केन्द्रीय माध्यमिक शिक्षा बोर्ड
(शिक्षा मंत्रालय, भारत सरकार के अधीन एक स्वायत्त संगठन)
CENTRAL BOARD OF SECONDARY EDUCATION
(An Autonomous Organisation under the Ministry of Education, Govt. of India)

CBSE/DIR(ACAD)/2021 **Date: 29.10.2021**

Circular No. Acad- 110/2021

All the Heads of Schools Affiliated to CBSE

Subject: Alternate activities for Science Practical work for classes 9-10.

With the school lockdown during the COVID pandemic, the amount of time available to teachers for face-to-face instruction has reduced in the current academic session. Further, the opportunities for hands-on teacher guided practical work for Science has also been limited. In September 2020, the Board guided schools vide CBSE Circular No. Acad-65/2020 dated 02nd Sept 2020 on the conduct of practical work during the lockdown, where the schools were advised to use the platform of OLabsto facilitate a virtual experience of CBSE curriculum aligned experiments/ activities for classes 9 to 12.

Further to this, the CBSE has curated a set of alternate experiments using simple, readily available household materials that learners can use to do these activities at their homes. The hands-on activities have been designed to have similar learning outcomes for all the lab experiments required to be done in 21-22 for class 9 and 10. Besides this, a list of additional activities from the NCERT lab manual for 9 (20 activities) and 10 (22 activities) are provided. Learners may use these to explore science concepts and gain better understanding.

These hands-on activities are accompanied by step-by-step guides, videos and worksheets for students to record observations. A list of material needed for each experiment, together with alternatives have also been included in the content package to facilitate the learners. The content has been provided by ThinkTac and is also available on the Diksha portal.

While the activities and materials have been chosen to be safe for learners to do on their own, teachers are required to review these before assigning them and advise parents if supervision is required for any specific activity. CBSE would be providing an online training on the usage of these activities, details of which will be intimated separately.

The list of the class 9 and 10 lab experiments and the links to access hands-on activities that can be used as an alternative is detailed as Annexure to this circular.

With regards,

Dr. Joseph Emmanuel
Director (Academics)

Annexure I

CBSE 9th Lab – Alternate Hands-on Activity Details

SL	Experiment Name	Hands-on Activity	Activity Video URL	Activity Guide URL	Observation Worksheet URL	Material List URL
1	Preparation of a true solution of common salt, sugar and alum	Sublimation, Filtration and Evaporation	https://youtu.be/BZ7uiic1tWI	http://cbseacademic.nic.in/ThinkTak_LabManual/011_TCM06TA52ENV27_Sublimation_Filtration_and_Evaporation_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/012_TCM06CON9ENV27_Sublimation_Filtration_and_Evaporation_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/013_TCM06TAMTENV27_Sublimation_Filtration_and_Evaporation_AL.pdf
2	Preparation of a suspension of soil, chalk powder and fine sand in water	Mixture - Types	https://youtu.be/hQ5yCcUQhKs	http://cbseacademic.nic.in/ThinkTak_LabManual/021_TCM09TA52ENV12_Mixture-Types_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/022_TCM09CON9ENV11_Mixture-Types_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/023_TCM09TAMTENV12_Mixture-Types_AL.pdf
3	Preparation of a colloidal solution of starch in water and egg albumin/milk in water and distinguish between these on the basis of Transparency, Filtration criterion and Stability	DIY Centrifuge	https://youtu.be/voodQoensGY	http://cbseacademic.nic.in/ThinkTak_LabManual/031_TCM02TA52ENV24_DIY_Centrifuge_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/032_TCM02CON9ENV24_DIY_Centrifuge_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/033_TCM02TAMTENV24_DIY_Centrifuge_AL.pdf
4	Preparation of a) mixture and b) compound using iron filings and sulphur powder and distinguishing between these on the basis of (i) appearance, i.e., homogeneity and heterogeneity (ii) behaviour towards a magnet (iii) behaviour towards carbon disulphide as a solvent (iv) effect of heat	Mixture - Iron and Sulphur	https://youtu.be/mMusX5mA99Y	http://cbseacademic.nic.in/ThinkTak_LabManual/041_TCC09TA52ENV16_Mixture-Iron_and_Sulphur_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/042_TCC09CON9ENV14_Mixture-Iron_and_Sulphur_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/043_TCC09TAMTENV16_Mixture-Iron_and_Sulphur_AL.pdf
5	Perform the following reactions and classify them as physical or chemical changes - Iron with copper sulphate solution in water	Reaction - Single Displacement	https://youtu.be/kmqZpkGEaD8	http://cbseacademic.nic.in/ThinkTak_LabManual/051_TCC48TA52ENV14_Reaction-Single_Displacement_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/052_TCC48CON9ENV11_Reaction-Single_Displacement_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/053_TCC48TAMTENV14_Reaction-Single_Displacement_AL.pdf
6	Perform the following reactions and classify them as physical or chemical changes - Burning of magnesium ribbon in air	Reaction - Magnesium and Oxygen	https://youtu.be/1V4O_2hLoFY	http://cbseacademic.nic.in/ThinkTak_LabManual/061_TCC05TA52ENV18_Reaction-Magnesium_and_Oxygen_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/062_TCC05CON9ENV16_Reaction-Magnesium_and_Oxygen_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/063_TCC05TAMTENV16_Reaction-Magnesium_and_Oxygen_AL.pdf
7	Perform the following reactions and classify them as physical or chemical changes - Zinc with dilute sulphuric acid	Chemical Change - Metal and Acid	https://youtu.be/9WrgeNhFKY8	http://cbseacademic.nic.in/ThinkTak_LabManual/071_TCC33TA52ENV15_Chemical_Change-Metal_and_Acid_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/072_TCC33CON9ENV13_Chemical_Change-Metal_and_Acid_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/073_TCC33TAMTENV15_Chemical_Change-Metal_and_Acid_AL.pdf
8	Perform the following reactions and classify them as physical or chemical changes - Heating of copper sulphate crystals	Explore Physical Change	https://youtu.be/yw8v7YFJTSE	http://cbseacademic.nic.in/ThinkTak_LabManual/081_TCP38TA52ENV10_Explore_Physical_Change_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/082_TCP38CON9ENV10_Explore_Physical_Change_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/083_TCP38TAMTENV10_Explore_Physical_Change_AL.pdf
9	Perform the following reactions and classify them as physical or chemical changes - Sodium sulphate with barium chloride in the form of their solutions in water.	Reaction - Precipitation	https://youtu.be/TeR50I0VNbk	http://cbseacademic.nic.in/ThinkTak_LabManual/091_TCC20TA52ENV20_Reaction-Precipitation_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/092_TCC20CON9ENV20_Reaction-Precipitation_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/093_TCC20TAMTENV20_Reaction-Precipitation_AL.pdf

