

5. IMPLEMENTATION PLAN OF THE PROJECT

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5.1 Organization for Implementation of the Project

The executive agency of the Project is DECS. Its subordinate organization EDPITAF will be in charge of the actual tasks of implementation.

After the Exchange of Notes is concluded between the Governments of Japan and the Philippines, a contract of the implementation will be made with the Government of the Philippines by a Japanese consultant firm on the detailed designs and supervision, and by a Japanese trading company firm on the supply of the equipment, respectively.

5.2 Undertakings of Both Governments

This Project is to provide the instructional equipment to the high schools in Region V and Region VIII as a part of assistance to secondary education instructional equipment program covering all over the Philippines. Undertakings of both governments for the Project are shown in the following table.

Items of Undertakings	Japan	Philippines
(1) Equipment		
1) Procurement of equipment	0	
2) Inspection at the warehouse in Manila	0	
3) Operation instruction of equipment ^{<1}	0	
(2) To secure warehouses as key stations		0
(3) To secure storing space for equipment in each school		0
(4) To provide the utilities		0
(5) To ensure import/customs clearance		
1) Transportation to Philippines	0	
2) Tax exemption/customs clearance		0
3) Internal transportation in Philippines		
a) To the warehouse in Manila	0	
b) From the warehouse in Manila to each key station	0	
c) From key stations to each school		0
(7) To bear the commissions to Japanese foreign exchange bank for banking services based on the B/A (Banking Arrangement)		0
(8) To accord convenient official services for Japanese nationals whose work may be required in connection with the Project at their entry into and departure from the Philippines and during their stay therein for the performance of their work		0
(9) To maintain and use properly and effectively the equipment provided by the Grant-in-Aid		0
(10) To bear all expenses other than those to be borne by the Grant-in-Aid necessary for the construction of facilities as well as for the transportation and installation of the equipment		0
(11) Procedures to get approvals necessary for the works, etc.		0

Remarks <1: Operation instruction by the Region level.

5.3 Procurement and Delivery Plan

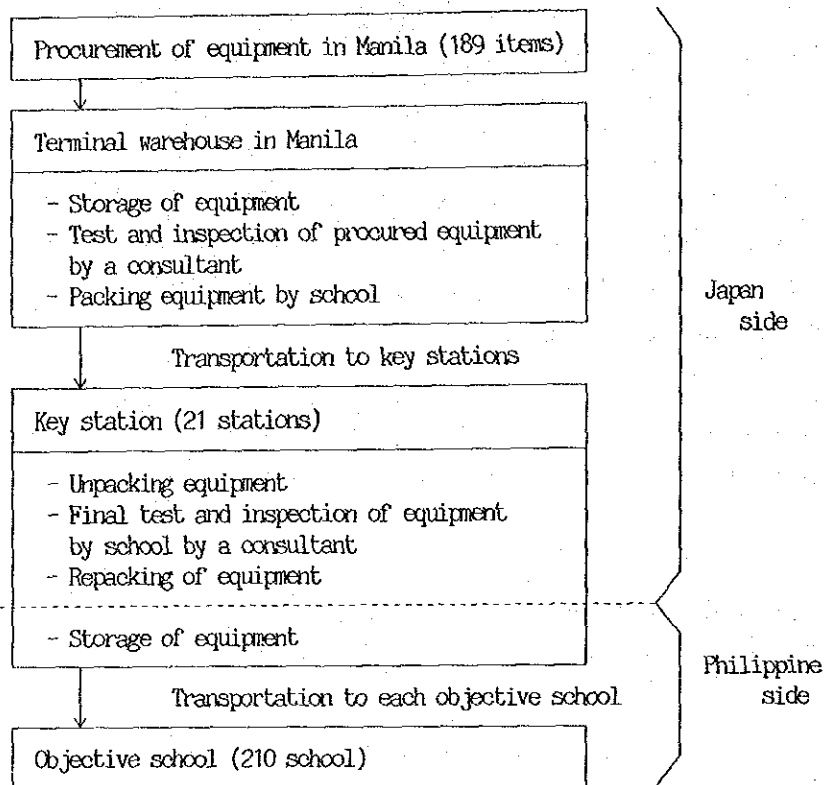
5.3.1 Procurement and Delivery Principles and Items to be Considered

Considering the Project is implemented by the grant aid provided by the Government of Japan, the following items should be considered the execute the procurement and delivery.

- 1) In the construction work of the school buildings with typhoon-proof structure in Region VIII which is planned by Japan, it is necessary to grasp the construction schedule so that the equipment may be supplied smoothly in these schools.
- 2) Responsibilities should be clarified concerning the transportation of the equipment to ensure the smooth and effective delivery.
- 3) Sufficient exchange of opinion should be made between the Philippine side, and a consultant firm and a trading firm of Japan side to maintain a good relationship.
- 4) Efforts should be made to prevent accidents at the time of temporal storage and transportation of the equipment.

5.3.2 Execution Plan

The instructional equipment in the Project do not include any ones required the installation works. After the equipment is procured, store and packed by each school in Manila, the package of the equipment is delivered to each school. In this time, Japan side undertakes the transportation up to total 21 key stations set up in both Regions, and the Philippine side undertakes it from key stations to each objective school. Working flow-chart of procurement and delivery of the equipment is shown in below.



