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VIPNET NEWS

A monthly newsletter of Vigyan Prasar Network of Science Clubs - VIPNET

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2011 International Year of Chemistry

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National Biodiversity Camp for VIPNET CLUBS

Dear Member,

As a follow up of the 'International Year of Biodiversity 2010', a "National Camp on Biodiversity and Forests" was organized during 26-29 May 2011 in Science City Ahmedabad. The programme was designed as the culmination of programmes and activities of IYB 2010 and initiation of the activities for Year of Chemistry 2011. Delegates from about 150 VIPNET clubs, accompanied by their coordinators participated. The basic objective of this camp was to consolidate the understanding of importance of Biodiversity, its sustainable use and conservation, besides providing an exposure to different eco-systems and how a particular ecosystem sustains some flagship species. During this camp, they also had an opportunity to interact with the experts, stakeholders and representatives of other States. All clubs were intimated about the programme & activity initiated by Vigyan Prasar as part of International Year of Biodiversity in January 2010. a series of discovery oriented activities were suggested to them through a series of articles and resource material in this newsletter. Clubs were encouraged to undertake the activities in a group mode for 2-3 months. Based on their findings; they were required to write a report which were evaluated & the top 160 were invited to participate in the National Camp. Each club was also asked to prepare two charts for displaying in the exhibition organized during the camp.

Inaugural Session in Progress

The activities during the Camp were designed to help the club members to differentiate and appreciate the importance of various ecosystems, the kind of Biodiversity they sustained and the challenges being faced by these ecosystems. During the four-day camp, each club member and coordinator was asked to present reports highlighting their observations and the number of new species of plants and animals they have identified, especially those which are not seen in their area. All participants were taken on a field trip to three places i.e Indorda Park (man-made ecosystem), Thol Bird Sanctuary (wetland ecosystem) and Polo Forest (a natural forest) situated at Vijay Nagar. For each field visit special material was developed to give a brief introduction about the ecosystem and the activities to be taken up. A kit comprising necessary stationery and equipment like hand-lens, binoculars, thermometer, etc. was provided to each participant. A day was also kept for visit for the Science City. In this programme children and coordinators from 12 States of India participated. The day-to-day report of the

The nice thing about chemistry is the way they named each of the elements after a famous letter.

Anonymous.....

programme is as follows-

Day 1 (26 June 2011)

The camp was inaugurated by Dr S K Nanda, IAS, Principal Secretary, Environment and Forests Department, Government of Gujarat, at the Gujarat Science City on 26th May 2011 at 10 am. Explaining the concept of sustainable development which is need of the hour, Dr Nanda said that the Gujarat had a variety of ecosystems, signifying the rich diversity of nature. According to him Indians are more concerned about nature and natural resources. That is the reason for which Indians are healthier in comparison to people of other countries. He urged the delegates to take the message of science to the community in form of arts and story-telling, which can be easily followed. He stressed on sustainable use and conservation of resources. He also spoke about the concept of reduce, reuse and recycle of resources.

Getting Ready for the Camp...

Participants at Thol Wetland

Dr H S Singh, IFS, Additional Principal Chief Conservator of Forests (Social Forestry) of Government of Gujarat delivered the keynote address. Dr. Singh informed that forest and biodiversity are central to all development. Gujarat has achieved both economic growth and environment development. The state has delivered best conservatory practices which are now followed by others States. He requested the participants to take interest in nature education and change their habits, attitude and mind-sets to reflect the true value of species and habitats.

Exhibition-Forest for the People

Shri B K Tyagi, Scientist - D, Vigyan Prasar informed that the idea of the national camp is to provide hands-on experience to the participants to understand & appreciate biodiversity and its importance besides developing scientific attitude and temperament. He also informed that the camp has been designed in such a way that it will help participants to understand the differences of various ecosystems, especially between the natural and man-made ecosystems. Shri Dilip Gadhavi, Executive Director, Gujarat Science City and Shri Jwalant Trivedi, Deputy Secretary, DST Gujarat also graced the occasion.

Soon after the inaugural session, Shri B.K.Tyagi, Vigyan Prasar, delivered a talk on biodiversity through a slide-show to highlight its importance, threats to biodiversity and efforts (National and International) being made by Govt. and International agencies. The participants also had a walk through in the activity centre where an illustrative exhibition on the theme "Forest for people" (to mark the celebration of the 2011: International year of forests) was put up. This exhibition was designed specially for the delegates.

Describing the hands-on activities, Dr Narottam Sahoo, Sr. Scientist, GSC informed that "forests are the lungs of the nature and play a key role in maintaining the health of the planet. They battle against climate change, releasing oxygen into the atmosphere while storing carbon. They regulate rainfall, feed our rivers and are essential to supplying the water for nearly half of our largest cities. They create and maintain soil fertility and protect us from storms and floods". Awe inspiring, forests are the most biologically diverse ecosystems on land, and are home to more than half of the terrestrial species of animals,

Participants enjoying the Movie Avtar at I-MAX Theater

Grand Musical Fountain Show in the Science City

plants and insects. They also provide shelter, jobs, security and cultural relevance for forest-dependent populations–around 1.6 billion people.

