

PANCHSHEEL PUBLIC SCHOOL
SESSION 2024-25
ENTRANCE EXAMINATION



CLASS - 6
SYLLABUS
STUDY MATERIAL
SAMPLE PAPER

SCIENCE

SYLLABUS



- 1) LIFE ON EARTH
- 2) SPACE TRAVEL
- 3) THRIVING WELL NESS
(Public Hygiene)



EARTH





Life on Earth.

Have you ever noticed all the things in our surrounding and how we are dependent on them in our day to day life. The things either biotic or abiotic which surround us is considered as our environment. The natural surrounding in which living things grow, developed and survive make up the environment. If surroundings are clean, then our environment is healthy. A clean environment is essential for healthy living. Any damaged to the environment will directly or indirectly affect us and other living beings such as plants and animals.



Once Sunny and his friend Tony was visiting in a park and while roaming here and there they have observed a vast change in the environment in the recent years.

Sunny:- hey Tony have you noticed extensive construction and expansion of towns and cities building roads and many other things which are responsible in the destruction of environment.

Tony:- oh yes my dear friend I have noticed that thousands of trees have been cut down to accommodate urban demands. Many of our activities are adversely affecting the environment by adding waste.

They both were worried about their surroundings and start observing all the changes in their surroundings minutely.

Tony:- Sunny I want to ask you one thing, what actually we can consider as waste?

Sunny:- we discard many items that seems useless to us. Such useless and unwanted material that is discarded by human is known as waste.

Tony:- Sunny can we categorise the waste according to their types?

Sunny:- yes of course there are two types of waste

1. Biodegradable waste. 2. Non biodegradable waste



Biodegradable waste - the waste that easily rots is called biodegradable waste. It consist of organic waste which gets broken down into simpler particles by the action of decomposers. For example, vegetable peels, paper bits, dry leaves, tissues, egg shells fruit peels, hairs etc

Non biodegradable waste- the waste that does not rot is called a non biodegradable waste. It consist of inorganic waste that cannot be broken down into simpler particles by the action of decomposers. For example, plastic and glass bottles, old cells batteries, polythene bags etc.

Tony :- Sunny can we show that biodegradable waste rotten soil while plastic does not?

Sunny:- Why not we can do this. If we will put waste material in a plastic cover and on 2nd place we will keep the waste material in a wooden box and we will keep them undisturbed inside the soil for some days so the observation can show us that which one is biodegradable and which one is not biodegradable.

Tony:- How?

Sunny:- The waste material in the wooden box is no longer recognisable as it has been decomposed and looks like a soil. The waste kept in plastic cover has not decompose as much as the waste kept outside.

Tony:- Ohh....then non biodegradable waste is a matter of big concern.

Sunny:- There are various steps by which we can manage non-biodegradable waste. We can apply 3R rule in our day to day life.



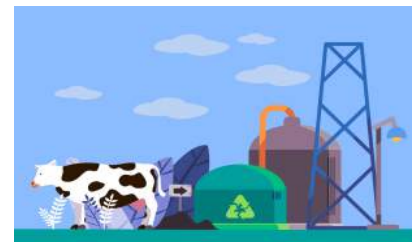
- Avoid using plastic bags, carry your own cloth bag.
- Use both sides of paper.
- Avoid using disposable plastic items.

- We can use empty jam containers to keep pickles, spices etc.
- We should choose to buy things like bottles for sovereigns and juices rather than metal cans.
- Every year many trees are cut down to produce paper. By recycling paper we can save many trees in a year.
- The broken and discarded glasses deliver to glass factories. Hair glass is melted on a high temperature and used to make new glass products.
- To recycle plastic firstly discarded or waste plastic is heated at certain temperature and converted into palettes. These palette are the news to make new products like buckets, bags, table, chair, etc.
- Before recycling waste matter is sold to scrap dealers. These dealers and supply metals to factories where it is melted at high temperature and is used to make new products.

Management of Biodegradable waste.

- Composting- vegetable and fruit peels and other domestic waste are converted into compost in deep pits called compost pits.

- **Vermi composting-** it involves the use of red Earth worms instead of fungi and bacteria. Earthworms are added to the waste and they breakdown the organic matter into soil like material called vermicompost.
- **The biogas is produced in a biogas plant.** Cow and buffalo dung along with agriculture remains get decomposed and produce biogas. The main constituent of this gas is methane. Methane Gas acts as an excellent fuel.

