

GULAB BAI YADAV SMRITI SHIKSHA MAHAVIDYALAYA ,BORWAN

Lesson Plan – 1

| | | | |
|----------------------------|---|---------------|----------------|
| Subject | :- Science | Class | :- VIII |
| Topic | : - Materials: Metals and Non-Metals | Period | :- III |
| School Minute | : - Gulab Bai Yadav Smriti Shiksha Mah. Borawan (M.P.) | Time | :- 40 |
| Teaching Method | : - Traditional method | | |
| General Objectives | : - | | |
| | <ul style="list-style-type: none">• To develop scientific approach and scientific attitude in students.• To grow interest in the field of science.• To give knowledge of science principles and facts.• To grow curiosity and observation power in the students.• To grow ability of applying science principles in daily life. | | |
| Specific Objectives | :- | | |
| | <ul style="list-style-type: none">• Students will be able to explain Physical properties of metals and non-metals.• Students will be able to explain chemical properties of metals and non-metals.• Students will be able to differentiate between physical properties of metals and non-metals.• Students will be able to differentiate between chemical properties of metals and non-metals. | | |



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Teaching Materials :- Chalk, duster, roller board, different samples of metals and non metals, hammer etc.

Previous Knowledge :-

- Students knew some examples of metals and non-metals.
- They can identify few metals and non-metals.
- Students know about rust.
- Students are familiar with some physical properties of metals and non-metals.

Introduction :-

Q. Give some examples of metals.

Ans. Gold, Iron, Silver, Aluminium etc.

Q. Give me some examples of non-metals.

Ans. Phosphorus, sulphur, oxygen etc.


Q. What are physical properties of metals and non-metals?

Ans. Students are unable to answer properly.

Q. What are different chemical properties of metals and non-metals?



Ans. Students are unable to answer properly.





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Statement :- Today we will learn about physical and chemical properties of metals and non-metals.

| Teaching aims | Teaching method | Teacher-student interaction | | Blackboard work |
|--|--|--|--|--|
| | | Teacher's actions | Student's actions | |
| Physical properties of metals 1. Physical state. 2. Malleability 3. Ductility 4. Hardness | Demonstration and questionnaire method | Teacher will show pieces of iron, aluminium, copper and magnesium and ask a question. Q. What is the state of iron? Q. What is the state of copper? Q. What is the state of aluminium? Statement :- Metals are generally solid. Q. What is the appearance of metals? Q. What is this property called? Statement :- This is called metallic luster, means metals are lustrous. Teacher will take one piece of aluminium and hammer it. Q. what happened when it was hammered ? Q. What is this property called? Statement :- On hammering metals can drawn in to thin sheets, this property is called as Malleability. Q. Give some examples of wires? Q. What is this property called? Statement:- By stretching metals can drawn in to wires, this property is called as ductility. Teacher will press different pieces of metals and ask the question Q. By pressing metals you can change the shape? Q. Why? | Ans. solid Ans. solid Ans. Solid Ans. Metals are bright. Ans. Students are unable to answer. Ans. It becomes flat. Ans. Students are unable to answer. Ans. Wire of copper, wire of aluminium, gold, silver etc. Ans. Students are unable to answer. Ans. No Ans. Because they are hard. |  Iron  Sodium |




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| <p>5. Sonorous</p> | | <p>Statement:- Metals are generally hard. Teacher will struck the different metals and ask the students-</p> <p>Q. What happen when metals are struck by any hard object?</p> <p>Q. What kind of sound they produce?</p> <p>Statement:- Metals produce ringing sound on trucking by any hard object, this property is called as sonorous nature.</p> | <p>Ans. They produce sound.</p> <p>Ans. Ringing sound.</p> | |
| <p>6. Conductivity</p> | | <p>Q. What happen when a bulb is connected with the help of metallic wires to the battery?</p> <p>Q. Why?</p> <p>Statement:- Metals are able to conduct electric current, that's why they are good conductor of electricity. They are also good conductor of heat energy.</p> | <p>Ans. It will glow.</p> <p>Ans. Because it is able to conduct electric current.</p> | <p>Q. What is malleability?</p> |
| <p>Physical properties of non- metals</p> <p>1. Physical state</p> <p>2. Lustrous</p> <p>3. Brittleness</p> |  | <p>Q. What is the state of oxygen and hydrogen?</p> <p>Q. What is the state of phosphorous and sulphur ?</p> <p>Q. What is the state of Bromine and Iodine?</p> <p>Statement:- Generally non-metals exists in all three states i.e. solid, liquid and gas. Teacher will show sulphur, phosphorus and students will be asked about their appearance</p> <p>Q. What is the appearance of non-metals ?</p> <p>Statement:- Non-metals are dull in appearance and called as non lustrous Teacher will hammer on pieces of sulphur and phosphorous and ask the question</p> <p>Q. What happen when this two were hammered?</p> | <p>Ans. Gas.</p> <p>Ans. Solid,</p> <p>Ans. Liquid .</p> <p>Ans. They are not bright, they are dull.</p> <p>Ans. Broken down into small pieces.</p> |  <p style="text-align: right;">  Prof. S.K. Tiwari Principal </p> |