Soon after the visit to the exhibition, delegates were divided into groups and activities were assigned to them. Each group was asked to select a leader amongst them. Shri B. K. Tyagi briefly explained about various hands-on activities based on observation,_technique of sample collection, reporting, etc. He also_discussed the activity sheets, which were specifically prepared for the field visits to sites. Queries of the participants were also replied.

The participants were taken to the I-MAX 3D Theatre in the Science City for a special screening of AVATAR which has an obvious environmental message with amazing visual effects to showcase an inspirational ecosystem on a far away planet. The film was not only a visual delight but a thrilling experience for all the participants.

Participants at Indroda Park

Second Day (27 June 2011)

On the second day, the participants made a field trip to the Thol Bird Sanctuary, a Wetland Ecosystem and Indroda Nature Park (man-made ecosystem). At Thol, participants were given tips on bird watching. The delegates were enthralled to see flamingos in thousands. More than 20 pairs of Saras cranes and hundreds of the Back Ibis were the other big birds besides many small birds which were identified with the help of a booklet provided to each participants in the kit. Visit to Indroda park was altogether a different experience as they saw many life forms (both animals and plants) in captivity. The most interesting part of the visits was the **DINOSAUR AND FOSSIL PARK.** The fossilized eggs of dinosaurs caught the imagination of all the participants.

Delegates also visited the Bhaskaracharya Institute of Satellite Communication and Geo-informatics (BISAG) and got a first hand experience about SATCOM studio and its communication practices. They also had an interactive session with Shri T P Singh, Director General, BISAG, on conservation of biodiversity through remote sensing.

The participants dedicated the evening time with a walk through inside the Science City by a guided tour to Hall of Space Science, Electrodrome, Life Science Park and Energy Park. It was a thrilling experience when all the participants witnesses 20 minutes show of water and culture in the Grand Musical Fountain.

Third Day (June 28, 2011)

The activities of the third day were organized at a unique place, popularly known as Polo Forests, situated at Vijaynagar, (about 180 km away from Ahmedabad.) The participants got an early morning bus-ride to reach the venue and were amazed to see the nature in the deep forest. A trek to the top of a hillock helped witnessing the beauty of the dry deciduous forests, its tree patterns, birds, and overall environment. A typical local lunch in the forest area was something new for delegates who were taken later to a micro-climate zone and conducted few experiments on temperature variations, identifying water sources and observing tree canopies and how the vegetation of that zone differed from the other nearby areas. Describing the special features, Dr Narottam Sahoo informed that a micro-climate is a local atmospheric zone where the climate differs from the surrounding areas. The term may refer to areas as small as a few square feet (for example a garden bed) or as large as many square miles. Micro-climates exist, for example, near bodies of water which may cool the local atmosphere, or in heavily urban areas where brick, concrete, and asphalt absorb the sun's energy, heat up, and re-radiate that heat to the ambient air: resulting in urban heat island. Experiments were done by the participants and observations noted.

Fourth Day (June 29, 2011)

The fourth day of the camp experienced a very lively interaction with Er. Anuj Sinha, Director, Vigyan Prasar who gave an insight about how to become a scientist and contribute to the socio-economic up-liftment of the society. The hour-long session was really inspiring and encouraging for all the delegates who answered questions about scientific projects, science careers and courses of study. Er Anuj Sinha also urged the students to participate in the scientific activities through VIPNET Clubs. To him, the future belongs to science and to only those who made friends with it.

Participants at Polo Forest

A poster exhibition was put up by the participants to display their work which they undertook as part of International year of Biodiversity 2010. Er. Anuj Sinha went through each of the student's project and had an interaction by asking some searching questions. Through this exhibition, delegates also got an opportunity to know the work of other children.

Dr. C. N. Pandey, IFS, Additional Principal Chief Conservator of Government of Gujarat (Planning and Development) conducted a session about the importance of forest biodiversity for all round development of the country. He explained that forests are one of the most biologically rich terrestrial ecosystem systems. Together, tropical, temperate and boreal forests offer diverse sets of habitats for plants, animals and micro-organisms, and harbor the vast majority of the world's terrestrial species. Furthermore, forest biodiversity is interlinked to a web of other socio-economic factors, providing an array of goods and services that ranges from timber and non-timber forest resources to mitigating climate change besides conserving genetic resources. At the same time, forests provide livelihoods for people worldwide and play important economic, social, and cultural roles in the lives of many indigenous communities. Therefore, forests and forest biological diversity are innately linked to ecosystem and human well-being.

