STEM Learning Pvt. Ltd.

Building Brains.....Beyond Books.....

1205, Marathon Icon, Marathon Nextgen Campus,
Opp. G. K. Marg, Lower Parel (w),
Mumbai - 400013.

To,
JSW CEMENT LIMITED
Salbani,
Paschim medinipur
West bengal

Respected Sir,
Greetings!

Subject: - Proposal for establishment of 'Mini Science Centre' in 2 Schools in Salbani under CSR Initiative of JSW Cement Limited.

Respected Sir,

Greetings!

This is in reference for setting up Mini Science Centre (MSC) in **Salbani** for **2** schools. The Mini Science Centre aims to inculcate basic concepts of Science, Technology, Engineering, Mathematics at school level, thereby encouraging inclination of students / learners towards science and technology. Models designed help students in identifying and experiencing the actual products which they learn from text books making it more practical oriented for learning of students specially who are from less privileged section of the society.

Furthermore we look forward along with your esteemed support to create curiosity and opportunity for the children to enrich their learning with best teaching aid and concretization of their concept.

This is not only an infrastructural setup but also a sustainable process to improve the pedagogy with continuous capacity building of the teachers alongside with students.

The budget for establishment of 1 Mini Science Centre in 1 school is Rs. 5, 66,400, so, budget for establishment of 2 Mini Science Center in 2 school is Rs. 11, 32,800 Detailed proposal attached for your kind reference.

We look forward for your support to increase scientific temper in the under privileged children and along fruitful association.

Thanking you in anticipation for providing us the opportunity to work for this Nobel cause.

Best Regards

Sayantan Maitra
STEM Learning

Implementing Partner:

STEM Learning – "A Social Enterprise"

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Mini Science Centre

Teacher Training Program

Science Competition (NSP)

DIY – Model Making

Proposal for Mini Science Centre

About: STEM Learning Pvt. Ltd:

STEM Learning was conceptualized with an aim to inculcate basic concepts of Science, Technology, Engineering, Mathematics at school level, thereby encouraging inclination of students / learners towards science and technology. Models designed by STEM help students in identifying and experiencing the actual concepts which they learn from text books making it more practical in approach

STEM believes that school education can't be only visual or audio but it is important for the children to practically feel the products and experience it. With this vision, STEM has customized 80 models based on 150+ concepts of Science and Math's for better learning and understanding of the concepts. STEM believes in adding more models for improved learning of students especially for those from less privileged section of the society.

STEM through its MSC's have benefitted over 2 Million students with 15000+ teachers in 2500 + schools across 26 states in India. In addition to this, STEM learning also has a niche in installing 104 Mini science Centre's in different talukas of Odisha. These science centers have trained more than one lakh students who otherwise would have never got chance to experience and explore science in a practical and easy way.

STEM's models are approved by 8 SCERT- Maharashtra, Goa, Chhattisgarh, Delhi, Odisha, West Bengal, Nagaland and Jammu & Kashmir for their alignment with the curriculum and the approvals by the SCERT's of Andhra Pradesh, Telangana and Karnataka are awaited for approval.

Mission Statement:

- To enhance students' aptitude towards science & math so that they embrace it and grow with it while relishing the learning process.

Vision Statement:

- To be recognized globally for bringing innovative learning products in School Education and contributing to the society by reaching to the less privileged students

Goal:

- Learning made accessible to all children for aptitude enhancement.

C.1: **Immediate Goal:** Reaching to Large population of under privileged Children Pan-India

C.2: **Aim:** Ensuring equal opportunities for learning and development of all under privileged Children.

2. *C.3:* **Immediate Aim:** Reaching 3500 schools in the academic year 2024-25.

2. *C.4:* **Objective:** Empowerment/Enhancement of aptitude of children.

Specific Objectives:

To ignite scientific interest in children so that:

- Question intelligently.
- Learn through discovery & Innovation.
- Connect scientific knowledge to their world
- All of these are expected to strengthen scientific temper in children, thus laying the foundation for a flourishing career in Science & Mathematics

Strategic areas of Focus:

- Providing quality teaching aids to improve teaching methods for students from lesser privileged sections of society.
- Enhancing a positive attitude, learning capacity, and skills of students.
- Providing a platform where students and teachers can volunteer for customized engagement programs/events.
- Creating partnerships and collaborating with various stakeholders to ensure sustainability of the project.

Background and Project Need:

The education system in India is undergoing a transformational process with special emphasis on Science and Math's education. Science education in India is faced by various practical challenges today. The first and the most basic problem that has persisted and resisted solution since early education, is our inability to ease the fear of difficult subjects such as science and math's and make it simple and fun so as to help retain the knowledge and strengthen the foundation of the child for future.

Science is knowledge about the material, natural world. It is knowledge produced from systematic observation, measurement, experimentation, exploration, and speculation and theorization about natural objects, their properties and their interactions. Whether the topic of forces in Physics or the solubility of substances in water from Chemistry, or germination in Biology, the science curriculum directs attention to the material world, to things and processes in it; about which it would like children to learn—to notice, name and think about things based and theories that characterize these disciplinary approaches, further more mathematics establishes the foundation for calculation is a part of everyday life

However, disciplinary approach is essential in learning BUT it is also imperative to ensure that we make the subject interesting; as, it is a challenge to large percentage of children to comprehend the formulas and equations. This not only limits the learning of students about science & Math's but also lessen the interest of children in these subjects and a fear psychosis is created in their minds for these subjects.

Our Honorable Prime Minister during the 104th Indian Science Congress on 'Science and Technology for National Development, emphasized that the government is committed to support the different streams of scientific knowledge fromfundamental science to applied science with an emphasis on innovations.

Prime Minister instituted the concept of 'scientific social responsibility'. Underlining the need to inculcate the concept of 'scientific social responsibility (SSR)', akin to corporate social responsibility, PM Shri Narendra Modi ji put the impetus on corporates to actively participate in developing science and technology centers across India.

We at STEM Learning provide the Mini Science Centre – (MSC) that support and encourages the students to develop aptitude & skills. Science activities done to stimulate curiosity, provide practical opportunities to explore a concept in easy ways, develop appropriate hands-on experience in understanding science and its concepts which is sadly absent today across all our education syllabus. More so with inadequate teaching staff in rural, municipal schools which are for the underprivileged children adds to the existing challenge in the education system.