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| <p>4. Hardness</p> <p>5. Conductivity</p> | <p>Q. What is this property called? Statement:- On hammering non-metals broken down into small pieces, this property is called as brittleness. As u seen earlier on pressing we can change their shape easily, they are soft in nature. Q. Electric iron and cattle's handle are made up of which matter? Q. Why?</p> | <p>Ans. Unable to answer.</p> <p>Ans. Non-metals</p> <p>Ans. To protect from electric shock and burning.</p> | |
| <p>Chemical properties of metals and non- metals</p> | <p>Q. What is chemical property? Statement:- As u know that non-metals are unable to pass electric current and heat energy because they are bad conductor of heat and electricity. Q. What is burning? Statement:- Any characteristic that gives a sample of matter the ability/inability to undergo a change that alters its composition is called as chemical property. Q. What is burning?</p> | <p>Ans. Chemical nature and behaviour of matter is called as chemical property.</p> | |
| <p>1. Reaction with Oxygen 2. Reaction with water 3. Reaction with Acids Displacement</p> | <p>Statement:- Both metal and non-metal when burnt in oxygen form their oxides. Oxides of metals are basic and non-metallic oxides are acidic. When metal react with water to produce metal hydroxide and hydrogen gas.</p> | <p>Ans. When Metter heated on high temperature in the presence of oxygen it burns.</p> | <p> $2Mg + O_2 \rightarrow 2MgO$ $S + O_2 \rightarrow SO_2$ $2Na + 2H_2O \rightarrow 2NaOH + H_2$ </p> |



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| reaction | | <p>Generally non-metals do not react with water.</p> <p>Q. What is the nature of metals?</p> <p>Q. What is the nature of salts?</p> <p>Q. What is neutralization reaction?</p> <p>Statement:- When metal reacts with dilute acid forms neutral salt and release hydrogen gas.</p> <p>Generally non-metals do not react with dilute acids.</p> <p>Q. What is displacement?</p> <p>Statement:- Similarly when more reactive metals reacts with less reactive metallic compound they displace them in aqueous solutions.</p> | <p>Ans. Basic.</p> <p>Ans. Neutral.</p> <p>Ans. Unable to answer.</p> <p>Ans. When any one is displaced by other is called as displacement.</p> | <p>$S + H_2O \rightarrow \text{No reaction}$</p> <p>$Na + \text{dil HCl} \rightarrow NaCl + H_2$</p> <p>$Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$</p> |
|----------|--|---|---|--|

Evaluation :-

- Differentiate between physical properties of metals and non-metals. *****
- Differentiate between chemical properties of metals and non-metals *****
- What is corrosion of metal? *****
- What is neutralization reaction? *****



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Lesson Plan – 2

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|----------------|--|---------------|---------|
| Subject | :- Science | Class | :- VIII |
| Topic | :- Cell – Structure and function | Period | :- III |
| School | :- Gulab Bai Yadav Smriti Shiksha Mah. Borawan (M.P.) (M.P.) Time :- 40 Minute | | |

Teaching Method :- Traditional method

General Objectives:-

- To develop scientific approach and scientific attitude in students.
- To grow interest in the field of science.
- To give knowledge of science principles and facts.
- To grow curiosity and observation power in the students.
- To grow ability of applying science principles in daily life.

Specific Objectives :-

- Students will be able to define the cell.
 - Students will be able to explain the structure of plant cell.
 - Students will be able to explain the structure of animal cell.
 - Students will be able to differentiate between animal and plant cell.
- Students will be able to draw diagram to show the structure of cell organelle.



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Teaching Materials

:- Chalk, duster, charts and diagrams of cell and cell organelle.

Previous Knowledge

:-

Q. What is the basic unit of your body?

Ans. Cell.

Q. What are the different types of cell?

Ans. Animal cell, plant cell etc.

Q. Who discovered the cell?

Ans. Robert Hook.

Q. What are the different cell organelle present in the cell?

Ans. Nucleus, mitochondria, ribosome, chloroplast etc.

Q. What are the functions of above cell organelle?

Ans. Students are unable to answer.