5.3.3 Supervision Plan

For procuring and distributing the equipment of the Project, a careful plan will be made based on sufficient previous arrangements with the Philippine side. The following items should be considered in the equipment procurement and delivery.

- 1) Since the transportation of the equipment is undertaken via key stations by Japan side and the Philippine side in turn, coordination should be made thoroughly from the detail design stage to make the transportation plan. Efforts should be made to coordinate with the construction work of typhoon-proof buildings, and shorten the sojourning period of the equipment at key stations.

- 2) Prior to supplying the equipment, the execution plan made by the contractor should be reviewed carefully, and appropriateness should be evaluated of the working schedule, procurement plan and equipment specifications.
- 3) An inspection of the equipment should be made beforehand while packing the equipment for each school in Manila to avoid troubles in the final inspection at key stations.
- 4) In the delivery and handing over of the equipment, the instruction of usage of the main equipment is to be carried out in each Region by a contractor. It should be examined and confirmed whether the instruction of usage is appropriate or not.

5.4 Implementation Schedule

The implementation schedule of the Project is described in the following table. The schedule is composed of the three steps of detailed design, bidding and execution.

Month	1	2	3	4	5	6	7	8	9	10	11	12
Exchange of Note	▽											
Consultant contract	■											
Preparation of tender documents	▬											
Approval of tender documents			■									
Tender			▬									
Contractor contract				▽								
Order/Manufacturing				▬								
Factory inspection								▬				
Packing									▬			
Transportation to key station										▬		
Final Inspection											▬	
Instruction <1												■
Hand over												▽

▬ Works in the Philippines

▬ Works in Japan

Remarks <1: The instruction of usage and experiment on the major equipment to be carried out to representatives of teachers in each educational division at a selected school in each Region.

5.5 Project Cost Undertaken by the Government of the Philippines

The project cost undertaken by the Government of the Philippines to cover the transportation from key stations to each school and electrical work is estimated to be approximately ₱ 6.55 million. The details are as follows.

- 1) Transportation: Approximately ₱3.97 million.
- 2) Electricity: Approximately ₱2.58 million.

6. OPERATION AND MAINTENANCE PLAN

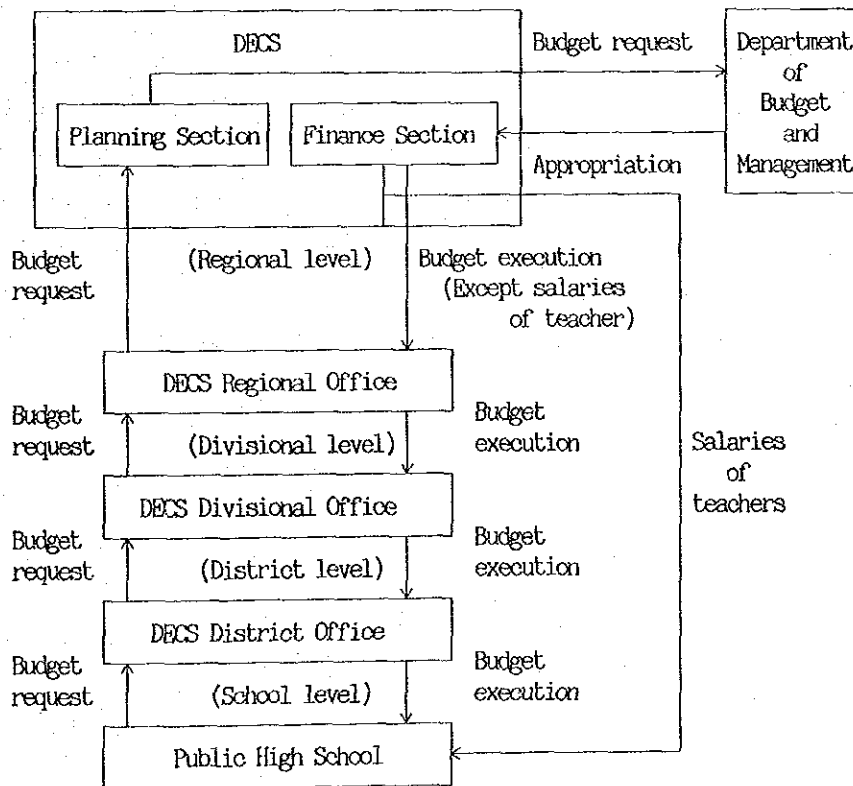
6. OPERATION AND MAINTENANCE PLAN

6.1 Maintenance System

The equipment will be provided to a large number of national high schools in Region V and Region VIII through DECS which is the executive agency of the Project.

The operation and maintenance of these equipment are performed by each school. As all the public high schools were nationalized in 1988, the annual budget of each school including operation and maintenance expenses are financed by DECS. Only the salaries of the teachers are paid directly to each teacher from DECS, and other budgets are paid to each Regional Education Office from DECS, and later paid to each school through Divisional Education Offices.

The budgeting system of the national high schools is shown in the following chart.



