

MAJOR COMPONENT-	Quality Interventions
SUB-COMPONENT-	Rastriya Aavishkar Abhiyan
ACTIVITY MASTER-	Rastriya Aavishkar Abhiyan
ACTIVITY-	Rastriya Aavishkar Abhiyan

1. Progress Report in r/o Rastriya Aavishkar Abhiyan 2018-19

Rashtriya Avishkar Abhiyan (RAA- Elementary) –

In order to promote Science and Maths learning at Upper primary to Sr. Secondary, the following activities were conducted-

Excursion Trip for Students at Elementary level within State under RAA-

Local tour for creating Scientific interest organized for students by visiting (1) Nehru Planetarium (2) Rail Museum and (3) National Science Centre. Total expenditure incurred was Rs. 5.4432 lakh.

Rashtriya Avishkar Abhiyan (RAA- Secondary) –

Study Trip for Students at Secondary level to Higher Institutions (Within States)

IIT Delhi conducted the programme under RAA. Total expenditure incurred was Rs. 0.05 lakh.

Exposure visit of Students at Secondary level outside State under RAA-

Out-station tour for promoting adventure and curiosity of students (Jim Corbette and Sariska) was conducted for 3993 students. Total expenditure incurred was Rs. 155.31985 lakh.

Math kits for Secondary level-

Two sets of Math kits were provided to DoE and Local bodies schools for the benefit of the students at Secondary level. Total expenditure incurred was Rs.28.61657 lakh.

Setting up of Astronomy Club - 16 Astronomy club was established in 16 zones through UNISED during 2018-19. Total expenditure incurred was Rs.14.50000 lakh.

RAA Lab:- Detailed modalities for establishment of Tinkering Labs was worked out in consultation with IIT Kanpur. It is proposed to establish the labs under AWP&B 2019-20 by IIT Kanpur.

2. Proposal for Rastriya Aavishkar Abhiyan in AWP&B 2019-20

In order to focus on connecting school based knowledge to life out of the school, making learning of Science and Mathematics, a joyful and meaningful activity and to promote innovation and use of technology, Ministry of Human Resource Development (MHRD), Govt. of India has launched Rashtriya Avishkar Abhiyan (RAA)

Objectives:-

1. To enable children to become motivated and engaged in Science, Mathematics and Technology (SMT) through observation, experimentation, inference drawing, model building, rational reasoning and testability.
2. To create curiosity, excitement and exploration among school children in Science, Mathematics and Technology.
3. To create a culture of thinking, inventing and doing, to promote enquiry based learning in schools.
4. To achieve learning levels appropriate to the class of study in Science and Mathematics.
5. To encourage and nurture schools to be incubators of Innovation.

Target Group:-

Children from 4-18 years studying in Govt./Govt. Aided schools, Open schools, Special Training Centres.

Proposed Interventions/Activities for 2019-20:

RAA1 Enhancement of Mathematical Calculation Skills

RAA2 Experimental Demonstration for secondary classes at Zonal level to enhance the scientific aptitude

RAA3 Study Trip for Students to Higher Educational Institutions (Within State) for sharing the best practices and mentoring.

RAA 4 Excursion trip for students within state (Elementary level) -Visit to places of scientific interest like Biodiversity Park, Science Museum, Planetarium and Industry etc).

RAA 5. Exposure Visit Outside State – Visit of places of scientific interest outside Delhi.

RAA 6. Rashtriya Avishkar Abhiyan Lab at 136 Clusters.

a. RAA-1:- ENHANCEMENT OF MATHEMATICAL CALCULATION SKILLS through Workshop on ABACUS learning at 136 clusters (8 schools per cluster)

The ultimate goal of education is to boost the development of the child's brain. It is to assist holistic learning by helping the child to understand concepts and theories, to broaden the child's understanding of things so that he can implement it for the development of the environment that they live in, Experiments help teachers achieve a variety of classroom goals related to:

- Student Learning Outcomes
- Teacher's Satisfaction With Teaching
- Grades
- Attendance
- Student Retention in Course
- Teaching Evaluation Scores
-

Abacus is a simple tool or a hardware used for performing rapid arithmetic calculations. The best age to learn [Abacus](#) is 8 yrs as in this stage brain is most active and learns phenomenally.

Objectives:-The Benefits of Teaching Children Maths Using Abacus kits.

Boosts better and faster calculation skills.