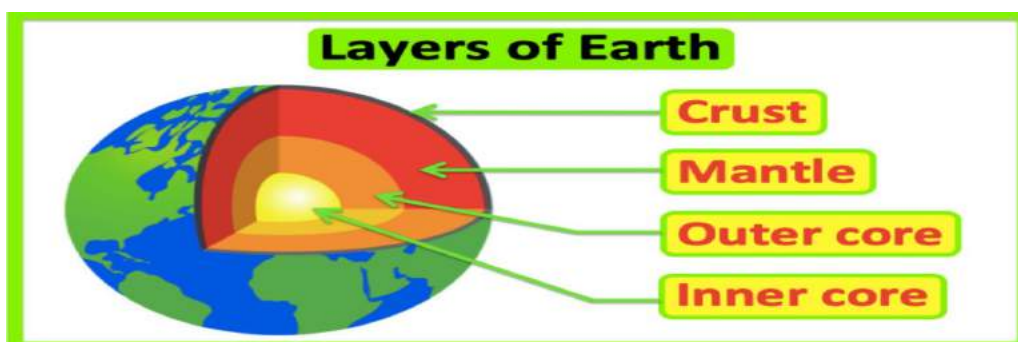


Tony:- oh thanks Sunny you have guided me a lot regarding the environment and how to save it.



Space travel

Earth is the amazing planet in the universe which is having life on its surface. Scientists believe that around 5,000,000,000 years ago the solar system was a spinning cloud of hot gas and dust. Slowly the earth cooled on the outside to form a crust, on which we live. The thickness of the crust varies from around 5 km in the ocean floor to around 70 km on the land. The next layer is the mantle which is almost 3000 km deep. The place where these plates meet each other is called a fault. When the plates move against each other, this is how an earthquake occurs.



The next layer is the hot outer core which is made up of iron and nickel. This is so hot that the iron and nickel metals are liquid. Next is the inner core which is the hottest part of the earth.

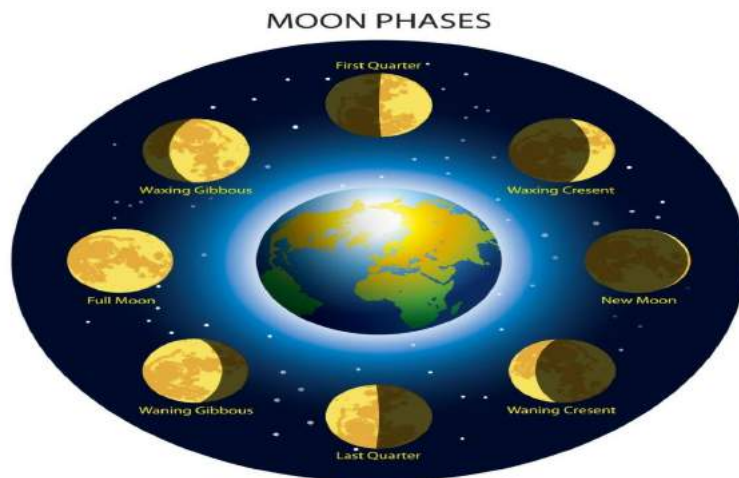
It has temperature over 5000 degree Celsius making it as hot as a surface of the Sun.

That's about Earth but isn't it fascinating when we see in the sky, at night the moon is visible to us.

Moon- moon is the natural satellite of the earth. It is lifeless place. It has no air or water. Its surfaces covered with rocks and dust. There are tall mountains at the plains of moon.



The moon takes about one month to revolve around the earth. As it revolves it also rotates slowly. It takes the moon about one month to rotate. Since it revolves and rotates at the same time the same side of the moon always faces us. One side of the moon always faces the Earth and the another side always faces away. We cannot see this side at all. The different shapes of the moon as visible to us on the earth are called its phases.



- The day when we cannot see the moon in the sky is called the new moon day.
- In the next couple of days a small portion of the side of the moon facing us get sunlight and is visible to us. This is crescent moon.
- In a week the first water moon is visible.
- In the next 3 days from then three quarter of the moon is visible to us. This is the waxing gibbous moon.
- On the 14th day the entire site facing get sunlight and we see the full moon.
- In the next 14 days the moon progressively decreases in size and the phase is rivers. After the full moon is seen the waning gibbous moon then the last quarter moon and the waning crescent moon and then finally the new moon.