6.2 Operation and Maintenance Budget

As was mentioned in "2.4.3 Maintenance Cost of Schools", the budget of the average annual cost of operation and maintenance per one public high school in Region V and VIII in 1988 was ₦59,000 and ₦66,000, respectively. As this budget will cover transportation, lighting and heating, equipment, and other operation and maintenance expenses, the amount to be allotted to the replacement and refillment of equipment and chemicals is extremely small. When the Project is implemented, the expenses of the following items in one school will increase as shown in the table.

1) Chemicals and consumables	₦3,300 /year
2) Glass tools replacement (10% of appliance cost)	₦1,250 /year
3) Training materials of Technology & Home Management	+ α
4) Increase of lighting and heating expenses	+ α
Total	₦4,550/year + α

As the increase of these costs are not included in the present budget plan, it is assumed to cause the equipment to be used less frequently. DECS is now trying to cope with this problem, seeking for a way to prepare a special budgetary measure for the recipient schools of SEDP including the Project. The estimated amount of increase is 10 to 20 percent of the average operation and maintenance cost per school at present. As the amount is not so large, it is very likely that the budgetary measure will be taken for this cost.

7. EVALUATION OF THE PROJECT

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7.1 Effects of the Project Implementation

7.1.1 Effects on Secondary Education

The secondary education in the Philippines has not produced sufficient effects because of imperfect facilities and instructional equipment, low level of teachers, improper curriculum, and so on. Under such circumstances, the Government of the Philippines formulated Secondary Education Development Program (SEDP) aiming at the improvement in the quality, access and equity of the secondary education. At the same time free secondary education in the public sector was made mandatory under the 1987 Constitution. Consequently, 3,414 public high schools have been nationalized since June 1988, and free education has been maintained.

The purpose of the Project is to provide standard instructional equipment in the urgently required fields of Science and Technology & Home Management to a large number of national high schools in Region V and VIII, where the development of secondary education has been far behind other Regions, and thereby realize efficient experiments and training, and improve the quality of education. The number of national high schools located in these regions as of 1988 are 572, and the number of students enrolled is about 295,000. The number of the objective schools in the Project is 210, which is 36.7 percent of the whole. The number of the recipient students is about 147,000, which is 49.8 percent of the total. Thus, the effects of the improvement of the secondary education produced by the Project will be great.

7.1.2 Effects on the Society of the Philippines

The Aquino government has introduced new policies protecting the economically weak, focusing on "development of education and human resource". The improvement of the secondary education promoted by SEDP is one of the specific measures to be the center of the movement.

The implementation of the Project will enable the lessons with a benefit of specific instructional equipment so that the students may be strongly interested in learning and become more willing to continue studying even under the unfavorable social conditions. As a result, the standard of education in these Regions will be improved so that many people can receive higher education and acquire the basic knowledge to meet the requirements of the employers.

7.2 Justification of the Project

The goal of SEDP is a general improvement of 3,414 national high schools in the country, and the Government of the Philippines is seriously tackling the achievement of the goal. The target year is 1992, and the works of improving curriculum and school facilities have already started with ADB Loan and other assistance from abroad. This Project, being a part of SEDP, will contribute to the work by providing instructional equipment. As the secondary education in the objective Regions is far behind in the whole country, the implementation of the Project is expected to bring great effects on the improvement of the secondary education in these Regions.

Thus, it is considered to be appropriate to implement the Project.

8. CONCLUSION AND RECOMMENDATION

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8.1 Conclusion

It is convinced that this Project, playing a part of the comprehensive SEDP, will greatly contribute to the improvement of the secondary education of the Philippines by providing instructional equipment.

Therefore, it is considered to be extremely significant that the Government of Japan should provide grant aid for the implementation of the Project.

8.2 Recommendation

It is recommended that the Government of the Philippines will take the following measures to proceed smoothly and effectively the execution of the Project as well as the operation and maintenance thereafter.

- 1) The transportation of the equipment to the key stations in the objective Regions will be undertaken by Japan, but the transportation from the key stations to each school is in charge of the Philippines. It is necessary to make an execution plan and prepare required staff beforehand, and take necessary budgetary measures to secure key stations and transportation to the schools.
- 2) Electricity facilities have not yet provided in some of the recipient schools. As some of the equipment in the Project require electric source, it is necessary to take budgetary measures to supply electricity before the implementation of the Project.
- 3) The re-education of the teachers should be strengthened to give sufficient understanding of the use of the provided equipment.
- 4) The fact is that the annual budget allotted to the operation and maintenance in the high schools is too tight to cover the operation and maintenance expenses of the instructional equipment. An additional budget should be appropriated at least for the recipient schools of the Project to cover the expenses necessary for the operation and maintenance of the equipment.

APPENDIX

APPENDIX

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APPENDIX 1

1.1 Members of the Basic Design Study Team

Name	Speciality	Present Department
Shizuo Matsubara	Leader	Chief, Chemistry Education Division, Research Centre for Science Education, National Institute for Educational Research
Shoji Matsumoto	Project Coordinator	Second Basic Design Study Division, Grant Aid Survey Department, JICA
Tamotsu Tomiyama	Instructional Equipment (1)	System Science Consultants Inc.
Harunobu Yoshino	Instructional Equipment (2)	System Science Consultants Inc.
Hiroshi Abo	Cost Estimation (Work in Japan only)	System Science Consultants Inc.