SL	Experiment Name	Hands-on Activity	Activity Video URL	Activity Guide URL	Observation Worksheet URL	Material List URL
10	To prepare a stained, temporary mount of onion peel and to study its cells.	DIY Microscope	https://youtu.be/T2DVJ4q3NOs	http://cbseacademic.nic.in/ThinkTak_LabManual/101_TPL20TA52ENV24_DIY_Microscope_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/102_TPL20CON9ENV23_DIY_Microscope_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/103_TPL20TAMTENV24_DIY_Microscope_AL.pdf
11	To prepare a temporary mount of human cheek epithelial cells, and to study its characteristics.	Microscope - Epithelial Cells	https://youtu.be/dsYW6iWM4iA	http://cbseacademic.nic.in/ThinkTak_LabManual/111_TBA19TA52ENV12_Microscope-Epithelial_Cells_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/112_TBA19CON9ENV12_Microscope-Epithelial_Cells_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/113_TBA19TAMTENV11_Microscope-Epithelial_Cells_AL.pdf
12	To study parenchyma and sclerenchyma tissues in plants by preparing temporary slides.	Microscope - Stem	https://youtu.be/bzEFI68emfk	http://cbseacademic.nic.in/ThinkTak_LabManual/121_TBP15TA52ENV21_Microscope-Stem_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/122_TBP15CON9ENV20_Microscope-Stem_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/123_TBP15TAMTENV21_Microscope-Stem_AL.pdf
13	To determine the density of a non-porous solid (insoluble and denser than water) by using a spring balance and a measuring cylinder.	Measure - Density (Kitchen Scale)	https://youtu.be/v8n24MI_Nrc	http://cbseacademic.nic.in/ThinkTak_LabManual/131_TCQ02TA52ENV15_Measure-Density_(Kitchen_Scale)_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/132_TCQ02CON9ENV14_Measure-Density_(Kitchen_Scale)_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/133_TCQ02TAMTENV14_Measure-Density_(Kitchen_Scale)_AL.pdf
14	To verify Archimedes' principle.	Archimedes Principle	https://youtu.be/iEVSqbGfx4k	http://cbseacademic.nic.in/ThinkTak_LabManual/141_TCP37TA51ENV11_Archimedes_Principle_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/142_TCP37CON9ENV11_Archimedes_Principle_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/143_TCP37TAMTENV11_Archimedes_Principle_AL.pdf
15	To establish the relation between the loss in weight of a solid when fully immersed in (i) tap water; (ii) strongly salty water, with the weight of water displaced by it by taking at least two different solids.	Density - Saline Water	https://youtu.be/ID5k1wckmAM	http://cbseacademic.nic.in/ThinkTak_LabManual/151_TCP28TA52ENV16_Density-Saline_Water_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/152_TCP28CON9ENV16_Density-Saline_Water_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/153_TCP28TAMTENV16_Density-Saline_Water_AL.pdf
16	To verify the law of conservation of mass in a chemical reaction.	Matter - Mass Conservation	https://youtu.be/ctqtVsc9u3Y	http://cbseacademic.nic.in/ThinkTak_LabManual/161_TCC37TA52ENV21_Matter-Mass_Conservation_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/162_TCC37CON9ENV20_Matter-Mass_Conservation_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/163_TCC37TAMTENV21_Matter-Mass_Conservation_ML.pdf