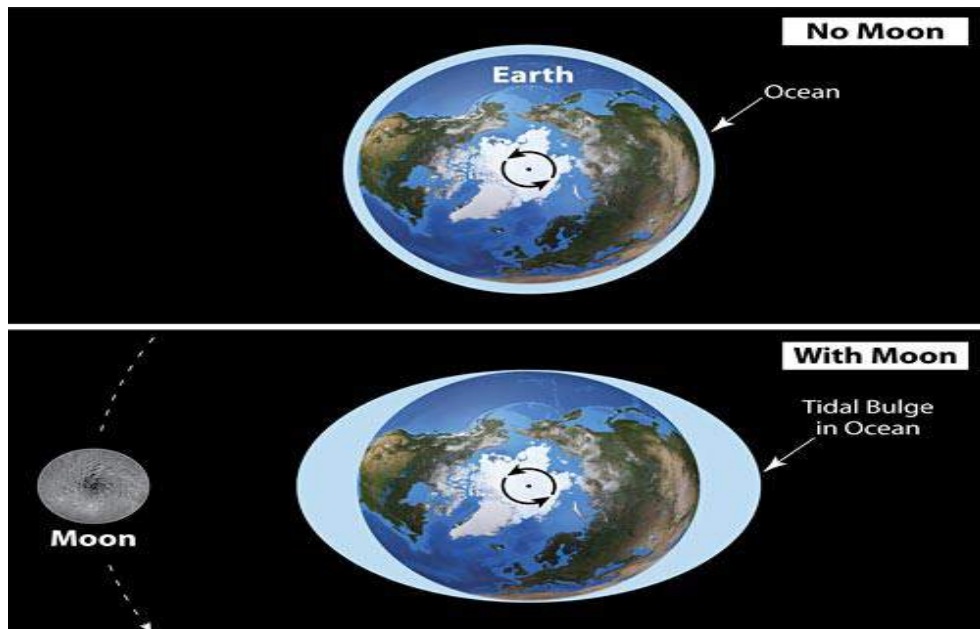


Do you know The Moon is Earth's only natural satellite.

The moon is about 1/4th the size of the earth. Like the earth it also pulls down all objects towards itself. This is called gravity. However the gravity on the moon is only about one sixth of that on the earth. This means that if you can jump 1 m on the earth you can jump 6 m on the moon. In fact if you weigh 30 kilogram on Earth you would only weigh 5 kilogram on the moon.

The moon is very quite place. Even if a big rock smash is the surface of the moon no sound can be heard. This is because sound travels in air and there is no air on the moon.

Tides are the rise and fall of the water levels in the oceans and seas. The rising of sea level is known as high tide. And the fall of the sea level is called low tide. The rise and fall the tide is known as tide cycle. The gravitational force of the moon pulls the oceans slightly towards itself. This causes a bulge or a high tide on the side of the earth closest to the moon. The sun's gravitational pull also plays a part. When the sun and moon are in the line with the earth the combined gravity cause very high and very low tides called spring tides.



In 1961 Yuri Gagarin of Russia become the first human to go to the outerspace. 8 years later in July 1969 the American spacecraft Apollo 11 landed on the moon. Neil Armstrong become the first human to step on the moon. A few minutes later is colleague Edwin Aldrine joined him. 10 more astronauts explore more between 1969 and 1972. Since the no further manned flights have been sent to the moon.

Space is a lonely and difficult place. Astronauts who go to space are exposed to high levels of radiation. Rigorous training is needed to prepare for space missions. It can take almost 2 years to be fully trained to travel to space. Astronauts undergo medical tests, physical and procedure trainings as well as training on experiments they will accomplish during their stay in space. Astronauts have to get used to wearing a space suit and staying in the confined environment, surviving on freeze-dried food and managing to follow the work schedule.

Rakesh Sharma and Late Kalpana Chawla and Sunita Williams are the astronauts of Indian origin who have travelled in space.