1.2 Study Team Survey Itinerary

Date	Itinerary	Description
1. Feb.26 (Mon)	Narita-Manila	Meeting with JICA and Embassy of Japan
2. Feb.27 (Tue)	Manila	Discussion with Department of Education, Culture and Sports (DECS)
3. Feb.28 (Wed)	Manila-Legazpi	Survey of high schools in Bicol Region
4. Mar. 1 (Thu)	Legazpi-Manila	- Ditto -
5. Mar. 2 (Fri)	Manila	Discussion with DECS
6. Mar. 3 (Sat)	Manila	Visit to ISMED and NLRC
7. Mar. 4 (Sun)	Manila	Team meeting and data analysis
8. Mar. 5 (Mon)	Manila	Discussion with DECS
9. Mar. 6 (Tue)	Manila	Signing of Minutes of Discussions. Report to Embassy of Japan and JICA
10. Mar. 7 (Wed)	Manila-Narita Manila	Departure of official members of the team Additional survey by consultant members of the team
11. Mar. 8 (Thu)	Manila	- Ditto -
12. Mar. 9 (Fri)	Manila	- Ditto -
13. Mar.10 (Sat)	Manila	- Ditto -
14. Mar.11 (Sun)	Manila-Narita	Departure of consultant members of the team

1.3 List of Members Contacted

Organization & Position	Name
<input type="checkbox"/> Embassy of Japan	
First Secretary	Kazuyoshi Yamaguchi
Second Secretary	Kouichi Mizushima
<input type="checkbox"/> JICA Philippine Office	
Vice President	Katsuhiko Oshima
Officer	Katsuro Saito
<input type="checkbox"/> Department of Education, Culture and Sports: DECS	
Secretary	Dr. Isidro D. Carino
Undersecretary, DECS	Dr. Victor M. Ordoñez
Executive Director, EDPITAF	
Asst. Director, BSE	Dr. Avelina T. Llagas
Head, RPDO-EDPITAF	Lourdes G. de Vera
Officer, RPDO-EDPITAF	Angelita Baltazar
Officer, RPDO-EDPITAF	Rosana Solis
Officer, RPDO-EDPITAF	Gigi Baltazar
Sector Desk Officer, RPDO-EDPITAF	Didi Sering
Head, GAO-EDPITAF	Yolanda A. Ramo
Officer, GAO-EDPITAF	Milagros Talinio
Officer, GAO-EDPITAF	Liza Jabson
Asst. Program Manager, SEDP-EDPITAF	Lilia Tuason
<input type="checkbox"/> National Economic and Development Authority: NEDA	
Officer	Felix B. Sanchez
<input type="checkbox"/> ISMED, University of the Philippines	
Director	Prof. Porfirio P. Jesuitas
<input type="checkbox"/> Australian International Development Assistance Bureau: AIDAB	
Project Manager, PASMEP	D. D. Malikienas

1.4 Minutes of Discussions

MINUTES OF DISCUSSIONS
ON THE PROJECT FOR
ASSISTANCE TO SECONDARY EDUCATION INSTRUCTIONAL EQUIPMENT PROGRAM
IN
THE REPUBLIC OF THE PHILIPPINES

In response to the request of the Government of the Republic of the Philippines (GOP), the Government of Japan (GOJ) decided to conduct a Basic Design Study on The Project for Assistance to Secondary Education Instructional Equipment Program (hereinafter referred to as "the Project"), and entrusted the study to the Japan International Cooperation Agency (JICA). JICA sent to the Philippines the study team headed by Mr. Shizuo MATSUBARA, Chief, Chemistry Education Division, Research Centre for Science Education, National Institute for Educational Research from February 26 to March 11, 1990.

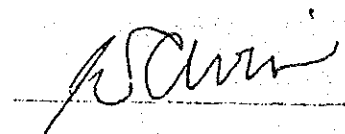
The Team had a series of discussions on the Project with the officials concerned in the Government of the Philippines and conducted a field survey in Manila and Bicol areas.

As a result of the study and discussions, both parties agreed to recommend to their respective Governments that the major points of understanding reached between them, attached herewith, should be examined towards the realization of the Project.

Signed this 6th day of March 1990 in Manila, Philippines.



Mr. SHIZUO MATSUBARA
Team Leader
Basic Design Study Team
Japan International
Cooperation Agency



Dr. ISIDRO D. CARINO
Secretary
Department of Education,
Culture and Sports

1. TITLE OF THE PROJECT

The title of the Project is "The Project for Assistance to Secondary Education Instructional Equipment Program".

2. OBJECTIVE OF THE PROJECT

The objective of the Project is to provide necessary instructional equipment (hereinafter referred to as "the Equipment") for secondary schools in order to enhance the teaching of the new secondary education curriculum under the Secondary Education Development Program (SEDP).

3. IMPLEMENTING AGENCY

The Implementing Agency for the Project is the Department of Education, Culture and Sports (DECS) through the Educational Development Projects Implementing Task Force (EDPITAF).

