

1- THE CIRCULATORY SYSTEM

D. Give reason for the following statements.

1. Veins have valves, but arteries are do not.

- Arteries do not require valves because pressure from the heart is so strong that blood is only able to flow in one direction. But veins contain valves that ensure blood flows in only one direction.

2. Heart produces the characteristic lubb -dubb sound.

- The “lubb” sound is produced by the closing of the AV(Atrioventricular) valves.
- The “dubb” sound is similarly caused by the closing of the semilunar valves.

E. Answer the following questions in a word.

1. Which blood cells carry oxygen from the lungs to all parts of the body? **RBC**
2. Which blood vessels has a thicker wall? **Arteries**
3. How many chambers does the adult human have? **Four**
4. The left ventricle pumps the blood into which artery? **Aorta**

F. Answer the following questions in brief.

1. What are the functions of blood?

- Transporting oxygen from lungs to different parts of the body.
- WBC helps to protect the body against infection.
- It carries waste products generated by cells of the body to the kidney for filtration.

2. Give two differences between arteries and veins.

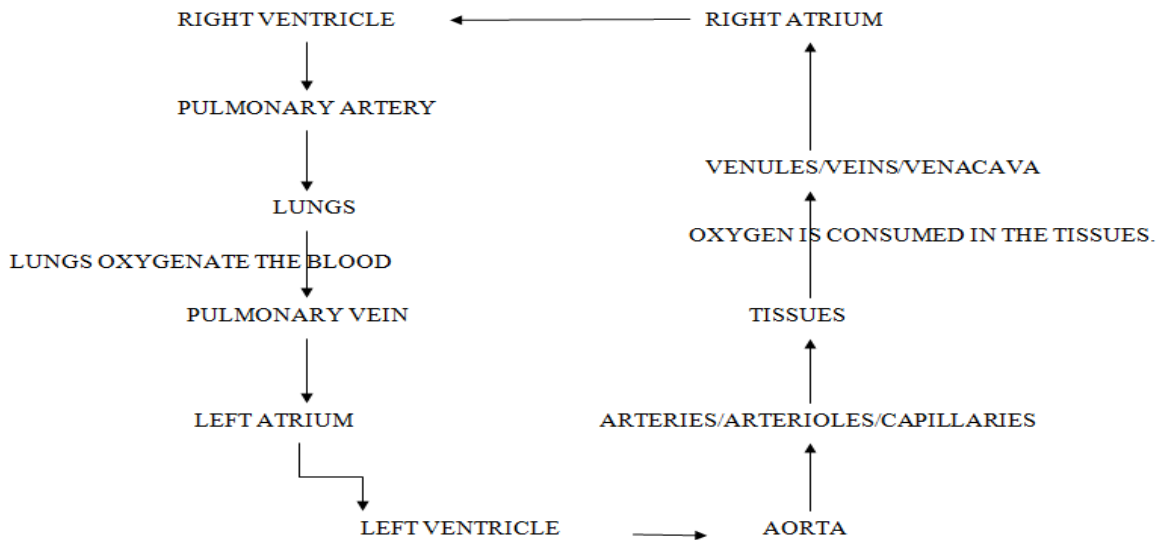
Arteries	Veins
Have thick walls	Have thin walls
Present deep under the skin	Present just under the skin