THRIVING WELLNESS (PUBLIC HYGIENE)

It's a perfect saying that without your health, you've got nothing going on. But for being healthy we have to stay away from any type of diseases and infection. Diseases a condition of the body that does not allow the body to function properly. So whenever a disturbance in the normal working of body occurs we call it a disease or illness.


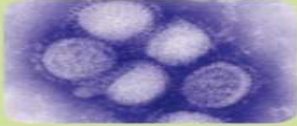


Diseases can be broadly classified into two categories.

- Non - communicable diseases
- Communicable diseases

Non- communicable diseases:- non communicable diseases are non- contagious. It means they cannot spread from one person to another. The journal caused to the deficiency of some vitamins or nutrients or malfunctioning of the body functions or organs.



Communicable diseases:- diseases that can be passed from an infected person to a healthy person in direct or indirect manner are called communicable disease. These are also called infectious diseases. Communicable diseases are caused by disease causing germs called pathogens. There also called as infectious agents. These disease causing germs are viruses, bacteria, fungi, protozoa and worms. These can only be seen through microscope so are called microorganisms or microbes.

Germ	Image	Diseases
Bacteria		Tuberculosis, Whooping cough, Tetanus, Typhoid, Diphtheria, Pneumonia, Cholera
Virus		Common cold, Influenza, Measles, Chickenpox, Polio, Rabies, AIDS, Swine flu
Protozoa		Malaria, Sleeping sickness, Dysentery
Fungi		Ringworm, Athlete's foot, Food poisoning

Spread of communicable diseases - communicable diseases can spread through an infected person or through various modes.

1. Direct mode- if a healthy person directly comes in contact with a person suffering from the disease. Diseases can also be spread through articles like towels, handkerchief and utensils used by the sick person. Diseases like chicken pox, measles and ringworm spread through direct contact.

b. Through cuts and wounds in the skin- joms can enter the body through cuts and wounds on skin and cause infection. For example, tetanus.

2. Indirect mode- infectious agents feat from one person to another through a medium. These medium can be air, food and water, vectors.

Air borne disease - Cold, tuberculosis,covid-19, diptheria.



Food and water borne disease - typhoid, jaundice and food poisoning.



Through vectors- Malaria caused by Anopheles mosquito. Dengue is transmitted by an Aedes mosquito infected with the dengue virus.

Through animals- Dogs carry virus of the disease rabies in their body, it's bite carry the disease.

Ways to prevent communicable diseases

- **We should be very much careful regarding our personal cleanliness by taking regular bath with a soap and shampoo.**
- **We should cover our nose with the tissue or a handkerchief while coughing or sneezing.**
- **We should not leave stagnant water around our house or in a coolers. This promotes breeding of mosquitoes.**
- **We should keep dust bins covered.**
- **Drinking water and food items should not be left uncovered.**

Vaccination- it is a method of introducing dead or we can disease causing germs into the body. It is either injected or given orally. These are known as vaccines. As vaccine enter the human body antibodies are formed. The antibody protect the body against the particular disease

SAMPLE PAPER

Q1. Which among the following is non-biodegradable waste?

- a. Kitchen waste b. Cowdung c. Vegetable peels
d. Plastic.**

Q2. Find out the odd one among the following.

- a. Crust b. Mantle c. Outer core d. Troposphere**

Q3. What is the meaning of non-contagious?

- a. Communicable b. Non-communicable
c. Both a&b. d. None of these.**

Q4. Which among the following is the natural satellite of earth?

- a. Sun b. Moon c. Mercury d. Venus**

Q5. Vermicompost is associated with which of the following?

- a. Earthworm b. Birds c. Both a&b d. None of these**

Q6. Vaccines when injected in the body produce.....

- a. Antibiotics b. Antigen c. Antibodies d. Allergy**

Q7. Saksham and his group of friends got a chance to visit the moon with Nasa after winning a quiz competition. Saksham is planning to play national anthem over there but one of the senior astronaut inform them it is not possible.



- a. Can you specify the reason that why it is not possible to play national anthem on moon?**
- b. Write two observation about moon's surface.**

Q8. Aysha was so worried about her surroundings because of various kinds of pollution and dirt. She was planning one campaign against that and wanted to take necessary actions against this.



Observe the above picture and suggest what steps should be taken to keep the surroundings near and clean.

Q9. Observe the figure given below and write any 5 good habits for a healthy living.