Participation Certificate were Distributed by Er Anuj Sinha Director, Vigyan Prasar

This was followed by an open house session with the experts. Discussion also took place on the present and future activities of the VIPNET Clubs. In the session, participants were briefed about the programmes and activities which has been planned by VP for VIPNET Clubs for the next two coming years.

In the afternoon, a formal valedictory programme was organized in the auditorium which was graced by Er. Anuj Sinha, Dr. C. N. Pandey, Shri Dilip S Gadhavi, Shri B. K. Tyagi and Dr. Narottam Sahoo. One teacher and student member from each of the state was invited to share their experiences about the camp.

The National Camp on Biodiversity was simply an amazing and an eye-opening experience for most of the participants. As per the feedback, the visits to different eco-systems like wetlands, micro-climatic zone, dry-deciduous forests, Indroda Nature Park, and I-MAX 3D technology was a life time experience for majority of them.

The participants received their certificates, kits, scientific event calendar and multimedia CD of Science City from the dignitaries on the dais. Dr. Narottam Sahoo proposed a vote of thanks.

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2011 International Year of Chemistry

National Children Science Congress

The Maha Kumbh of Child Scientists

By Dr. D.K. Pandey

The 'National children Science Congress' has become a nationwide activity since 1993. A beginning was made by holding first NCSC in Delhi. The primary objective of this programme is to provide a forum to children of the age group 11-17 year, both from formal school system as well as from out of school to exhibit their creativity and innovativness, specially in solving the societal problems by using the method of science. The preparation is already on for the organisation of 19th NCSC, during Dec. 27-31, 2011, at Jaipur (Rajasthan). In this issue detail information in given above NCSC for the benefit of all the VIPNET Club members. All registered VIPNET clubs can participate in this national event, which is know referred as 'Maha Kumbh' of child scientist. A brief writ-up about the main theme and subthemes of 19th NCSC is also given with some description thereof.

National Children's Science Congress:

Post-independence India has seen quite a few marvelous S&T interventions for emancipation of peoples' life in all its facets. Scanning through the truly national efforts in the last couple of decades, one event that readily comes to mind is Children's Science Congress, which not only has changed the way the science is looked at; but also has ignited the minds of Indian children, because it directly involves these budding citizens of our vast country. But the best part of this movement is the involvement of the adults too; be it as motivators and guides, or organizers and facilitators. Such an amalgamation of diverse people and thoughts has truly made Children's Science Congress an extremely popular and desirable activity in the Indian scientific calendar.

Eligibility for participation:

- Any children within the age bracket of 10 and 17 years can participate in Children's Science Congress, irrespective of caste, creed, religion, language and ethnic background.
- 10 to 14 years constitutes the lower age group; while 14+ to 17 years is called the upper age group. The age is calculated on the basis of attainment on 31 December of the calendar year in which he/she is participating.
- Children's Science Congress is not necessarily a school-based program; it is open to all non-formal systems of education besides out-of-school and disabled children.
- Children in the past have joined Children's Science Congress from science centers, clubs and other forums also, although they are also part of school systems.

Opening Ceremony at Chennai on Dec. 27, 2010

Features of the Children's Science Congress:

The projects are:

- Innovative, simple and practical;
- Represent teamwork;
- Are based on exploration of everyday life-situations;
- Involve field based data collection;
- Have definite outputs, arrived through scientific methodology;
- Are related directly to community work in the local community; and
- Have definite follow-up plans.

The Philosophy of Children's Science Congress:

* A unique program that motivates children to take-up scientific research on local specific issues of their choice under broad themes, instead of imposing issues on them
* A real experiment to promote methods of science with ample opportunities to encourage creativity, innovation and experiential learning
* An activity towards promoting congenial team work, correlating science with everyday life situations
* A potentially strong and effective movement for influencing the impressionable minds to enhance

Participant During the Opening Ceremony in their Colorful Traditional Dresses

community feelings and sensitize towards societal needs

* An event not merely for the privileged and school-going children; but even for those who are not in the formal school set-up, drop-outs, or forced to be out of the conventional mode due to poverty and disabilities

The Genesis:

The Bharat Jan Vigyan Jatha (BJVJ) in 1987 brought many voluntary organizations, non-governmental organizations and government agencies into a great melting pot of ideas and action, resulting in sincere desire to work together for science popularization and communication;

* This new-found zeal and camaraderie was further boosted up by an activity similar to Children's Science Congress in Gwalior, Madhya Pradesh in the early nineties

* On January 02, 1991 the NCSTC-Network was born under the watchful eyes of the NCSTC, Department of Science & Technology, Government of India

* National Children's Science Congress made its first appearance in 1993 by the initiative of National Council for Science & Technology Communication, Department of Science & Technology, Government of India and is been implemented throughout the country by NCSTC-Network and its members.