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STEM Learning MSC Locations:

STEM learning has pan India presence in 26 states of India and have proven our process of Installation, delivery- Teachers Training Program along with Monitoring & Evaluation and Maintenance of MSC.

1. *Maharashtra*
2. *Rajasthan*
3. *Gujarat*
4. *Karnataka*
5. *Himachal Pradesh*
6. *Jammu & Kashmir*
7. *Goa*
8. *Haryana*
9. *Nagaland,*
10. *Kerala*
11. *Tamil Nadu*
12. *Uttar Pradesh*
13. *Jharkhand*
14. *Chhattisgarh*
15. *Madhya Pradesh*
16. *Andhra Pradesh,*
17. *Odisha*
18. *Telangana.*
19. *Bihar*
20. *Uttarakhand.*
21. *Punjab*
22. *Odisha*
23. *Assam*
24. *Sikkim*
25. *Meghalaya*
26. *Manipur*

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Reforming Education

STEM Centre

STEM Centre :

- Clearing fundamentals of science concepts.

– Tinker Workshop:

- Out of the box and conceptualizing a solution for a digital world.

– Digital DIY Model Making:

- A platform that ignites the spirit of competition among peers and enhancing their creativity and innovation beyond books

– NSP :

- A platform that ignites the spirit of competition among peers, enhancing their knowledge & innovation beyond books

Project Summary Statement:

Mini Science Centre

(MSC) is an educative, innovative and systemic instrument designed to revolutionize science & math's education that makes learning simpler and accessible. It is a catalytic channel that is interactive, engaging & fun way of learning technique aimed to raise awareness, grasp the information & strengthen the aptitude of children; furthermore, MSC supports the teachers in teaching - with a focus on concepts from science & math's. Mini science Centre has a range of *80 table top working models with 37 back-drops and manuals in regional language* to provide hands-on experience for learning/teaching Science and Mathematics for Class 5 through 10.

MSC will be a permanent and integral part of the school and academics right from its installation.

The models designed for MSC forms the basis for effective education and better understanding of the academic concepts and their practical applications. Principally these models are ….

- For all students from standard 5 to 10.
- Intentional and standards-based.
- Active, interesting, and relevant to students.
- Reflect current research and practices that are curriculum based.
- Age-level appropriate.
- Integrate skills from different subjects of Science and Mathematics. Incorporate staff training in science and Math's teaching.
- Based on ongoing assessment of student needs and progress.

Mini Science Centre (MSC) Scope of Work

Project Aspect	Expected Deliverables
MSC Infrastructure Arrangement	Infrastructure Arrangements Include: ● 80 tabletop models will be installed in the school out of which 17 models operate on electricity. ● A proper room minimum of 350-400 Sq. ft. or suitable size along with 17 tables/ platform with 13 pieces of plywood 100 Running feet (8ftx1.5ft) for Mini Science Centre should be provided in the school. ● 17 electrical connections in the room should be provided in the school. ● Providing the Backdrops (Language in which it is to be printed should be conveyed beforehand). ● Providing the user manual and training manual (Language in which it is to be printed should be conveyed beforehand).
Installation of MSC (80 MODELS + 80 USERS PLACARD + 37 COLOURFUL BACKGROUNDS+ 1 SAFETY PLACARD+1 TEACHERS MANUAL)	Installation generally starts within 3 weeks from school closure/signing MOU and is completed within 2 days at the school premises. The MSC classroom is painted in white color & mounting of plywood is done along with fitting electrical supply points. **Deliverables:** 80 Models + 80 Users Placard + 37 colorful backgrounds + safety placard + 1 teachers manual The Installation team takes pictures of the room both pre & post installation and a letter is signed from the school authority (Principal) after successful installation and handing over of the materials/documents etc.

First Teachers Training Program (TTP)	1st Teachers training program is undertaken within 2-3 weeks from the installation. 1st Virtual TTP to be conducted in 2nd year To set the training day and location, the trainer's team contacts the principal teacher at the school. Reconfirmation is requested from the principal and teachers 72 hours before to the TTP. The Training consists of the following: 1) Orientation of Models 2) Usage as per the Concepts. 3) Mapped document of model with curriculum. 4) Established topics and their usage as per the timetable. 5) Explaining the follow up process for any queries through Phone calls and WhatsApp support group formation. 6) Updating the MSC Register, as the models are plug and play, it can be demonstrated in class for concept clarity. 7) Identify and prioritize issues to be dealt with by teachers. 8) Setup Goals for Best Practice Documentation. 9) Inform about Monitoring & Evaluation visit and process. **The Documents Supporting This Activity Are:** a. Call sheet b. WhatsApp Group Snapshot. c. Goal set document for output. d. Teachers Attendance Sheet Training. e. Pictures and Videos (if possible)
Refresher Teachers Training Program (RTTP) – Conducted Individually for each school.	Typically, the RTTP is conducted four months following the first TTP. 2nd Virtual TTP to be conducted in 3rd year The trainer's staff contacts the principal and teachers of the school to schedule the training day and location. Reconfirmation is requested from the principal and teachers 72 hours before to the TTP. The Training Consists of the following: ● Engagement of Teachers about Usage of Models. ● Identifying Models with Frequent Usage. ● Frequency of models being taken to class for explanation of concepts. ● Asking the teachers regarding any issues faced during accessing the models and solving it accordingly.
Utilization Check of MSC	After completion of both the Teachers 'Training Program, WhatsApp group is created between teachers and our own trainers to periodically check the utilization of the models Footages of teachers using the models is to be posted regularly on the WhatsApp broadcast group. ● Random Visits to School in order to check usability of the models. ● Every fortnight, a check is done to gain insights about the frequency of usage of the models. ● MSC registers are frequently looked upon to cross check the claims made by the teachers about the usage of MSC.
st 1 Monitoring and Evaluation (Baseline Survey)	This allows for the full examination of one's understanding of numerous situations, requirements, and school assistance. It usually takes place 4-5 weeks after the first TTP. Students are given baseline surveys based on the content they are taught in accordance with their standards. Our team, the Project Implementation Associate, makes site visits and interviews instructors and students for the baseline survey. The M&E consists of collecting data on: ● No. of students per Class/division. ● Foundational skills for progressive improvement. ● Gender segregation