3. What are valves?

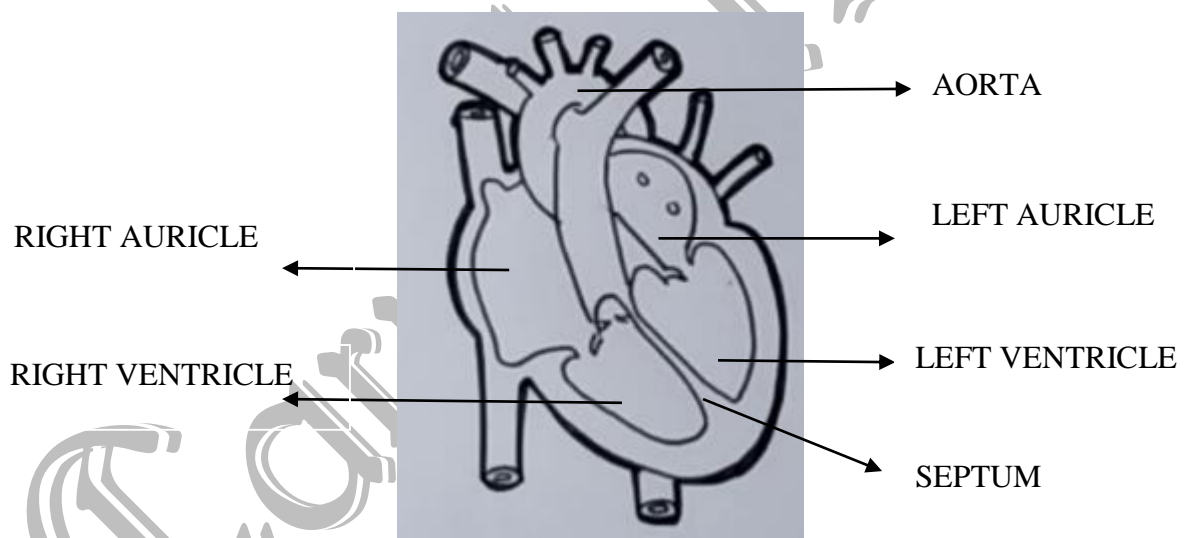
- Flap like structure inside the heart or major blood vessels that Allow the movement of blood in a single direction.

G. Answer the following questions in detail.

1. Explain the movement of blood in the body with the help of a diagram.



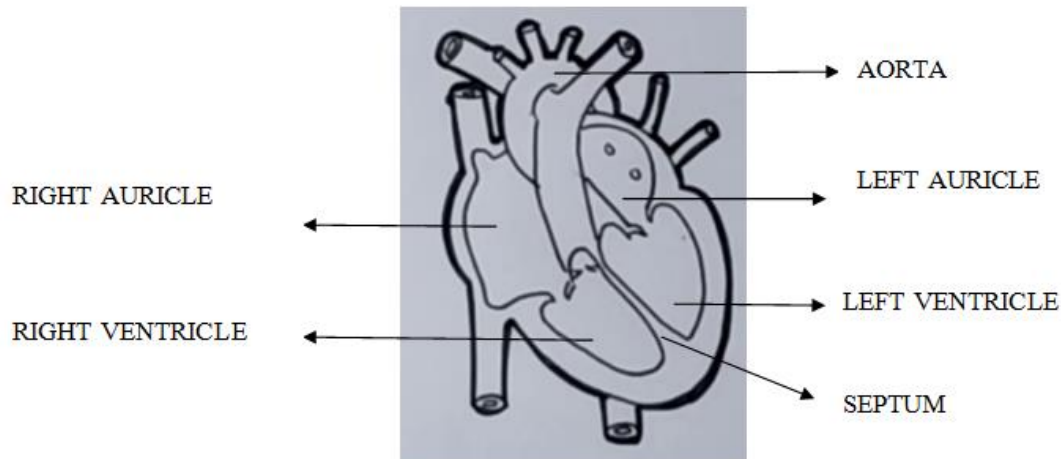
2. Explain the structure of the heart.



- The heart is a muscular organ located between the lungs, slightly towards the left side of the chest region.
- The size of our heart is equal to the size of our closed fist.
- The heart is divided into four chambers- the upper two chambers are called auricles and the lower two chambers are called ventricles.
- The left side of the heart is completely separated from the right side by a partition.
- This partition prevents the mixing of pure blood with impure blood.

- The function of the heart is to pump blood containing oxygen and nutrients to all the cells in the body.