CBSE 10th Lab – Alternate Hands-on Activity Details

SL	Experiment Name	Hands-on Activity	Activity Video URL	Activity Guide URL	Observation Worksheet URL	Material List URL
1	Finding the pH of the following samples by using pH paper/universal indicator: (i) Dilute Hydrochloric Acid (ii) Dilute NaOH solution (iii) Dilute Ethanoic Acid solution (iv) Lemon juice (v) Water (vi) Dilute Hydrogen Carbonate solution	DIY Acid-Base Paper Indicator	https://youtu.be/Rjds5v-uUrw	http://cbseacademic.nic.in/ThinkTak_LabManual/171_TCP03TA52ENV15_DIY_Acid-Base_Paper_Indicator_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/172_TCP03CONXENV14_DIY_Acid-Base_Paper_Indicator_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/173_TCP03TAMTENV14_DIY_Acid-Base_Paper_Indicator_AL.pdf
2	Finding the pH of the following samples by using pH paper/universal indicator: (i) Dilute Hydrochloric Acid (ii) Dilute NaOH solution (iii) Dilute Ethanoic Acid solution	Acids-Bases - Turmeric Indicator	https://youtu.be/smOuAQ0CIYQ	http://cbseacademic.nic.in/ThinkTak_LabManual/181_TCC25TA52ENV24_Acids-Bases-Turmeric_Indicator_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/182_TCC25CONXENV23_Acids-Bases-Turmeric_Indicator_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/183_TCC25TAMTENV23_Acids-Bases-Turmeric_Indicator_AL.pdf

SL	Experiment Name	Hands-on Activity	Activity Video URL	Activity Guide URL	Observation Worksheet URL	Material List URL
	(iv) Lemon juice (v) Water (vi) Dilute Hydrogen Carbonate solution					
3	Studying the properties of acids and bases (HCl & NaOH) on the basis of their reaction with Zinc metal	Reaction - Acid and Metal	https://youtu.be/5o1ueY1x5hM	http://cbseacademic.nic.in/ThinkTak_LabManual/191_TCC18TA52ENV28_Reaction-Acid_and_Metal_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/192_TCC18CONXENV28_Reaction-Acid_and_Metal_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/193_TCC18TAMTENV28_Reaction-Acid_and_Metal_AL.pdf
4	Studying the properties of acids and bases (HCl & NaOH) on the basis of their reaction with Zinc metal	Reaction - Base and Metal	https://youtu.be/odwuPLqk-To	http://cbseacademic.nic.in/ThinkTak_LabManual/201_TCC49TA52ENV15_Reaction-Base_and_Metal_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/202_TCC49CONXENV15_Reaction-Base_and_Metal_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/203_TCC49TAMTENV15_Reaction-Base_and_Metal_AL.pdf
5	Studying the properties of acids and bases (HCl & NaOH) on the basis of their reaction with Solid sodium carbonate	Reaction - Acids and Bases	https://youtu.be/SkQE-RAuHh8	http://cbseacademic.nic.in/ThinkTak_LabManual/211_TCC01TA52ENV25_Reaction-Acids_and_Bases_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/212_TCC01CONXENV24_Reaction-Acids_and_Bases_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/213_TCC01TAMTENV24_Reaction-Acids_and_Bases_AL.pdf
6	Performing and observing the following reaction - Combination reaction	Reaction - Magnesium and Oxygen	https://youtu.be/KysR0E6MRH8	http://cbseacademic.nic.in/ThinkTak_LabManual/221_TCC05TA52ENV18_Reaction-Magnesium_and_Oxygen_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/222_TCC05CONXENV16_Reaction-Magnesium_and_Oxygen_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/223_TCC05TAMTENV16_Reaction-Magnesium_and_Oxygen_AL.pdf
7	Performing and observing the following reaction - Decomposition	DIY Electrolysis	https://youtu.be/0Cv5f8otqlA	http://cbseacademic.nic.in/ThinkTak_LabManual/231_TCC19TA52ENV27_DIY_Electrolysis_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/232_TCC19CONXENV27_DIY_Electrolysis_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/233_TCC19TAMTENV27_DIY_Electrolysis_AL.pdf
8	Performing and observing the following reaction - Displacement reaction	Reaction - Single Displacement	https://youtu.be/WqiKm4QDcsA	http://cbseacademic.nic.in/ThinkTak_LabManual/241_TCC48TA52ENV14_Reaction-Single_Displacement_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/242_TCC48CONXENV14_Reaction-Single_Displacement_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/243_TCC48TAMTENV14_Reaction-Single_Displacement_AL.pdf
9	Performing and observing the following reaction - Double displacement	Reaction - Double Displacement	https://youtu.be/9eQklnhWOMs	http://cbseacademic.nic.in/ThinkTak_LabManual/251_TCC47TA52ENV12_Reaction-Double_Displacement_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/252_TCC47CONXENV12_Reaction-Double_Displacement_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/253_TCC47TAMTENV12_Reaction-Double_Displacement_AL.pdf
10	Observing the action of Zn, Fe, Cu and Al metals on the following salt solutions: (i) ZnSO4(aq) (ii) FeSO4(aq) (iii) CuSO4(aq) (iv)Al2 (SO4)3(aq) Arranging Zn, Fe, Cu and Al (metals) in the decreasing order of reactivity based on the above result	Reaction - Metal Reactivity Series	https://youtu.be/XxxU3TQ9GYw	http://cbseacademic.nic.in/ThinkTak_LabManual/261_TCC21TA52ENV28_Reaction-Metal_Reactivity_Series_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/262_TCC21CONXENV28_Reaction-Metal_Reactivity_Series_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/263_TCC21TAMTENV28_Reaction-Metal_Reactivity_Series_AL.pdf
11	Experimentally show that carbon dioxide is given out during respiration.	DIY Respirometer (Turmeric)	https://youtu.be/VwW0Pu313AM	http://cbseacademic.nic.in/ThinkTak_LabManual/271_TBA36TA52ENV15_DIY_Respirometer_(Turmeric)_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/272_TBA36CONXENV14_DIY_Respirometer_(Turmeric)_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/273_TBA36TAMTENV14_DIY_Respirometer_(Turmeric)_AL.pdf
12	Determination of the focal length of (i) Concave mirror	Explore Curved Mirrors	https://youtu.be/fyfo3VLhe8A	http://cbseacademic.nic.in/ThinkTak_LabManual/281_TPL19TA52ENV12_Explore_Curved_Mirrors_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/282_TPL19CONXENV12_Explore_Curved_Mirrors_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/283_TPL19TAMTENV12_Explore_Curved_Mirrors_AL.pdf
13	Determination of the focal length of (ii) Convex lens by obtaining the image of a distant object.	DIY Optic Bench (Fresnel Lens)	https://youtu.be/fHmYYz-TC-8	http://cbseacademic.nic.in/ThinkTak_LabManual/291_TPL18TA52ENV21_DIY_Optic_Bench_(Fresnel_Lens)_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/292_TPL18CONXENV21_DIY_Optic_Bench_(Fresnel_Lens)_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/293_TPL18TAMTENV21_DIY_Optic_Bench_(Fresnel_Lens)_AL.pdf

