

SCIENCE CENTRE NEWS LETTER

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SCIENCE CENTRE

Volume 4, Issue 01

WHAT'S NEW IN SCIENCE

Beneficial skin bacteria protect against skin cancer

Science continues to peel away layers of the skin microbiome to reveal its protective properties. Researcher from the San Diego School of Medicine have published study report in Science Advances, University of California on a "potential new role for some bacteria on the skin: protecting against cancer."

"We have identified a strain of staphylococcus epidermidis, common on healthy human skin, that exerts a selective ability to inhibit the growth of some cancers," said Richard Gallo, MD, PhD, Distinguished Professor and Chair of the Department of Dermatology at UC San Diego School of Medicine. Further he said "This unique strain of skin bacteria produces a chemical that kills several types of cancer cells but does not appear to be toxic to normal cells." The team discovered the S.epidermidis strain produces the chemical compound 6-N-hydroxyaminopurine (6-HAP).



Mice with S.epidermidis on their skin that did not make 6-HAP had many skin tumors after being exposed to cancer causing ultraviolet rays (UV), but mice with the S.epidermidis strain producing 6-HAP did not. 6-HAP is a molecule that impairs the creation of DNA, known as DNA synthesis and prevents the spread of transformed tumor cells as well as the potential to suppress development of UV-induced skin tumors. Mice that received intravenous injections of 6-HAP every 48 hours over a two week period experienced no apparent toxic effects, but when transplanted with melanoma cells their tumor size was suppressed by more than 50 percent compared to controls.

Melanoma is the most serious form of skin cancer that starts in the pigment-producing skin cells, called Melanocytes.

Courtesy : Millennium School, Dandi Road, Surat

SCIENTIST OF THE MONTH

Benjamin Peary Pal

Benjamin Peary Pal was born on May 26, 1906 at Mukandpur, Punjab. He did his B.Sc from Rangoon University, Burma (Myanmar) in 1928. He did his Ph.D. from Cambridge University in 1932. Dr. Pal did distinguished scientific work in the breeding of disease resistant varieties of wheat. NP- 809 is one of the wheat bred by him, which is a landmark in the history of wheat- breeding program. It unites desirable agronomic character and high grain quality with substantial resistance to the three destructive wheat rusts and loose smut. His contribution towards potato-breeding work has been immense. In



developing and modernising research facilities

in the Indian Agricultural Research Institute, Dr. Pal was a significant contributor. Dr. Pal received the Rafi Ahmed Kidwai Memorial Prize in 1957. He received the Padma Shri in 1958, the Padma Bhushan in 1968. He was elected a Fellow of the Royal Society (FRS) in 1972. He was a bachelor and donated his property to the Indian Council of Agricultural Research. He was awarded Aryabhata Medal in 1982 and the Padma Vibhushan in 1987. He was the President of the Agricultural Society of India and the Vice-President of the Rose Society of India.

Courtesy : Millennium School, Dandi Road, Surat



Timings

Tuesday to Friday
9.30 am to 4.30 pm

Saturday - Sunday
& Public Holidays
11.00 am to 6.30 pm

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SCIENCE FACTS MAY 2018

1st May	International Worker's Day.
3rd May	World Press Freedom Day. (By U.N.)
3rd May	International Energy Day.
5th May 1961	"Freedom 7" the first piloted Mercury space craft launched by America.
8th May	World Redcross Day.
11th May	National Technological Day.
11th May 1998	India conducted nuclear tests at the Pokhran range in Rajasthan Desert.
12th May	International Nurses Day
13th May 1857	Sir Ronald Ross (Inventor of medicine for Malaria) was born.
14th May 1686	Daniel Gabriel Fahrenheit (inventor of Thermometer) was born.
14th May 1796	Dr. Edward Jenner tested his hypothesis first time on a eight years old boy.
16th May 1831	David Edward Hughes (inventor of carbon microphone & teleprinter) was born.
17th May 1749	Sir Edward Anthony Jenner (Inventor of smallpox vaccine) was born.
18th May	World AIDS Vaccine Day.
18th May	International Museum Day.
19th May 1910	Halley's Comet brushes the Earth with its tail.
19th May 1971	Soviet Union had sent "Mars-2" for journey to Planet Mars which was crashed land of the Mars.
24th May 1844	First telegraphic message was sent by well-known Scientist Samuel Morse.
30h May 1971	America launched space craft "Mariner -9" to Planet Mars.
31t May	World No Tobacco Day (by U.N.).

U. N. : United Nations

Ans:- 1.c, 2.d, 3.c, 4.b, 5.b

KNOW THE EXHIBITS AT FUN SCIENCE GALLERY

ENERGY BALL

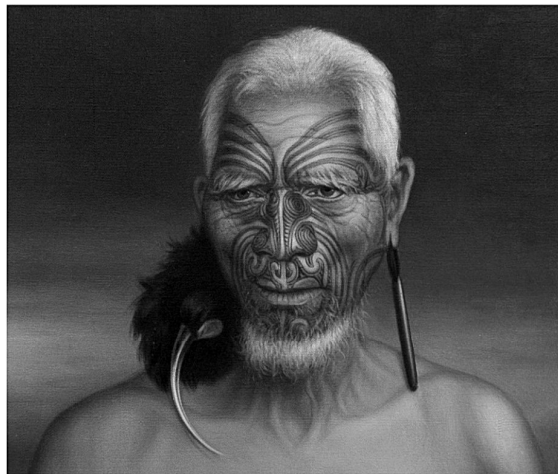
Here is a maze of circuitous paths along which "energetic" balls roll and performs an acrobat of circus. They turn wheels, hit gongs and balls, create music and sometimes fall from a height but only to bounce back for another round of performance. As the balls are lifted to the top by a motorized mechanism and released, they acquire potential energy that depends on the height through which they are raised. Once these energized balls starts rolling down the different paths of the maze, their potential energy converted into kinetic energy, which in turn gets converted to other forms of energy as the balls perform different works in their circuitous journey. Part of their energy is also lost due to friction.



