EHV – Science

Topic	Concept	Values Integration
Body Systems	Digestive System, Nervous Systems, Skeletal Systems etc	Team work Each system working together to support the body. When working in a team, we should be aware of our responsibilities as team members and should work together to support each other so that the team can succeed. <u>Silent sitting linked to the topic</u> …Imagine a bright light entering your head and filling your head and your heart… Now imagine the light moving through your [insert name of the system you are working on]. … Let the light fill your [one by one go through the parts of the system. You might need to remind them which part of the body each is in.]….. Let the light join each system part together so they can work together in harmony for your health… Now imagine that you are sending the light to the person sitting on your right hand side. From there it goes to the next person… and so on until you have sent light to every person in the room…. Imagine the light connecting everyone in the room to everyone else. Say to yourself "We are all a team and we support each other to be the best that we can be, so that the team can be healthy. <u>Story</u> Once upon a time the arms and the legs and the head made a plot against the stomach. They whispered together that they did all the work while the stomach did none. The legs said that

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		they walked to get the food, the arms said they laboured for it, the mouth said that it received the food. The teeth said that they chewed it. So they agreed not to do any more work, so as to prove to the stomach how helpless he was without them. The stomach heard what they said, but pretended to take no notice. And it came to pass that after a couple of days of idleness, the legs found they were growing very weak, the arms found they couldn't lift, the mouth was growing dry, the teeth were tired of doing nothing, and it was clear that the whole body was wasting away. Then the legs, the hands and the head began whispering again, still thinking that the stomach didn't hear them. But he did. The legs struggled to get some food, the hands struggled to lift it to the mouth, the mouth struggled to receive it. The teeth struggled to chew it. And slowly the body revived and became strong and hearty again. As for the stomach, he smiled to himself, but never said a single word. <u>The message</u>: No parts of anything are of use unless they work happily with all the other parts. A family or a community is a poor sort of family/community unless all the members work together for the happiness of all. Extracted from *Richards Topical Encyclopedia*, New York: J.A.Richards, 1945, Vol. 14, p.295.

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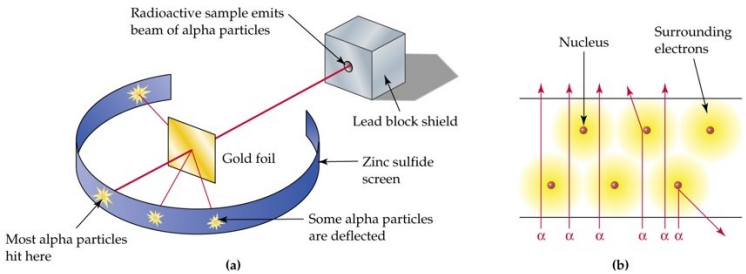
<table>
<tr><td></td><td></td><td></td></tr>
<tr><td>Atoms</td><td>Atoms are made up of subatomics particles Neutrons, electrons, protons.

Model of Atoms: Rutherford’s Model

Different models of Atoms

Class activity. Make a model of Atoms (Bohr’s model, Thompson’s model) Use hearts to represent protons. My students used stars to represent electrons.</td><td>According to the Rutherford’s model, light rays:

<table><tr><td></td><td>Values learnt</td></tr><tr><td>Deflect</td><td>We should be able to deflect negative thoughts

Or Positive thoughts should be absorbed and then passed onto others.</td></tr><tr><td>Go through the empty space</td><td>If there are any negative comments directed towards you, let it pass through. Do not let it affect you in any way.</td></tr><tr><td></td><td></td></tr></table>
Our hearts should be filled with positive thoughts surrounded by ‘bright stars’.
Or discuss with students about changing the negative energy around you (electrons) to positive energy by surrounding yourself with stars (GOOD COMPANY)

<u>Silent sitting</u>
Do a shortened version of the light meditation but concentrate particularly on the part where they are asked to send light to people who are being unkind to them or who they perceive to</td></tr>
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	 	be unkind. Ask them to imagine that they are sending the light in the form of bright stars from their hearts to deflect the negative thoughts or words coming their way. Share your own story about a time when you have used this technique successfully to improve a situation with somebody who has been sending negative thoughts to you. <u>Homework challenge</u> Challenge the students to choose somebody who they think is negative towards them and to practise this activity every day for one week. Suggest a timeframe, eg 2 minutes per day to focus on sending the stars from their hearts. Remind them every day to do it. At the end of the week, ask students to share any success stories. To encourage them to do it, you could display stars on the wall with the names of the students who report a success story.

