school on 16<sup>th</sup> & 17<sup>th</sup> January. Total 87 students were participated in the workshop.
- DIY lab membership students participated in 6 different tinkering activities viz. electronics circuit using *Tinkercad*, programming with *Scratch*, card-board based designing etc. Students also learnt *Pictoblox app* to build voice command LED glove lamp and walking & obstacle robot. Their learning video can be found on <https://fb.watch/q9RCI1ZSQ5/?mibextid=2JQ9oc> and <https://youtu.be/7npm0zllZ1o>



### J] Wikipedia & women-led enterprise development (ASMITA) project update:

- Wiki-team completed proof-reading work for 14 Marathi books comprising 991 pages.
- On 3<sup>rd</sup> January, a 3 days training workshop on 'aari-work' (hand-embroidery) was organized on the occasion of birth anniversary of great socialist 'Krantijyoti Savitribai Phule'. Training was attended by 8 ladies from Pabal village. Expert trainer Ms. Pooja Dhomale trained participants in various types of 'aari work' techniques like simple thread, silk thread, jardosi etc.
- On 14<sup>th</sup> January, exposure visit and open-discussion workshop was organized for Pabal village-based Women Self-Help Group (WSHG) members. Aim of meeting was to discuss aspirations of WSHGs in village with respect to technology-based women-led enterprise development opportunities.



### K] Other tit-bits:

- Update on modernization of engineering & electrical section:** CSR team of MAHLE Engineering Service India-CSR division visited VA on 19<sup>th</sup> Jan. Objective of visit was to review progress of proposal especially upgradation of different lab at VA.
- Tinkering workshop for high-school students: A tinkering camp was organised for 35 students of Anand-Niketan (Nasik) school at Pabal from 28<sup>th</sup> Jan – 30<sup>th</sup> Jan.
- Ranajeet visited Lokbharati University for Rural Innovation, Sanosara (Bhavnagar, Gujrat) to participate in the panel discussion on 'Rural Innovation' on 2<sup>nd</sup> January. He gave talk on importance of design-thinking & internships for B.Voc. students.

- iv. Swapnil Dhokale (BE, Mech) joined VA team from 8<sup>th</sup> January. He will work as project-officer Department of Science & technology (DST) supported Technology Acceleration Platform for Rural Innovation & Social Entrepreneurship (TAP-RISE) project.
- v. Yogesh participated in Mitra Milan program of NGO leaders on 20<sup>th</sup> and 21<sup>st</sup> Jan at Pune.
- vi. Weather record – Rainfall of the month – 13.31 mm (Total: 478.72 mm), Max temp-30.00°C, Min Temp –9.00°C, Humidity –79%, Water height in well– 3.00 M.
- vii. Energy consumption record- Electricity unit – III Phase-758 units, I Phase import-131 units, Solar generation-758 units. DG used – 3:00 Hrs, Biogas- 56.83 m<sup>3</sup> (dung used 1136 kg)
- viii. Animal Husbandry section update – Milk production – 650 Kg (Gross profit Rs: 3051.00).
- ix. Online visitors: [www.dsttara.org](http://www.dsttara.org) – 912(Organic search-709, Direct search-196), [www.vigyanashram.com](http://www.vigyanashram.com) – 833 (Organic search- 451, Direct search- 382). Campus tour visitors –415

**KJ Data Report:** <https://shorturl.at/fqAJ4>

(Work of VA is supported by Asha for Education, Praj foundation, EATON Foundation, LTI-Mindtree, SPA Education Foundation, UNICEF, TATA Technologies Pvt Ltd, MAHLE Engineering Services Pvt Ltd, Schaeffler India, INDUSA Endowment, Savitribai Phule Pune University, Dept of Science & Technology, La-fondation, The Prabhu Trust and many individuals and foundations).

**Photo Gallery:**



Poultry training @ fanshi



26<sup>th</sup> Jan cultural program



Students from Anand Niketan, Nasik doing 3 days training



Visit of Mahle CSR team to VA

For Regular update: [www.facebook.com/vigyan.ashram.pabal](https://www.facebook.com/vigyan.ashram.pabal) ; [www.vigyanashram.blog](https://www.vigyanashram.blog)  
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