The Main Objective of Children's Science Congress:

The primary objective of the Children's Science Congress is to make a forum available to children of the age-group of 10-17 years, both from formal school system as well as from out of school, to exhibit their creativity and innovativeness and more particularly their ability to solve a societal problem experienced locally using the method--of-science.

By implication, the Children's Science Congress prompts children to ponder upon some significant societal problem, think over its causes and subsequently try and solve the same using the scientific process. This involves close and keen observation, raising pertinent questions, building models, predicting solutions on the basis of a model, trying out various possible alternatives and arriving at an optimum solution using experimentation, field work, research and innovative ideas. The Children's Science Congress encourages a sense of discovery. It emboldens the participants to question many aspects of our progress and development and express their findings in vernacular.

The methodology which is adopted to organize the District, State & National Level Children's Science

The Process of Children's Science Congress:

- **The national organizer, NCSTC-Network, in collaboration with all like-minded organizations and individuals, declare a Focal Theme, with relevant sub-themes, for every two years.**
- **Necessary Activity Guide, leaflets, registration forms are circulated well on time through the State and District coordinating agencies.**
- **District level organizing and academic committees are responsible for propagating the message and software to the children spread over the length and breadth of the country.**
- **Children form groups of 2—5, and select a guide to steer them through the project. They first identify a topic/ an issue/ a local problem under the given sub-themes and make quick assessment of the work schedule. Majority of the projects need to carry out survey work to proceed further; but not always as has been observed over the last 15 years. Some projects build up on models, prototypes or hypotheses which might be very refreshing and innovative.**
- **Working through surveys, collection and collation of data, drawing results, representing findings by suitable mathematical tools, suggesting solutions, testing results in the field, concluding with follow-up actions in that order, the groups prepare the project reports in a standard and uniform manner.**
- **The report is presented first in the District Level Congress by the group leader and is assessed by a group of evaluators. All selected projects from this level are next presented in the State Level Congress in front of a wider audience and discussed threadbare by all concerned before they are sent for the National Level Congress, held during 27—31 December, every year.**

Congress is outlined hereunder;

District Level

In each and every district of India, NCSTC-Network in consultation with NCSTC and the State Coordinating Agency/State Organizing Committee, a District Coordinator is appointed for looking after the organizational aspects of Children's Science Congress under his/her guidance a District Organizing Committee is organized. As per the guidelines of NCSTC, the district level Children's Science Congress is revolved in different blocks within the District (it is mandatory not to organize at the same place for two consecutive years).

State Level

Similarly, State Coordinating Agency is appointed in each and every state as per the guidelines. The said agency then appoints a State Coordinator for looking after the organizational aspects of Children's Science Congress under his/her guidance a State Organizing Committee are organized. Similarly, as per the guidelines, the State Level Children's Science Congress is also organized in different districts of the states.

Participant During the Opening Ceremony Procession

National Level

Likewise, for organizing the National Level Children's Science Congress, NCSTC-Network central office invites proposal for hosting the National Children's Science Congress from its different members. After getting the proposals from different agencies, NCSTC-Network requests certain data from the proposed agencies and also requests to send a detail report of the infrastructure available.

Project screening:

Screening of projects is done by the evaluators at district, state and national level Congresses based on oral presentation and written report. A handbook outlining the criteria of evaluation for children from both, rural and urban areas has been brought out and made available to all of the evaluators. Even the orientation of the evaluator sis being carried out at all levels of the Congress. A child scientist is free to make presentation in any of the scheduled languages. Promising and potential projects identified at national level are being pursued further.

Rashtriya Kishore Vaigyanik Sammelan:

Rashtriya Kishore Vaigyanik Sammelan (RKYS) is being organized every year along with the annual session of Indian Science Congress, for popularization of science amongst children and teachers alike, where selected child scientists from the state level of Children's Science Congress participate. The objective of this activity is to stimulate creativity and inventiveness in science in the young minds. CSC provides a platform for children across the country to interact with eminent scientists and exchange knowledge and ideas. The Sammelan encourages the participants to visualize the future of the nation and to pursue their natural curiosity; thus unleashing a wave of creativity and scientific temper.

International participants:

Over a period of years, National Children's Science Congress has attracted not just national but even International participation; since last few years students and teachers from SAARC and ASEAN countries have participated in the national event of Children's Science Congress.

Earlier the child scientists even had an opportunity to visit Germany under exchange program and Philippines to participate in a Youth Summit.

Focal Theme of NCSC 2011

LAND RESOURCES: USE FOR PROSPERITY, SAVE FOR POSTERITY

The most important natural resource, upon which all human activity is based since time immemorial, is land. Land resource is our basic resource. Throughout history, we have drawn most of our sustenance and much of our fuel, clothing and shelter from the land. It is useful to us as a source of food, as a place to live, work and play. It has different roles. It is a productive economic factor in agriculture, forestry, grazing, fishing and mining. It has many physical forms like mountains, hills, plains, lowlands and valleys. It is characterized by climate from hot to cold and from humid to dry. Similarly, land supports many kinds of vegetation. In a wide sense, land includes soil and topography along with their physical features of a given location.