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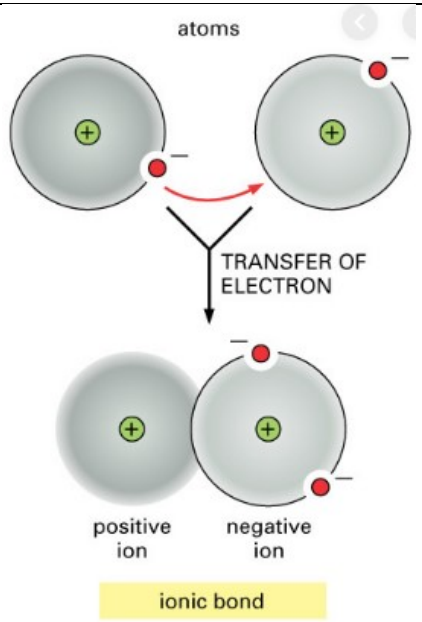
Chemical Reactions	Atoms react to become stable either by sharing or donating its electrons.	
Ionic and Covalent Bonding		It is better to give away things to others that we may not need but maybe very useful to others. Discussion points : • Selfless service • Love for others that you are willing to give and not expect anything in return <u>Homework challenge</u> Challenge the students to do one of the activities suggested in the notes about homework, eg helping a family member secretly, or practising ceiling on desires, to save time, money or some other items to donate to others. At the end of the challenge, it is important to discuss with the students about how, like the atoms, they feel better about themselves (more stable) from doing these activities.

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	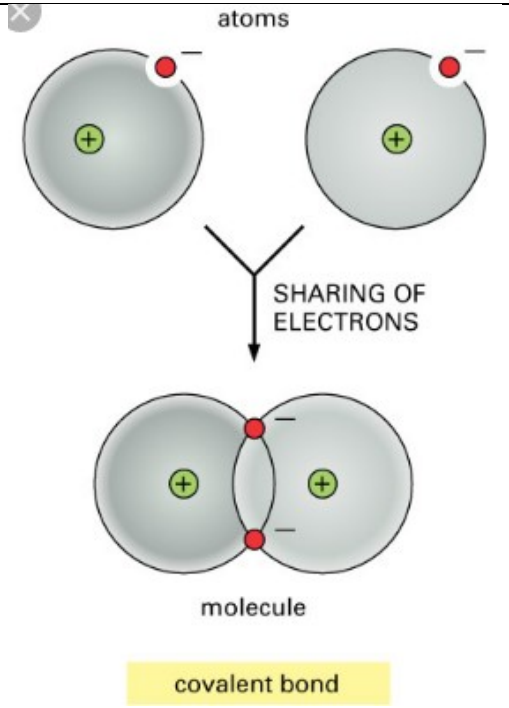	Elements sharing electrons to become stable. We should be prepared to also share if need be. Few discussion points: • Sharing the love • Respecting others needs • Love for others • Understanding your needs and other's needs.

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Photosynthesis	Plants carry out the process of photosynthesis – using Sun's energy to produce food and giving out oxygen.	Selfless service by trees. <u>Silent sitting</u> At the end of the lesson, use silent sitting to recall and consolidate the process of photosynthesis, step by step. This will help them to transfer the information to their long term memories…. Then ask the students to imagine they are like a tree, drawing in the Sun's energy, filling their bodies and minds, giving them strength…. then to imagine that, like the trees, they are sharing their strength with their friends, with their family members, with their school, with the community, and with the whole country and whole world. <u>Homework challenge</u> Having established how important trees are to sustaining life, challenge students to do Ceiling on Desires to save some money that can be used to buy trees, that they can plant and nurture.
Acids, Bases and Neutral	Change of colours of red and blue litmus paper. In Neutral, blue litmus paper remains blue and red litmus remains red. No colour change in neutral substance.	We should always be neutral and not let anything affect. Discussion points : • We should always keep a balance in life and not get affected by any negativity directed towards us.