4. PROJECT SITE

The DECS requested recipient schools, listed according to priority in Annex I, has been confirmed by the Mission.

5. STANDARD LIST OF THE REQUESTED EQUIPMENT

The DECS requested standard list of equipment for specific subject areas, as shown in Annex II, has been confirmed by the Mission.

6. DELIVERY OF EQUIPMENT

The delivery of equipment up to the key stations will be covered by the grant.

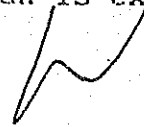
7. JAPAN'S GRANT AID PROGRAM

The Philippine side has understood the system of Japan's Grant Aid Program explained by the Team which include a principle for use of a Japanese consultant firm and Japanese contractors for the implementation of the Project.



8. NECESSARY MEASURES TO BE TAKEN BY THE PHILIPPINE SIDE

The Government of the Philippines will take the necessary measures listed in Annex III on the condition that the Grant Aid by the Government of Japan is extended to the Project.



Annex I PRIORITIZED PROJECT SITES

REGION V

1. Marcial O. Ranola Mem. School
Guinobatan Albay
2. San Lorenzo DHS
Tabaco, Albay
3. Polangui Gen. Comp. HS
Polangui, Albay
4. Masarawag DHS
Guinobatan, Albay
5. Libon Agro-Indust'1 HS
Libon, Albay
6. Saban HS
Oas, Albay
7. Malipot DHS
Guinobatan, Albay
8. Matacon HS
Polangui, Albay
9. San Antonio HS
Tabaco, Albay
10. Cavasi HS
Ligao, Albay
11. Bariw HS
Camalig, Albay
12. Paulba HS
Ligao, Albay
13. Malabog HS
Daraga, Albay
14. Pagasa NHS
Legaspi, Albay
15. Tabaco NHS
Tabaco, Albay
16. Batobalani DHS
Paracale, Camarines Norte
17. Matacong DHS
Imelda, CN
18. Rizal DHS
Sta. Elena, CN
19. Basud DHS
Basud, CN
20. Vinzons HS
Vinzons, CN
21. Impig NHS
Impig, Camarines Sur
22. Salvacion DHS
Dato, CS
23. Salvacion DHS
Tigaon, CS
24. San Ramon DHS
Lagonoy, CS
25. San Isidro DHS
Libmanan, CS

REGION VIII

1. Tanauan SCHI
Tanauan, Leyte
2. Kauswagan DHS
Palo, Leyte
3. Julita DHS
Julita, Leyte
4. Albuera NHS
Albuera, Leyte
5. Carigara NHS
Carigara, Leyte
6. Granja Kalinawan
DHS, Jaro, Leyte
7. Balocawehay DHS
Abuyog, Leyte
8. Cabacungan DHS
Dulag, Leyte
9. Tunga DHS
Tunga, Leyte
10. Margen DHS
Merida, Leyte
11. Burauen DHS
Burauen, Leyte
12. Sta. Fe DHS
Sta. Fe., Leyte
13. Mahaplag DHS
Mahaplag, Leyte
14. Lucsoon DHS
Naval, Biliran
15. Tabon-Tabon DHS
Tabon-tabon, L.
16. Patoc DHS
Dagami, Leyte
17. Sta. Mesa DHS
Tanauan, Leyte
18. Tabango VHS
Tabango, Leyte
19. Bunga DHS
Baybay, Leyte
20. Matlang DHS
Isabel, Leyte
21. San Miguel DHS
San Mig., Leyte
22. Minuhang DHS
Barugo, Leyte
23. Sta. Rosa DHS
Barugo, Leyte
24. Javier DHS
Javier, Leyte
25. Wright VHS
Wright Samar

