|  |  |
| --- | --- |
| Flipped Classroom  Active Science Resources—Pre-class and In-class  Activities |  |

**List of Flipped Classroom Activities**

The activities aim at

• Stimulating students’ thinking skills

• Nurturing students’ dtawing and graphing skills

• Reinforcing students’ experiment skills

• Promoting self-learning in science

|  |  |  |  |
| --- | --- | --- | --- |
| **Form 1** | | | |
| **Stimulation of Thinking Skills** | **Drawing and Graphing Skills** | **Experiment Skills** | **Self-learning in Science** |
| **[Ch 1]** School laboratory accidents  **[Ch 2]** Distribution of the world's water resources  **[Ch 3]** Should we kill all mosquitoes | **[Ch 1]** Drawing sectional diagrams  **[Ch 2]** Drawing a line graph  **[Ch 3]** Making dichotomous keys | **[Ch 1]** Steps in Scientific Investigation (SI)  **[Ch 2]** Use of condenser during distillation | **[Ch 2]** Unifying Concept – Change and constancy in the water cycle  **[Ch 3]** NoS – Discovery of cells |
| **[Ch 4]** How do animals attract mates  **[Ch 5]** Energy needs: then and now (thinking why energy need is growing rapidly) | **[Ch 4]** Biological drawing  **[Ch 5]** Understanding the use of fossil fuels from a graph | **[Ch 4]** How to use a microscope  **[Ch 6]** Observing Brownian motion using dilute milk | **[Ch 4]** Unifying Concept– Organization of our body systems  **[Ch 5]** Unifying Concept – Conservation of energy  **[Ch 6]** Unifying Concept – Models in science |

|  |  |  |  |
| --- | --- | --- | --- |
| **Form 2** | | | |
| **Stimulation of Thinking Skills** | **Drawing and Graphing Skills** | **Experiment Skills** | **Self-learning in Science** |
| **[Ch 7]** Where do plants gain weight from?  **[Ch 8]** What is the use of RCCB? | **[Ch 7]** Drawing a diagram of stomata | **[Ch 7]** Destarching a plant  **[Ch 7]** Using a microscope to observe stomata  **[Ch 8]** How to insert an ammeter | **[Ch 7]** Unifying Concept – Conservation of matter (during respiration and photosynthesis)  **[Ch 8]** Unifying Concept – Energy and charges |
| **[Ch 10]** What may happen when the brain is damaged?  **[Ch 11]** World without friction | **[Ch 9]** pH curve  **[Ch 10]** Drawing light ray diagrams for the eye  **[Ch 11]** Plotting graphs (*s*–*t* graph)  **[Ch 11]** Drawing free body diagram | **[Ch 9]** Using pH papers and universal indicator solutions  **[Ch 10]** Dissecting an ox's eye  **[Ch 11]** Measuring forces by using a spring balance | **[Ch 9]** NoS – Attitudes leading to successful discovery (Robert Boyle)  **[Ch 10]** Unifying Concept – Forms and fucntions of different parts of the eye  **[Ch 11]** NoS – Newton's discovery of universal gravitation |

|  |  |  |  |
| --- | --- | --- | --- |
| **Form 3** | | | |
| **Stimulation of Thinking Skills** | **Drawing and Graphing Skills** | **Experiment Skills** | **Self-learning in Science** |
| **[Ch 12]** The most suitable way to reduce weight  **[Ch 13]** Metals in a smartphone | **[Ch 13]** Balancing a chemical equation  **[Ch 14]** Drawing a ray diagram (for plane mirror images) | **[Ch 12]** Testing food substances in a laboratory  **[Ch 13]** Use of thermometer during fractional distillation  **[Ch 14]** Measuring the angle of incidence and angle of refraction | **[Ch 12]** NoS – The first vaccine in history  **[Ch 13]** NoS – The growing Periodic Table  **[Ch 14]** NoS – Newton and prism |