The exponentially growing population in the country has placed immense pressure on the dwindling land resources, endangering the very survival of the biome as a whole.

Land, the marvelous product of nature, without which no life would survive, is now at stake worldwide. The time has come to sustain it for our sustenance and its bridle must be handed over to our future generation, the children, who will unveil the thousands of wonders above and underneath this creamy layer. They will be amazed with the mystery of various branches of sciences in relation to the land mass on which they are growing and playing

day to day. It will also be their prime duty to put into action the knowledge and wisdom acquired by their ancestors as regard various land uses.

1. Sub-theme: KNOW YOUR LAND

India has a diverse geology. Different regions of India contain rocks of various types belonging to different geologic periods. Some of the rocks are severely distorted and transmuted while others are lately deposited alluvium. Great variety of mineral deposits in huge quantity is found in the Indian Geological survey. India's geographical land area can be categorized into Deccan Trap, Gondwana and Vindhyan. The Deccan Trap covering almost the entire state of Maharastra, a part of Gujrat, Karnataka, Madhya and Andhra Pradesh. Indian soils are normally divided into four broad groups. These comprise of alluvial soil, black soil, red soil and laterite soil. Allivial soils are derived from the deposition led by different tributaries of Indus, Ganges and the Brahmaputra system. It includes soils in deltic alluvium, calcarious alluvium and coastal alluvium. It covers 40 per cent of land area. Black soils are dark in colour gently calcarious low in organic matter, high in clay content, high in cation exchange capacity. They are sticky and plastic. It covers about 22.2 per cent of total land area. Red soil of India covers almost all the states. The colour of red soil is due to wide diffusion of iron. These soils are poor in nitrogen, phosphorus and humus. Kaolinitic type of mineral is prevalent in red soil. Laterite soils are highly weathered materials rich in secondary oxides of iron, aluminum or both. It contains large amount of quartz and kaolinite.

Soil mapping: The physical properties of soil are important since this determine the manner in which it can be used either for agriculture, forestry etc., and non agriculture purposes like habitat, recreation site etc. Properties *viz*: infiltration rate, water holding capacity, aeration, plasticity and nutrient supplying ability are influenced by the size, proportion, arrangement and mineral composition of the soil particles.

2. Sub-theme: FUNCTIONS OF LAND

Land systems function through general capabilities of soils that are important for various agricultural, environmental, nature protection, landscape architecture and urban applications. Soil performs multiple functions starting from providing physical, chemical and biological support for plant growth. It provides habitat for variety of flora and fauna including human. lives. It acts as natural filter and buffered media against abrupt changes occurring in it. It also acts as a sink of organic carbon and thus global Co_2 flux. It is the platform for manmade structure and perpetuates cultural heritage

Soil is the hot-spot of biodiversity. Beneath feet they construct a wonderful world, called "Black Box" by soil ecologist. Each community of this world is working honestly for correcting the soil condition and making soil live so that above ground plant growth is ensured and thus biodiversity is maintained. Thus, belowground diversity influences the nature and makeup of above ground diversity.

Land acts as a reservoir of rich gene pool. But it is amazing to know that till date only 1-10% of total soil microorganisms can be isolated and characterized. So, there is a tremendous potentiality to explore and exploit rest of unknown soil residents for the benefit of human community.

Soils provides a platform for manmade structures like buildings, road, highways, mall, multiplex etc.. It is the platform for civil and engineering works. Soil itself is a raw material for many small-scale industries like pottery, terracotta, tiles, brick etc. However, in many cases we are wasting much of our valuable land resources for various industrial uses. Time has come to assess the magnitude of damage we are causing our land resources through such activities and to find the alternative uses or remedies.

Sub-theme: LAND QUALITY

Soil quality is defined as the continued capacity of soil to function as a vital living system, within ecosystem and land-use boundaries, to sustain biological productivity, promote the quality of air and water environments and maintain plant, animal and human health. In short, soil quality can be defined as the "fitness for use" or "Capacity of the soil to function".

Indicators to assess land quality

Land use is an indicator reflecting how and to what extent society is responding to meet its changing needs and goals or to adapt to changing environmental conditions. About 45% of total geographical area of our country is affected by various kind of land degradation. In these degraded land area, erosion of soil caused by water flow contributes maximum to the degradation processes (about 63%) followed by acidification (about 11%), water logging (about 10%), erosion of soil by wind (about 6%) and salinization of soil (about 4%).