- | | | | |
|-----|--------------------------------------|-----|-----------------------------------|
| 26. | Aqdangan DHS
Baaao, CS | 26. | Wright CHS
Wright, Samar |
| 27. | Sta. Justina DHS
Buhi, CS | 27. | Basey NAS
Basey, Samar |
| 28. | Palsong DHS
Bula, CS | 28. | Taft NHS
Taft, Samar |
| 29. | Sto Tomas DHS
Comaligan, CS | 29. | Dolores NHS
Dolores, Samar |
| 30. | San Isidro DHS
Pamplona, CS | 30. | Lawaan SCII
Lawaan, Samar |
| 31. | San Fernando DHS
San Fernando, CS | 31. | Balangiga NAS
Balangiga, Samar |
| 32. | Hobo DHS
Minalaba, CS | 32. | Giporlos NHS
Giporlos, Samar |
| 33. | La Purisima DHS
Nabua, CS | 33. | Malabog NHS
Malabog, Samar |
| 34. | Tamban DHS
Tinambac, CS | 34. | Dobon DHS
Dobon, Samar |
| 35. | Tinambac CS
Tinambac, CS | 35. | Salcedo CHS
salcedo, Samar |
| 36. | Bula NHS
Bula, CS | 36. | Gen. MacArthur
NAHS, Samar |
| 37. | Milaor DHS
Milaor, CS | 37. | Samar NAHS
Taft, Samar |
| 38. | Nabua NHS
Nabua, CS | 38. | Bobon SOF
Bobon, N. Samar |
| 39. | San Francisco DHS
Bulan, Sorsogon | 39. | Washington DHS
Catarmán, N.S. |
| 40. | San Isidro DHS
Bulan, Sor. | 40. | Polangi DHS
Catarmán, N. S. |
| 41. | Casiguran NHS
Casiguran, Sor. | 41. | Alegria DHS
San Isidro N.S. |
| 42. | Bulan NHS
Bulan, Sor. | 42. | Oquendo DHS
Calbayog City |
| 43. | Abuyog DHS
Sorsogon, Sor. | 43. | Trinidad DHS
Trinidad, N.S. |
| 44. | Sorsogon NHS
Sorsogon, Sor. | 44. | San Policarpio
DHS, Calbayog |
| 45. | Macalaya DHS
Castilla, Sor. | 45. | Tarabucan DHS
Tarabucan, N.S. |
| 46. | Bagacay DHS
Gubat, Sor. | 46. | Mondragon DHS
Mondragon, N.S. |
| 47. | Pilar Prod. Dev. HS
Pilar, Sor. | 47. | Lavezares AIS
Lavezares, N.S. |
| 48. | Prieto Diaz HS
Prieto Diaz, Sor. | 48. | Leyte NHS
Tacloban City |
| 49. | Gallanosa NHS
Irosin, Sor. | 49. | Alang-alang HS
A.-alang, Leyte |
| 50. | Rizal DHS
Gubat, Sor. | 50. | Catarmán NHS
Catarmán N.S. |
| 51. | Masbate NCHS
Masbate, Masbate | 51. | Tolosa DHS
tolosa, Leyte |
| 52. | Calabanga HS
Calabanga, CS | 52. | P. Rebadulla MAC
Bo. Samar |

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- | | | | |
|-----|---|-----|---------------------------------------|
| 53. | Cataingan NHS
Cataingan, Cat. | 53. | San Roque MHS
San Roque, Leyte |
| 54. | Pili NHS
Pili, CS | 54. | R.K. Kangleon MAS
TI, Dontoc, S.L. |
| 55. | San Fernando HS
San Fernando, Mas. | 55. | San Antonio NHS
San Antonio, NS |
| 56. | Naga HS
Tiwi, Albay | 56. | Mayorga BHS
Mayorga, Leyte |
| 57. | Cumadcad HS
Castilla, Sor. | 57. | Plaridel BHS
Daybay, Leyte |
| 58. | Cotmon HS
Camalig, Albay | 58. | Sta. Margarita HS
Samar |
| 59. | San Pascual HS
San Pascual, Mas. | 59. | Maripipi NHS
Maripipi, Leyte |
| 60. | San Isidro HS
Magarao, CS | 60. | Naval SOF
Naval, Biliran |
| 61. | Bagamanoc RDHS
Bagamanoc, Cat. | 61. | Bolusao BHS
Lawaan |
| 62. | San Jose HS
Bobon, CS | 62. | DVORAC
Burauen, Leyte |
| 63. | Mobo BHS
Mobo, Mas. | 63. | Dulag NHS
Dulag, Leyte |
| 64. | Caramoran RDHS
Caramoran, Cat. | 64. | Villareal HS
Villareal, Samar |
| 65. | Tabli HS
Caramoran, Cat. | 65. | Tambis BHS
St. Bernard S.L. |
| 66. | Don Gonzalvo NHS
Ragay, CS | 66. | San Ricardo NHS
San Ricardo, S.L. |
| 67. | Santos E. Conag HS
Esperanza, Mas. | 67. | Mercedes NHS
Mercedes |
| 68. | Daquit NHS
Labo, CS | 68. | Tacloban CNHS
Tacloban City |
| 69. | Banguerohan HS
Legazpi City | 69. | Almeria HS
Almeria, Biliran |
| 70. | Donsol NHS
Donsol, Sor. | 70. | A.S. Melgar BHS
Capoocan, Leyte |
| 71. | Sto. Domingo NHS
Sto. Domingo, Albay | 71. | Tucdao HS
Tucdao, Leyte |
| 72. | Anislag HS
Daraga, Albay | 72. | Rawis HS
Hinabangan, Samar |
| 73. | San Miguel RDHS
San Miguel, Cat. | 73. | Canipaan BHS
So. Leyte |
| 74. | Baras RDHS
Baras, Cat. | 74. | Valencia BHS
Ormoc City |
| 75. | San Rafael HS
Tigaon, CS | 75. | Quinapundan NHS
Quinapundan, ES |
| 76. | Jovellar HS
Jovellar, Albay | 76. | Hernani NHS
Hernani, E. Samar |
| 77. | Pamukid HS
San Fernando, CS | 77. | Sta. Cruz BHS
Malitbog S.L. |
| 78. | Supang Datag HS
Caramoran, Cat. | 78. | San Isidro AIS
San Isidro |
| 79. | Catanduanes NHS
Virac, Cat. | 79. | Pagsulhugon BHS
Pagsulhugon, Leyte |

