



**Sainik School Chandrapur**  
**Holiday homework: Winter vacation**  
**Class VI**  
**Subject: Science**

1. **Working model:** 'Food: Any nutritious substance that people or animals eat or drink or that plants absorb in order to maintain life and growth.' Prepare any food item of your state and record the video of it.

Write a report mentioning

- Name of the food item.
- Ingredients
- Method of preparation
- Images

2. **Project**

Topic: Working model: 'Traditional methods of water purification'

Please refer Appendix I

3. **Worksheets**

Please refer Appendix II

## **Appendix I**



**SAINIK SCHOOL CHANDRAPUR**  
**MINISTRY OF DEFENCE**

“WORKING MODEL: TRADITIONAL METHODS OF WATER  
PURIFICATION”

SUBJECT: SCIENCE

SUBMITTED BY: *Your name*

CLASS AND SECTION:



## AIM

To find the traditional purification technique used in your region to purify water.

## THEORY

Water purification is the process of removing undesirable chemicals, biological contaminants, suspended solids, and gases from water. The goal is to produce water that is fit for specific purposes. Most water is purified and disinfected for human consumption (drinking water), but water purification may also be carried out for a variety of other purposes, including medical, pharmacological, chemical, and industrial applications.

The history of water purification includes a wide variety of methods. The methods used include physical processes such as filtration, sedimentation, and distillation; biological processes such as slow sand filters or biologically active carbon; chemical processes such as flocculation and chlorination; and the use of electromagnetic radiation such as ultraviolet light.

## HYPOTHESIS

There are many traditional methods of water purifications are there in our rural areas

- Cloth Filtration
- Ceramic Filtration
- Household Sand Filter
- Volcanic Stone Filter
- Jempeng Stone Filter
- Sedimentation
- Three Pot Water Method

Traditional Ways of Water Disinfection

- Boiling
- Solar Disinfection

## MATERIALS REQUIRED

*As per the method you are choosing.*

## PROCEDURE

*Write the procedure based on the method you chose.*

*Attach the diagram of your model*

## OBSERVATIONS

*Write the observation of the working of the model*

*You can add images here*

## CONCLUSION

People over the years have regularly practiced some ordinary water purification methods to match the quality standards of drinking water. In the present-day situation, the amount of drinkable water is only 1.2 per cent on the earth. Nowadays, it has become more necessary for us to purify water than it has ever been in ancient times.

Due to increasing population and global warming, potable water will become harder and harder to come by. So, using some of the above techniques, you can also purify water at home.

Link for reference: <https://biologyreader.com/traditional-water-purification-methods.html>

## **Appendix II**



## **Worksheet I – Chapter I Food from where it is coming from**

### **FILL IN THE BLANKS:**

Q1. A beehive has small compartments called Combs.

Q2. Pulses or legumes or dals are rich in Proteins.

### **MULTIPLE CHOICE QUESTIONS:**

Q3. Which among the following is herbivore?

- (a) Cow            (b) Lion            (c) Tiger            (d) Crow

Q4. Which among the following is an omnivore?

- (a) Cockroach            (b) Lion            (c) Deer            (d) Plants

Q5. Which one of the following is NOT an animal product?

- (a) Cheese            (b) Honey            (c) Butter            (d) Onion

### **SHORT ANSWER TYPE QUESTIONS:**

Q6. Give any two examples of Pulses.

Q7. What are used for adding flavour to the food?

Q8. What are poultry animals? Give two examples.

Q9. Define the following:

(a) Pisciculture.

(b) Apiculture.

### **DIAGRAM BASED QUESTION:**

Q10. Look at the following picture and identify the product obtained from it.



**FILL IN THE BLANKS:**

Q1. Animals eating plants and plant products are called \_\_\_\_\_.

Q2. Cereals are rich sources of \_\_\_\_\_.

Q3. Animals eating other animals are called \_\_\_\_\_.

Q4. Deer eats only plant parts and is called \_\_\_\_\_.

**MULTIPLE CHOICE QUESTIONS:**

Q5. Lion is a carnivore because it eats only \_\_\_\_\_.

- (a) Animals            (b) Plants            (c) Both (a) and (b)    (d) None of these

Q6. Which one of the following is a spice?