	The principal and teachers questionnaire will be qualitative while for the students, it will be quantitative and qualitative with Focused Group Discussion (FGD). The students' quantitative tools will include: 1) Fill in the blanks. 2) Match the columns. 3) Questions and 3 options. 4) Pictorial identifications of models. The documents supporting this activity is: 1) Call sheet. 2) WhatsApp group snapshot. 3) Questionnaires 4) Notes of FDG. 5) Pictures and Videos (if possible). 6) Raw data in excel. 7) M&E report
Maintenance	The maintenance team visits the school after the 1st M&E visit. (2-3 weeks after 1st M&E visit). **The maintenance will include:** ● Repairing and replacement as and when required ● Re-clean the premises. **The documents supporting this activity:** ● Pictures of repaired model ● Pictures of replaced model ● Signed report of maintenance from the Principal/Teacher
2nd Monitoring & Evaluation Visit	Generally conducted 6-8 weeks after the maintenance visit. **Qualitative:** Students will be asked about their actual usage in class and MSC as part of FG and IDI (In-depth Interview) lead questions. The second M&E visit follows the same procedure as the first M&E visit. The data will be gathered in the second set of questionnaires, which will be prepared, and th second M&E will be the baseline for the first year.

Expected outcome of the program:

i. Aptitude of students for learning science and mathematics improved by creating simple, child friendly eco system which is fun and enjoyable.
ii. Empowering teachers with easy teaching aids.
iii. Improve teaching pedagogy by use of models in conducting the science and math's class through better engagement of teachers in teaching.
iv. Increased enrolment and interest in STEM-related courses in school.
v. Continued participation in STEM programming.
vi. Increased self-confidence in tackling science & Math's classes and projects.
vii. Shift in attitude about careers in STEM.
viii. Increased test scores as compared to non-participants.
ix. Increased general knowledge of science & math's-based concepts.
x. Gains in 21st century skills, including communication, teamwork, and analytical thinking.
xi. Higher likelihood of graduation and pursuing a STEM career.

Timeline of the project:

PO & Contract Confirmation	School Identification/ Need Assessment	Installation	1st-TTP	Monitoring & Evaluation (M & E 1st Visit)	2nd- TTP	AMC/ 1st Follow up	2nd M&E/ Project Completion
1st week	Within 2 -3 weeks from PO.	3-weeks From school identification & closure.	15 to 20 Days from installation	20 to 25 weeks from Installation	15-20 Days from 1st Follow - up	45 days from 1st TTP	35th to 40th week from Installation

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Logical Framework Analysis

Input	Output	Outcome	Measurement indicators	Timelines (Quarterly)	Risks Vs. Mitigation
School Identification	• Identifying government schools from areas of deficit	• An intervention plan will be created. • Meeting with school principal for formal MSC introduction and benefit for students	• Receiving list of schools from DEO • Visiting government schools • Well drafted intervention plan introduced to school • Receive Installation Approval letter from school	1st quarter	• Inter-state and city travel, risk of covid-19 infection • Multiple visits to schools and getting permission
Baseline survey	• A thorough knowledge about various conditions, needs and its intervention for school.	• to understand problem & need by gathering information on the status quo of the school	• Preparing baseline question tool • Visit by PIA to conduct baseline survey on student and teachers • Identify 1 room for MSC installation • Baseline report created with analysis	1st quarter	
MSC installation	• MSC installation in room of 80 models with 37 back-drops and manuals in regional language	• To provide hands-on experience for learning/teaching Science and Mathematics for Class 5 through 10. • Maximize Learning experience through practical approach • Explains 150 + concepts with depth clarity	• Install tables and 80 plugs • Transport 80 models to school • MSC models testing and function check • Inauguration of MSC with Clients, BD and PIA	1st Quarter	• Long distance travel with MSC models transport from warehouse
Teacher Training Program -TTP	• Call and TTP scheduling by PIA • Training Through PPT of MSC models • Benefits • Best usage • Maximum utilization • Models & concepts it explains in simpler way • Benefits & takeaway of MSC will be highlighted • Question – answer and queries will be resolved	• Teachers empowered with innovative teaching aids • Teaching time reduced to 50-60% • Complex concepts taught easily • Active engagement of students in class • Replace rote-based learning to practical-based approach for sustainable knowledge	• TTP will be scheduled • TTP with PPT will be conducted • Feedback & suggestion from teachers • TTP report created for documentation	1st quarter	• **Risk:** Absentees • **Mitigation:** Constant update of MSC benefit will be communicated.
MSC-Maintenance	• PIA along with MSC technical person, free	• Continuous and Maximum	• Quality check of MSC by Team technician	3rd quarter	

	Maintenance drive is conducted. • Aim: Learning shouldn't stop, student can use MSC independently	utilization of MSC for sustainable use	• Repair and place if needed • Maintenance report created • MSC model utilization register maintained		
Midline Survey	Survey to understand the impact of MSC on students and teachers academic learning and teaching achievement	• By then the impact on students: - explore their talents, apply theory knowledge to practice, gain essential skills, develop analytical & critical thinking	• Prepare midline M&E questionnaire • PIA will schedule date & time for M&E • M&E conducted with teachers and students • Report of midline report created with analysis		
Refresh Teacher Training Program -RTTP	• Improve & enhancement of teacher's skills • Teachers empowered with innovative teaching aids to explain concepts with each • Benefits & takeaway of MSC will be highlighted • Training to refresh best usage of MSC for maximum utilization	• Learning and using innovative teaching aids for quality teaching and better understanding of subjects • Reduces stress and completes syllabus on time • Class will be more interactive as students will take keen interest to learn science and math	• RTTP scheduled • RTTP with PPT will be conducted • Feedback & suggestion from teachers • TTP report created for documentation	3nd quarter	
MSC - Monitoring & Evaluation	• To understand student's needs and improve for Opportunities & Innovative ideas for maximum learning.	• Students will be confident and empowered through new skills gained. • Reduced future academic anxiety. • Opportunities to explore one's potential Peer to peer learning and support	• Google form for M&E • Qualitative feedback through interview. • Quantitative data analysis	4tn quarter	
Client Visit to MSC established school	• Coordinate and arrange visit to client's CSR funded school	• The client will witness themselves the impact created through MSC installation • Transformation in skills knowledge and self-confidence	• Annual Report • Annual PPT • Videos of impact and students' achievement – Client wise & School wise	1rd and 4th quarter	