Statement

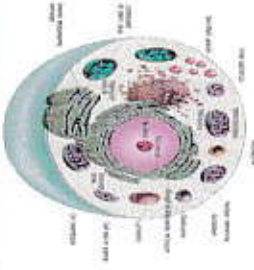
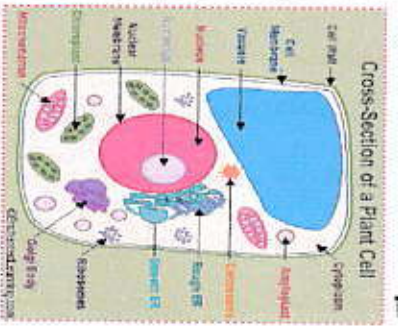
:- Today we will learn about cell its types, structure and function.



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Presentation :-

| Teaching aims | Teaching method | Teacher-student interaction | | Blackboard work | Evaluation |
|------------------------------------|--|--|---|---|--|
| | | Teacher's actions | Student's actions | | |
| Types of cell | Question answer and explanation method | <p>Q. What are the different types of cell?</p> <p>Q. What are the types on the basis of nucleus?</p> <p>Statement :- On the basis of nucleus there are two types of cell. Cell with developed nucleus is known as eukaryotic cell and cell without distinct nucleus is known as prokaryotic cell.</p> <p>Q. What are the different shape of the cell?</p> <p>Statement :- There are different shapes of cell, they modify according to function and location in the body. They are oval – like egg cell, rectangular – epithelial cell, branched – nerve cell, spindle – sperm, cubical, cylindrical etc.</p> | <p>Ans. Animal cell and plant cell.</p> <p>Ans. Students remain silent.</p> <p>The students listen carefully and note down the facts in note book.</p> <p>Ans. Students do not replay clearly and completely.</p> <p>Students will listen and note down the shapes of the cell.</p> |  | <p>Q. Name different types of cell?</p> |
| Structure of animal and plant cell | | <p>Teacher will draw the diagram of animal cell and plant cell and asked to label it.</p> | <p>Students will draw the diagram but unable to label it properly</p> |  | <p>Q. What are the different shapes of cell.</p> |




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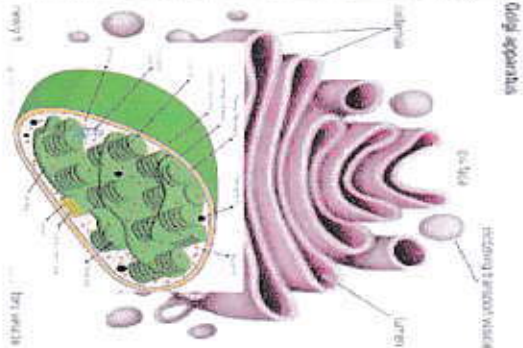
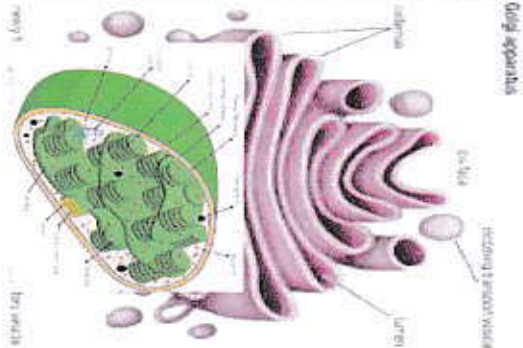
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|--------------------------------|---|---|---|---|
| 1. Protoplasm and cytoplasm | <p>Q. What is plasma?</p> <p>Statement :- Fluid present between nucleus and cell membrane is called as cytoplasm and cytoplasm along with nucleus is called as protoplasm. It is known as physical basis of life.</p> <p>Q. What is the meaning of nuclei?</p> <p>Q. What structures you can see in the nucleus?</p> <p>Statement :- Nucleus is the center part of the cell. It is covered by a nuclear membrane. It is the controller of cell activity. In plant cell it shifted to the periphery. It plays main role in cell division.</p> <p>Q. what is the outermost covering of cell in the dig?</p> <p>Q. what is the difference between animal and plant cell covering?</p> <p>Statement :- Animal cell remain covered with a flexible membrane known as cell membrane. Deposition of cellulose and chitine and</p> | <p>Ans. State of matter which is semi liquid in nature.</p> <p>Ans. Center.</p> <p>Ans. Chromosomes and vacuole like structure. Students will listen carefully and note down the important points in their note book.</p> <p>Ans. Cell membrane.</p> <p>Ans. It is irregular in animal cell and fixed in plant cell. Students will be able to know difference between membrane and cell wall.</p> | <p>Protoplasm = cytoplasm + nucleoplasm</p> | <p>Q. what is the function of nucleus?</p> |
| 2. Nucleus | <p>Q. What is the meaning of nuclei?</p> <p>Q. What structures you can see in the nucleus?</p> <p>Statement :- Nucleus is the center part of the cell. It is covered by a nuclear membrane. It is the controller of cell activity. In plant cell it shifted to the periphery. It plays main role in cell division.</p> <p>Q. what is the outermost covering of cell in the dig?</p> <p>Q. what is the difference between animal and plant cell covering?</p> <p>Statement :- Animal cell remain covered with a flexible membrane known as cell membrane. Deposition of cellulose and chitine and</p> | <p>Ans. State of matter which is semi liquid in nature.</p> <p>Ans. Center.</p> <p>Ans. Chromosomes and vacuole like structure. Students will listen carefully and note down the important points in their note book.</p> <p>Ans. Cell membrane.</p> <p>Ans. It is irregular in animal cell and fixed in plant cell. Students will be able to know difference between membrane and cell wall.</p> | <p>Protoplasm = cytoplasm + nucleoplasm</p> | <p>Q. what is the function of nucleus?</p> |
| 3. Cell membrane and cell wall | <p>Q. What is the meaning of nuclei?</p> <p>Q. What structures you can see in the nucleus?</p> <p>Statement :- Nucleus is the center part of the cell. It is covered by a nuclear membrane. It is the controller of cell activity. In plant cell it shifted to the periphery. It plays main role in cell division.</p> <p>Q. what is the outermost covering of cell in the dig?</p> <p>Q. what is the difference between animal and plant cell covering?</p> <p>Statement :- Animal cell remain covered with a flexible membrane known as cell membrane. Deposition of cellulose and chitine and</p> | <p>Ans. State of matter which is semi liquid in nature.</p> <p>Ans. Center.</p> <p>Ans. Chromosomes and vacuole like structure. Students will listen carefully and note down the important points in their note book.</p> <p>Ans. Cell membrane.</p> <p>Ans. It is irregular in animal cell and fixed in plant cell. Students will be able to know difference between membrane and cell wall.</p> | <p>Protoplasm = cytoplasm + nucleoplasm</p> | <p>Q. What is the difference between cell membrane and cell wall?</p> |