- (a) Potato            (b) Bean            (c) Mango            (d) Coriander

Q7. Human beings are

- (a) Herbivore    (b) Carnivore    (c) Scavenger    (d) Omnivore

Q8. Wheat, rice, maize are

- (a) Pulses            (b) Cereals            (c) Spices            (d) None of these

Q9. Cow and buffalo are \_\_\_\_\_ animals.

- (a) Milk yielding    (b) Meat yielding    (c) Poultry            (d) None of these

Q10. Which of the following have high water content?

- (a) Pulses            (b) Cereals            (c) Fruits            (d) All of these

**SHORT ANSWER TYPE QUESTIONS:**

Q11. Name the group of animals eating both plants and animals.

Q12. What is Tea and Coffee commonly called?

Q13. Define

- (a) Food            (b) Herbivores

Q14. Why do we need food?

**DIAGRAM BASED QUESTION:**

Q15. Identify the diagram. Which product we get from this plant?



## **Worksheet II Chapter 2 Components of food**

### **1. ANSWER THE FOLLOWING**

1. What is the importance of water in our body?
2. Write two functions of vitamins.
3. Why proteins are called building blocks of our body?
4. Why is roughage essential component of our food?
5. People who eat sea food will not suffer from goiter. Explain.
6. Soham was having difficulty in seeing things clearly in dim light. The doctor tested his eye sight and prescribed a particular vitamin supplement.
  - (i) Which deficiency disease he is suffering from?
  - (ii) Which food component he is lacking from his diet?
  - (iii) Suggest some food items that he should include in his diet? (four points)
7. What are deficiency diseases? Give two examples.
8. How will you test for the presence of proteins in a food item?
9. How fats are useful to us? Why we do not eat excess fat?
10. What are the symptoms of Rickets?

### **Very Short Answer**

- Q1)** Define nutrients?
- Q2)** How can we get to know the presence of the proteins?
- Q3)** Where we found carbohydrates in our food?
- Q4)** Which colour indicates the presence of the starch?
- Q5)** What is energy giving foods?

### **Short Answer**

- Q6)** How the dilute solution of iodine and copper sulphate solution can be prepared?
- Q7)** Why our body needs the different kinds of food?
- Q8)** What do you mean by dietary fiber?
- Q9)** Why we need fibre and water in our body?
- Q10)** What is the role of the nutrients in our body?

### **Long Answer**

- Q11)** What are the tests for proteins and starch explain it?
- Q12)** Explain what do different food items contain?

**Q13)** State the difference between carbohydrates and proteins?

**Q14)** State the difference between starch and sugar?

**Q15)** Write short note on fats?

### **Worksheet III Chapter 3 – Fibre to fabric**

**Question 1-** List any two types of fabric?

**Question 2-** How does silk fabric feel?

**Question 3-** With what kind of fabric your dupatta is made up of?

**How is yarn made ?**

**Question 1-** Yarn is made of ..... ?

**Question 2-** What is yarn ?

**Question 3-** How do you make yarn from cotton?

### **EXERCISE**

**Question 1- Fill In The Blanks.**

- Silk is smooth and \_\_\_\_\_
- \_\_\_\_\_ is extracted from the outer covering of coconut.
- \_\_\_\_\_ and \_\_\_\_\_ are synthetic fibres.
- Cotton is a \_\_\_\_\_ fibre.
- Yarns are made of \_\_\_\_\_.

**Question 2- Write True Or False.**

- Polyester is a natural fibre.
- In knitting, a single yarn is used to make a piece of fabric.
- Cotton clothes are comfortable to wear in hot humid weather.
- The process of removing seed from cotton is called retting.
- The fibres are spun in yarns by pulling out and twisting the fibres together.

**Question 3- Match The Column 'A' With Column 'B'**

<b>A</b>	<b>B</b>
a. Jute	a. outer covering of coconut
b. Acrylic	b. stem
c. Coir	c. separation of seeds
d. Ginning	d. synthetic fibres
e. Hand spindle	e. spinning

**(i). Which of the following is not a natural fibre?**

- a) Wool   b) Nylon   c) Cotton   d) Jute

**(ii). Which of these fabrics will you choose to wear in hot and humid weather?**

- a) Cotton   b) Wool   c) Silk   d) Nylon

**(iii). The process of separation of seeds from cotton balls is :**

- a) Spinning   b) Retting   c) Ginning   d) Picking

**(iv). Acrylic is:**

- a) Natural fibre   b) Animal fibre   c) Plant fibre   d) Synthetic fibre

**(v). Which of these is a plant fibre?**

- a) Polyester   b) Wool   c) Acrylic   d) Jute

**Question 5- Very Short Answer Type Questions.**

**(i) Name any two animal fibres?**

Answer- Wool and silk.