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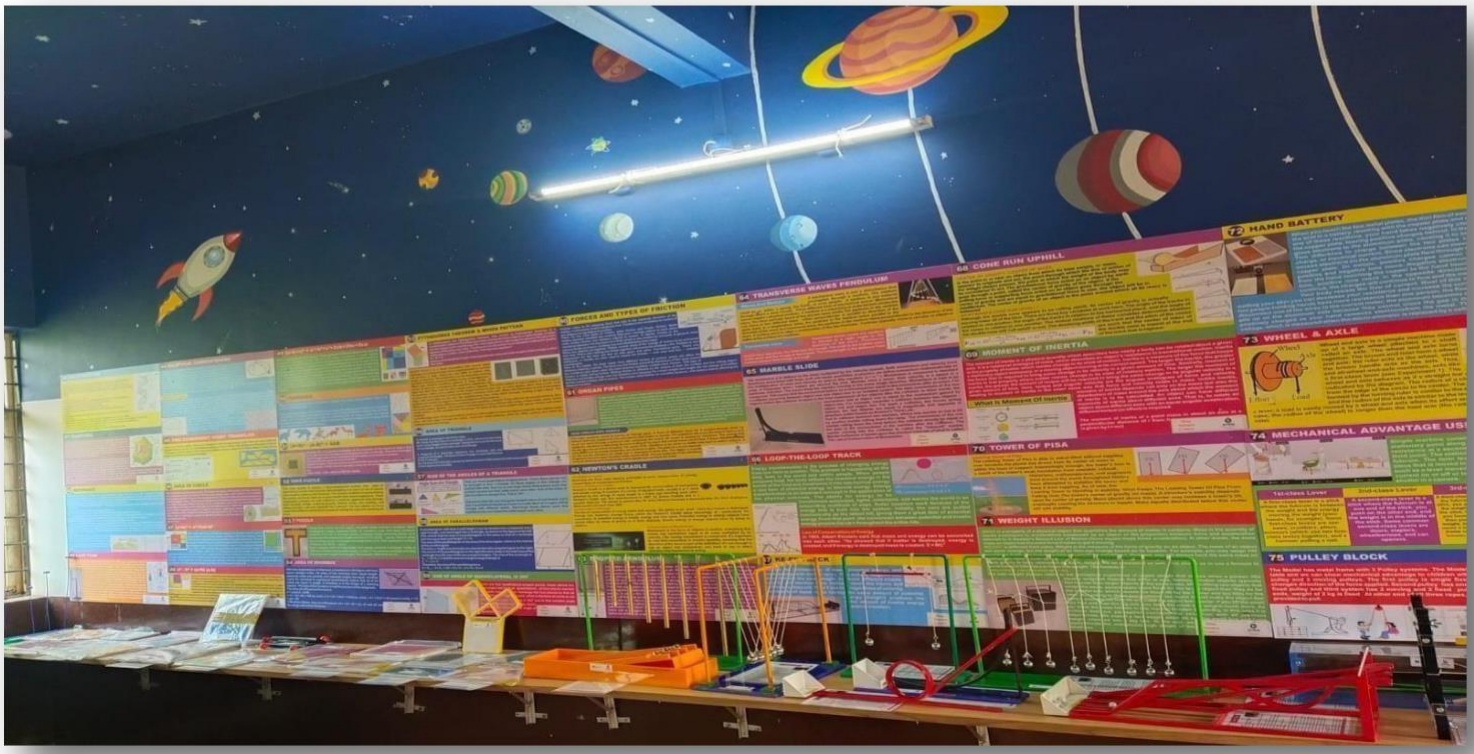
Mini Science Centre:



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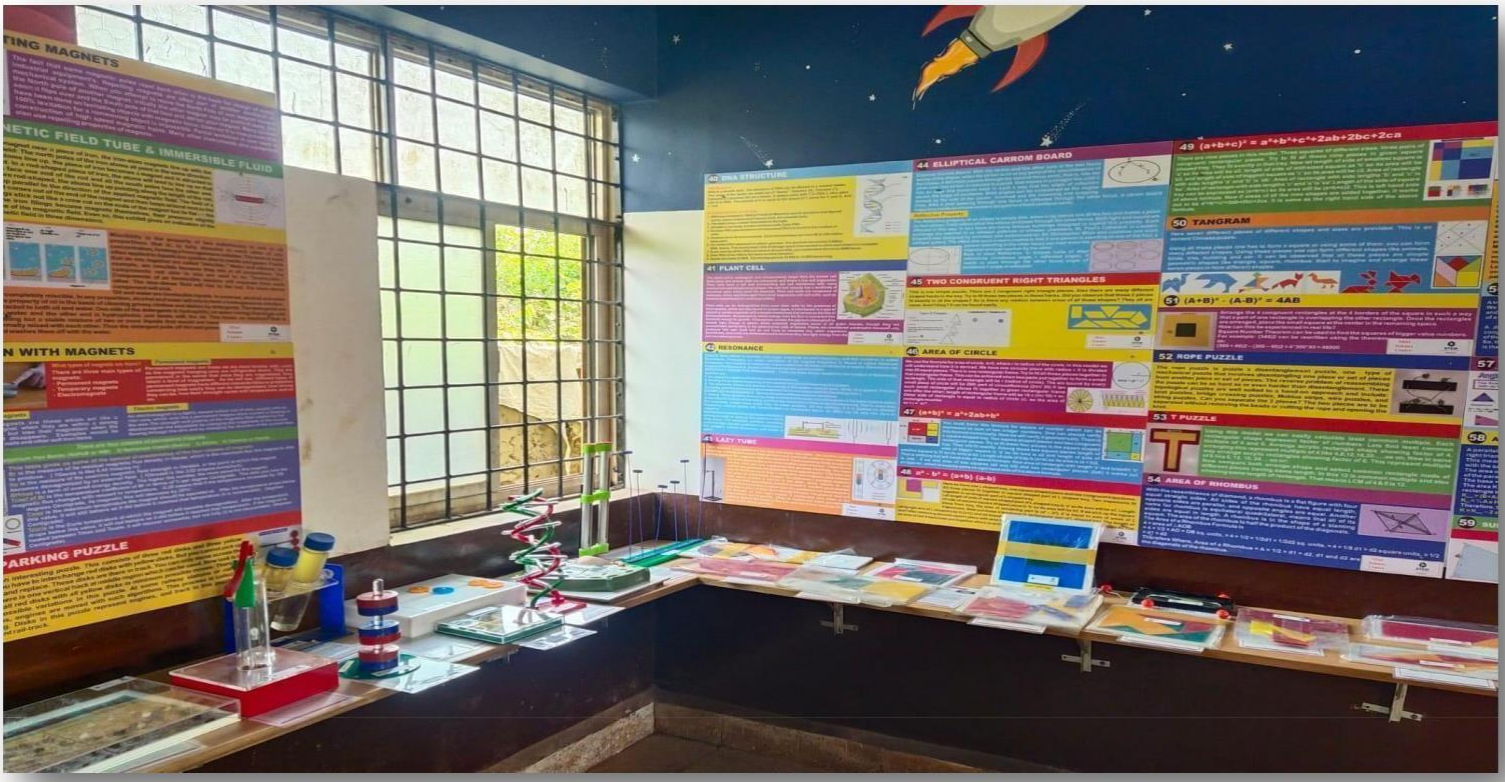