Since all agricultural activities are directly or indirectly, affected by how the "soil is handled", its health becomes the prime concern before one can address human and livestock health issues. Managing soil is a formidable challenge to ensure productivity, profitability and national food security.

Sub-theme: ANTHROPOGENIC ACTIVITIES ON LAND

Anthropogenic (Greek word, meaning manmade) effects, processes or materials are those which are derived from human activities. Major effects of anthropogenic activities on land resources include:

***Land degradation*:** Land degradation includes loss of top soil, physical changes like damage of soil structure (compaction), chemical changes like salinization, sodification, acidification, deposition of heavy metals and an overall declination of fertility and productivity of soil. Among the anthropogenic processes, agriculture, industrialization and urbanization all contribute significantly.

Loss of biodiversity: Biodiversity refers to totality of genes, species, and ecosystems of a region. India at present has 2.4% of land area of the world but contributes 8% species to global diversity. The Western Ghat, the Himalayas and the Indo-Burma regions are among the thirty four Hotspots identified worldwide as regards to vulnerable biodiversity resources. Biodiversity loss is a common phenomenon associated with land use and land cover change.

Green house gas load to atmosphere: Every anthropogenic activity of concern to the precious land resources leaves an imprint in the atmosphere. There has been global ecological concern for increased concentration of carbon dioxide by 31%, methane by 151% and nitrous oxide by 17 % since 1750 which is incidentally coincided with the pace of land use change enforced by industrial revolution, urbanization, large scale live stock farming and by also modernization of agriculture.

Sub-theme: SUSTAINABLE USE OF LAND RESOURCES

The world's land resources that include soil, water and vegetation are under great pressure to meet the food, fiber and housing needs of ever growing population. In addition, the land resources are also expected to provide services related to biodiversity, clean water and air and swallow vast amount of wastes produced by living beings. In nature different processes within the earth's surface generally occur in a cyclic manner thus maintaining a balance between different components of the ecosystems.

Major uses of land resource include forestry, pasture and grasslands, agriculture, housing and urban and industrial activities. The guiding principle for sustainable land management depends on ecological and economic interrelationships. The choice of land use and the practices for its sustainable management are site-specific and depend on local needs of the population. Soil is an important natural resource and its sustainable use is generally linked to agricultural management, though it performs multifarious functions. In relation to sustainable management one needs to know how agricultural management practices are influencing soil physical, chemical and biological parameters.

Sub-theme: COMMUNITY KNOWLEDGE ON LAND USE

Community based Knowledge can be described as a system of knowledge possessed by the members of a community in such a way that they themselves can put it to use, modify the same as and when required, and the knowledge is generally transmitted from one generation to another in verbal form. Often some terms like Indigenous Knowledge or Traditional Knowledge are also used to describe Community Knowledge, as if those are synonymous. Any idea or innovation that originated somewhere among some people and continued to be practiced by them for a considerably long period of time may be called indigenous.

Community based Knowledge is generally transferred from one individual to another through material transfer (seed), method transfer (water conservation technique) and capacity transfer (skill learning under teacher/father/mother) mode.

NCSC is a group activity, Children in a group of 2-5 form a group & select a locally relevant problem under one of the sub theme & start work. Amongst the group one child will function as group leader & responsible for making presentation other children or group member will cooperate him/her in experimenting, data collection, analysis of data, interpretation of data, drawing a conclusion & finally finding a feasible solution of the problem.

In all states there is a state organising committee & similar pattern is at district level also. A list of state coordinators has been given here. You may contact them to find out the contact address of district coordinators. The first official CSC is organised at district level. If you need any specific information with regard to CSC in your state or at national level event or at Indian Science Congress you may also contact the following:

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If you want to know more about Vigyan Prasar, its publications & software, besides the next moves of VIPNET Science Clubs, please write to us at the address given below:-

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Sensitization Workshop for Formation of Science Clubs in Tripura

Vigyan Prasar in association with Tripura State Council for S&T (TSCST), Itanagar organized a 2-day Sensitization programme with an objective to form the Science Clubs in this State and initiate some science popularisation activities in a planned manner for next two years. It is to be mentioned

Inaugural Session in Progress

that TSCST has initiated and developed a structure to form about 500 Science Clubs in higher Secondary classes of Tripura with an aim to promote inquisitiveness and inculcate scientific temperament among them. The workshop was a collaborative effort to associate newly formed

Technical Session in Progress

science clubs with VIPNET and develop a road map of activities for next 2-years in the State. The workshop was organized on June 13-14 at Pragya Bhavan, Agartala. During the workshop about 74 teachers representing 70 schools from 4 districts of Tripura participated. During the inaugural session, M.L. Roy, Member Deputy Secretary of TSCST was also present and assured to provide necessary support and cooperation for the

Technical Session in Progress

Demonstrations of Activity by Dr. J.P. Roy Choudhary

activities of the clubs. Shri Sriram Tarnikanti, Commissioner & Secretary of Department of Science, Technology and Environment of Tripura inaugurated the workshop. During the technical session, the participants were briefed about the programmes and activities of VP and the benefits which the clubs would get by becoming a member of VIPNET Club. They were also briefed by Prof. A.K. Misra of Guwahati University on taking up some activities based on method of science with social relevance. The demonstration of a few low-cost/ no-cost activities were also conducted by Prof. J P Roy Chowdhury of Tripura Science Forum. The participants were also assigned the task to work out the activities to be taken up by the clubs of Tripura as part of International Year of Chemistry 2011 and Campaign on Transit of Venus 2012, which will occurred on June 6, 2012.