SL	Experiment Name	Hands-on Activity	Activity Video URL	Activity Guide URL	Observation Worksheet URL	Material List URL
14	To trace the path of a ray of light passing obliquely through a rectangular glass slab for different angles of incidence and to measure the angle of incidence, angle of refraction, the angle of emergence and interpret the results.	Snell's Law	https://youtu.be/v829V_alDCU	http://cbseacademic.nic.in/ThinkTak_LabManual/301_TPL28TA52ENV12_Snell_s_Law_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/302_TPL28CONXENV11_Snell_s_Law_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/303_TPL28TAMTENV11_Snell_s_Law_AL.pdf
15	To trace the path of a ray of light through a glass prism	Light - Deviation and Dispersion	https://youtu.be/3ICF4zk-k-w	http://cbseacademic.nic.in/ThinkTak_LabManual/311_TPL27TA52ENV12_Light-Deviation_and_Dispersion_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/312_TPL27CONXENV12_Light-Deviation_and_Dispersion_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/313_TPL27TAMTENV12_Light-Deviation_and_Dispersion_AL.pdf
16	Studying the dependence of potential difference (V) across a resistor on the current (I) passing through it and determining its resistance. Also plotting a graph between V and I.	Circuit - Resistance	https://youtu.be/snn-dOE5u6A	http://cbseacademic.nic.in/ThinkTak_LabManual/321_TPM20TA52ENV14_Circuit-Resistance_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/322_TPM20CONXENV13_Circuit-Resistance_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/323_TPM20TAMTENV14_Circuit-Resistance_AL.pdf
17	Studying (a) binary fission in Amoeba, and (b) budding in yeast and Hydra with the help of prepared slides.	Microscope - Asexual Reproduction	https://youtu.be/IGPdOLCnYOg	http://cbseacademic.nic.in/ThinkTak_LabManual/331_TBA28TA52ENV11_Microscope-Asexual_Reproduction_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/332_TBA28CONXENV11_Microscope-Asexual_Reproduction_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/333_TBA28TAMTENV11_Microscope-Asexual_Reproduction_AL.pdf

Annexure II

CBSE 9th- Additional Hands-on Activity Details

SL	Experiment Name	Hands-on Activity	Activity Video URL	Activity Guide URL	Observation Worksheet URL	Material List URL
1	To show that gases are readily compressible and liquids are not.	Matter - Compressibility	https://youtu.be/1tdQbeYfvsI	http://cbseacademic.nic.in/ThinkTak_LabManual/341_TCP11TA52ENV19_Matter-Compressibility_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/342_TCP11CON9ENV19_Matter-Compressibility_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/343_TCP11TAMTENV19_Matter-Compressibility_AL.pdf
2	To study the process of evaporation.	Matter - Evaporative Cooling	https://youtu.be/TRITrywcPwg	http://cbseacademic.nic.in/ThinkTak_LabManual/351_TCP06TA52ENV27_Matter-Evaporative_Cooling_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/352_TCP06CON9ENV27_Matter-Evaporative_Cooling_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/353_TCP06TAMTENV26_Matter-Evaporative_Cooling_AL.pdf
3	To prepare a saturated solution of common salt in distilled water and to determine its solubility at room temperature. To prepare a solution of common salt of 10% composition by mass	Matter - Solubility	https://youtu.be/QIx54jCk84g	http://cbseacademic.nic.in/ThinkTak_LabManual/361_TCP22TA52ENV29_Matter-Solubility_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/362_TCP22CON9ENV29_Matter-Solubility_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/363_TCP22TAMTENV29_Matter-Solubility_AL.pdf
4	To study the process of separation of a mixture of two immiscible liquids.	Separating Funnel Model	https://youtu.be/9g22bFKAG5U	http://cbseacademic.nic.in/ThinkTak_LabManual/371_TCM12TA52ENV14_Separating_Funnel_Model_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/372_TCM12CON9ENV14_Separating_Funnel_Model_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/373_TCM12TAMTENV14_Separating_Funnel_Model_AL.pdf
5	To separate a mixture of two miscible liquids by simple distillation.	DIY Distillation (Test Tube)	https://youtu.be/_h0pcaucuR8	http://cbseacademic.nic.in/ThinkTak_LabManual/381_TCP35TA52ENV11_DIY_Distillation_(Test_Tube)_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/382_TCP35CON9ENV11_DIY_Distillation_(Test_Tube)_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/383_TCP35TAMTENV11_DIY_Distillation_(Test_Tube)_AL.pdf