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Some of Our MSC Models:

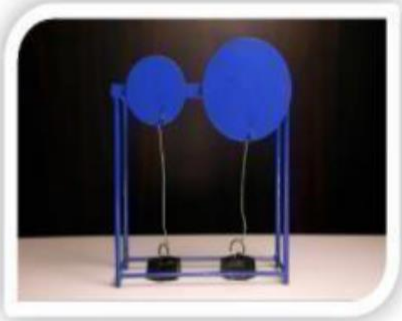
$(a+b)^2=a^2+2ab+b^2$

Floating Magnets

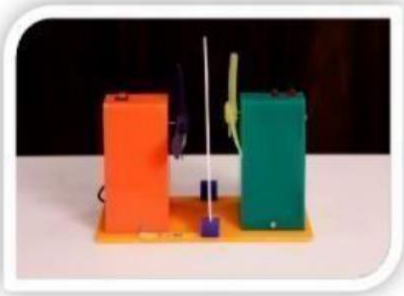
Pythagoras

Pin Screen

Conductors-and-insulators



Wheel-and-axel

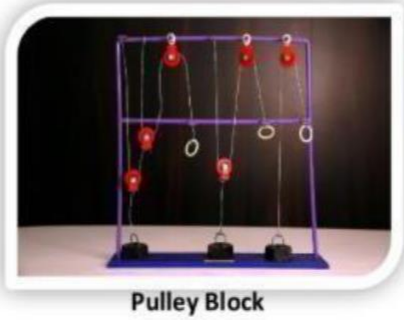


Windmill

Elliptical Carrom Board

Lever

Tangram



Pulley Block

Area of Rhombus

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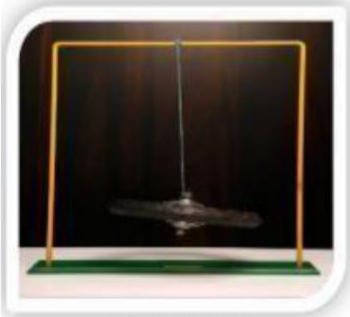
Centrifuge-Puzzle

Electric Bell

Fun with Magnets



Gyroscope

Total Internal Reflection

Law of Inertia

Outcomes/Result expected:

- Improvement of aptitude of the students in regards of science and mathematics.
- Development of inquisitiveness, critical thinking, problem solving skills and creativity of students.
- Enhancing the skills of teachers by training them to teach in a practical manner.
- Improve teaching pedagogy by use of models in conducting the science and math's class through better engagement of teachers in teaching.
- Strengthening of concepts of Science and Mathematics.

Conclusion:

As the famous saying goes, "It is greater to work to educate a child, in the true and large sense of the world than to rule a state." The real empowerment of a country lies in the hands of the children. There cannot be any weapon bigger than education to empower country. STEM education plays an important role as it pervades every aspect of life.

Our STEM Centre, provides more practical based learning and teaching style of Science and mathematics concept. This would equip the students with better clarity on the application of difficult concepts of Science and mathematics in their syllabus. The clarity of concepts would enable the students to think critically, analyze and explore the new horizons which would eventually benefit the society. The following are the benefits of STEM Centre:

Capacity Building of Teachers: MSC enables teachers to explain all the Mathematics, Physics and Science concept in amore effective manner. It saves the teaching time by 50% which means the increase in productivity of the teachers in school.

Improves the scientific temperament of students: Instead of reading from book and listening to teachers, MSCs Plug& Play models involve the students in teaching process which ignites the students' inquisitiveness and also provide better clarity and logic about the theories.

Encourages Innovation: STEM Centre boost the confidence among the students by educating them with science and mathematics concepts. The new-found scientific temperament in them encourages them to transform their innovative into reality.

Promotes Creativity: Creativity cannot sustain without Science. Whether it is an engineer or an architect, they have to be well versed with science and mathematics theories to create a sustainable design. The knowledge of STEM will allow the creative to use the material and space effectively.