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| 4. Chloroplast | <p>pectin make it hard and rigid in plant cell called as cell wall.</p> <p>Q. What is the shape of chloroplast?</p> <p>Q. In which cell it is present?</p> <p>Q. What is the colour pigment present in it?</p> <p>Statement :- Chloroplast is a plastid present only in plant cell. It is photosynthetic organelle contain chlorophyll to traps sunlight. It is present only in eukaryotic cell. It is double membranous structure contain thylakoides and stroma.</p> <p>Q. Who has given this name?</p> <p>Q. What are the components are present in it ?</p> <p>Statement :- It is the structure which is present in animal cell composed of parallel tubes called tubes, cistern and vacuoles. it is secretary in nature.</p> <p>Statement :- Small granular dotted structures present freely or on the membrane of EPR.</p> | <p>Ans. Convex from one side.</p> <p>Ans. Plant cell and absent in animal cell.</p> <p>Ans. Chlorophyll.</p> |  | <p>Q. What is the function of chloroplast?</p> |
| 5. Golgi body | <p>Q. What are the components are present in it ?</p> <p>Statement :- It is the structure which is present in animal cell composed of parallel tubes called tubes, cistern and vacuoles. it is secretary in nature.</p> <p>Statement :- Small granular dotted structures present freely or on the membrane of EPR.</p> | <p>Ans. Answer may be given as Camellio Golgy.</p> <p>Ans. From the dig. They may answer cisterny, tubules and vacuoles.</p> |  | <p>Q. What is the function of Golgi body?</p> |
| 6. Ribosome | | | | |



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| <p>7. Endoplasmic reticulum</p> | <p>It is responsible for Protein biosynthesis. They are composed of two small sub units.</p> <p>Q. What is this reticular structure in cytoplasm? Q. What are the different types of ER?</p> <p>Statement:- Reticular tubular structure present in cytoplasm is called as ER. It is double membranous and secretory in nature. It helps in production of other cell organel.</p> <p>Q. What is the meaning of chromosome? Q. What is the location of chromosomes in cell?</p> <p>Statement :- Chromosomes are thread like structures present in nucleus. They contain granular bodies genes. Chromosome carries parental information from one generation to next generation.</p> | <p>Q. What is called as protein factory of cell?</p> |
| <p>8. Chromosome</p> | <p>Students will listen carefully.</p> <p>Ans. This is ER.</p> <p>Ans. It is Smooth and Rough Endoplasmic Reticulum.</p> <p>Students will note down the related information.</p> <p>Ans. Coloured body.</p> <p>Ans. They are present in nucleus.</p> <p>Students will listen carefully.</p> | <p>Q. What is the difference between RER and SER?</p> <p>Q. What is the function of chromosome?</p> <p>Q. Differentiate between animal cell and plant cell.</p> |



Home work :-

- Collect the information about discovery of different cell organelle;
- Draw the ultra structure of animal and plant cell and labelle it.