SL	Experiment Name	Hands-on Activity	Activity Video URL	Activity Guide URL	Observation Worksheet URL	Material List URL
6	To study the phenomenon of osmosis.	Explore Osmosis	https://youtu.be/et2xEV7K-50	http://cbseacademic.nic.in/ThinkTak_LabManual/391_TCP17TA52ENV13_Explore_Osmosis_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/392_TCP17CON9ENV12_Explore_Osmosis_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/393_TCP17TAMTENV12_Explore_Osmosis_AL.pdf
7	To study plasmolysis in leaf epidermal peels of Rhoeo or Tradescantia.	Explore Plasmolysis	https://youtu.be/rQGiE4bVCn8	http://cbseacademic.nic.in/ThinkTak_LabManual/401_TBO06TA52ENV10_Explore_Plasmolysis_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/402_TBO06CON9ENV11_Explore_Plasmolysis_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/403_TBO06TAMTENV11_Explore_Plasmolysis_AL.pdf
8	To test the presence of starch in a given food sample and metanil yellow in pigeon pea.	Food Test - Milk Adulteration	https://youtu.be/NGzfUgf6WDw	http://cbseacademic.nic.in/ThinkTak_LabManual/411_TCC13TA52ENV15_Food_Test-Milk_Adulteration_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/412_TCC13CON9ENV14_Food_Test-Milk_Adulteration_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/413_TCC13TAMTENV14_Food_Test-Milk_Adulteration_AL.pdf
9	To identify and study striated muscle fibre and nerve fibre in animals.	Microscope - Animal Tissue	https://youtu.be/iQDPCCAJN7I	http://cbseacademic.nic.in/ThinkTak_LabManual/421_TBA27TA52ENV11_Microscope-Animal_Tissue_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/422_TBA27CON9ENV10_Microscope-Animal_Tissue_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/423_TBA27TAMTENV10_Microscope-Animal_Tissue_AL.pdf
10	To study the characteristics of Spirogyra, Agaricus, moss, fern, Pinus and an angiosperm plant.	Microscope - Fungi (Mushroom)	https://youtu.be/m6raB943kDM	http://cbseacademic.nic.in/ThinkTak_LabManual/431_TBM05TA52ENV15_Microscope-Fungi_(Mushroom)_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/432_TBM05CON9ENV15_Microscope-Fungi_(Mushroom)_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/433_TBM05TAMTENV15_Microscope-Fungi_(Mushroom)_AL.pdf
11	To prepare herbarium sheet of a flowering plant.	DIY Herbarium Sheet	https://youtu.be/wcXrerjb4gU	http://cbseacademic.nic.in/ThinkTak_LabManual/441_TBP32TA52ENV11_DIY_Herbarium_Sheet_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/442_TBP32CON9ENV10_DIY_Herbarium_Sheet_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/443_TBP32TAMTENV10_DIY_Herbarium_Sheet_AL.pdf
12	To compare the external features of monocot and dicot plants.	Microscope - Leaf Venation	https://youtu.be/-UvYTKVbaWA	http://cbseacademic.nic.in/ThinkTak_LabManual/451_TBP12TA52ENV26_Microscope-Leaf_Venation_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/452_TBP12CON9ENV26_Microscope-Leaf_Venation_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/453_TBP12TAMTENV26_Microscope-Leaf_Venation_AL.pdf
13	To compare the external features of monocot and dicot plants.	Plant Life - Germination	https://youtu.be/5y8XXf25GEs	http://cbseacademic.nic.in/ThinkTak_LabManual/461_TBP16TA52ENV24_Plant_Life-Germination_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/462_TBP16CON9ENV23_Plant_Life-Germination_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/463_TBP16TAMTENV23_Plant_Life-Germination_AL.pdf
14	To study the life cycle of malarial parasite.	Flexagon - Plasmodium Life Cycle	https://youtu.be/c5EelD-LPBU	http://cbseacademic.nic.in/ThinkTak_LabManual/471_TBE09TA52ENV10_Flexagon-Plasmodium_Life_Cycle_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/472_TBE09CON9ENV10_Flexagon-Plasmodium_Life_Cycle_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/473_TBE09TAMTENV10_Flexagon-Plasmodium_Life_Cycle_AL.pdf
15	To study the third law of motion using two spring balances.	DIY Spring Balance	https://youtu.be/sF-dQoZYAK8	http://cbseacademic.nic.in/ThinkTak_LabManual/481_TPF34TA52ENV22_DIY_Spring_Balance_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/482_TPF34CON9ENV21_DIY_Spring_Balance_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/483_TPF34TAMTENV21_DIY_Spring_Balance_AL.pdf
16	To study the variation in limiting friction with mass and the nature of surfaces in contact.	Trolley Model	https://youtu.be/t9NumOhVJic	http://cbseacademic.nic.in/ThinkTak_LabManual/491_TPF31TA52ENV25_Trolley_Model_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/492_TPF31CON9ENV24_Trolley_Model_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/493_TPF31TAMTENV24_Trolley_Model_AL.pdf
17	(i) To study the effect of amplitude on the time period of a simple pendulum. (ii) To study the variation in time period of a simple pendulum with its length. (iii) To study the effect of mass on the time period of a simple pendulum.	Motion - Periodic	https://youtu.be/bFqulc5zJ5U	http://cbseacademic.nic.in/ThinkTak_LabManual/501_TPT14TA52ENV11_Motion-Periodic_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/502_TPT14CON9ENV11_Motion-Periodic_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/503_TPT14TAMTENV11_Motion-Periodic_AL.pdf
18	To determine the speed of a transverse pulse propagated through a stretched string.	Transverse Wave Model	https://youtu.be/p8M05J5ivv0	http://cbseacademic.nic.in/ThinkTak_LabManual/511_TPS20TA52ENV11_Transverse_Wave_Model_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/512_TPS20CON9ENV11_Transverse_Wave_Model_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/513_TPS20TAMTENV11_Transverse_Wave_Model_AL.pdf
19	To determine the speed of a longitudinal pulse	Longitudinal Wave Model	https://youtu.be/DKIALxcTZYg	http://cbseacademic.nic.in/ThinkTak_LabManual/521_TPS21TA52ENV10_Longitud	http://cbseacademic.nic.in/ThinkTak_LabManual/522_TPS21CON9ENV10_Longitu	http://cbseacademic.nic.in/ThinkTak_LabManual/523_TPS21TAMTENV10_Longitu