**(ii) Name the two basic types of natural fibres?**

Answer- Cotton and wool.

**(iii) What is the right time for harvesting of jute plant?**

Answer- When plant is at flowering stage.

**(iv) List any two uses of jute?**

Answer- Jute is used to make ropes, carpets and ginny bags.

**Question 6- Short Answer Type Questions.**

**(i) Write differences between natural and synthetic fibres?**

Answer

Natural Fibres	Synthetic fibres
1. These fibres are obtained from nature.	1. These fibres are obtained by human by chemical processes.
2. They can absorb water .	2. They cannot absorb water.
3. Examples - wool, cotton, silk, jute.	3. Examples - nylon, polyester, acrylic.

**(ii) What is sericulture ?**

Answer- Rearing of silkworms for production of silk is known as sericulture.

**(iii) What is meant by ginning of cotton ?**

Answer- The process of separation of seeds from cotton balls is known as ginning.

## **Question 7- Long Answer Type Questions.**

### **(i) Why do we prefer cotton clothes in summer ?**

Answer- Cotton clothes are good for humid and hot weather (summer), because it absorbs water easily.

### **(ii) How spinning of cotton is done ?**

Answer- The fibres are spun in yarns by pulling out and twisting the fibres together. This process is known as spinning. Spinning is done with hand spindle (takli), spinning wheel (charkha) or machines

## **Questions**

### **Very Short Answer**

- Q1) How silk fibre is drawn from?
- Q2) What is ginning?
- Q3) What is spinning?
- Q4) Define fibres?
- Q5) What is weaving?

### **Short Answer**

- Q6) What are the uses of fabrics?
- Q7) What do you mean by yarn?
- Q8) What kinds of devices are used for spinning the cotton yarn?
- Q9) What is yarn made up of?
- Q10) Difference between weaving and knitting?

### **Long Answer**

- Q11) Explain the processing of the cotton?
- Q12) State the difference between nylon and polyester?
- Q13) Write short note on some plant fibres?
- Q14) Explain the history of the clothing material?
- Q15) State the difference between natural fibres and artificial fibres?

## **Worksheet IV Sorting materials into groups**

### **Answer the following questions.**

Q1. State some properties on the basis of which materials can be grouped. Mention two ways in which grouping of materials is useful to us.

Q2. Name at least three objects that can be made using each of the given material.

(a) Glass (b) Steel (c) Leather

Q3. Define the following and give two examples for each.

(a) Immiscible liquids (b) Conductors (c) Insulators (d) Opaque objects

Q4. Give reasons: -

(a) Most of the metals lose their lustre after some time.

(b) A spoilt egg does not sink in water.

(c) Handles of most kitchen utensils are made of wood or special kinds of plastic.

(d) Dentists use pumice

(e) Boric acid powder is spread on the carom board while playing on it

Q5. Write one difference between: -

(a) Solids & liquids

(b) Transparent & translucent objects.

Q6. What is solubility? Give two examples for solids insoluble in water.

Q7. Name the gas: -

(a) The major component of air. \_\_\_\_\_

(b) This is used in weather balloons. \_\_\_\_\_

(c) This is responsible for the survival of aquatic plants and animals.

(d) This is required for photosynthesis. \_\_\_\_\_

(e) This causes air pollution. \_\_\_\_\_

Q8. John has accidentally spilled some coconut oil in a glass of milk. Is it possible to separate the two liquids? Why?

1. State some properties on the basis of which materials can be grouped. Give two ways how this grouping of materials is useful to us.

2. Name at least three objects that can be made from each of the given materials:-

(a) Glass (b) Steel (c) Leather

3. Define the following and give two examples for each:-

(a) Immiscible liquids (b) Conductors (c) Insulators (d) Opaque objects

4. Give reasons:-

(a) Most of the metals lose their lustre after some time.

(b) A spoilt egg does not sink in water.

(c) Handles of most kitchen utensils are made of wood or special plastic.

(d) Dentists use pumice

(e) Boric acid powder is sprayed on the carom board while playing on it

5. Write one difference between:-

(a) Solids & liquids

(b) Transparent & translucent objects.

