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1.	Identify the most abstract concepts (difficult topics) from any class physical science text book suggest ways & means to make it easy to understand and concrete.	college.	02 - 04
2	Identify concrete & Abstract concepts in physics & chemistry of any class & suggest the appropriate Teaching methods & approaches to teach them and report.	college	05 - 07
3	Prepare an assignment on any physical sciences & its application & implications with other branches of knowledge.	college	08 - 10
4.	Prepare biographical sketch of a scientist & his/her contributions to physics/ chemistry.	college	11 - 13
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ACTIVITY - I

1. Identify the most abstract concepts (difficult topics) from any class physical science textbook suggest ways & means to make it easy to understand and Concrete.

Class :- 8th class
Physics :- Force

Introduction :-

Have you ever wondered what makes an object slow down or go faster, or change its direction of motion? We often say that a force has been applied on a ball when it is kicked, pushed, thrown or flicked. So, a push or a pull on an object is called a force. Thus, we can say that the motion imparted to objects was due to the action of a force.

Types of Force :-

Contact forces and forces at a Distance :-

Why does tooth paste come out when we pour the tube? Why does the needle of a magnetic compas move when we place a bar magnetic near. Have you observed the difference between the force you apply on the needle of a compas.

Assumptions of construct forces :-

Knowledge is constructed from assumption, experience. You observe that there is direct contract between Your hand and tube force which result when there is a direct physical contact between two objectives.

Muscular force :-

Muscular force is caused by the action of muscles in our body. The force resulting due to the action of muscles is known as the Muscular Force.

In all the actions that we perform in our daily life like brushing, bathing, eating, writing, driving & walking is an example of muscular force.

Force of friction :-

When we stop pedalling a bicycle, it gradually slows down and finally comes to stop. A car or a scooter also comes to rest once its engine is switched off.

So, the force responsible for changing the state of motion of objects in all these examples is the force of friction.

Tension :-

We know that the stone would fall down due to gravitational pull at the earth if the string is broken.

For a strech or pull apart the object, means tension is the pulling or stretching force transmitted axially along an object such as a string, rope, chain, rod, thus member, or other object.

Non - contact forces :-

Magnetic force :-

Magnetic force, attraction or repulsion that arises between electrically charged particles because of their motion.

Electrostatic Force :-

A straw is said to have acquired electrostatic charge after it has been rubbed with a sheet of paper.

The force exerted by a charged body on another charged or uncharged body is known as electrostatic force.

Gravitational Force :-

A coin or pen falls to the ground when it slips off our hand. When the coin is held in hand it is at rest. As soon as it is released, it begins to move downwards, So the state of motion of the coin undergoes a change.

So every object in the universe, whether small or large, exerts a force on every other object. This force is known as the gravitational force.

ACTIVITY - II

2. Identify concrete and Abstract concepts in Physics and chemistry of any class and suggest the appropriate Teaching methods and approaches to teach them and report.

Inductive Approach :-

In the Inductive approach the concept / generalization is derived after electing a number of examples from pupils. It is reasoning from particular to general. This method is known as Formula construction method and logical approach.

We make use of inductive method of teaching whenever, we place before children a number of facts, examples or objects & then endeavour to lead them to draw conclusions.

e.g:- By heating various metals, the student may conclude that metals expand when heated.

The various steps in Inductive approach :-

1) Sensing the Problem :-

Here the students define the problem.

2) Analysing the Situation :-

Here a detailed analysis of all the aspects of the situation is done.

3) Collecting the data :-

The students collect the relevant data from different sources like books, field etc.

4) Organising the data :-

The students organize the collected information with the help of teacher.

5) Framing Possible solutions :-

After organizing the data, the students frame possible solutions.

6) Eliminating :-

Only possible solutions are retained and the rest are eliminated.

7) Verification :-

The solutions are applied to the problem situations and the results are checked. The procedure is repeated a number of times.

Deductive Approach :-

It is opposite to Inductive approach. Deductive approach is from general to particular. It is sometimes called going from the known to unknown because it involves making logical interences from general statements that have already been accepted. This method called as a method of verification of formula.

Example :- Acids changes blue litmus paper as red Bases changes red litmus paper as Blue.

Steps in deductive approach :-

1) **Understanding the problem :-**

The students understand the problem, define it and formulate it.

2) **Collecting information :-**

The students collect the information from a number of sources like library, laboratory, field etc.

3) **Reviewing :-**

Principles are reviewed to find facts which may be best applicable to the problem in question.

4) **Drawing inference :-**

The principles are applied to particular case & inferences are drawn that the problem falls under the principle.

5) **Verification :-**

The principle is applied to the particular case. If it solves the problem then it is accepted, otherwise the procedure is repeated till a better solution is found.

ACTIVITY - III

3) Prepare an assignment on any physical sciences and its application and implications with other branches of Knowledge.

Meaning of Science :-

Science is derived from a latin word 'Scientia' of "Sera", which means "Knowledge" or "to know". Science is the investigation and interpretation of events in the natural, physical environment and within our bodies.

science
- is a body of knowledge.
- is a method of inquiry, a way of investigating
- is an attitude towards life a way of thinking.

Thus, science could be defined as "a body of knowledge, a way of investigation or method and a way of thinking in the pursuit of an undertaking of nature.