SL	Experiment Name	Hands-on Activity	Activity Video URL	Activity Guide URL	Observation Worksheet URL	Material List URL
	propagated through a stretched slinky.			inal_Wave_Model_AL.pdf	dinal_Wave_Model_AL.pdf	dinal_Wave_Model_AL.pdf
20	To study the reflection of sound.	DIY Stethoscope	https://youtu.be/v3B4j9iXJkM	http://cbseacademic.nic.in/ThinkTak_LabManual/531_TBA05TA52ENV27_DIY_Stethoscope_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/532_TBA05CON9ENV26_DIY_Stethoscope_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/533_TBA05TAMTENV26_DIY_Stethoscope_AL.pdf

CBSE 10th - Additional Hands-on Activity Details

SL	Experiment Name	Hands-on Activity	Activity Video URL	Activity Guide URL	Observation Worksheet URL	Material List URL
1	To measure the change in temperature during chemical reactions and to conclude whether the reaction is exothermic or endothermic.	Reaction - Exothermic and Endothermic	https://youtu.be/in3WspwAL9Q	http://cbseacademic.nic.in/ThinkTak_LabManual/541_TCC41TA52ENV12_Reaction-Exothermic_and_Endothermic_Al.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/542_TCC41CONXENV12_Reaction-Exothermic_and_Endothermic_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/543_TCC41TAMTENV12_Reaction-Exothermic_and_Endothermic_AL.pdf
2	To show that acids, bases, and salts are electrolytes.	Acids-Bases - Conductivity	https://youtu.be/2X3_JWn1_n0	http://cbseacademic.nic.in/ThinkTak_LabManual/551_TCC02TA52ENV27_Acids-Bases-Conductivity_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/552_TCC02CONXENV27_Acids-Bases-Conductivity_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/553_TCC02TAMTENV27_Acids-Bases-Conductivity_AL.pdf
3	To identify bleaching powder among given samples of chemicals.	Explore Bleaching Powder	https://youtu.be/SGctEJkzsDc	http://cbseacademic.nic.in/ThinkTak_LabManual/561_TCC39TA52ENV13_Explore_Bleaching_Powder_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/562_TCC39CONXENV12_Explore_Bleaching_Powder_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/563_TCC39TAMTENV12_Explore_Bleaching_Powder_AL.pdf
4	To identify washing soda or baking soda among given samples of chemicals.	Explore Washing Soda	https://youtu.be/aeZzFnbV7mI	http://cbseacademic.nic.in/ThinkTak_LabManual/571_TCC40TA52ENV13_Explore_Washing_Soda_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/572_TCC40CONXENV13_Explore_Washing_Soda_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/573_TCC40TAMTENV13_Explore_Washing_Soda_AL.pdf
5	To show that crystals of copper sulphate contain water of crystallisation	DIY Copper Sulphate Crystals	https://youtu.be/VY4fxf8rZ08	http://cbseacademic.nic.in/ThinkTak_LabManual/581_TCP08TA52ENV26_DIY_Copper_Sulphate_Crystals_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/582_TCP08CONXENV25_DIY_Copper_Sulphate_Crystals_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/583_TCP08TAMTENV25_DIY_Copper_Sulphate_Crystals_AL.pdf
6	To study physical and chemical properties of acetic acid (ethanoic acid).	Explore Ethanoic Acid	https://youtu.be/kzF1wibqPs0	http://cbseacademic.nic.in/ThinkTak_LabManual/591_TCC50TA52ENV10_Explore_Ethanoic_Acid_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/592_TCC50CONXENV11_Explore_Ethanoic_Acid_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/593_TCC50TAMTENV11_Explore_Ethanoic_Acid_AL.pdf
7	To study some oxidation reactions of alcohol	Reaction - Alcohol Oxidation	https://youtu.be/Dl50mh_9yU0	http://cbseacademic.nic.in/ThinkTak_LabManual/601_TCC51TA52ENV11_Reaction-Alcohol_Oxidation_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/602_TCC51CONXENV10_Reaction-Alcohol_Oxidation_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/603_TCC51TAMTENV10_Reaction-Alcohol_Oxidation_AL.pdf
8	To study saponification reaction for preparation of soap	DIY Handmade Soap	https://youtu.be/FT9SRiUoVXM	http://cbseacademic.nic.in/ThinkTak_LabManual/611_TCC23TA52ENV16_DIY_Handmade_Soap_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/612_TCC23CONXENV16_DIY_Handmade_Soap_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/613_TCC23TAMTENV16_DIY_Handmade_Soap_AL.pdf
9	To compare the foaming capacity of different samples of soap. To study the comparative cleansing capacity of a sample of soap in soft and hard water.	Explore Soap	https://youtu.be/q3P7UYj-uIU	http://cbseacademic.nic.in/ThinkTak_LabManual/621_TCC44TA52ENV17_Explore_Soap_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/622_TCC44CONXENV20_Explore_Soap_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/623_TCC44TAMTENV20_Explore_Soap_AL.pdf
10	To prepare temporary mounts of leaf peels to observe stomata and to differentiate between dicot and monocot stomata.	Microscope - Stomata	https://youtu.be/BmX_x3nIK4s	http://cbseacademic.nic.in/ThinkTak_LabManual/631_TBP24TA52ENV11_Microscope-Stomata_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/632_TBP24CONXENV11_Microscope-Stomata_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/633_TBP24TAMTENV11_Microscope-Stomata_AL.pdf
11	To show that light is essential for photosynthesis.	Plant Life - Photosynthesis	https://youtu.be/WQhT_-S-rto	http://cbseacademic.nic.in/ThinkTak_LabManual/641_TBP25TA52ENV15_Plant_Life-Photosynthesis_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/642_TBP25CONXENV15_Plant_Life-Photosynthesis_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/643_TBP25TAMTENV15_Plant_Life-Photosynthesis_AL.pdf