- ❖ Increases endurance for stress and pressure.
- ❖ Improves problem-solving abilities.
- ❖ Teaches clearer logical reasoning.
- ❖ Sharpens concentration and observance.
- ❖ Develops confidence and self-esteem.
- ❖ Heightens stronger mental visualisation skills.
- ❖ Betters reading and writing.

STRATEGY

Target Group- 5440 students* (05 students per school)

Total Schools:-136x08=1088 schools (08 Schools per clusters)

1Day workshop at cluster level, which will be held for **3 consecutive months**

EXPENDITURE NORMS PER CLUSTER :-

S. NO.	Particulars	Phy target	Unit cost (In Rs.)	Total outlay (In Rs.)
1	Payment to RP @1500/-	1	1500/-	1500/-*3=4500/-
2	Refreshment to children @35- for 40 children	40	35/-	1400/-*3=4200/-
3	Refreshment to RP and others @Rs.50/- per person for 10 persons including maths teacher ,CRCC,DURCC etc	10	50/-	500/-*3=1500/-
4	Contingency			200/-*3=600/-
5	Provision of ABACUS kit (one time) to class IV & V students(One Abacus kit for every 4 children)	10	500/-	5000/-*1=5000/-
6	Payment to supporting staff(1)	1	200/-	200/-*3=600/-
TOTAL OF 3 WORKSHOPS				Rs.16400/-

TOTAL EXPENDITURE

PHY TARGET	UNIT COST (In Lacs)	TOTAL OUTLAY (in lacs)
136 clusters	16400/-	22.304

b. RAA-2 Experimental Demonstration for secondary classes at Zonal level to enhance the scientific aptitude.**Target Group:-Students of secondary classes.****Objective:-**

- To provide teachers with an **applied research experience** through which they can motivate and engage their students in Science through improved and encouraging exploration.
- To enable teachers **to integrate scientific environmental education** into their subject matter by providing in-depth understanding of contemporary environmental challenges.

- To provide teachers with opportunity to **personally connect with nature and help develop strategies** to encourage students to make this connection as well and **help build curiosity, excitement and exploration.**
- To provide teachers with experiences and materials that **enriches their skills and builds innovation in classroom practices.**

Strategy:- Team of 4 students from each school of the zone will participate at zonal level and will demonstrate and experiment at the zonal level.

Mass demonstration/Experimentation by School children

At Zonal level- 10 Schools from each zone, 4 participants from each school.

Arrangement at venue:2 teams (2 participants in each group)

Honorarium to 3 Judges @1500/-	=Rs.4500/-
Refreshment @Rs.35/- (40 participants +10 escort)	=Rs.1750/-
Conveyance to participants 40 & 10 Escort @Rs.50/-	=Rs.2500 /-
Miscellaneous & other unforeseen including refreshment of Judges etc.	=Rs.2000/-
2 Banners	=Rs.1000/-
Videography	=Rs.2000/-
	=Rs.13750 /-
Prize	
1 st Prize to 4 students @Rs.500/-	=Rs.2000/-
2 nd Prize to 4 students @Rs.400/-	=Rs.1600/-
3 rd Prize to 4 students @Rs.300/-	=Rs.1200/-
	=Rs.4800 /-
Total (13750+4800)	=Rs.18550/-
For 29 zones (18550 x 29)	=Rs.537950/-
Total outlay: -Rs.537950/-	

c. RAA-3 Study Trip for Students to Higher Educational Institutions (Within State) for sharing the best practices and mentoring.

3 days interstate visit may be planned for sharing the best option for further career and future planning.

Activity	Physical Target	Unit Cost (in Lakhs)	Financial Outlay (In Lakhs)
Exposure Visit of students of Sr. Secondary Level	100	0.05	5.00

Activity	Action/Strategies
Exposure Visit to Higher Educational Institution	1. For sharing the best practices in teaching in the higher institution. 2. A team comprising the members of Students and Teachers. 3. The visit will be planned in the month of Oct/Nov., 2019.

d. RAA-4: - Excursion trip for students within state (Elementary level) -Visit to places of scientific interest like Biodiversity Park, Science Museum, Planetarium and Industry etc).

