

Our Science Center Activity

- ISO/ICO competitive test
- Computer lab, VTP, KVK
- Braingym
- Library - books and toys
- Digital Education for std 8th and 9th of Science, Maths and English
- Sections like Museum Auditorium, Physics, Chemistry, Biology lab



- Outdoor innovative modern models based on science principles

We organized a webinar on plant identification, value and its spread. In which famous botanist and writer from Bhavnagar Dr. Mittalia guided on the identification, introduction, characteristics and usefulness of the plants seen during the monsoon.



- Natraj park and solar park updated with science based new models to provide knowledge to the students.
- And for many more activities visit our website:
www.sciencecity.co.in

: Subscription :
 Rs. 200 for 12 Books
 Rs. 20 for 1 Book

: Proprietor :
Printer & Publisher
 Behalf of
 Monghiben Balvihar Trust
Bipin Shah

: Publication & Printer :
 Monghiben Balvihar Trust
 Ambawadi, Bhavnagar
 Phone : (0278) 2209220

email
 sciencecity.bhavnagar@gmail.com

Facebook : is.gd/fbscty
 www.sciencecity.co.in

: Editor :

Bipin Shah

: Editorial Committee :

Dr. Arun Dave
 Dr. Dipak Shukla
 Dr. Hitesh Shah
 Dr. Rasiklal Kava
 Mr. Shivkumar Iyer
 Mr. Ashwin Prajapati

: Computer Work :

Mr. Ravi Solanki

Advisory Committee

Dr. Anil Kane
 Dr. Munikumar Mehta
 Dr. Anamik Shah

In association with
 Vikas Vartul Trust



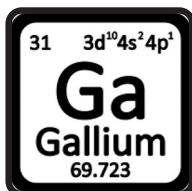
Periodic Table

4.



Resonance :
Let's develop
kitchen garden

8.



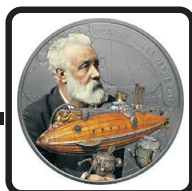
Alchemist :
Metal that melts
in your hand

24.



Health Bytes :
Super Food -
"Turmeric & Ginger"

28.



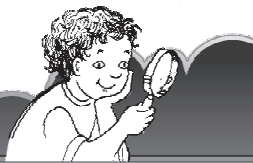
Nature :
Mother of Science -
Science story

36.



Jr.Kalam :
Solar Umbrella

Jr. Scientist	06	Treasure	23
Mathematician	07	SciFair	26
Olympiad	10	Nano News	27
Cyber	11	Origami	30
Green Earth	12	SciFiction	32
Inspirations	14	Maths Model	34
Focus	15	IQ Booster	35
Vitamin	16	Teacher's bridge	37
Brain X-Ray	17	Inventor	38
Experiment	18	Rainbow	40
Curiosity	20	SciTech	41
Good Food	21	Prophet	42



Resonance

Let's develop kitchen garden

In today's competitive world, we are eating chemicalized grains, fruits and vegetables. These are sprayed with pesticides, chemical fertilizers and hormones to get more production. This has led to the development of various diseases and also land and air pollution.

To save life, let's grow organic food and contribute to build a healthy society. Nature has given us a lot but, in the lure of more production we are breaking its system.

According to the Medical Council of India, it is recommended for every person to consume 175 grams of fruits and 300 grams of vegetables (90 gm of tubers, 90 gm of leafy vegetables, 120 gm of green vegetables) daily to live a healthy and wholesome life. But people are not taking it properly, that is why we cannot live a healthy and wholesome life. Kitchen garden is an excellent idea to cope with this problem.

The cultivation of vegetables, fruits and herbs in roof, balcony or in the free areas besides our home is called kitchen garden. In these areas, a variety of seasonal vegetables can be grown in a well-planned manner. Even those who do not have such free areas can develop them in pots, wooden box or large capsule. In big cities people live in flats. They can organize it on their balcony, common

gallery or on the terrace. Let's see the requirement for a kitchen garden...

Soil / Land: Soil is very important for kitchen garden. It can be kept upto 20-30 cm in the pots, box or capsule in which we are going to cultivate. Generally, good soil is prepared by mixing black, red or loamy soil, silt and appropriate amount of compost in the soil.

Seeds: Contact trusted shops, government agricultural offices and farmers for indigenous seeds. Some seed kits are made and distributed by Science City. (contact: 0278-2205220).

Sunlight: Make special arrangements so that every vegetable plant can get adequate amount of sunlight.

Water: Give proper amount of water to each plant. Water the plants by observing their leaves. Rainwater is excellent for

plant. The drip irrigation can also be used.