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Lesson Plan – 3

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|----------------------------|--|---------------|--------------|
| Subject | :- Science | Class | :- VIII |
| Topic | :- Friction | Period | :- III |
| School | :- Gulab Bai Yadav Smriti Shiksha Mah. Borawan (M.P.) | Time | :- 40 Minute |
| Teaching Method | :- Traditional method | | |
| General Objectives | :- <ul style="list-style-type: none">• To develop scientific approach and scientific attitude in students.• To grow interest in the field of science.• To give knowledge of science principles and facts.• To grow curiosity and observation power in the students.• To grow ability of applying science principles in daily life. | | |
| Specific Objectives | :- <ul style="list-style-type: none">• Students will be able to explain friction and its types.• Students will be able to explain the factors affecting the friction.• Students will be able to explain the advantages and disadvantages of friction.• Students will be able to explain the ways of reducing friction. | | |



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Teaching Materials :- Chalk, duster, ball, pipes, roller board.

Previous Knowledge :-

- Q. What is force?
Ans. A push or pull on an object is called a force.
- Q. Name the force responsible for the wearing out of bicycle tyres?
Ans. Force of friction.
- Q. What are the different types of friction?
Ans. Students are unable to answer.

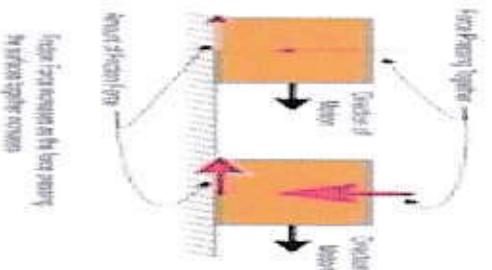
Statement :- Today we will learn about friction and its types, advantages and disadvantages.

| Teaching aims | Teaching method | Teacher-student interaction | | Blackboard work | Evaluation |
|------------------|---------------------------|--|---|--|----------------------|
| | | Teacher's actions | Student's actions | | |
| What is friction | Lecture and demonstration | Students will ask to rub their two hands against each other. Q. Do you able to move your hands freely? Q. Why? Q. What is this force called? Q. What is the cause of friction? | Ans. No Ans. A force opposes their free movement. Ans. Frictional force. Ans. The irregularities on the two surfaces in contact. | Statement:- The force which oppose the relative motion | Q. What is friction? |



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| <p>Factors affecting friction Nature of surface</p> | <p>between two surfaces is called friction force. This force is causes because irregularities between two surfaces of contact. Greater the irregular surface higher the frictional force. Students will ask to rub their hands vigorously for few minutes. Q. What do you feel? Q. Give me any other example of generation of heat energy? Statement:- When two surfaces oppose the relative motions between them also produce heat. Teacher will take a ball and a book. Teacher will keep the book on an angle of 20 degree on table top and release ball on it and repeat the same on the floor of classroom. Q. On which surface ball travel more distance? Q. Why? Statement:- Friction will be greater in case of a rough</p> | <p>Ans. On rubbing vigorously there is generation of heat energy. Ans. When we strike a matchstick, against the rough surface.</p> |  <p>Heat energy is generated by friction.</p> |
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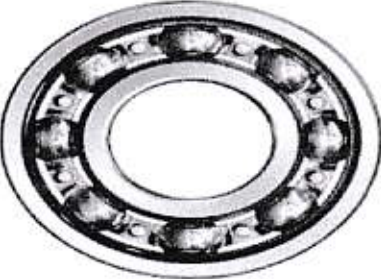

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| <p>Surface area</p> | | | |
| <p>Types of friction Static, Sliding and rolling friction</p> | <p>surface. It depends on the nature of surfaces in contact. Teacher will take chalk box and place on table top and apply a force on it by finger. Now he will place small pipes and place chalk box on it and apply force on it by finger tip. Q. In which condition less friction generate? Q. What is the reason?</p> <p>Statement:- Greater the surface area higher the friction. When a body kept on a surface and on applying a little force, it cannot be move from its place because of oppose of surface is called as static friction. Increasing force it is on the edge of moving and start to slide called sliding friction and when one body rolls over the surface of another body, the resistance to its motion is called the rolling friction. Q. What happen when sprinkle fine powder on the carom board?</p> | <p>Ans. When it placed on pipes. Ans. Less surface area.</p> <p>Students will listen carefully and note down the important facts in their note book.</p> | <p>Q. What are the factors affect friction?</p> |
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| <p>Lubricants</p> | | <p>Q. What happen when oil drops applied between two rubbing surface? Q. What is this substances called? Statement:- The substances which reduce friction are called lubricants. Friction can be reduce by using ball bearing, polishing surfaces, using oil, applying grease etc. Q. Give me some examples of uses of friction in daily life?</p> | <p>Ans. It becomes smooth. Ans. Students unable to answer properly.</p> |  <p>leehom@yhy-bearings.com</p> | <p>Q. What are the different types of friction? Q. Prove that friction is a friend as well foe.</p> |
| <p>Importance of friction.</p> |  | <p>Q. Give some harmful examples of friction? Statement:- Friction is harmful as well useful. It is clear friction is a compulsory evil.</p> | <p>Ans. We can walk on the surface. We can write with pen and pencil. We can stop vehicles by applying breaks. Ans. It wears out the machines, tools, soles of shoes. It produces heat.</p> | | |

Homework :-

- Write an essay on importance of friction.
- Collect some examples from your surroundings to show that friction in compulsory evil.