Under this activity, students will visit Parks, Garden, Science Museum and Planetarium under the guidance of their science teachers who will act as guide to give an idea about purpose of Science, Museum and Planetarium visit. After the visit of the assigned place, the teacher will conduct a small test in the prescribed template based on the observation of students. During the session 2019-2020, it is proposed to, cover 45 students and 4 teachers each from 178 schools as detailed below:-

No. of schools =178
No. of Students =8010
No. of Teachers =712

Management wise Quota of Schools

Sl. No.	District	No. of Schools				Total
		DoE	MCD	NDMC	DCB	
1	East	10	10	0	0	20
2	North East	10	10	0	0	20
3	North	7	8	0	0	15
4	North West	13	13	0	0	26
5	West	13	13	0	0	26
6	South West	8	9	0	3	20
7	South	13	13	0	0	26
8	New Delhi	2	5	3	0	10
9	Central	7	8	0	0	15
	Total	88	90	03	03	178

Site wise distribution of Schools

Sl. No.	District	Site				Total
		Science Museum	Bio-diversity park	Planetarium	Industry	
1	East	05	05	06	04	20
2	North East	05	05	06	04	20
3	North	05	05	02	03	15
4	North West	08	08	05	05	26
5	West	08	08	05	05	26
6	South West	05	05	06	04	20
7	South	08	08	05	05	26
8	New Delhi	03	03	02	02	10
9	Central	05	05	03	02	15
	Total	52	52	40	34	178

Financial Implication @ Rs. 200 per child :-

1. Travelling allowance @Rs.100/- per child.
2. Food/refreshment/Water Bottle @Rs.90/- per child.
3. Miscellaneous like preparation and printing of templates (HQ level)@Rs.10/- per child.

Sl. No.	District	No. Of Schools	No. of Students	Rate (in Rs)	Amount (In Rs.)
1	East	20	900	200	180000
2	North East	20	900	200	180000
3	North	15	675	200	135000
4	North West	26	1170	200	234000
5	West	26	1170	200	234000
6	South West	20	900	200	180000
7	South	26	1170	200	234000
8	New Delhi	10	450	200	90000
9	Central	15	675	200	135000
	Total	178	8010		1602000

(Rupees Sixteen Lakh Two Thousand only)

Visit to places of scientific interest inside Delhi Total out lay.

Phy. Target	Unit Cost (Rs. in lakh)	Fin. (Rs. in lakh)
8010	0.002	16.02

e. RAA-5:- Exposure Visit Outside State – Visit to places of scientific interest outside Delhi.

After visit of the assigned place, the teacher will conduct a small test in the prescribed template based on the observation of students. During the session 2019-2020, it is proposed to cover 40 students and three teachers of each of 195 Schools as detailed below:-

No. of schools = 195
No. of Students = 7800
No. of Teachers = 585

S. No.	District	No. Of Schools	No. of Students 40 students per Schools	Rate@.05	Amount (In Rs.)
1	East	15	600	.05	30.0
2	North East	15	600	.05	30.0
3	North	15	600	.05	30.0
4	North West-A	15	600	.05	30.0
5	North West-B	15	600	.05	30.0
6	West-A	15	600	.05	30.0
7	West-B	15	600	.05	30.0
8	South West-A	15	600	.05	30.0
9	South West-B	15	600	.05	30.0
10	South	15	600	.05	30.0
11	South East	15	600	.05	30.0
12	New Delhi	15	600	.05	30.0
13	Central	15	600	.05	30.0
	Total	195	7800	0.65	390

15 Schools per District 40 students per schools =600X13=7800 students

Target	No. of Students	Unit Cost (Rs. in lakh)	Fin. (Rs. in lakh)
15 Schools of each district	15 x 13 (distt.) x 40 (students) = 7800	0.05	390.00

f. RAA 6. Rashtriya Avishkar Abhiyan Lab at 136 Clusters

The Ministry of Human Resource Development (MHRD) has launched the Rashtriya Avishkar Abhiyan (RAA), a convergent framework across School Education and Higher Education aiming to encourage children towards learning Science, Mathematics and to develop their interest through activity related to Science and Mathematics. One of the interventions under RAA is strengthening of school science and mathematics laboratories.

Rashtriya Avishkar Abhiyan will target students in the age group of 6-14 years and in turn the execution of RAA will span across MHRD's schematic intervention of Samagra Shiksha Abhiyan (SSA).