SCIENTIFIC QUESTION

What is the art of tattooing?

The art of tattooing goes back to very times. It was famous mainly among the East Indians, Japanese, Chinese and Egyptians. A lot of religious and social significance was attached to tattooing. Among some people, tattooing has been used to designate mourning. Among others, young girls were not considered ready for marriage, until they have been decorated with fancy tattooing. Warriors tattooed themselves in order to show their courage and also to look more frightful to their enemies. In spite of these reasons, the main reason behind tattooing was body decoration. Maoris of New Zealand used to cover their faces with very complicated tattooed patterns. In Japan, people used to tattoo chrysanthemums, dragon's faces and whole landscapes on their bodies. Tattoo design used to take the place of clothing for some of the Japanese. The Red Indians used tattooing as a way



of identifying themselves with certain tribes. Tattooing is done by pricking the skin in dots and lines

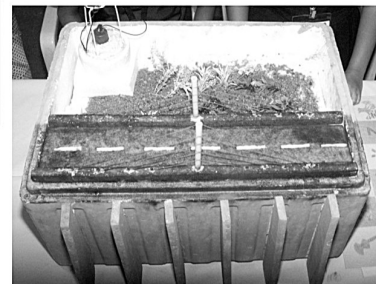


with a sharp instrument, like a needle of steel, shell or bone. Then colouring matter is put in to form a design. In some countries, the art of tattooing still exists. Tattoos fall into three broad categories: purely decorative (with no specific meaning); symbolic (with a specific meaning pertinent to the wearer); pictorial (a depiction of a specific person or item). The American Academy of Dermatology distinguishes five types of tattoos: first traumatic tattoos, also called "natural tattoos", that result from injuries, especially asphalt from road injuries or pencil lead; second amateur tattoos; Third professional tattoos, both via traditional methods and modern tattoo machines; Fourth cosmetic tattoos, also known as "permanent make-up"; and last medical tattoos.

Courtesy :
Millennium School, Dandi Road, Surat

SCIENCE PROJECT

Surat Municipal Corporation in collaboration with Surat Smart city Development Ltd. had organized "Science Fair" at ground floor of Art Gallery, Science Centre, Surat from 21st to 22nd July 2017. 'Shri Vasudev Smart Primary School No.4' presented their project on 'A Precautionary Model about Flood'. The aim of the project is to alert people to the situation of flood. The principle of the project is to convert Kinetic Energy into Sound Energy. According to the Model, the water is filled in one container through the pump. The plaque is going up when the water level is raised. One another plaque is fixed at the top. at the time of the flood, when the water level reaches the danger level, the copper plaque is coming into contact with the fix plaque and siren sounds which indicates the dangerous situation of the water level. Thus, the model can be used as precaution at the time of the flood.



SCIENCE QUIZ

1. At which temperature the density of water is maximum?

- a. 100°C b. 0°C c. 4°C d. 273°C

2. What is the reason behind decrease in the boiling point of water at higher altitudes?

- a. high temperature b. low temperature c. high atmospheric pressure d. low atmospheric pressure

3. Which method can be applied to determine purity of a metal?

- a. Boyle's law b. Pascal's law c. Archimedes principle d. Newton's law

4. What is the purpose of using Diode?

- a. amplification b. purification c. modulation d. demodulation

5. Who invented Electron Microscope?

- a. Galileo b. Knoll and Ruska c. Robert Koch d. Leeuwenhook

SCIENCE CENTRE

Science Centre forms the main part of the entire complex; it displays thematic galleries in the field of Science and Technology. The ground floor of Science Centre showcases 3D Theatre and Souvenir Shop. The first floor of Science Centre showcases Planetarium, Fun Science Gallery and Power of Play Gallery and second floor of Science Centre showcases Diamond Gallery, whereas Entering into Space, Textile Gallery, Cosmos Gallery and Polar Science Gallery are under development.

3d Show	Tuesday to Friday (Time)	Saturday, Sunday & Holidays (Time)
English	09:15, 11:20, 12:00, 02:40, 04:00	11:20, 12:00, 02:40, 04:00
Hindi	10:00, 10:40, 12:40, 01:20, 02:00, 03:20	12:40, 01:20, 02:00, 03:20, 04:40, 05:20, 06:00
Science Centre + Planetarium + Museum + Diamond Gallery		
Above 18 Years	Rs. 100	
3 Years to 18 Years	Rs. 65	
Science Centre + Museum + Diamond Gallery		Planetarium
Above 18 Years	Rs. 60	Tuesday to Friday
3 Years to 18 Years	Rs. 40	Saturday, Sunday & Public Holidays
Science Centre + Planetarium + Museum + Diamond Gallery + 3D Show		09:30 to 10:20 English
Above 18 Years	Rs. 120	10:30 to 11:20 Gujarati
3 Years to 18 Years	Rs. 80	11:30 to 12:20 Gujarati
Planetarium		12:30 to 01:20 English
Above 18 Years	Rs. 50	01:30 to 02:20 Gujarati
3 Years to 18 Years	Rs. 40	12:30 to 01:20 English
3D Show		01:30 to 02:20 Hindi
Above 18 Years	Rs. 60	02:30 to 03:20 Hindi
3 Years to 18 Years	Rs. 40	03:30 to 04:20 Gujarati
		04:30 to 05:20 English
		05:30 to 06:20 Gujarati