Len

h

80. Jose Panganiban HS
J. Panganiban, CN
81. Oas Polytech. School
Oas, Albay
82. Bato RDHS
Bato, Cat.
83. San Francisco HS
Malilipot, Albay
84. Tulay na Lupa HS
Lobo, CN
85. Del Gallego HS
Del Gallego, CS
86. Cabasan HS
Bacacay, Albay
87. Viga RDHS
Viga, Cat.
88. Sta. Lutgarda HS
Cabusao, CS
89. San Juan HS
Libmanan, CS
90. Abucay HS
Pilar, Sor.
91. B. U. Pilot HS
Rapu-Rapu, Albay
92. Colacting HS
Lupi, CS
93. Carolina NHS
Naga City
94. Gigmoto RDHS
Gigmoto, Cat.
95. Villahermosa HS
Rapu-Rapu, Albay
96. Pili HS
Bacacay, Albay
97. San Felipe HS
Basud, CS
98. Talaonga NHS
Sta. Magdalena, Sor.
99. Larap HS
J. Panganiban, CN
100. Itaran HS
Polangui, Albay
101. Gibgos HS
Caramoan, CS
102. Magnesia HS
Virac, Cat.
103. Caditaan HS
Magallanes, Sor.
104. Sagrada HS
Tinambac, CS
105. Batan HS
Rapu-Rapu, Albay

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90. Sta. Rita CHS
Sta. Rita, Samar
81. Tarangnan NHS
Tarangnan, Samar
82. Marabut DHS
Marabut, Samar
83. Calingcaling DHS
Barugo, Leyte
84. Mercedes DHS
Silago
85. Independencia DHS
Talalora, Samar
86. Daugo DHS
Maasin, S. Leyte
87. Daran HS
Daran, Samar
88. San Joaquin DHS
Palo, Leyte
89. Basey NHS
Basey, Samar
90. Bagacay DHS
Hinabangan, Samar
91. Llorente NHS
Llorente, E.S.
92. Arteche NAS
Oras, E. Samar
93. Alugan SOC
San Policarpio
94. Jipapad DHS
Jipapad, E.S.
95. San Joaquin DHS
Calbayog City
96. Laong NTS,
No. Samar
97. Merida VS
Leyte
98. Gala VS,
N. Samar
99. La paz DHS
Leyte
100. Biri DHS
No. Samar
101. San Rafael DHS
S. Leyter
102. Caridad DHS
Leyte
103. Limasawa DHS
so. Leyte
104. Sta. Paz DHS
So. Leyte
105. Libas DHS
Leyte

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Annex II STANDARD LIST OF EQUIPMENT AND CONSUMABLES

The requested equipment and consumables for the six (6) subject areas are the following:

SCIENCE

- General Science
- Biology
- Chemistry
- Physics

TECHNOLOGY AND HOME MANAGEMENT

- Home Economics
- Industrial Arts

Subject Area: GENERAL SCIENCE

1. Platform Balance
2. Terrestrial Globe
3. Laboratory Apparatus Repair Kit
4. Water Analysis Outfit
5. Seismograph Model
6. Anemometer
7. Rain Gauge
8. Graduated Cylinder
9. Beaker
10. Laboratory Thermometer
11. Aneroid Barometer
12. Magnetizer
13. Stop Watch
14. Hand Lens
15. Pulley
16. Magnetic Compass

Subject Area: BIOLOGY

1. Mortar and Pestle
2. Pocket Magnifier
3. Petri Dish
4. Dissecting Set
5. Evaporating Dish
6. Mercurial Thermometer
7. Beaker
8. Erlenmeyer Flask
9. Test Tube
10. Glass Slide
11. Cover Glass
12. Triple Beam Balance
13. Microscope, Compound

14. Overlay Charts of Human Organ System
15. Detachable Organ Set
16. Lens Cleaning Set

Subject Area: **CHEMISTRY**

1. Balance, Triple Arm
2. Thermometer, General Laboratory
3. Graduated Cylinder
4. Beaker 250 ml, 500 ml
5. Test Tube
6. Erlenmeyer Flask
7. Iron Stand with Base
8. Electrolysis Apparatus
9. Calorimeter
10. pH Meter
11. Wire Gauge
12. Mortar and Pestle
13. Reagent Bottles
14. Evaporating Dish
15. Test Tube Holder
16. Funnel
17. Test Tube Rack
18. Iron Ring
19. Universal Clamp
20. Glass Rod
21. Cork Borer/Stopper
22. Cabinet for Chemicals

Subject Area: **PHYSICS**

1. Convex and Concave Mirror
2. Demonstration Lens Set
3. Newton Scale
4. Thermometer, Mercurial
5. Spiral Spring
6. Meter Stick
7. Acceleration Recording Timer
8. Stop Watch
9. Magnetic Compass Set
10. Dynamic Cart
11. Electroscope
12. Equilateral Prism
13. U-Shape Magnets
14. Graduated Cylinder Set (10 ml, 100 ml)
15. Beaker Set
16. Pulley
17. Transistor Radio Demo Set
18. Multi Tester
19. Ripple Tank Apparatus
20. Kits of Logic Gates with Board
21. Sets of Tuning Forks
22. Resonance Apparatus

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23. Electric Motor/Generator
24. Free Fall Apparatus
25. Photometer
26. Set of Lenses
27. Light Source for Reflection and Refraction Experiment
28. Platform Balance with Sets of Weights
29. Scientific Calculator