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Lesson Plan – 4

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|---------------------------|---|---------------|----------------|
| Subject | :- Science | Class | :- VIII |
| Topic | :- Materials : Metals and Non-Metals | Period | :- III |
| School | :- Gulab Bai Yadav Smriti Shiksha Mah. Borawan (M.P.) Time :- 40 Minute | | |
| Teaching Method | :- Smart class teaching | | |
| General Objectives | :- <ul style="list-style-type: none">• To develop scientific approach and scientific attitude in students.• To grow interest in the field of science.• To give knowledge of science principles and facts.• To grow curiosity and observation power in the students.• To grow ability of applying science principles in daily life. | | |

Specific Objectives

- :-** Students will be able to explain Physical properties of metals and non-metals.
- Students will be able to explain chemical properties of metals and non-metals.
- Students will be able to differentiate between physical properties of metals and non-metals.
- Students will be able to differentiate between chemical properties of metals and non-metals.



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Teaching Materials :- Interactive White Board, Power point presentation, 3-D modules, Virtual lab.

Previous Knowledge :-

- Q. Give some examples of metals.
 Ans. Gold, Iron, Silver, Aluminium etc.
- Q. Give some examples of non-metals.
 Ans. Phosphorus, sulphur, oxygen etc.
- Q. What are physical properties of metals and non-metals?
 Ans. Students are unable to answer properly.
- Q. What are different chemical properties of metals and non-metals?
 Ans. Students are unable to answer properly.

Statement :- Today we will learn about physical and chemical properties of metals and non-metals.

Presentation :-

| Teaching aims | Teaching method | Teacher-student interaction | | Green / white board work | Evaluation |
|---|----------------------|--|--|--|---|
| | | Teacher's actions | Student's actions | | |
| Physical properties of metals 1. Physical state. | Smart class teaching | Teacher will explain physical properties with the help of multimedia slide show. Different metals will shows in the form of video. Q. What is the state of metals? | Ans. Metals are solid except then mercury. | Different activity, properties and chemical equations will be written on the board | Q. What is the state of metals? 88 |




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| 2. Lustrous | | <p>To show luster of metals fresh pieces of metals will show with the help of 3-D module.</p> <p>Q. What is luster?</p> <p>An activity of hammering different metals will shows to convert metallic piece in thin sheets with the help of 3-D module.</p> <p>Q. What happen when metals were beaten by hammer?</p> <p>A module of stretching metals at goldsmith's work shop will show to demonstrate ductile nature of metals.</p> <p>A power point presentation will show to explain hardness and sonorous nature of metals.</p> <p>A virtual lab will use to show the conductivity of different metals by setting an electric circuit.</p> <p>Students will ask to place different pieces of metals and other material in empty place of circuit and observe the bulb.</p> <p>Q. What you observe when you place metals and other material</p> | <p>Ans. The property by which metal reflect light and appear bright.</p> <p>Ans. They convert in to thin sheets.</p> <p>Students will observe module and note down important facts.</p> | <p>Q. What is malleability?</p> <p>Q. What is the meaning of sonorous?</p> |
| 3. Malleability | | <p>4. Ductility</p> <p>5. Hardness</p> <p>6. Sonorous</p> | <p>Ans. When metals placed bulb glows, while</p> | |
| 7. Conductor | | | | |



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| <p>Physical properties of non-metals</p> <ol style="list-style-type: none"> 1. Physical state 2. Lustrous 3. Brittleness 4. Hardness 5. Conductivity | | <p>in circuit?</p> <p>A module will show to explain conduction of heat energy in metals.</p> <p>A virtual lab will use to demonstrate the different chemical reaction in the laboratory by using different chemical reagent and metals.</p> | <p>other material unable to complete circuit.</p> <p>Students will observe the activity carefully and note down the important points.</p> |  <p> $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$ $\text{S} + \text{O}_2 \rightarrow \text{SO}_2$ $2\text{Na} + 2\text{H}_2\text{O} \rightarrow 2\text{NaOH} + \text{H}_2$ $\text{S} + \text{H}_2\text{O} \rightarrow \text{No reaction}$ $\text{Na} + \text{dil HCl} \rightarrow \text{NaCl} + \text{H}_2$ $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$ </p> | <p>Q. What is the nature of metallic oxide?</p> <p>Q. Why Zn can not be replaced by Cu?</p> |
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Homework:-

- Differentiate between metals and non-metals.
- Write physical properties of metals and non-metals with exceptions.