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SWOT Analysis:

STRENGTHS (Internal factors)	WEAKNESS (Internal factors)
✓ Timely set up of MSC. ✓ 80 Models& backdrops aligned with curriculum. ✓ Structured TTP. ✓ Planned Follow-up M&E Process. ✓ WhatsApp Group for better connectivity & response. ✓ Vibrant Volunteer engagement programs.	✓ Probable delay in delivery in models for MSC.
STRENGTHS (EXTERNAL FACTORS)	**WEAKNESSS (EXTERNAL FACTOR)**
✓ Only structured program that has been certified by 7 SCERTS aligning with educational curriculum. ✓ Trust of more than 150 donors. ✓ Successfully implemented Program Pan India in 24 states in more than 2000 schools.	School withdrawal or no support. Non-Availability for training on scheduled dates.
OPPORTUNITY (INTERNAL FACTORS).	**THREAT (INTERNAL FACTORS).**
✓ Constantly up grading its process and offerings. ✓ Constant development of new modules.	✓ None, as the organization is managed by professionals and overseen daily by its Founder and MD.
OPPORTUNITY (EXTERNAL FACTORS)	**THREAT (EXTERNAL FACTORS).**
✓ To constantly better our TTP and M&E by learning's, experience and donor value addition.	Probable non acceptance of additional responsibility by school administration. Probable delay in taking ownership beyond the project period.

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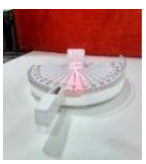
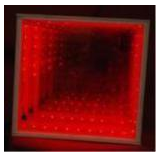
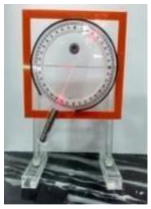
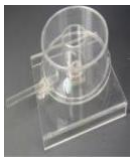
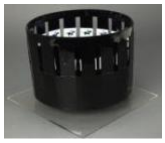
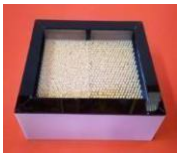
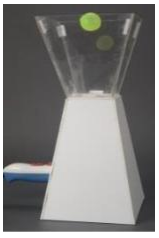
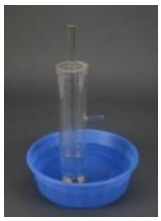
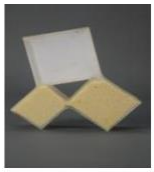
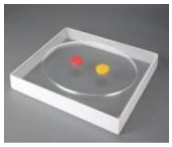
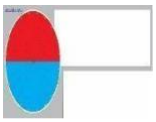
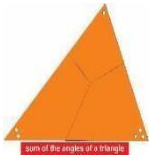
List of 80 Exhibits				
Sl. No.	Exhibit	Image	Concepts	CBSE Board Mapping
1.	Constellation Viewer		Identification and study of Indian constellations About Constellations Stars Pattern	i)Std 8'th-17.Our Universe
2.	Newton's Disc		White light is made up of 7 Colors (VIBGYOR). Splitting of white light.	i)Std 7'th-15.Light ii)Std 8'th-16.Light iii)Std 10'th-11.The Human Eye and the colorful world
3.	Color Shadow		Combinations of color lights. Additive mixture of color. Primary colors.	i)Std 6'th-11.Light, Shadows and Reflection
4.	Periscope		Application of laws of reflection. Angle of incidence and angle of reflection	i) Std 6'th-11.Light, Shadows and Reflection ii) Std 7'th-15.Light iii)Std 8'th-15.Light
5.	Kaleidoscope		Multiple reflection. Symmetric images. Patterns due to reflection	i) Std 6'th-11.Light, Shadows and Reflection ii) Std 6'th-13.symmerty (Math's) iii) Std 7'th-15.Lightiv)Std 8'th-16.Light
6.	Laws of Reflection		Laws of reflection for plane mirror. Angle of incidence = angle of reflection.	i) Std 6'th-11.Light, Shadows and Reflection ii) Std 7'th-15.Light iii)Std 8'th-16.Light iv)Std 10'th-10.Light - Reflection and Refraction

7.	Corner Mirror		Multiple reflection. Image formula (N=360/A - 1) Angled mirrors.	i) Std 6'th-11.Light, Shadows and Reflection ii) Std 7'th-15.Light iii)Std 8'th-16.Light
8.	Infinity Tunnel		Multiple reflections. Image formation in parallel mirrors.	i) Std 6'th-11.Light, Shadows and Reflection ii) Std 7'th-15.Light iii)Std 8'th-16.Light
9.	Magic Water Tap		Optical Illusion. Refractive index of medium, refraction	i)Std 10'th-10.Light - Reflection and Refraction
10.	Total Internal Reflection.		Total internal reflection, bending of light ray. Optical fiber	i)Std 10'th-10.Light - Reflection and Refraction
11.	Fun with Magnets		Types of magnets Magnetic field and properties of field lines.	i) Std 6'th-13. Fun with Magnets ii) Std 10'th-13.Magnetic effects of electric current ii)Std 10'th-13.Matter in our surroundings
12.	Law of Inertia		Newton's first law. Inertia is opposing change in state of rest.	i) Std 9'th-9.Force and Law of Motion

13.	Circle and Ball		Newton's first law. Inertia is opposing change in motion. Centripetal force.	i)Std 9'th-9.Force and Law of Motion
14.	Action and Reaction		Newton's 3rd law of motion. For every action there is equal opposite and reaction	i)Std 9'th-9.Force and Law of Motion
15.	Parrot in the Cage		Persistence of vision. Frames per second. The basic concept of animation.	i)Std 8'th-16.Light
16.	Zoetrope		Persistence of vision. Frames per second. The basic concept of motion picture.	i)Std 8'th-16.Light
17.	Pin screen		Pressure Inverse relation of Pressure Area Representation of Pixels	i)Std 9'th-9.Force and Law of Motion
18.	Floating Ball		Bernoulli's principle. Pressure difference and lift.	i)Std 7'th-8.Winds, Storms and Cyclones