SL	Experiment Name	Hands-on Activity	Activity Video URL	Activity Guide URL	Observation Worksheet URL	Material List URL
12	To show that carbon dioxide is essential for photosynthesis.	Plant Life - Photosynthesis (CO2)	https://youtu.be/y-u6qrKKl7Y	http://cbseacademic.nic.in/ThinkTak_LabManual/651_TBP35TA52ENV12_Plant_Life-Photosynthesis_(CO2)_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/652_TBP35CONXENV12_Plant_Life-Photosynthesis_(CO2)_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/653_TBP35TAMTENV12_Plant_Life-Photosynthesis_(CO2)_AL.pdf
13	To study the liberation of carbon dioxide gas during aerobic respiration.	Reaction - Acids and Bases (Plastic Bag)	https://youtu.be/iVUW95d1EeI	http://cbseacademic.nic.in/ThinkTak_LabManual/661_TCC17TA52ENV14_Reaction-Acids__Bases_(Plastic_Bag)_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/662_TCC17CONXENV12_Reaction-Acids_and_Bases_(Plastic_Bag)_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/663_TCC17TAMTENV12_Reaction-Acids_and_Bases_(Plastic_Bag)_AL.pdf
14	To study the liberation of carbon dioxide gas during fermentation.	Respiration - Anaerobic	https://youtu.be/i8rI1w3Osjg	http://cbseacademic.nic.in/ThinkTak_LabManual/671_TBM02TA52ENV24_Respiration-Anaerobic_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/672_TBM02CONXENV24_Respiration-Anaerobic_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/673_TBM02TAMTENV24_Respiration-Anaerobic_AL.pdf
15	To study the action of salivary amylase on starch solution.	Digestion - Starch (Amylase)	https://youtu.be/8qnXCj7qtKE	http://cbseacademic.nic.in/ThinkTak_LabManual/681_TCC16TA52ENV28_Digestion-Starch_(Amylase)_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/682_TCC16CONXENV27_Digestion-Starch_(Amylase)_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/683_TCC16TAMTENV27_Digestion-Starch_(Amylase)_AL.pdf
16	To study the phenomenon of phototropism and geotropism in plants	Plant Life - Tropism	https://youtu.be/j-Z2wYAwOXA	http://cbseacademic.nic.in/ThinkTak_LabManual/691_TBP18TA52ENV11_Plant_Life-Tropism_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/692_TBP18CONXENV11_Plant_Life-Tropism_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/693_TBP18TAMTENV11_Plant_Life-Tropism_AL.pdf
17	To study binary fission in Amoeba or Paramoecium and budding in yeast or Hydra.	Plant Life - Vegetative Propagation	https://youtu.be/qZt5LsGRnIw	http://cbseacademic.nic.in/ThinkTak_LabManual/701_TBP19TA52ENV12_Plant_life-Vegetative_Propagation_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/702_TBP19CONXENV12_Plant_Life-Vegetative_Propagation_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/703_TBP19TAMTENV12_Plant_Life-Vegetative_Propagation_AL.pdf
18	To verify the laws of reflection of light using a plane mirror.	Law of Reflection (Mobile Phone)	https://youtu.be/cHABkxAW1sc	http://cbseacademic.nic.in/ThinkTak_LabManual/711_TPL26TA52ENV13_Law_of_Reflection_(Mobile_Phone)_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/712_TPL26CONXENV12_Law_of_Reflection_(Mobile_Phone)_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/713_TPL26TAMTENV12_Law_of_Reflection_(Mobile_Phone)_AL.pdf
19	To draw magnetic field lines of a bar magnet. To draw the magnetic field lines of a current-carrying straight wire.	Magnetism - Field Lines	https://youtu.be/j6A7USdbJWw	http://cbseacademic.nic.in/ThinkTak_LabManual/721_TPM07TA52ENV13_Magnetism-Field_Lines_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/722_TPM07CONXENV13_Magnetism-Field_Lines_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/723_TPM07TAMTENV13_Magnetism-Field_Lines_AL.pdf