Selection of vegetables: Generally, plant type and vine type plants should be planned for the kitchen garden. Support vines by growing them at the edges or corners. Plant type vegetables should include tomato, eggplant, cabbage, cauliflower, spinach, fenugreek, lettuce, chilly, okra, cluster beans, long beans etc. If you have a place to grow trees, you can grow Drum stick, sweet neem, lemon, sapodilla, banana, guava, papaya etc.





Usually most of the vegetables are made from seeds or sapling. Good sapling can be obtained from the nursery or the farmer.

☞ **Winter:** Eggplant, Tomato, Chilly, Carrot, Radish, Cabbage, Cauliflower, Sweet Potato, Onion, Garlic, Coriander, Fenugreek - Sowing time October-November.

☞ **Summer:** Okra, Cluster beans, Eggplant, Bottle gourd, Ridge gourd, Long beans, Bitter gourd, Amaranthus- Sowing time February-March.

☞ **Monsoon:** Cucumber, Cluster beans, Long beans, Tomato, Eggplant, Ridge gourd, Mooth gourd, Bean pods, Fenugreek, Bottle gourd, Coriander, Pointed gourd, Mint, chilly, Ginger etc. can be grown in monsoon season. This should be planned before the rains, i.e. in July or early August

☞ **Pest control:** With the development of kitchen garden, home-made garlic-onion paste should be dissolved in water. And spray it instead of pesticides to control the disease.

Salt water can be used in the same way. This salt water can be prepared by adding 2 teaspoons of salt in 4 liters of water and sprinkled on the plants. Grow organic vegetables using neem oil, grass / cow urine.

Tools Needed for Kitchen Garden: Plow

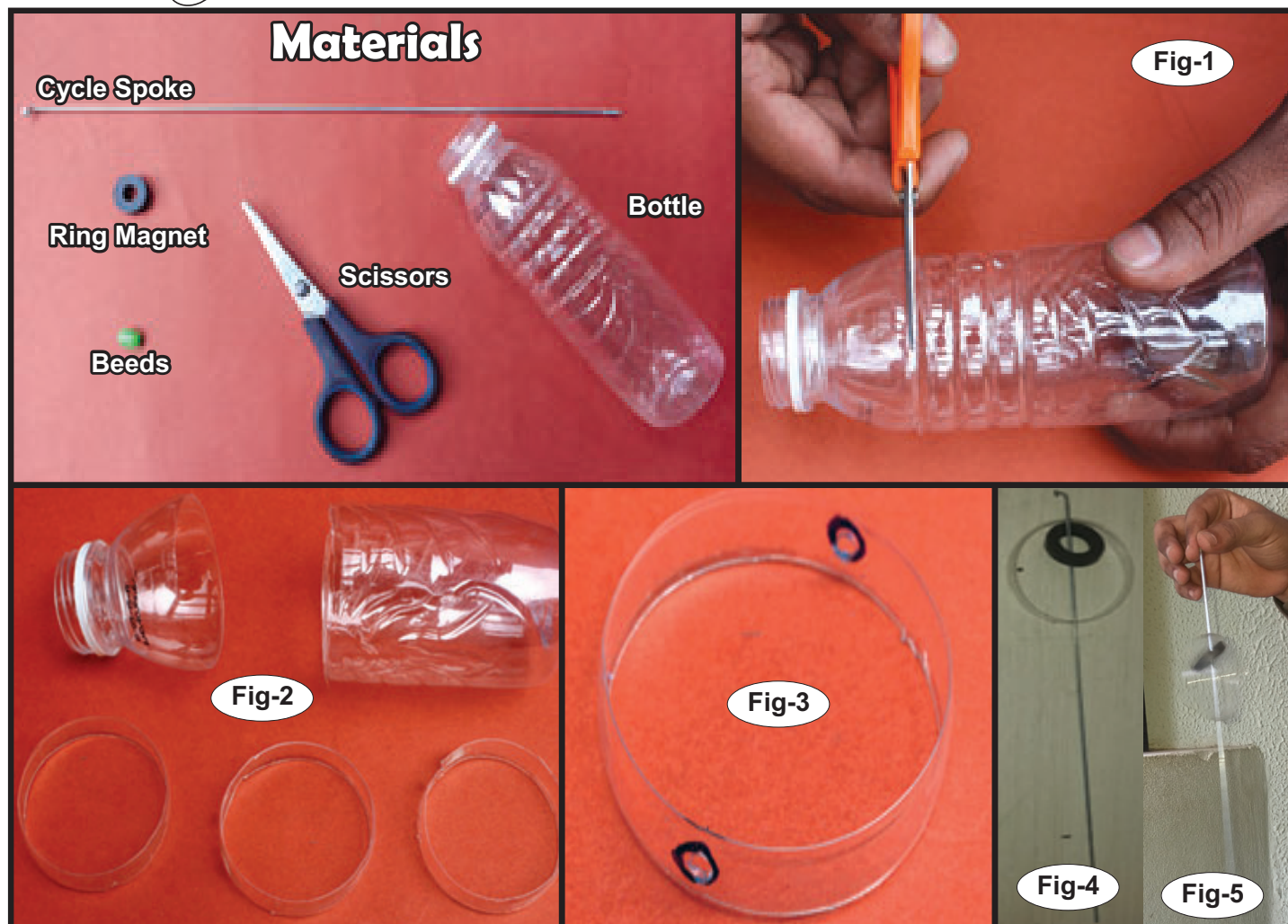
Benefits of Kitchen Garden:

- Utilization of spare time of all age group family members.
- Organic vegetables to create a healthy family.
- Environmental awareness among the children.
- Children get closer to nature and develop power of observation.
- Children can cover their curriculum like parts of plant, germination of seed, etc.
- Awareness about diversity of plants.
- Helps to save money.
- Since plants are the only natural source of oxygen, more pure oxygen can be obtained around us.



Jr. Scientist

Magnetic Loop spinner



1. Take an axis of bicycle, a ring magnet, scissors and a bottle with circular groove as shown in the picture. If you do not have bottle, you can also take a 1×30 cm strip of paper.
2. Cut the grooves of the bottle using scissors as shown in the second picture and cut it into a circular shape so that a ring will be prepared as shown in picture 2A. If you are using a paper strip, make a ring by connecting both the ends of the strip.
3. Make two holes in the ring at 180° as shown in picture 3.
4. Pass the axis of the bicycle through one hole of the ring and then through the ring magnet as shown in the 4th picture and then through the other hole of the ring.
5. Now give a little force to the ring magnet as it will rotate down slowly and as a result, axis of the bicycle vibrates and that is why the ring comes down in a circular motion.

What change will happen if we take an iron ring instead of a ring magnet?

What will be the result if we use bar magnet instead of ring magnet?

SE



Mathematician

Speed of light

In the early 20th century, scientists faced a problem in the field of science. This is called Photoelectric effect. When light is applied to the metal foil (thin surface), after a while, electrons start flowing from the metal strip. So, electric current starts flowing. The mystery of this was not understood by any scientist. Einstein decided to solve this problem. According to Newton's theory, light is also made up of microscopic particles and according to Christian Huygens' theory, light is also made up of waves. According to the Max Planck's theory, the light comes in the form of tiny particles of energy. Einstein found the solution of this problem by accepting the theories of all these three scientists.

This invisible phenomenon is explained by the example of the game of billiards. As a marble ball moves, it collides with another marble ball with the energy it has and the other marble ball moves ahead. Similarly, when a particle of light hits the surface of an object, the electron of the metal particle moves from its place and pushes the electron beside this. Thus, the pressure of the light particles constantly increases and that is why an electric current is generated. In air, the particles are scattered so light uses less energy during travelling while the light uses


more energy in solid and liquid because the particles present in these are closer.

Newton considered time as a different dimension from space but Einstein said that time is the 4th dimension. Length, width and height are the other three dimensions. Einstein's first hypothesis was that the speed of light is constant, i.e., the light would cover a certain distance in a second.

Einstein proved this by experiments and examples that time is not different from space and that space also has to depend on time. He gave equations correlating space and light. And also gave the rule of kinetics that the motion of any object in

the universe could not be greater than the speed of light. The speed of light is the limit of speed, but currently scientists claim that light itself has broken its own limit.

Looking at Einstein's well-known formula in relation to space, $E = mc^2$ (Energy = Mass (Speed of light)²) shows the relation between time and space.

Mass = Energy and Energy = Mass. Energy is obtained by transforming the mass. Energy is converted and mass is obtained. Friends, there is a good question in science is, "Does light have weight ?? If yes, how can it be weighed? And if not, why doesn't light weigh? Think and try to solve the problem. 



Christian Huygens



Max Planck



Alchemist

Metal that melts in your hand

Friends, you must be learning about metals in school. We also use a lot of metals in our daily lives. Do you know any metal that can melt in your hand? Today we will talk about that metal, gallium.

Gallium was discovered by the French chemist Paul Emile Lecoq de Boisbaudran. While examining the material separated from the zinc blend by observing its main spectral lines, he observed something different and immediately isolated that and studied its properties. This was exactly like Ica-aluminum that Russian chemist Dmitry Mendeleev predicted a few years ago.

Although it is abundant on the surface of the earth, it is not found in the free state. It is

extracted as a by-product of zinc blends, iron pyrites, bauxite and germanite.