Picture based question:



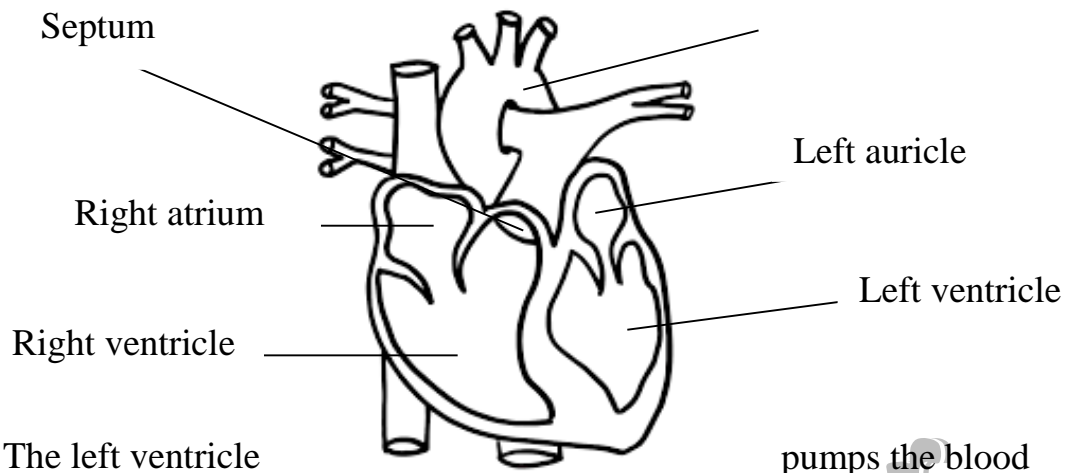
WORKSHEET

I. Fill in the blanks:

1. **Circulatory system** Organ system that circulates blood through the body.
2. **Blood** a fluid tissue that transports oxygen, nutrients in the body.
3. **Plasma** liquid component of blood.
4. **Artery blood** vessels that carry blood away from the heart.
5. **Vein** Blood vessels that carry blood towards the heart from the rest of the body.