19.	Floating Fan		Bernoulli's principle. Air pressure difference	i)Std 7'th-8.Winds, Storms and Cyclones
20.	Tornado		Atmospheric disturbances, currents, storms. Vortex of wind.	i) Std 7'th-8.Winds, Storms and Cyclones ii) Std 8'th-15.Some Natural Phenomena
21.	Hand Pump		Application of pressure to pump water. Pressure-volume relation.	i)Std 7'th-11.Transportation in Animals and Plants ii))Std 10'th-6.Life Process
22.	Anamorph		Perspective, Viewpoints Illusion and Graphical projection	Std. 10 Chapter. 11. The Human eye and The colorful Word
23.	Floating Magnets		Properties of magnet. Attraction in opposite poles and repulsion in like poles	i) Std 6'th-13. Fun with Magnets ii) Std 8'th-11.Force and Pressure
24.	Magnetic Field Tube & Immiscible Fluid		Magnetic field and properties of magnets. Density of liquid	i) Std 6'th-13. Fun with Magnets ii) Std 10'th-13.Magnetic effects of electric current ii)Std 10'th-13.Matter in our surroundings

25.	Moment of inertia		Moment of inertia Rotational inertia. Distribution of mass.	Std. 10 Chapter. 6. Force and Pressure
26.	Lazy Tube		Magnetic Field and Forces, Eddy current, Lenz Law.	i) Std 6'th-13. Fun with Magnets ii) Std 10'th-13.Magnetc effects of electric current
27.	Hyperbola		Conic sections. Shape of hyperbola.	i)Std 8'th-16.Light (Persistence of vision)
28.	Magnetic effect of electric current		Magnetism Magnetic effects of electric current. Compass deflection. Oesterd's experiment	Std. 10 Chapter. 13. Magnetic Effect of Electrical Current
29.	Pythagoras Model & Moire Pattern	 	Pythagoras theorem and Interference of Light	i) Std 7'th-6.The Triangle and its Properties ii) Std 9'th-9.Areas of Parallelograms and triangles iii) Std 10'th-6.Triangles Std 10. Chapter. 10. Light-Reflection and Refraction
30.	Elliptical Carom Board		Conic sections. Properties of ellipse.	i)Std 8'th-13.Sound ii)Std 9'th-12.Sound

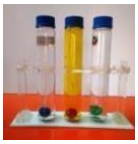
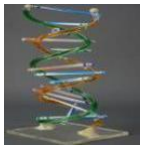
31.	Two Congruent Right Triangles		Comparison of area of different geometric shapes. Congruent shapes.	i) Std 6'th-5.Understanding Elementary Shapes ii) Std 7'th-11. Perimeter and Area
32.	Area of a Circle		Simple illustration of derivation of area of circle	i) Std 6'th-5.Understanding Elementary Shapes ii) Std 7'th-11. Perimeter and Area iii) Std 10'th-12.Areasrelated to circle
33.	$(a+b)^2 = a^2+2ab+b^2$		Geometric illustration of basic algebraic identity.	i) Std 7'th-12.Algebraic Expression ii) Std 8'th-19.Algebraic expression and Identities iii)Std 9'th-2.Polynomials
34.	$(a+b+c)^2 = a^2+b^2+c^2+2ab+2bc+2ca$		Geometric illustration of basic algebraic identity.	i) Std 7'th-12.Algebraic Expression ii) Std 8'th-19.Algebraic expression and Identities iii)Std 9'th-2.Polynomials
35.	a2-b2=(a+b) (a-b)		Geometric illustration of basic algebraic identity.	i) Std 7'th-12.Algebraic Expression ii) Std 8'th-19.Algebraic expression and Identities iii)Std 9'th-2.Polynomials
36.	Sum of the angles of a triangle		Elementary theorem of math. "Sum of all three angles of any triangle=180 ° Linear pair.	i) Std 6'th-5.Understanding Elementary Shapes ii) Std 7'th-6.The Triangle and its Properties

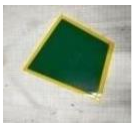
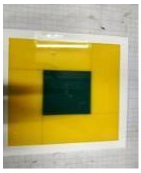
37.	Tangram		Interesting tiling puzzle. Basic geometric shapes.	To all standard
38.	Parking Puzzle &T puzzle		Mathematical logic Algorithm Brain Teaser Tiling Puzzle	To all standard
39.	Organ pipes		Sound of different frequencies and wavelengths. Musical notes.	i)Std 8'th-13.Sound ii)Std 9'th-13.Sound
40.	Area of rhombus		Simple illustration of derivation of area of rhombus	Std. 10 Chapter. 6. Area and mensuration
41.	Transverse wave pendulum		Mechanical wave. Basic concepts of transverse wave. Actual Representation of vibrating particles and propagating wave	i)Std 8'th-13.Sound ii)Std 9'th-13.Sound
42.	Area of triangle		Simple illustration of derivation of Area of Triangle	Std. 10 Chapter. 6. Area and mensuration

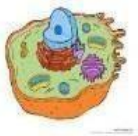
43.	Area of parallelogram		Simple illustration of derivation of area of parallelogram	Std. 10 Chapter. 6. Area and mensuration
44.	Coupled Pendulum		Resonant frequency. The resonant frequency depends on the pendulum's length. Longer pendulums have lower frequencies.	i)Std 6'th-10.Motion, and Measurement of Distances ii)Std 7'th-13.Motion and time
45.	Solar Light		Conversion of solar energy into electricity. Application of renewable energy sources. Solar panel, semiconductors.	i)Std 10'th-14.Sources of Energy
46.	Wind Mill		Working of wind mill. Conversion of wind energy into electricity.	i)Std 10'th-14.Sources of Energy
47.	Shape of earth due to rotation		Shape of earth Rotational force Centrifugal force	Std. 10 Chapter- 6.Gravitation
48.	KE PE Track		Conversion of energy. Potential and Kinetic energy.	i)Std 6'th-10.Motion, and Measurement of Distances ii)Std 7'th-13.Motion and time iii)Std 9'th-11.Work and energy

49.	Loop The Loop		Conservation of energy. The minimum speed necessary to complete the loop Without falling.	i)Std 9'th-11.Work and energy
50.	Rope Puzzle		Logic and Mathematical shapes study of surfaces	to all standard
51.	Refraction Cylinder		Refraction of light Alphabet symmetry	Std. 10 Chapter. 10. Light-Reflection and Refraction
52.	Newton's Cradle		Conservation of energy, conservation of momentum and friction.	i)Std 9'th-9.Force and Law of Motion
53.	Centrifuge Puzzle		Centripetal and Centrifugal force.	i)Std 5'th-11.Sunita in space ii)Std 9'th-8.Motion ,10.Gravitation
54.	Hand Battery		Electric potential difference. Electric battery. Chemical effect of electric current	i)Std 10'th-3.Metals & Non -Metals
55.	Periodic Table		Atomic Number and Periodic Classification of Elements	Std. 10 Chapter. 5 Periodic Classification of Elements