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Lesson Plan – 5

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|----------------------------|--|---------------|--------------|
| Subject | :- Science | Class | :- VIII |
| Topic | :- Materials : Metals and Non-Metals | Period | :- III |
| School | :- New Catholic Mission School Jhabua (M.P.) | Time | :- 40 Minute |
| Teaching Method | :- Smart class teaching | | |
| General Objectives | :- | | |
| | • To develop scientific approach and scientific attitude in students. | | |
| | • To grow interest in the field of science. | | |
| | • To give knowledge of science principles and facts. | | |
| | • To grow curiosity and observation power in the students. | | |
| | • To grow ability of applying science principles in daily life. | | |
| Specific Objectives | :- | | |
| | • Students will be able to define the cell. | | |
| | • Students will be able to explain the structure of plant cell. | | |
| | • Students will be able to explain the structure of animal cell. | | |
| | • Students will be able to differentiate between animal and plant cell. | | |
| | • Students will be able to draw diagram to show the structure of cell organelle. | | |
| Teaching Materials | :- Interactive White Board, Power point presentation, 3-D modules, Virtual lab. | | |

Previous Knowledge :-

Q. What is the basic unit of your body?
Ans. Cell.

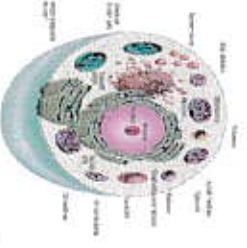


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- Q. What are the different types of cell?
 Ans. Animal cell, plant cell etc.
- Q. Who discovered the cell?
 Ans. Robert Hook.
- Q. What are the different cell organelle present in the cell?
 Ans. Nucleus, mitochondria, ribosome, chloroplast etc.
- Q. What are the functions of above cell organelle?
 Ans. Students are unable to answer.

Statement :- Today we will learn about cell, its types, structure and function .


| Presentation :- | | Teacher-student interaction | | Green/White board work | Evaluation |
|-------------------|-----------------------------|---|---|---|---|
| Teaching aims | Teaching method | Teacher's actions | Student's actions | | |
| Types of cell | Smart class teaching method | A 3-D module will show to give an introduction of discovery and types of cells. Statement :- On the basis of nucleus cells are of two types i.e. prokaryotic and eukaryotic and on the basis of cell covering and nutrition it plant cell and animal cell. A slide show will be shown to explain different shape and size of the cells. Statement :- To perform different work and | Students will observe carefully and after the module main points in the form of summery will be note down in the note book. | Prokaryotic cell – bacteria and cyano-bacteria Eukaryotic cell – animal cell, plant cell | Q. Name different types of cell? |
| Shape of the cell | | | Students will draw the diagram of different shape of the cell. |  | Q. What are the different shapes of cell? |



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| <p>Structure of animal and plant cell</p> <ol style="list-style-type: none"> 1. Protoplasm and cytoplasm 2. Nucleus 3. Cell membrane and cell wall 4. Chloroplast 5. Golgi body 6. Ribosome 7. Endoplasmic reticulum 8. Chromosome | | <p>accommodate itself cells modify in shape and size. A 3-D module in the form of power point presentation will shows to explain the structure of animal and plant cell. A drawing tool will be used by the teacher to explain how diagram of the two cells can draw and labelle.</p> <p>Nature and composition of protoplasm will be explained with the help of slide show.</p> <p>3-D module will use to explain structure and function of different cell organelle. Students will ask to draw the diagram of different organelle and labelle them.</p> | <p>Students will observe carefully and draw the diagram in note book and labelle it.</p> | <p>Students will observe carefully.</p> <p>Students will observe carefully and note down the points given in the end of slides of every module.</p> |  <p>Cross-Section of a Plant Cell</p> <p>Protoplasm = cytoplasm + nucleoplasm</p> | <p>Q. what is the function of nucleus? Q. What is the difference between cell membrane and cell wall? Q. What is the function of chloroplast, Golgi body, chloroplast? Q. What is called as protein factory of cell?</p> |
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| | | | | | Q. Differentiate between animal cell and plant cell. |
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Home work :-

- Collect the information about discovery of different cell organelle.
- Draw the ultra structure of animal and plant cell and labelle it.