II. Picture based question:

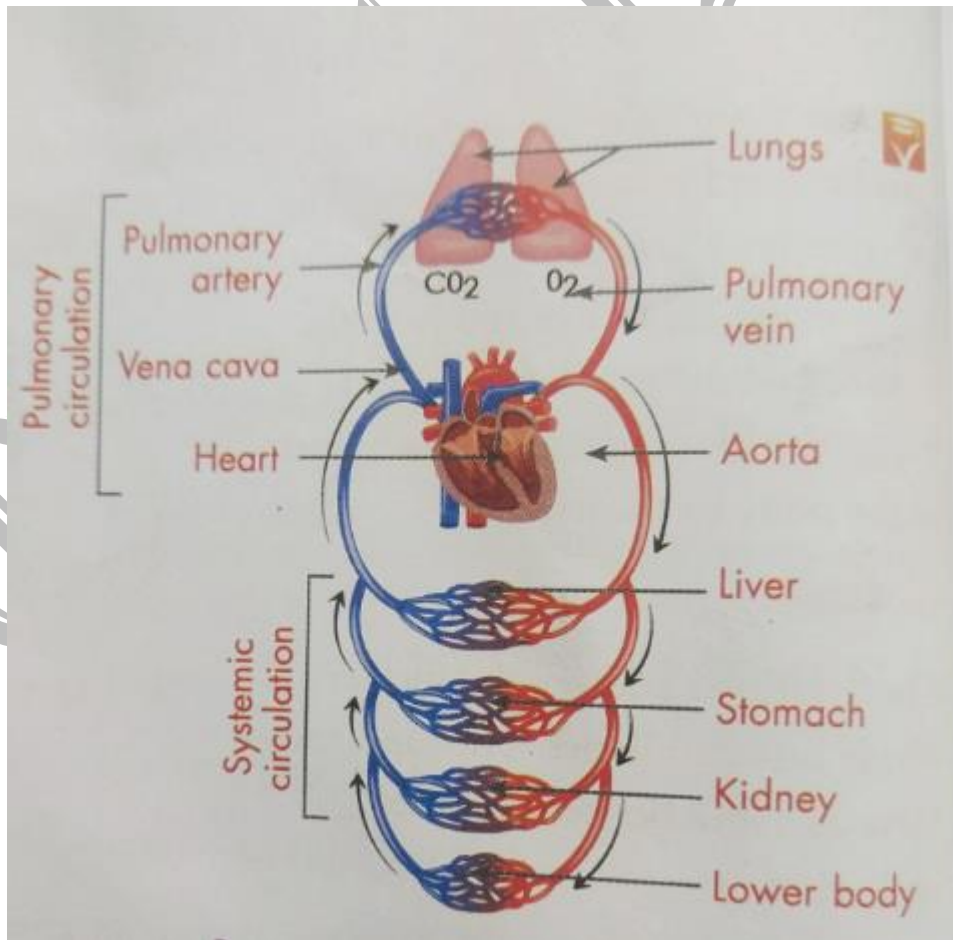
Aorta



- The left ventricle pumps the blood into which artery? Aorta.
- Which is the artery that carries blood from the heart? Aorta.

WORKSHEET

I. Picture based questions.



Representation of blood flow of blood vessels.

I. Fill in the blanks:

1. The color of a red blood cell is due to **Hemoglobin**.
2. The two lower chambers of the heart are called **Ventricles**.
3. The **Pulmonary** artery takes the blood from the ventricles to the lungs.
4. The blood is also circulated from heart to body parts and vice versa is called **Systematic circulation**.
5. The blood loaded with carbon dioxide from the body comes into the **Aorta** of the heart.
6. The oxygen-rich blood from the lungs comes into the **Left ventricle** of the heart.
7. The oxygen-rich blood is pumped into different parts of the body through **Right auricle**.
8. Systematic and Pulmonary circulation are together referred to as **Double circulation**.

2 THE SKELETAL AND MUSCULAR SYSTEM

D. Give reasons for the following.

1. The last two ribs of the ribcage are called floating ribs.

- Because it does not attach to the sternum.

2. Do not have voluntary muscles in our heart.

- Heart is a pumping organ and need to beat continuously to supply blood to various parts of the body. That is why it is made of involuntary muscles

E. Answer the following questions in a word or a sentence.

1. What is the function of the synovial fluid?

- Helps the movable joints to move smoothly.

2. What is the function of the backbone?

- Supporting structure for the entire skeleton and it also protects the spinal cord.

3. In which activities do we use voluntary muscles?

- It helps us to walk, talk, pick up things.

4. Where are tibia and fibula present in our body?

- Lower leg.

5. What are joints?

- Joints are the areas where two or more bones meet.

F. Answer the following questions in brief.

1. What are cardiac muscles?

- The muscles present in the heart are called cardiac muscle. We cannot control the movement of cardiac muscle. Thus, they are called as involuntary muscles. The cardiac muscles are strong, and they work nonstop.

2. What are the functions of the skeleton?

- The skeletal system works as a support structure for your body. It gives the body's shape, allows movement, makes blood cells, and provides protection for the organs and stores minerals.

3. How are ligaments different from tendons.

Tendon	Ligament
Connects muscle to bone	Connects bone to bone
Tough and elastic	Elastic

4. What is the function of girdles?

- It provides space for attachment of bones of hind limbs.
- It provides movement to hind limbs.

G. Answer the following questions in detail.

1. Explain the four types of joints.

- **Ball-and-socket joints:** Such as the shoulder and hip joints, allow backward, forward, sideways, and rotating movements.

- **Hinge joints:** Such as in the fingers, knees, elbows, and toes, allow only bending and straightening movements.
- **Pivot joints:** Such as the neck joints, allow limited rotating movements.
- **Gliding joints:** The surfaces of bones at the joint are flat, so the bones glide over each other. Example, tibia, and fibula.