6. State atleast three properties that would be best suitable to distinguish between the following pairs:-

(a) Copper & paper

(b) Glass & wood

7. What is solubility? Give two examples of solids insoluble in water.

8. Name the gas:-

(a) which is the major component of air. \_\_\_\_\_

(b) which is used in weather balloons. \_\_\_\_\_

(c) which is responsible for the survival of aquatic plants and animals. \_\_\_\_\_

(d) which is required for photosynthesis. \_\_\_\_\_

(e) which causes air pollution. \_\_\_\_\_

9. John has accidentally spilled some coconut oil in a glass of milk. Is it possible for him to separate the two liquids? Why?

10. While preparing lemonade, Suresh added ice cubes and then dissolved sugar. Ramesh, on the other hand, dissolved sugar and then added ice cubes. Whose technique is better for dissolving sugar faster? Why?

### **Very Short Answer**

**Q1)** Define translucent?

**Q2)** What kind of the materials has the lustre?

**Q3)** How all objects are made up of?

**Q4)** What is transparent?

**Q5)** What is common in the following: Newspapers, books, notebooks, calendars?

### **Short Answer**

**Q6)** What is the main difference between soft materials and hard materials?

**Q7)** Why water plays an important role in the functioning of our body?

**Q8)** Why can be objects be of different colours?



Q9) How grouping of materials are useful?

Q10) Why do colours and shapes matter?

**Long Answer**

Q11) State the difference between transparent and translucent?

Q12) Distinguish between rough material and smooth material?

Q13) State the difference between soluble and insoluble substances?

Q14) Explain some properties of the materials?

Q15) Distinguish between metals and non-metals?

Worksheet V Separation of substance

**Q.1 Name the method of separation for the following: -**

- a) Removal of grains from stalks -----
- b) Separation of grains of corn from husk -----
- c) Separation of broken rice from whole rice -----
- d) Separation common salt from sea water -----

**Q.2 Fill in the blanks: -**

- a) The process of allowing the muddy water to stand so that the mud settles at the base is called -----
- b) The slow conversion of a liquid into its vapor below its boiling point is called ----
- c) For making paneer, a few drops of ----- are added to milk.
- d) The substance that dissolves in a solution is called the -----

Q.3. State whether the following statements are true or false:-

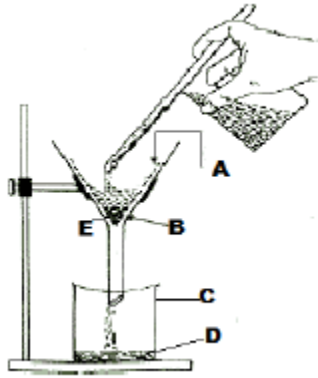
- a) A mixture of sugar and water can be separated by filtration -----
- b) The separation of tea leaves from tea can be done by sieving. -----
- c) A mixture of powdered salt and sugar can be separated by the process of sieving. -----.
- d) The process by which the insoluble components of muddy water settle down is called decantation. -----.

Q.4. It is not advisable to separate wheat flour from sugar crystals by Handpicking, why? What would be a better method to do so?

Q.5. How will you separate all the components of a mixture of sand and salt in water?

Q.6. Define the term saturated solution.

Q.7. Label the parts marked as A, B, C, D & E in the given diagram.



### **Very Short Answer**

- Q1) What is handpicking?  
Q2) What is threshing?  
Q3) What are the limitations of the handpicking?  
Q4) Define separation process?  
Q5) Name the different methods of separation?

### **Short Answer**

- Q6) What do we do with the separated components?  
Q7) What are the advantages of the handpicking?  
Q8) Why do we need to separate the substances?  
Q9) Why do we need separation?  
Q10) What do you understand by winnowing?

### **SHORT ANSWER TYPE-1 QUESTIONS:**

- Q1. How will you differentiate between filtrate and residue?  
Q2. Write a short note on Distillation.  
Q3. Which liquid is called universal solvent? Why?  
Q4. What is Sublimation? Give an example.  
Q5. Define the following terms:  
a. Solute  
b. Solvent  
Q6. Is it possible to separate the mixture of wheat flour and sugar crystals? If yes, how will you do it?  
Q7. Define solubility of a substance. How does the solubility of a substance vary with temperature?  
Q8. Can a farmer use a pedestal fan to do winnowing? Comment.