Application & Implication of physical science with other branches :-

Science is a discipline consists of different branches. For the sake of convenience and fesibility we have subdivided into physics, chemistry, Biology & natural science at school level. At the higher level new subdisciplines like Biochemistry, Electronics, Geophysics etc.

1) Physical science with mathematics :-

All branches of Mathematics have direct application of science. Scientific inventions can't be achieved without the help of mathematics. Various theories of science are tested on the touchstone of mathematics. The tables and graphs made available only with the help of mathematics.

A) Physics and Mathematics :-

→ Measurements, Statistics, Kinematics, Collisions are based on Mathematics.

Eg : $v = u + at$

$v^2 - u^2 = 2as$

→ To explain light Phenomenas like Refractive index.

Eg : $\mu = \frac{\sin i}{\sin r}$

B) Chemistry and Mathematics :-

→ Balancing in equations :-

$2Na + Cl_2 \rightarrow 2NaCl$

2) Science and Literature :-

Language is the property of the literature. Through language only the knowledge of science is spread throughout the world. Teacher of science should try to use correct language & encourage their students to write correct language.

Physical science and Biology :-

Biology & Physics has led to the development of new branch of study called 'Bio Physics'. It include the study of Genetic Gene. Mutation, Radio isotopes, pollution.

Physical science and History :-

History is the study of the growth of the nation. The growth & development of any nation depends on scientific advancement. Hence both are closely correlated.

Physical science and Art :-

An artist should know the principle of Light & shade, objects and background for drawing or keeping the colour contrast in attractive condition.

Physical science and Music :-

Various types of instruments are based on different principles of science. In the study of music, its technicalities like tones, pitch etc can be easily understood if the student has a basic knowledge of science.

Conclusion :-

So we conclude that science acquaints the students with knowledge of facts, it also trains them as well balanced useful citizens by preparing them vocationally, morally, intellectually & aesthetically.

ACTIVITY - IV

4) Prepare biographical sketch of scientist & his/her contributions to physics/chemistry.

Name: Sri chandrasekhar Venkataraman
Born: 1st November 1888
Tiruchirapali, Madras Presidency, British India
Died: 21 November 1970 (aged 82)
Bangalore, Mysore, India.
Nationality: India
Known for: Raman
Spous : Lokasundari Ammal
children : 2 including Venkataraman Radhakrishan
Awards : Fellow of the Royal Society (1924)
Matteucci Medal (1928)
Knight Bachelor (1930)
Hughes Medal (1930)
Nobel prize in physics (1930)
Bharat Ratna (1954)

Fields : Physics
Institution : India Finance Department Rajabazar Science college (university of culcula)
Indian Association for the cuttivation of science,
Indian Institution of science Raman Research Institute.

Education :-

At an early age Raman moved to the city of Visakhapatnam and Hudied at Aloystas. Auglo India high school Raman Paned him matriculation examination of the age of all and the paned his F.A examination with a scholarship at the age of 13.

In 1902 Raman Joined Presidency college in Madras where his father was a futeren in physics in 1904 he paned in Bachlore of arts. Examination state at Andrapradesh and later joined presidency college in Madras.

Carrer :-

In 1917 Raman resigned from his government service after he was appointed the first Pilot Professor at physics at the university of culcutla at same time he continued doing research at the Indian Amaintian for the cultivation of science culcutla where they students gathered around him at the university of culcutla.

On 28 February 1928 Raman lead expriment at IACS with colaboration including K.S. Krishna on the scatlering of Light when the discovered what how by G. Venkataraman. it was invontely aear that this discovery was of huge value of gave further proof of the quantum vactor of Light Raman had a compirased professional relationship with F.S. Kmhnman who surprising

didnot share the award but mentioned of prominently even in nobal.

Raman was successed by "Debandra Mahon Bose". at the palint professor in 1932. In 1933 Raman left IACS and join Indian Institution of science in Bonget.

Achievements :-

During a voyage to europe in 1921 Raman noticed the blue color of glaciens the made talerne sec which exphsed the phenomenon.

Raman employed mono chromatic light from a mercury and lamp which penetrated its spectrum the dected tims in spectum which is later called Raman Lines.

ACTIVITY - IV

4) List out different content aspects of a unit in physics / chemistry and write down the objectives and specifications under cognitive Domain associated with them.

Class – 8th class
Content – Metals & Non metals
1st content – Metals
objective and specification
2nd content – Non metal
content - metal

Knowledge :-
It involves the recall of specific and universal method and process it explain. student complete details of the metals.

Appearence :-
In previous classes you bornt that the material which have a bright surface and outlet light we called has those mater

Sonority :-
While Aryan was carrying a geometry box he slipped fell he notted that the box made a ringing sound it was similar to the sound that at ringing bell.

Analysis :-
The breakdown of communication into its constituent elements or part so that the relative hierchy of ideas is made clear type of metals ideas expressed are made explet.

Evaluation :-
Judgement about the metals and methods for given purpose it includes informal excluders.

Synthesis :-
students putting together of metal elements and part so to form a whole. The includes production of a unclear communication of a plane obstract reduction.

Content - 2, Non-metals

Knowledge :-
It involves the real at specific and universal process it explain complete details of knowledge to the students.

Comprehension :-
It represent the lowest level of understanding the non-metal the properties for the students.

Identification :-
Students Identifiy the non-metals observed and identification of participation non-metals.

Appearance :-

Students observed the wooden bells and wooden poonishare what use in schools and also implus also temples. These are observed in all the knowledge in activities of the pupils of the students.