2. Describe the structure of a ribcage.

- The ribs are a set of twelve paired bones which form the protective 'cage' of the thorax.
- It protects the heart and the lungs in our body.
- The Rib cage is formed by 12 pairs of bow shaped bones called ribs.
- All the 12 pairs of ribs are attached to the backbone at the back.
- Only 10 pairs of ribs are attached to a broad bone called the breastbone or sternum in the front.
- As two pairs of ribs are not attached to the sternum in the front, they are called floating ribs.

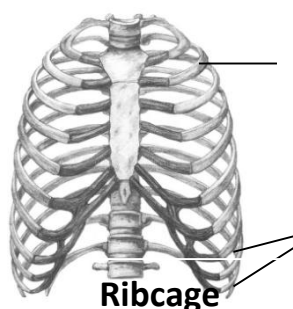
3. Differentiate between skeletal and smooth muscles.

Skeletal Muscle	Smooth Muscles
Attached to the bones	Line up the visceral organs. Such as Intestines, blood vessels, pupils
Voluntary actions	Involuntary reflexes and actions.
Well striated	Lack striation

WORKSHEET

PICTURE BASED QUESTION

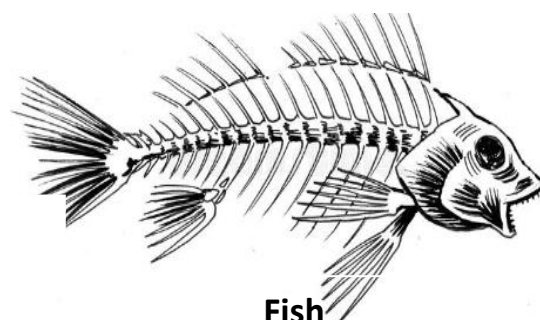
Identify the bones and label the parts



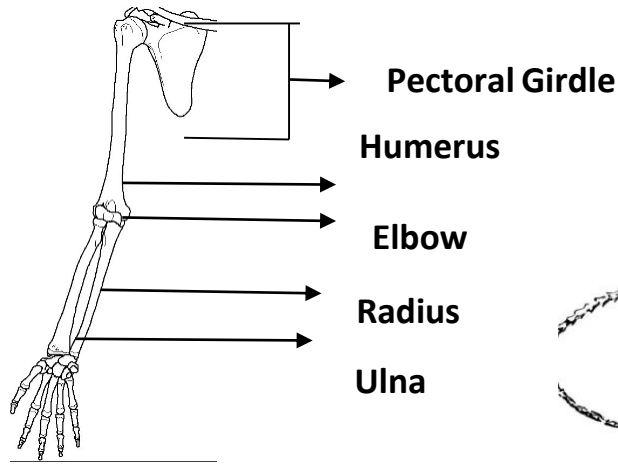
True Ribs

Floating Ribs

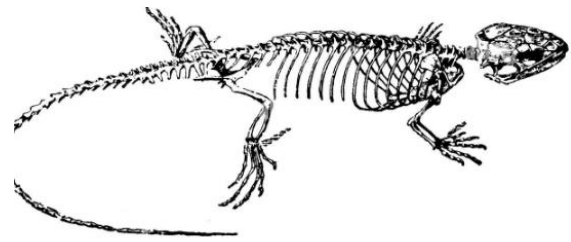
Ribcage



Fish



Fore Limbs



Lizard

Choose the correct options to fill the blanks :

1. All the bones present in our body forms our (digestive/skeletal) system **Skeletal**
2. The bones of the limbs are (short/long) **Long.**
3. The (rib-cage/skull) protects the brain. **Skull.**
4. The delicate spinal cord is protected by(backbone/jawbone) **backbone.**
5. The upper jaw and lower jaw have (teeth/Lips) **teeth.**

