

Lab in a box by "I Love Science"

| Unit | Activity | 6th | 7th | 8th | Student activity material (5x) |
|--|--|-----|-----|-----|--------------------------------|
| Unit 1: Food | | | | | |
| 1.1 – Food testing (Components of food) | | | | | |
| | Test presence of glucose in food | Y | | | Y |
| | Test starch in food | Y | | | Y |
| | Test protein in food | Y | | | Y |
| | Test presence of fat in food | Y | | | Y |
| Unit 2: Air & water | | | | | |
| 2.1 – Air | | | | | |
| | Testing oxygen in air | Y | | | |
| | Make an anemometer | Y | | | Y |
| 2.2 – Water | | | | | |
| | Water filtration model | | | Y | |
| 2.3 – Air pressure | | | | | |
| | Bernoulli bag and straw spray | | Y | | Y |
| Unit 3: Materials | | | | | |
| 3.1 – Sink or float | | | | | |
| | Density: Make a boat from rubber | Y | | | Y |
| | Make a boat of metal | Y | | | Y |
| | Density & solubility of oil and water | Y | | | |
| | Bottle diver (Sub marine) | Y | | | Y |
| 3.2 – Separation of substances | | | | | |
| | Handpicking | Y | | | |
| | Magnetic separation | Y | | | |
| | Sedimentation-decantation-filtration | Y | | | |
| | Winnowing | Y | | | |
| | Evaporation | Y | | | |
| 3.3 – Physical & chemical changes | | | | | |
| | Burning of Magnesium ribbon | | Y | | |
| | Making slime | | Y | | Y |
| | Making solid objects from POP | | Y | | Y |
| 3.4 – Heat & Temperature | | | | | |
| | Heat conduction | | Y | | |
| | Air expansion by heating inflates balloon | | Y | | |
| | Make thermometer in a bottle | | Y | | Y |
| 3.5 – Acids and bases | | | | | |
| | Testing acids and bases with pH paper | | Y | | Y |
| | Testing acids and bases with litmus paper | | Y | | Y |
| | Indicator fun: writing with turmeric | | Y | | Y |
| | Acid base reaction, | | Y | | Y |
| | CO ₂ as fire extinguisher | | Y | | Y |
| | Neutralization test | | Y | | Y |
| | CO ₂ Balloon | | Y | | Y |
| | Lava bottle with Eno Tablet | | Y | | Y |
| Unit 4: The living world | | | | | |
| 4.1 – Body movements | | | | | |
| | Bone joints: Hinge, Ball & Socket joint, Pivot joint | Y | | | |
| 4.2 – Respiration | | | | | |
| | Model of lungs | | Y | | |
| | Check Carbon dioxide in the air we exhale | | Y | | |
| 4.3 – Using Microscope to view miniature life | | | | | |
| | Paper microscope & prepared slides | | | Y | Y |
| | Making onion peel slide | | | Y | Y |
| | Using a bug viewer | | | Y | Y |
| 4.4 - Microorganisms | | | | | |
| | Fermentation with yeast | | | Y | |
| Unit 5: Moving things | | | | | |
| 5.1 – Time & Motion | | | | | |
| | Make a sundial | | Y | | Y |
| | Oscillations of a Pendulum | | Y | | Y |
| 5.2 – Force & Pressure | | | | | |
| | Make weighing scale from rubber-bands | | | Y | Y |
| 5.3 – Hydraulic Force & Pressure | | | | | |
| | Make hydraulic lift | | | Y | Y |

| | | | | |
|---|--|----|----|----|
| 5.4 – Electrostatic force | | | | |
| | Make an electroscope | | | Y |
| 5.5 – Friction | | | | |
| | Friction in different material surfaces | | Y | Y |
| | Rolling friction | | Y | Y |
| | Make a fidget spinner with ball bearing | | Y | Y |
| | Hovercraft | | Y | Y |
| 5.6 – Sound | | | | |
| | Observe longitudinal waves in slinky. | | Y | |
| | swingnig pipe | | Y | Y |
| | Screaming balloon | | Y | Y |
| | Palm pipes | | Y | Y |
| | Stethoscope | | Y | Y |
| | Guitar | | Y | Y |
| | Cup telephone | | Y | Y |
| Unit 6: Optics | | | | |
| 6.1 – Light shadows & reflection | | | | |
| | Test material of different transparency | Y | | |
| | Make a shadow game | Y | | Y |
| | Light travels in straight line | Y | | Y |
| | Pin hole camera | Y | | Y |
| | Reflection of light with plane mirror | Y | | Y |
| 6.2 – Spherical mirrors and lenses | | | | |
| | Make convex and concave mirrors | | Y | Y |
| | Making image from a concave mirror | | Y | |
| | Image in a convex mirror | | Y | |
| | Optical power and focal length of lenses | | Y | Y |
| | Observe refraction in lenses using a light ray box | | Y | |
| | Model of a camera | | Y | Y |
| | Model of a projector | | Y | |
| 6.3 – Dispersion of light | | | | |
| | Making a rainbow from prism | | Y | |
| | Mixing rainbow colors in Newton's disk | | Y | Y |
| 6.4 – Multiple reflections | | | | |
| | Reflection form multiple mirrors | | Y | Y |
| | Kaleidoscope | | Y | Y |
| | Periscope | | Y | Y |
| 6.5 – Vision | | | | |
| | Model of human eye | | Y | |
| | Persistence of vision toys | | Y | Y |
| Unit 7: Electricity & Magnetism | | | | |
| 7.1 – Electric circuit | | | | |
| | Make an electric circuit | Y | | Y |
| | Connect multiple LEDs in Parallel | Y | | Y |
| | Electric circuit with a motor. | Y | | Y |
| | Test good and bad conductors of electricity | Y | | Y |
| | Make a torch with a switch | Y | | Y |
| 7.2 – Effects of electric current | | | | |
| | Electric heating | | Y | Y |
| | Electromagnet | | Y | Y |
| | Electric motor | | Y | Y |
| | Solar electricity | | Y | Y |
| 7.3 – Electrochemistry | | | | |
| | Test conductivity of liquids | | Y | Y |
| | Electroplating of copper on iron | | Y | Y |
| | Make an electric battery from lemon juice. | | Y | Y |
| | Electrolysis of water | | Y | Y |
| 7.4 – Magnets | | | | |
| | Use compass to find N-S direction, | Y | | Y |
| | Make your own compass | Y | | Y |
| | Magnetic repulsion toys: Floating magnets. | Y | | Y |
| | Magnetic attraction: Magic flying kite. | Y | | Y |
| | Magnetic levitation. | Y | | Y |
| | Magnetic poles and field lines | Y | | Y |
| | | 32 | 32 | 28 |
| | | | | 68 |
| | | 92 | | |