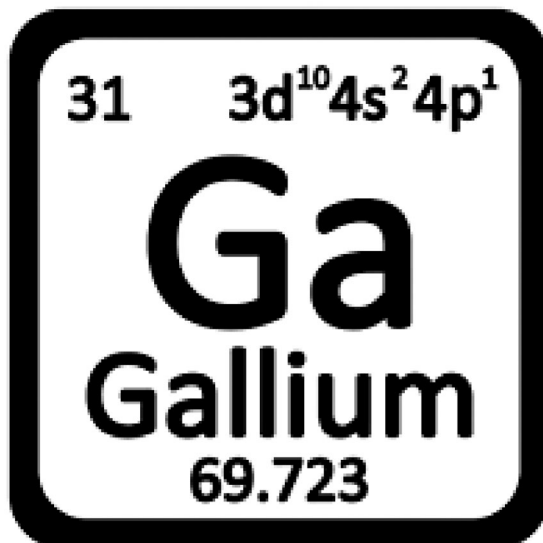
It is white like silver and soft which can be cut with a knife. Due to oxidation, it appears slightly bluish in color. According to Periodic Table.com, by weight, gallium is 0.0019 % of the Earth's crust. It is easily achieved by smell. The largest producers of gallium are Australia, Russia, France and Germany.

Its symbol is Ga, atomic number is 31 and atomic weight is 69.723.

Its density is 5.91 gm / c^3 has a melting point of 29.76°C . That is why if you take a piece of gallium in the palm of your hand it melts due to the heat of the palm. It is then kept back on

surface and solidified again. It has two isotopes, Ga-69 and Ga-71. It is a brittle metal that can be easily broken.

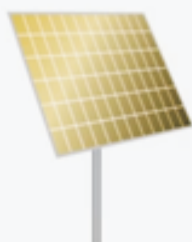
Gallium is a reactive element. At high temperature it combines with metals. And it reacts with both



which makes gallium arsenide solar panels the most efficient in the world at converting sunlight into electricity.

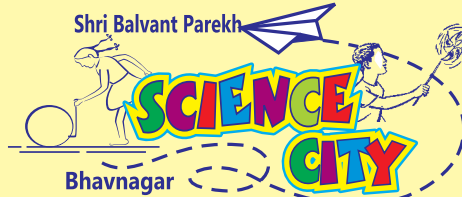


Gallium arsenide



Silicon





For
notice
board

for students of standard 4th to college

Objectives : ISO-ICO exams develop children's attitude towards science - maths, Computer and logic and cultivate creativity amongst them and help them in comprehensive development.

To get ready for competitive exams like UPSC, GPSC, RBI, SBI, IPS, SSC, LIC, INDIAN RAILWAY etc., gain confidence and achieve success.

ISO fees: Rs.70

Date : 03-12-2020 (changes can be made)

Section : 7 section of std 4th to 10th

Time : 90 minutes - 10:00 am to 11.30 am

Structure : Science-Environment based MCQ

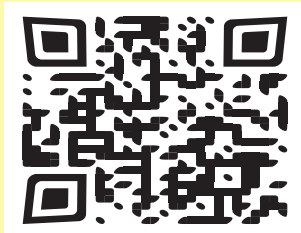
ICO fees: Rs.70

Date : 10-12-2020 (changes can be made)

Section : 7 section of std 5th to 12th and college

Time : 90 minutes - 1:30 pm to 3.00 pm

Structure : Computer, IT, IQ and Maths based MCQ



SCAN ME



Benefits

1. Rs.2.50 lakhs prizes to 721 students.
2. One-year free Subscription of Science Express as consolation prize.
3. Winners will get prize cheque and colourful certificate will be given to all the participants.
4. Curriculum based workbook will be given for preparation.



Collaborators

Pidilite Industries Limited



**Please see
the website for
online
registration**

Phone no-2205220/2206220, E-Mail:sciencecity.bhavnagar@gmail.com, Website : www.sciencecity.co.in , Facebook : is.gd/fbscty

September - 2020
Register under RNI No.
Price ₹20, Annual Subscription ₹200

Posted On 20th day of Month
Postal Regd. No.

The advertisement features a vibrant, cartoonish background with a blue sky and green hills. At the top right, the Pidilite logo is visible. A central yellow sign reads "Rangeela CREATIVE CLAY". Below it, a wooden sign says "Learn as you play with Creative Clay!". The main product is a pink "I love animals" pack, priced at ₹100, which includes a yellow rolling pin and various animal-shaped cutters. Other packs shown are the "Marine pack" (₹70), "Dino pack" (₹35), and "Fruit pack" (₹35). A banner states "Other exciting themes also available!". The background is decorated with various animals and objects like a giraffe, a dog, a turtle, a bee, a hummingbird, and a bunch of grapes.

Science EXPRESS

SHRI BALVANT PAREKH SCIENCE CITY
Ambawadi, Bhavnagar - 364002
www.sciencecity.co.in