## Worksheet VI Motion and measurement

### **Question 1- Fill In The Blanks.**

- a. One metre is        **cm**.
- b. Five kilometer is        **m**.
- c. Motion of a child on a swing is       .
- d. Motion of the needle of a sewing machine is       .
- e. Motion of wheel of a bicycle is       .

### **Question 2- Write True Or False.**

- a. Hand span or feet step are standard units of measurement.
- b. Standard unit of length is metre.
- c. Motion of train on railway track is an example of linear motion.
- d. Length of a curved line can be measured by a scale.
- e. Motion of hands of a clock is a circular motion.

### **Question 3- Match The Column 'A' With Column 'B'**

A	B
a. Metre	a. Periodic motion
b. Circular motion	b. Length
c. 1 km	c. Linear motion
d. Train on track	d. Hands of clock
e. Swing	e. 1000m

### **Question 4. Choose The Correct Answer.**

**(i). In motor vehicles which of the following is used for measuring the distance covered by the vehicle?**

- a) Speedometer    b) Odometer    c) Thermometer    d) None of these

**(ii). A student want to take the measurements of a brick, for this purpose which unit he should use?**

- a) kilometre    b) metre    c) centimeter    d) Hand span

**(iii). The motion of wings of a moving fan is .....**

- a) Circular motion    b) Linear motion    c) Both (a) and (b)    d) None of these

**(iv). Which of among is false?**

- a) 1000m = 1 km    b) 100 mm = 1cm    c) 100cm = 1m    d) 10mm = 1cm

**Question 5- Very Short Answer Type Questions.**

- (i) Name some means of transport used in ancient time?
- (ii) Give two examples of periodic motion.

**Question 6- Short Answer Type Questions.**

- (i) Give two examples of transport used on land, water and air.
- (ii) What is distance?
- (iii) Arrange the following lengths in their increasing magnitude:  
1 metre, 1 centimetre, 1 kilometre, 1 millimetre.
- (iv) Write the similarities and differences between the motion of a bicycle and a ceiling fan that has been switched ON.
- (v) The distance between Radha's home and her school is 3250 m. Express this distance into km.

**Question 7- Long Answer Type Questions.**

- (i) Describe what precautions should be taken while measuring length or breadth of an object?
- (ii) How many types of motion are there? Give examples for each type.
- (iii) Write an activity for measuring the length of a curved line?
- (iv) Why hand span or footsteps cannot be used as standard units of measurement?

**Questions**

**Very Short Answer**

- Q1) What is unit?
- Q2) How we will we expressed the result of the measurement?
- Q3) What we use as means of transport on water?
- Q4) Which organ of our body works in periodic motion?
- Q5) Define measurement?

**Short Answer**

- Q6) What do you understand by the International System of Units?
- Q7) Give some example of rectilinear motion?
- Q8) What do you understand by the metric system?
- Q9) Give some examples of periodic motion?
- Q10) What do you mean by pendulum?

## **Long Answer**

- Q11)** State the difference between centimetre and millimetre?
- Q12)** Write short note on motion?
- Q13)** What are the steps we have to take measurement of a length?
- Q14)** Explain the following motion with example: circular motion, rectilinear motion and periodic motion?
- Q15)** Difference between distance and displacement?

## **Extra questions**

1. Which are the two parts of the measurement?
2. What is the need of a standard unit of measurement? Give an example to show that all standard units are not SI units
3. Why tailors tape is made flexible?
4. What is rest? What is motion?
5. Prakash says that the picture hanging on the wall is at rest. Dhruv says that the same is moving with a speed of about 30 km/s. Can both of them be equally true? How?
6. Which are the two kinds of circular motions? Differentiate between them
7. What is common between oscillatory motion and vibratory motion? What are the differences between them?
8. Define periodic and non-periodic motions. What is common between periodic and nonperiodic motions?
9. What are the precautions to be taken while measuring length?
10. Shiva's scale is broken at the zero end. So he measured the length of his pencil starting from 2.5 cm. The reading he got for the length was 12 cm. What is the actual length of the pencil?
11. Find an example for a body with three different kinds of motions simultaneously. (Multiple motion)