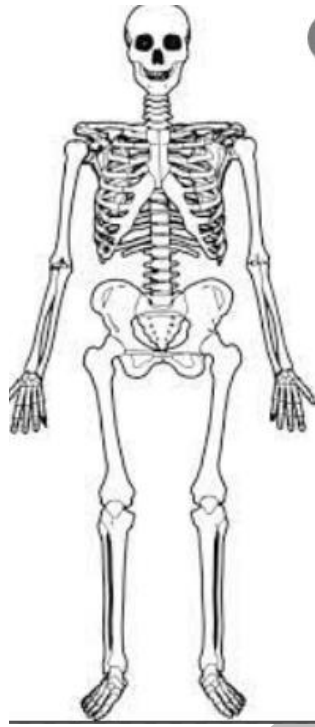
WORKSHEET

I.FILL IN THE BLANKS:

Ribcage	Ligament	Vertebrae	Posture	Cardiac muscle
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1. **Vertebrae** is the bones that make up the backbone.
2. **Ligament** is the tissues which attach one bone to another at a joint.
3. **Cardiac Muscle** is the muscles present in the heart.
4. **Posture** is the position in which we stand and walk.
5. **Ribcage** is the structure that protects the lungs and the heart.

II.PICTURE BASED QUESTIONS:



1. Framework of our body consisting of bones is called **Skeleton**
2. **Collagen** is a substance that covers the exterior of the bone.
3. **Bone Marrow** is the soft fatty substance present in long bones.
4. **Skull** is the structure that protects our brain, eyes, ears and nose.
5. The structure that protects the lungs and the heart is called **Ribcage**

LN -3 FOOD AND HEALTH

C. GIVE REASON FOR THE FOLLOWING:

1. The food pyramid shaped like a triangle.
2. We should avoid spending too much time sitting at a place.

E. ANSWER THE FOLLOWING QUESTIONS IN A WORD:

1. Name one source of vitamin C. **Citrus fruits.**
2. Which type of food contains useful bacteria? **Yogurt**
3. Which diseases is caused by the intake of a lot of junk food? **Diabetes, hypertension or heart related diseases.**
4. Which diseases is caused by the deficiency of iron? **Anemia**

5. Diabetes is an example of which type of diseases? **Lifestyle disorder.**

F. ANSWER THE FOLLOWING QUESTIONS IN BRIEF:

1. What is roughage? How is it important for our body?

Fibrous indigestible material obtained by eating fruits and green leafy vegetables is called roughage. It adds bulk to the food .It helps us to get rid of the undigested food easily. It also helps to avoid constipation.

2. What is hypertension? What are its symptoms?

High blood pressure is a common lifestyle disease. High blood pressure may lead to several types of heart diseases. The main causes of high blood pressure are stress , anxiety ,lack of physical activity and eating unhealthy food.

3. Fats give us lots of energy, but we should not eat them in large quantities.

Why?

Fats are essential part of everyone's diet but we should avoid consuming large amount of fats because they result in increase bad cholesterol and decrease in good cholesterol.

4. Why are sprouts and fermented food good for health?

Because they contain useful bacteria and yeast. Fermented foods are good for digestion as the bacteria that help in fermentation aid in digestion. Eg idly and curd.

G. ANSWER THE FOLLOWING QUESTIONS IN DETAIL.

1. List some measures we should take to make our diet healthy.

We can make our diet healthier in numerous ways. Some of them are as follows:

- Include fruits, vegetables, yogurt and salad in your daily diet.
- Consume less amounts of sugar and salt.
- Avoid deep fried food items and use less oil while cooking.