The second day was devoted on finalizing activities and sharing of resources for two programmes mentioned above. All the newly

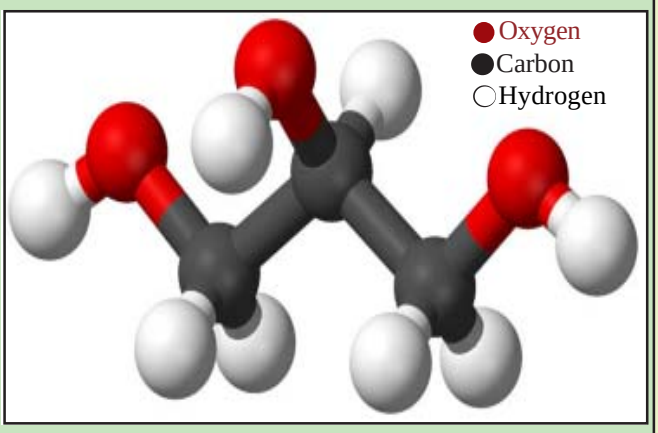
Photo Session

formed clubs have agreed to take up the activities suggested by Vigyan as part of International Year of Chemistry 2011. The workshop was concluded with a brief valedictory function in which Shri Sahadeb Das, Director, Department of School Education, Govt of Tripura , was present. All the participants were given a certificate of participation. As a result of this programme, about 70 VIPNET Clubs have been formed in the State.

चित्र पहेली- 62 / Photo Quiz - 62

This year the photo quiz will be based on chemistry as part of IYC 2011

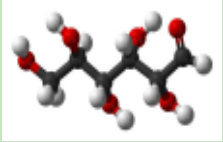
- Identify the Structural model of a Molecule given in the picture? It belong to alcohol family of organic compound having molecular formula. It absorbs water from the air; this property makes it valuable as a moisturizer in cosmetics.
- चित्र में दिये गए एक अणु की संरचना के मॉडल को पहचानिए? यह अणु अल्कोहल समूह का है, जिसका उपयोग सौन्दर्य प्रसाधनों में त्वचा की नमी को बचाये रखने के लिए किया जाता है।



- उत्तर प्राप्त करने की अंतिम तिथिः 30 अक्तूबर 2011
- ड्रॉ द्वारा चयनित विजेताओं को पुरस्कार स्वरूप विज्ञान प्रसार के प्रकाशन भेजे जाएँगे।
- अपने जवाब इस पते पर भेजें : विपनेट चित्र पहेली - 62, विज्ञान प्रसार, ए-50, सेक्टर 62, नोएडा-201 309 (उत्तर प्रदेश)
  VIPNET Photo Quiz , 62, VIGYAN, PRASAR, A-50, Sec. 62, Noida-201 309 (U.P.)

Correct Answer of Photo Quiz 57

Glucose



Glucose is the most common carbohydrate and is a major energy source in most organisms, from bacteria to humans. Glucose is one of the main products of photosynthesis.

Glucose, an aldohexose is a monosaccharide. It is a carbohydrate that cannot be split into smaller units by the action of dilute acid. Like other monosaccharides glucose is optically active. Most naturally-occurring glucose is dextrorotatory, in short, D-Glucose. It is often referred to as dextrose monohydrate, or, simply dextrose. The mirror-image of the molecule, L-glucose, cannot be metabolised by cells in the biochemical process.

NAME OF THE WINNERS: -

(This month we have not received any correct answer, so no prize is given for the photo quiz no. 57 to any one.)