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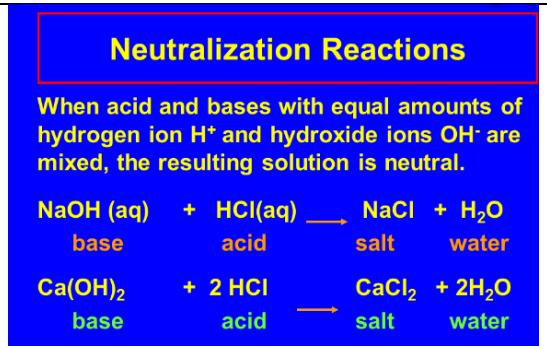
Neutralization Reactions		Any negative emotions within us can be balanced off by positive thoughts. <u>Silent sitting</u> … Imagine yourself as a piece of litmus paper. You can choose whether you are blue or red. Imagine some of the things that can make us feel negative emotions….. imagine something that has made you feel angry recently, and then watch as you manage to stay the same blue or red that you have chosen to be. Now think of something that has made you feel jealous recently – and again imagine that this has not affected you and you are still able to hold your blue or your red colour. Now think of a time when you have felt disappointed. Once again imagine that this disappointment is not able to affect you at all, and that your litmus paper still keeps its original blue or red colour. Before you open your eyes, make a promise to yourself that you will not change your colour whatever negative things might happen around you – you will still continue to keep your blue or your red balance. <u>Homework</u> Ask each student to write down one negative emotion and to think of a positive thing that they could think, say or do to balance it. To encourage students to do this activity, divide them into groups and see which group can come up with the best set of ideas. (Talk to them about strength in unity, that the group working together can come up with better results than individuals working alone.)

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Cells	Organelles make up the subunits of a cell. There are numerous each with their own function.	Teamwork – each member working together and doing their part. Discussion points : • Duty – each member should be familiar with their duty • Responsible • Cooperation <u>Silent sitting</u> Just like the organelles, each one of us has something special and unique about us, and we have a responsibility to discover what ours is, and how we can use it to make ourselves and others happier. Imagine that you are very, very tiny and you are walking inside brain. It looks like a library, with lots of shelves and books. Inside the books are all the things you have ever learned. You walk along the shelves until suddenly you find what you are looking for. It is a big book on a very high shelf. You take it off the shelf and look at the cover. On the cover it has your name and it is called "My Book of Special Strengths". Imagine that you open the book. On the first page there is a list of all the special strengths that you have, and all the things that you are good at. It might be words, or it might be a picture, or it might be like a movie. If you can't see anything don't worry because it will pop into your mind later. Have a good look at what is on the page and make sure you take careful notice of the information that is given to you. When you are ready, close the book and put it back on the shelf.

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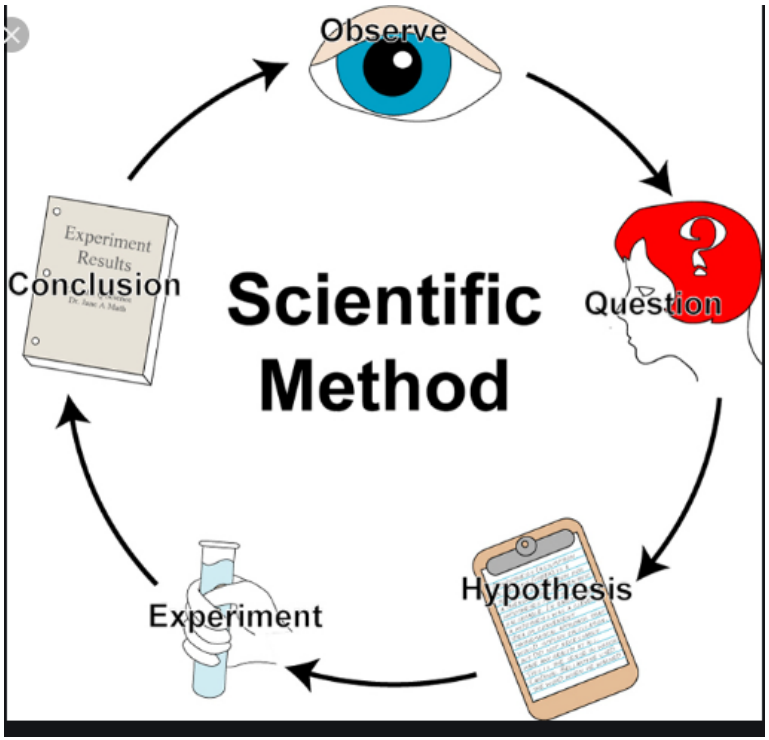
Scientific Method		**Lifeskills Process** Aim – Always have an aim or objective Risk – Evaluate what risks will be involved when you undertake a task in life (example : studies, work project etc) Method – how will you carry out the duty with love, respect. Any work carried out should be done with love, peace etc Discussion Reflect on what has been done. Self-evaluate. Identify any mistake that was made.