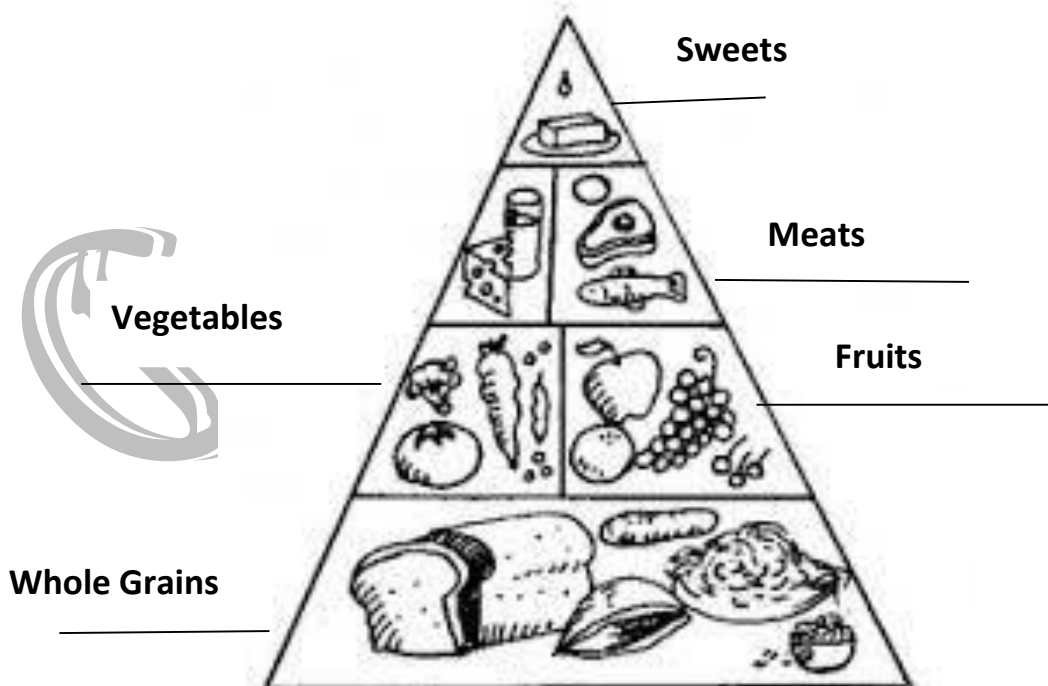
2. **What is deficiency disease? List some deficiency diseases along with their causes.**

- Some non – communicable diseases are caused by the deficiency of nutrients in our diet. They are classified as deficiency diseases.
- Night blindness – person cannot see in dim light – Vitamin A
- Beriberi – Affects eyes, skin growth etc. – Vitamin B
- Scurvy – bleeding gums and swollen joint – Vitamin C
- Rickets – Bones become soft and bend easily – Vitamin D

WORKSHEET

I. PICTURE BASED QUESTIONS:

Complete the food pyramid given below by writing the food groups and their recommended servings.



II. FILL IN THE BLANKS:

1. Carbohydrates found in our food are present in the form of Sugar & Starch

2. Carbohydrates and fats provide **Energy** to our body
3. Foods containing carbohydrates and fats are also called **Energy** giving foods
4. Foods containing proteins are often called **Body Building** foods
5. Overeating fat rich food leads to **Obesity**

WORKSHEET

I. GIVE TWO EXAMPLES OF THE FOLLOWING:

1. Vitamin rich food **Fish** **Broccoli**
2. Carbohydrate rich food **Bread** **Milk**
3. Junk food **Cake** **Burger**
4. Fermented food **Sea Food** **Dark Green Vegetables**
5. Foods to prevent anemia

II. NAME THE FOLLOWING:

1. Carbohydrates, Proteins, Vitamins, Minerals, Fats are known as **Nutrition.**
2. The nutrient needed for Muscling building in our body is **Protein**
3. A disease caused by the deficiency of Vitamin C **Scurvy.**
4. Protein deficiency in our body results in **kwashiorkor**
5. Excessive weight gain leads to **Heart Diseases.**

III. SAY TRUE OR FALSE:

1. There are four constituents of food. **False**
2. Minerals are needed in small quantities in our body. **True**
3. Roughage Includes mostly water. **True**

4. Junk food contains high amount of water. **False**

5. It is important to eat a balanced diet. **True**

Carmel Hosur