Chemical Terminology Puzzle 16

H	A	L	O	G	E	N	S	S	E	F	G	H	J	T	Y
F	I	H	R	T	D	F	R	T	T	Y	S	F	C	C	I
I	S	S	I	E	S	W	C	E	R	S	I	D	O	F	S
D	I	S	O	M	E	R	S	D	E	R	T	D	M	D	S
S	D	F	E	T	R	T	E	W	S	C	B	G	P	T	Y
S	R	T	Y	U	O	N	M	J	Y	U	D	F	O	S	E
S	D	F	G	T	P	P	E	R	T	Y	U	H	U	S	E
R	T	D	F	S	F	G	E	S	E	R	T	Y	N	S	E
E	R	I	S	O	B	A	R	S	S	D	E	R	D	S	D
F	G	O	A	I	O	D	R	R	T	D	S	D	R	T	Y
A	D	N	E	R	C	A	T	A	L	Y	S	T	S	D	E
R	S	S	S	F	G	L	R	T	F	S	D	E	Q	W	E
A	S	D	F	G	D	L	R	T	Y	U	I	H	D	F	E
R	T	F	A	L	L	O	T	R	O	P	E	S	S	E	R
D	F	G	Y	R	T	Y	W	E	R	T	F	G	H	R	T
S	D	F	G	T	Y	R	E	M	I	X	T	U	R	E	W

Clues

- Atoms having the same atomic number but different neutron number are known as:
- Atoms of different elements having same mass number but different atomic numbers are called
- One or more forms of an elementary substance is refer to :
- Compounds with the same molecular formula but different structural formulas are known as :
- A substance that increases the rate of a chemical reaction, without being part of it.
- A metallic solid solution composed of two or more elements.
- Positive or negative electrical charged atoms are called:
- Physical combination of two or more substances but not chemically united is called
- A pure chemical substance consisting of two or more different chemical elements
- Some member of Group 7 of periodic table is called.

❑ R. K. Yadav
rky@vigyanprasar.gov.in

- Last date of receiving correct entries: 30 Oct., 2011.
- Winners will get activity kit/ books as a prize.

Please send your entries to:-

Chemicals Terminology Puzzle-16, VIPNET News, Vigyan Prasar, A-50, Sector 62, Noida-201 309 (U.P.)

The puzzle has been Designed as part of International Year of Chemistry-2011

State Tree of India Puzzle- 12

Name of the winners:

1- M.L. Snigdha (Silchar)
2- Kundan Kumar (Chapra)
3- Varan Shukla (Karnal)

Club speak

पानी की कमी पर चिंता

'पाठशाला विज्ञान क्लब', ईटगांव, जिला फैजाबाद द्वारा 'विश्व पर्यावरण दिवस' 5 जून के अवसर पर पशु-पक्षियों के लिए जगह-जगह प्याऊ की व्यवस्था की गई।

इस अवसर पर क्लब के सदस्यों ने कहा कि अगर हमें पर्यावरण बचाना है तो पशु-पक्षियों को बचाना होगा। उन्होंने कहा कि पृथ्वी पर तीन चौथाई भाग में जल है फिर भी पीने लायक साफ पानी की कमी है। क्लब के सदस्यों द्वारा पानी की कमी की ओर ध्यान दिलाते हुए यह भी बताया गया कि सन् 1951 ई. में देश में प्रति व्यक्ति पानी की उपलब्धता 5177 घन मी. थी जो अब घटकर 1650 रह गई है। इसको लेकर क्लब के सदस्यों सहित उपस्थित लोगों ने चिंता प्रकट की।

जागरुकता अभियान

'युवा विज्ञान क्लब', राजगढ़ मध्य प्रदेश द्वारा 31 मई 'विश्व धुम्रपान निषेध दिवस' के अवसर पर धुम्रपान निषेध हेतु अभियान चलाया गया।

इस अवसर पर क्लब के सदस्यों द्वारा बताया गया कि "राजगढ़ में कैंसर की बीमारी अधिक फैल रही है इसी के दृष्टिगत् हम यह अभियान चला रहे हैं"।

साथ ही क्लब के सदस्यों द्वारा 5 जून 'विश्व पर्यावरण दिवस' के मौके पर भी स्थानीय बाण गंगा नदी की साफ-सफाई का कार्य भी किया।

क्लब द्वारा आगामी कार्यक्रम के रुप में वर्षा ऋतु के समय अधिक से अधिक पौधें लगाने का संकल्प भी लिया गया।

कार्यक्रम में मुख्य रुप से क्लब के समन्वयक पराग गुप्ता एवं पर्यवेक्षक/सलाहकार अनुराग ने महत्वपूर्ण भूमिका निभाई।

World Environment Day Celebration

Karonsia Vipnet Club, Sirsagani, Firozabad celebrate, 'World Environment Day' on 5 June, 2011 at Dot's Public School, Sirsagani. More than 100 students participated in this event.

Hands-on-Activity

Dhanvantri Science Club Meerut, Uttar Pradesh organized a series of programme during January to June, 2011. The activities comprised of Ketchup Experiment, how to make a periscope, how to make a pin hole camera, how to make a kaleidoscope, lighting fire without matchsticks and using alum to purify water etc.

Seminar on Safe Drinking Water

Aadharshila Science Club, Chandpur, Uttar Pradesh organized a seminar on Safe drinking Water on 27th February, 2011. In this seminar all the member of the club participated.

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