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Lesson Plan – 6

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|----------------------|---|---------------|---------|
| Subject | :- Science | Class | :- VIII |
| Topic | :- Friction | Period | :- III |
| School Minute | :- Gulab Bai Yadav Smriti Shiksha Mah. Borawan (M.P.) | Time | :- 40 |

Teaching Method

:- Smart class teaching

General Objectives

:-

- To develop scientific approach and scientific attitude in students.
- To grow interest in the field of science.
- To give knowledge of science principles and facts.
- To grow curiosity and observation power in the students.
- To grow ability of applying science principles in daily life.

Specific Objectives

:-

- Students will be able to explain friction and its types.
- Students will be able to explain the factors affecting the friction.
- Students will be able to explain the advantages and disadvantages of friction.
- Students will be able to explain the ways of reducing friction.

Teaching Materials

:- Interactive White Board, Power point presentation, 3-D modules, Virtual lab.

Previous Knowledge

Q. What is force?



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Ans. A push or pull on an object is called a force.

Q. Name the force responsible for the wearing out of bicycle tires?

Ans. Force of friction.

Q. What are the different types of friction?

Ans. Students are unable to answer.

Statement :- Today we will learn about friction and its types, advantages and disadvantages.

Presentation :-

| Teaching aims | Teaching method | Teacher-student interaction | | Blackboard work | Evaluation |
|------------------|-----------------|--|---|---------------------------------------|----------------------|
| | | Teacher's actions | Student's actions | | |
| What is friction | Smart class | Students will ask to rub their two hands against each other. Q. Do you able to move your hands freely? Q. Why? | Ans. No Ans. A force opposes their free movement. Ans. Frictional force. Ans. The irregularities on the two surfaces in contact. | Prof. S.K. Tiwari <i>Principal</i> | Q. What is friction? |


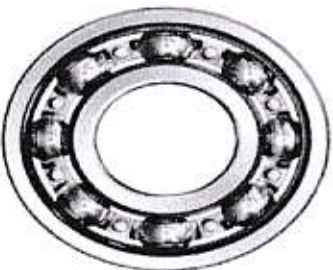


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| <p>Factors affecting friction Nature of surface</p> | <p>between two surfaces of contact. Greater the irregular surface higher the frictional force. Students will ask to rub their hands vigorously for few minutes. Q. What do you feel?</p> <p>Q. Give me any other example of generation of heat energy? Statement:- When two surfaces oppose the relative motions between them also produce heat. An activity with the help of module will shows to students to explain the effect of two different surface on friction. Q. On which surface ball travel more distance? Q. Why? Statement:- Friction will be greater in case of a rough surface. It depends on the nature of surfaces in contact. Teacher will perform an activity with the help of virtual lab to explain the effect of surface area on friction. Q. In which condition less</p> | <p>Ans. On rubbing vigorously there is generation of heat energy. Ans. When we strike a matchstick, against the rough surface.</p> <p>Ans. On the table top. Ans. It is smooth then floor.</p> | <p>Ans. When it placed on</p> |
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| <p>Surface area</p> | <p>friction generate? Q. What is the reason? Statement:- Greater the surface area higher the friction. With the help of virtual lab an activity will perform to calculate the force need to move the object using spring balance. A power point presentation will use to explain the types of friction.</p> | <p>Q. What happen when sprinkle fine powder on the carom board? Q. What happen when oil drops applied between two rubbing surface? Q. What is this substances called? Statement:- The substances which reduce friction are called lubricants. Friction can be reduce by using ball bearing, polishing surfaces, using oil, applying grease etc. Some examples of reducing friction will be shown using 3-D module i.e. use of ball bearing, use of grease, use of dry and liquid lubricants. Q. Give some examples of uses</p> | <p>Ans. By reducing friction it increase efficiency of board. Ans. It becomes smooth. Ans. Students unable to answer properly.</p> |  | <p>Q. What are the factors affect friction?</p> |
| <p>Types of friction Static, Sliding and rolling friction</p> | <p>Q. What are the factors affect friction?</p> | <p>Q. What are the different types of friction?</p> | <p>Q. What is the use of lubricants?</p> |  <p>leehom@yhy-bearings.com</p> | <p>Q. What is the use of lubricants?</p> |
| <p>Lubricants</p> | <p>Q. What is the use of lubricants?</p> | <p>Q. What is the use of lubricants?</p> | <p>Q. What is the use of lubricants?</p> | <p>Q. What is the use of lubricants?</p> | <p>Q. What is the use of lubricants?</p> |




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| Importance of friction. | | <p>of friction in daily life?</p> <p>Q. Give some harmful examples of friction?</p> <p>Statement:- Friction is harmful as well useful. It is clear friction is a compulsory evil.</p> | <p>surface. We can write with pen and pencil. We can stop vehicles by applying breaks.</p> <p>Ans. It wears out the machines, tools, soles of shoes. It produces heat.</p> | <p>friction is a friend as well foe.</p> |
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Homework :-

- Prove that friction is a friend as well foe.




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