56.	Cone Run Uphill		Centre of mass. Gravity pulls on the center of mass of objects.	i)Std 9'th-10.Gravitation
57.	Tower Of Pisa		Center of mass. Centre of gravity. Gravitation. Stability of structure.	i)Std 9'th-10.Gravitation
58.	Lever		Simple Machines Lever. Type of lever.	i)Std 9'th-11.Work and energy
59.	Pulley Block		Pulley- simple machine. Combination of pulley. Mechanical Advantage.	i)Std 9'th-11.Work and energy
60.	Wheel and Axel		How it is easy to rotate wheel when force is applied at a point distant from center.	i)Std 9'th-11.Work and energy
61.	Heat Absorption		Black Body, Heat Absorption and Reflection, Color Temperature	Std. 7 Chapter -4.Heat
62.	Day and Night		Cycle of day and night on earth. Shadows. Seasons, angle of tilt.	i)Std 8'th-17.Stars and The Solar system

63.	Viscosity Tube		Buoyancy. Viscosity. Density	i)Std 5'th-7.Experimentswith water ii`)Std 9'th-10.Gravitation
64.	Rock and Minerals		Different types of rock and mineral samples. Difference between them.	i`)Std 9'th-14.Natural Resources
65.	DNA		Double helix structure of DNA. A-T and G-C pairs.	i`)Std 10'th-9.Heredity and Evolution
66.	Lateral Shift		Refraction of light, deviation inpath.	Std. 10 Chapter. 10 Light - Reflection and Refraction
67.	Force & types of friction		Friction, speed due to surface texture. Rolling Friction.	Std. 9 Chapter-11. Work And Energy
68.	Funny mirrors		Distorted mirror. Convex and concave mirrors	Std. 10 Chapter. 10 Light - Reflection and Refraction
69.	Marble Slide		Conservation of momentum.	Std. 9 Chapter- 9.Force and Laws of motion

70.	Resonance		Frequency and length of object, resonating frequency.	Std. 9 Chapter-. 4. Sound
71.	Weight Illusion		Weight Illusion Volume and Density	Std. 9 Chapter- 1.Matter - Its Nature & Behavior
72.	Area of Trapezium		Area of trapezium using parallelogram	Std. 10 Chapter. 6. Area and Mensuration
73.	Sum of angles of Quadrilateral		Sum of angles of Quadrilateral Complete angle	i) Std 6'th-5.Understanding Elementary Shapes ii) Std 9'th-6.The Quadrilateral
74.	(A+B)^2 - (A-B)^2 = 4AB		Geometric illustration of basic algebraic identity.	i) Std 7'th-12.Algebraic Expression ii) Std 8'th-19.Algebraic expression and Identities iii)Std 9'th-2.Polynomials
75.	Electric bell		Electric Circuit, Electromagnet and magnetic effects of current	1) Std - 7th – 14 Electrical currents and its effects. 2) Std - 10th - 12. Magnetic effects of Electric Current.
76.	Human Torso		Human Body Anatomy Organs Functions of Body parts	Std 6 Chapter 8 Body Movements

77.	Ear & Eye	 	Sense organs Functions of body parts Vision Hearing	Std 5 Chapter 1 Super Senses
78.	Human Joints		Types of joint In human body Bones and ligaments	Std 6 Chapter 8 Body Movements
79.	Plant Cell		Eukaryotic cells Difference between cells Parts of cell	Std 9 Chapter 5 The Fundamental Unit of Life
80.	Animal Cell		Difference between cells, Parts of cell	Std 9 Chapter 5 The Fundamental Unit of Life

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Financial Budget for Setting up of 2 Mini Science Center in 2 School for the Duration of 1 year

The budget is for 2 school for 2 MSC for 1 Year					
SR.NO	ITEM	DESCRIPTION	COST	NOS OF SCHOOLS	TOTAL
1	MINI SCIENCE CENTRE	80 MODELS + 80 USERS PLACARD+ 37 COLOURFUL BACKGROUNDS + 1 SAFETY PLACARD + 1 TEACHERS MANUAL+ 1 GATE BANNER INCLUDES INSTALLATION & DELIVERY	3,45,000	2	6,90,000
		TAXES @ 18%	62100		124200
		TOTAL	4,07,100	2	8,14,200
2	TRAINING OF TEACHERS (TTP)	TEACHERS TRAINING PROGRAMME -2 (FRESHER TEACHERS TRAINING PROGRAMME - FTTP & REFRESHERS TEACHERS TRAINING PROGRAMME - RTTP)	40,000	2	80,000
		TAXES @18%	7200		14400
		TOTAL	47,200	2	94,400
3	MONITORING & EVALUATION	TOTAL - 2 VISITS IN INDIVIDUAL SCHOOLS TO CONDUCT BASELINE & ENDLINE SURVEY	40,000	2	80,000
		TAXES @ 18%	7200		14400
		TOTAL	47,200	2	94,400
4	ANNUAL MAINTENANCE CONTRACT	CLEANING SERVICING & IF REPLACEMENT (if any)	40,000	2	35,000
		TAXES @ 18% (cost applicable from second year)	7,200		6300
		TOTAL	47,200	2	0
5	INFRASTRUCTURE	SET UP OF PLATFORMS & ELECTRIC CONNECTIONS & WHITE WASH	55,000	2	1,10,000
		TAXES @18%	9,900		19,800
		TOTAL	64,900	2	1,29,800
TOTAL (1+2+3+5)			**5,66,400**	2	**11,32,800**
		NET COST FOR PER SCHOOLS (1+2+3+5)	**4,80,000**	2	**9,60,000**
		GST@18%	**86,400**	2	**1,72,800**
		TOTAL COST INCLUDING GST	**5,66,400**		**11,32,800**

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THANK YOU

STEM LEARNING