It is proposed to establish Tinkering Labs as RAA Lab with the help of Department of Computer Science and Engineering, IIT Kanpur, as per the following details:

Sl. No.	Name of Items	Cost (Rs. in lakh)
1	Equipments for Rashtriya Avishkar Abhiyan lab by UNISED	10.00
2.	Monitoring support, Supervision, Teacher Training and three year operation & maintenance	5.00

The total cost of one lab is Rs.15.00 lakh (Fifteen lakh rupees). The school would have to provide at least well painted and furnished lab room space with electricity and water availability. A list of equipments to be provided in the lab are divided into 4 packages as follows:-

1. Package 1: Electronics Development, Robotic, Internet of things and Sensors.
2. Package 2: Rapid Prototyping Tools.
3. Package 3: Mechanical, Electrical and Measurement Tools.
4. Package 4: Power Supply and Accessories and Safety Equipment

In addition the following equipments shall be provided-

Sl. No.	Equipment for lab	Quantity
1	Laptop Intel i3 RAM 4GB, HDD 1 TB reputed brand with 3 years warranty window 10 license and open office license.	3
2	Projector 3000 lumen with LED/LCD/DLP with reputed brand with 3 years warranty	1
3	Projector screen/Mat finish White board	1
4	Speaker	1
5	Projectors hanging kit	1
6	Printer (B/W)	1
7	Webcam (QHMP 495 LM)	1
8	Electrical Fitting for the above	

For the activities, under the **Operation and Maintenance** component, IIT Kanpur has proposed as under-

Sl. No.	Name	Description
1	Hand on Teacher Training	3 days – 2 batch of 65 students each, per year for 3 years
2	Tinkering workshop for teachers by IIT Kanpur	2 days – 2 batch of 65 teachers each, per year for 32 years
3	Tinkering quiz at each RAA Lab buy the visiting mentor/resource persons	1 quiz in 1 month/monthly basis
4	Monthly Tinkering Seminar by visiting Mentor	1 seminar in 1 month/monthly basis
5	State level exhibition for Innovation models developed under RAA Labs	1 in a year
6	Monthly honorarium to the Mentor on per school basis (Rs.5000)	26 mentors for 130 RAA Labs
7	Repair & maintenance of ATL equipments	As and when required
8	Purchase of consumable/spares	As and when required

Capacity building of teachers by academicians from IIT and experts from UNISED will be carried out on various topics.

The Project Implementation Plan proposed by IIT Kanpur is as tabulated below:-

Project Implementation Plan	
Activity	Timeline
Project equipments at school level	Within three months from the date of 1 st instalment
Project activities – Training of Teachers, quiz, seminar etc. (as mention in the Table 2)	Within one year from the date of work order issued by Samagra Shiksha
Operation and maintenance component	Up to three years from work order date

Proposed Budget-

Physical target	Unit cost (Rs. in lakh)	Financial (Rs. in Lakh)
136 clusters	15.00	2040.00

3. Recommendation of Technical Support Group (TSG) -2019-20

Activity	Proposal			Recommendation			Remarks
	Phy	Unite Cost	Finance	Phy	Unite Cost	Finance	
RashtriyaAaviskaarAbhiyan (Elementary)							
ABACUS	136	0.164	22.304	136	0.04	5.44	Considered @ Rs. 4000/cluster (136 cluster). In every cluster 40 student would be covered
Excursion Trip for Students within State	8010	0.002	16.02	8010	0.002	16.02	Considered as proposed
RashtriyaAaviskaarAbhiyan (Secondary)							
Science Exhibition / Book Fair	29	0.1855	5.38	29	0.1855	5.3795	Considered as proposed
Study Trip for Students to Higher Institutions (Within States)	100	0.05	5	100	0.002	0.2	Considered @ Rs.200/student as per norms
Exposure visit outside State	7800	0.05	390	7800	0.02	156	Considered @ Rs. 2000/student
RAA Lab (Capacity building of teachers by academicians from IIT and experts from UNISED will be carried out on various topics. The Project Implementation Plan proposed by IIT Kanpur)	136	15	2040	136	15	2040	In 2018-19 RAA Lab by UNISED on a pilot basis for 130 clusters @ Rs. 15.00 lakh / cluster. approved. In the current financial year 136 schools considered.