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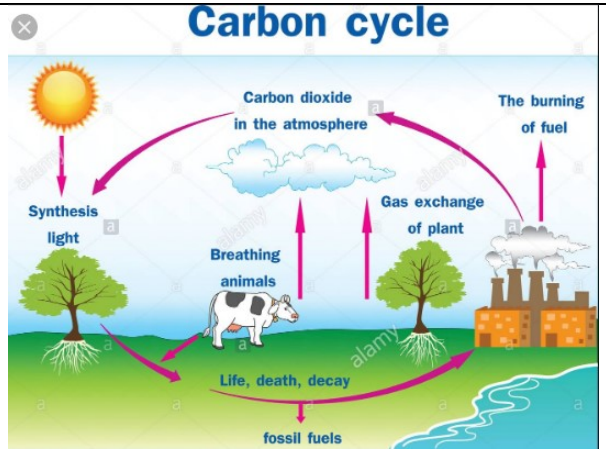
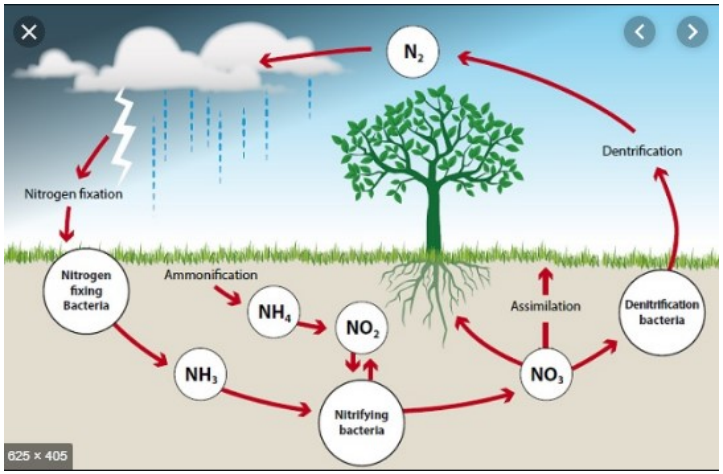
Water Cycle/Carbon Cycle/Nitrogen Cycle	 		Definition of what goes around comes around —used to say that if someone treats other people badly he or she will eventually be treated badly by someone else. You should not mistreat them.

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	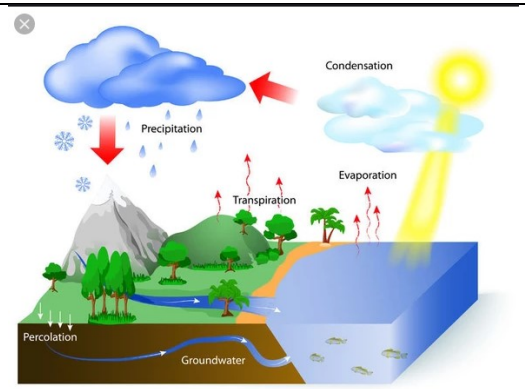	
Periodic Table	The periodic table, also known as the periodic table of elements, is a tabular display of the chemical elements, which are arranged by atomic number, electron configuration, and recurring chemical properties.	
Energy	In physics and chemistry, the law of conservation of energy states that the total energy of an isolated system remains constant; it is said to be conserved over time. This law means that energy can neither be created nor destroyed; rather, it can only be transformed or transferred from one form to another.	
Ester	Esters are common in organic chemistry and biological materials, and often have a pleasant characteristic, fruity odor. This leads to their extensive use in the fragrance and flavor industry.	

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