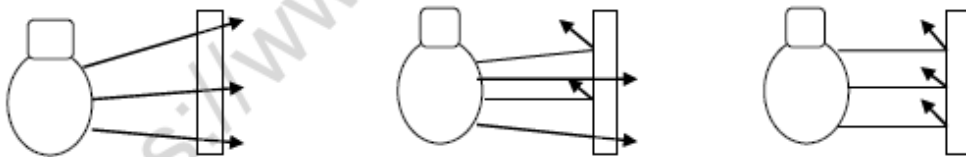
Some alien kids from the planet Isas visited earth in 5490 AD. It had turned into a lifeless planet. They found out using their laser meter that the deepest point on the earth is Challenger Deep which is 10,916m and the highest point is Mt. Everest which is 8840m. A naughty kid Djinklo lifted the Mt. Everest and dropped in the Challenger Deep using his space excavator. It sank without a trace. Now Djinklo wants to find out how deep the top of the Mt. Everest lie under water. But he is not good in math. Can you help him?

## Worksheet VII Light shadows and reflection

Q1. How do we see things? In the given diagram draw the direction of the light ray to show how the boy can read his book?



Q2. Look at picture given below and classify the non luminous objects according to their ability to allow light to pass through them and define them in the boxes given in the picture.



Q3. Give two examples from nature where shadows are cast by the Earth and the Moon.

Q4. How are shadows formed? Write three conditions for a shadow to be formed.

Q5. What is the principle of the working of a pinhole camera?



Q6. Draw the line image of the tree formed on the screen of the pinhole camera by drawing a ray of light from the top and bottom of the tree to the screen at the back of the camera.

Q7. What are the characteristics of the image formed by a pinhole camera?

Q7. What will be the size of the image if the object is placed

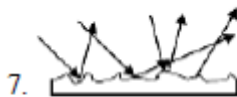
- near the camera.
- at a distance from the camera.

### **ANSWER THE FOLLOWING**

1. What are luminous objects? Give any two examples.
2. Classify the given materials into transparent, translucent and opaque objects.  
Clean water, frosted glass, mud, clear air, butter paper, cellophane paper, mirror

transparent	translucent	opaque

3. Represent diagrammatically (a) a beam of parallel rays (b) a beam of rays coming from a point source of light.
4. Name the property of light which is responsible for the image formation in a pinhole camera.
5. Write ONE similarity and ONE difference between shadow and image of an object.
6. What happens to the size of the image when the distance between the object and the pinhole in a pinhole camera is increased?
- 7.



A



B

- a) Write the difference between the above two reflections.
  - b) Which one of these reflections is responsible for the image formation in a plane mirror?
8. What are the conditions required for the formation of a shadow?

### **Very Short Answer**

- Q1) Which object do not form a shadow?
- Q2) Define luminous objects?
- Q3) How does light travel?
- Q4) On which principle a pinhole camera is based?
- Q5) How we get the clear images?

### **Short Answer**

- Q6) How will we use pinhole camera to see the solar eclipse?

- Q7) What is shadow and how it is formed?
- Q8) What is meant by lateral inversion?
- Q9) What are the characteristics of the shadow?
- Q10) What do you mean by the reflection of light?

### **Long Answer**

- Q11) What is the principle of pinhole camera? State the characteristics of the image formed in the pinhole camera?
- Q12) State the difference between image and shadow?
- Q13) State the difference between luminous objects and non-luminous objects?
- Q14) State the difference between transparent objects and translucent objects?
- Q15) State the difference between translucent objects and opaque objects?

### **Worksheet VIII Garbage In Garbage Out**

#### **Very Short Answer**

- Q1) What is composting?
- Q2) What is the other name for landfill?
- Q3) Define vermicomposting?
- Q4) What type of garbage is collected in blue dustbin and green dustbin?
- Q5) What is the aim of the Swachh Bharat Mission?

#### **Short Answer**

- Q6) What will happen if garbage is not removed from our surroundings?
- Q7) What are red worms?
- Q8) What do you mean by recycling?
- Q9) What are the main causes of the landfill?
- Q10) What do you understand by the recycling of paper?

#### **Long Answer**

- Q11) Explain landfill and parts of the landfills?
- Q12) Explain the various methods of garbage disposal?
- Q13) What can we do to minimize over use of plastics and deal with the garbage?
- Q14) What are the advantages and disadvantages of the landfills?
- Q15) What are the advantages and disadvantages of the plastics?