Rastriya Aavishkar Abhiyan	96 Rashtriya Aavishkar Abhiyaan (Elementary)							
	96. ABACUS	136	0.164	22.304	136	0.04	5.44	Considered @ Rs. 4000/cluster (136 cluster). In every cluster 40 student would be covered
	96.h Excursion Trip for Students within State	8010	0.002	16.02	8010	0.002	16.02	Considered as proposed
	Total of Rashtriya Aavishkar Abhiyaan (Elementary)			38.32			21.46	
	97 Rashtriya Aaviskaar Abhiyan (Secondary)							
	97.a Science Exhibition / Book Fair	29	0.1855	5.38	29	0.1855	5.3795	Considered as proposed
	97.d Study Trip for Students to Higher Institutions (Within States)	100	0.05	5	100	0.002	0.2	Considered @ Rs.200/student as per norms
	97.e Exposure visit outside State	7800	0.05	390	7800	0.02	156	Considered @ Rs. 2000/student
	97.y RAA Lab	136	15	2040	136	15	2040	In 2018-19 RAA Lab by UNISED on a pilot basis for 130 clusters @ Rs. 15.00 lakh / cluster. approved. In the current financial year 136 schools considered.
	Total of Rashtriya Aaviskaar Abhiyan (Secondary)			2440.38			2201.58	
Total of Rastriya Aavishkar Abhiyan			2478.7			2223.04		

4. Approval of Plan Approval Board 2019-20

- g) **Rashtriya Avishkar Abhiyan (Elementary):** An outlay of Rs. 21.46 lakh as per unit cost given below was estimated for Rashtriya Aavishkar Abhiyan (RAA) for various activities, such as, Mentoring by Higher Institutions, Establishment of Science Clubs, Science corners, Teachers circles, and excursion trip for students within state for upper primary level. UT is requested to provide UDISE code of selected schools within two months where these activities will be carried out. The state may also refer to detailed guidelines issued by MHRD for Rashtriya Avishkar Abhiyan.

(Rs. in lakh)			
Activity Master	Physical	Unit Cost	Financial
Rashtriya Avishkar Abhiyan (Elementary)			
ABACUS	136	0.04	5.44
Excursion Trip for Students within State	8010	0.002	16.02
Total			21.46

Outcome: This will help in improving overall performance in terms of PGI indicators 1.1.7 and 1.1.8.

- h) **Rashtriya Avishkar Abhiyan (Secondary):** An amount of Rs. 2201.58 lakh as per unit cost given below was estimated for Rashtriya Avishkar Abhiyan (RAA) for various activities, such as, Mentoring by higher education institutions, Setting-up of teacher circles, Setting up of Science exhibitions; Book Fair, Exposure Visits within and outside State, etc. State is requested to provide UDISE code of selected schools within two months where these activities will be carried out. The state may also refer to detailed guidelines issued by MHRD for Rashtriya Avishkar Abhiyan. List of schools approved for RAA Lab is attached in Annexure-III.

(Rs. in lakh)			
Activity Master	Physical	Unit Cost	Financial
Rashtriya Aaviskaar Abhiyan (Secondary)			
Science Exhibition / Book Fair	29	0.1855	5.3795
Study Trip for Students to Higher Institutions (Within States)	100	0.002	0.2
Exposure visit outside State	7800	0.02	156
RAA Lab	136	15	2040
Total			2201.58

5. Costing of Project Approval Board (PAB)

Rashtriya Aavishkar Abhiyan	97	Rashtriya Aavishkar Abhiyaan (Elementary)						
		97. ABACUS	136	0.16400	22.304	136	0.04000	5.44
		97. h Excursion Trip for Students within State	8010	0.00200	16.02	8010	0.00200	16.02
		Total of Rashtriya Aavishkar Abhiyaan (Elementary)			38.32			21.46
Rashtriya Aaviskaar Abhiyan (Secondary)	98	Rashtriya Aaviskaar Abhiyan (Secondary)						
		98. a Science Exhibition / Book Fair	29	0.18550	5.38	29	0.18550	5.3795
		98. d Study Trip for Students to Higher	100	0.05000	5	100	0.00200	0.2

Particulars				Proposal			Final Approved Outlay		
Major Component	Sub Component		Activity Master	Physical	Unit Cost	Financial	Physical	Unit Cost	Financial
			Institutions (Within States)						
		98.	Exposure visit outside State	7800	0.05000	390	7800	0.02000	156
		98.	RAA Lab	136	15.00000	2040	136	15.00000	2040
			Total of Rashtriya Aavishkar Abhiyan (Secondary)			2440.38			2201.58
			Total of Rastriya Aavishkar Abhiyan			2478.7			2223.04