20	To study the magnetic field of an electromagnet.	DIY Electromagnet	https://youtu.be/iachsDUumfk	http://cbseacademic.nic.in/ThinkTak_LabManual/731_TPM03TA52ENV17_DIY_Electromagnet_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/732_TPM03CONXENV16_DIY_Electromagnet_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/733_TPM03TAMTENV16_DIY_Electromagnet_AL.pdf
21	To study the force on a current-carrying straight conductor in a magnetic field and to verify that the motion of the conductor is according to Fleming's left-hand rule.	Fleming's Left Hand Rule	https://youtu.be/wdH0J-byFE8	http://cbseacademic.nic.in/ThinkTak_LabManual/741_TPM24TA52ENV11_Flemings_Left_Hand_Rule_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/742_TPM24CONXENV11_Flemings_Left_Hand_Rule_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/743_TPM24TAMTENV11_Flemings_Left_Hand_Rule_AL.pdf
22	To study the phenomenon of electromagnetic induction	Faraday's Law	https://youtu.be/kIylg_qwM_M	http://cbseacademic.nic.in/ThinkTak_LabManual/751_TPM25TA52ENV10_Faradays_Law_AL.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/752_TPM25CONXENV10_Faradays_Law_AD.pdf	http://cbseacademic.nic.in/ThinkTak_LabManual/753_TPM25TAMTENV10_Faradays_Law_AL.pdf

Copy to the respective Heads of Directorates, Organizations and Institutions as indicated below with are quest to disseminate the information to all the schools under their jurisdiction:

1. The Commissioner, Kendriya Vidyalaya Sangathan, 18 Institutional Area, Shaheed Jeet Singh Marg, New Delhi-16
2. The Commissioner, Navodaya Vidyalaya Samiti, B-15, Sector-62, Institutional Area, Noida 201309
3. The Director of Education, Directorate of Education, Govt. of NCT of Delhi, Old Secretariat, Delhi-110054
4. The Director of Public Instructions (Schools), Union Territory Secretariat, Sector 9, Chandigarh-160017
5. The Director of Education, Govt. of Sikkim, Gangtok, Sikkim–737101
6. The Director of School Education, Govt. of Arunachal Pradesh, Itanagar–791111
7. The Director of Education, Govt. of A&N Islands, Port Blair–744101
8. The Director of Education, S.I.E., CBSE Cell, VIP Road, Junglee Ghat, P.O.744103, A&N Island
9. The Director, Central Tibetan School Administration, ESSESS Plaza, Community Centre, Sector-3, Rohini, Delhi
10. The Additional Director General of Army Education, A–Wing, Sena Bhawan, DHQ, PO, New Delhi-110001
11. The Secretary AWES, Integrated Headquarters of MoD (Army), FDRC Building No.202, Shankar Vihar(Near APS), Delhi Cantt-110010
12. The Secretary, Eklavya Model Residential Schools (EMRS), Ministry of Tribal Affairs, Government of India.
13. The Secretary, Sainik Schools Society, Room No. 101, D-1 Wing, Sena Bhawan, New Delhi-110001.
14. The Chairman, Odisha Adarsha Vidyalaya Sangathan, N-1/9, Near Doordarshan Kendra, PO Sainik School Nayapalli, Bhubaneswar, Odhisha-751005.
15. All Regional Directors/Regional Officers of CBSE with the request to send this circular to all the Heads of the affiliated schools of the Board in their respective Regions
16. All Joint Secretary/DeputySecretary/AssistantSecretary/SPS/Analyst, CBSE
17. All Head(s)/In-Charge(s),Centre of Excellence, CBSE
18. Incharge IT Unit with there quest to put this Circular on the CBSE Academic Website
19. In-Charge, Library
20. The Head (Media & Public Relations), CBSE
21. DS to Chairman, CBSE
22. SPS to Secretary, CBSE
23. SPS to Director(Academics), CBSE
24. SPS to Director(Information Technology), CBSE
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Director (Academics)