Subject Area: **HOME ECONOMICS**

1. Sewing Machines (with Basic Sewing Tools and Sewing Kit)
2. Pressure Cooker
3. Meat Grinder
4. Can Sealer
5. Electric/Gas Range
6. Blender/Mixer
7. Casserole with Cover
8. Electric Iron
9. Set of Dinnerware
10. Set of Silverware
11. Glassware
12. Set of Frying Pan
13. Dutchman's Knife
14. Cutting Knives
15. Mixing Bowl
16. Kettle
17. Baking Pan, Tube Pans, Loaf Pan Sheets
18. Set of Measuring Spoons
19. Rotary Egg Beater
20. Set of Measuring Cups

Subject Area: **INDUSTRIAL ARTS**

1. Stock and Dye
2. Pipe Wrench
3. Pipe Vise
4. Hack Saw
5. Pliers
6. Screwdriver, Philipps
7. Utility Tester
8. Wire Stripper
9. Hand Drill with Bits
10. Cold Chisel Set
11. Hammer
 - a. Cross-pen
 - b. Claw
 - c. Ball Pen Hammer
12. Metal Rule
13. Tape Rule
14. Tin Snip
15. Electric Welding
16. Soldering Iron
17. Machinist Vise

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18. Metal Cutting Chisel
19. Center Punch Set
20. Vise Grip Pliers
21. Bench Grinder
22. Hand Saw
23. Jack Plane
24. Hand Brake
25. Zigzag Rule (Folding Rule)
26. Wood Chisel Set
27. C-Clamp
28. Bar Clamp
29. Carpenter's Square (Combination Type)
30. Try-Square
31. Marking Gauge

CONSUMABLES:

- | | |
|--------------------------------|----------------------------|
| 1. Litmus Paper | 26. Ferric Chloride |
| 2. Sulfur Powder | 27. Potassium Ferricyanide |
| 3. Bromothymol Blue | 28. Potassium Chromate |
| 4. Ethyl Alcohol | 29. Potassium Dichromate |
| 5. Filter Paper | 30. Potassium Bromide |
| 6. Phenolphthalein | 31. Boric Acid (Crystals) |
| 7. Benedict Solution | 32. Zinc Plate |
| 8. Copper Sulfate | 33. Copper Plate |
| 9. Carbon Tetrachloride | 34. Calcium Chloride |
| 10. Nitric Acid | 35. Ammonium Chloride |
| 11. Phenol | 36. Zinc Nitrate |
| 12. Iodine Solution | 37. Sulfuric Acid |
| 13. Alcohol Burner | 38. Manganese Dioxide |
| 14. Benzoic Acid | 39. Acetic Acid |
| 15. Naphthalene Balls | 40. Sodium Bicarbonate |
| 16. Iron Fillings | 41. Nichrome Wire |
| 17. Sodium Hydroxide (Pellets) | 42. Copper Wire |
| 18. Magnesium Ribbon | 43. Lead Pellets |
| 19. Yeast | 44. Hydrogen Peroxide |
| 20. Calcium Oxide | 45. Potassium Nitrate |
| 21. Denatured Alcohol | 46. Potassium Chloride |
| 22. Copper Dust | 47. Sodium Sulfate |
| 23. Calcium Carbide | 48. Ammonium Solution |
| 24. Lead Nitrate (Crystals) | 49. Hydrochloric Acid |
| 25. Potassium Iodide | 50. pH Paper |

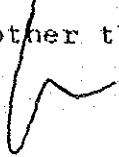
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**Annex III MEASURES TO BE UNDERTAKEN BY THE
GOVERNMENT OF THE PHILIPPINES**

1. To provide data and information necessary for the Project.
2. To provide a science educational room for each secondary school for the Project and facilities for the distribution of electricity and other incidental facilities, if necessary.
3. To ensure prompt unloading, tax exemptions, customs clearance at the port of disembarkation in the Philippines and to facilitate prompt internal transportation therein of the products purchased under the Grant Aid.
4. To secure warehouses in the key stations where the equipment items to be provided under the Grant Aid will be temporarily housed, pending final distribution to recipient schools.
5. To distribute the equipment items delivered from the warehouses in the key stations to the designated project sites.
6. To exempt Japanese nationals engaged in the Project from customs duties, internal taxes and other fiscal levies which may be imposed in the Philippines with respect to the supply of the products and services under the verified contracts.
7. To accord Japanese nationals whose services may be required in connection with the supply of the products under the verified contract such facilities as may be necessary for their entry and stay in the Philippines for the performance of their work.
8. To ensure the necessary budget and personnel for the proper and effective implementation of the Project, including the operation and maintenance of equipment provided under the Grant Aid.
9. To ensure that the secondary school teachers who will make use of the equipment are given adequate training on its utilization and proper maintenance.
10. To provide the necessary permissions, licenses and other authorizations for carrying out the Project.

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11. To bear all commissions to the Japanese foreign exchange bank for the banking services based upon the "Banking Arrangement" such as the advising commission of the "Authorization to Pay" and payment commission.
12. To bear all the expenses other than those to be borne by the Grant Aid.



1.5 List of References

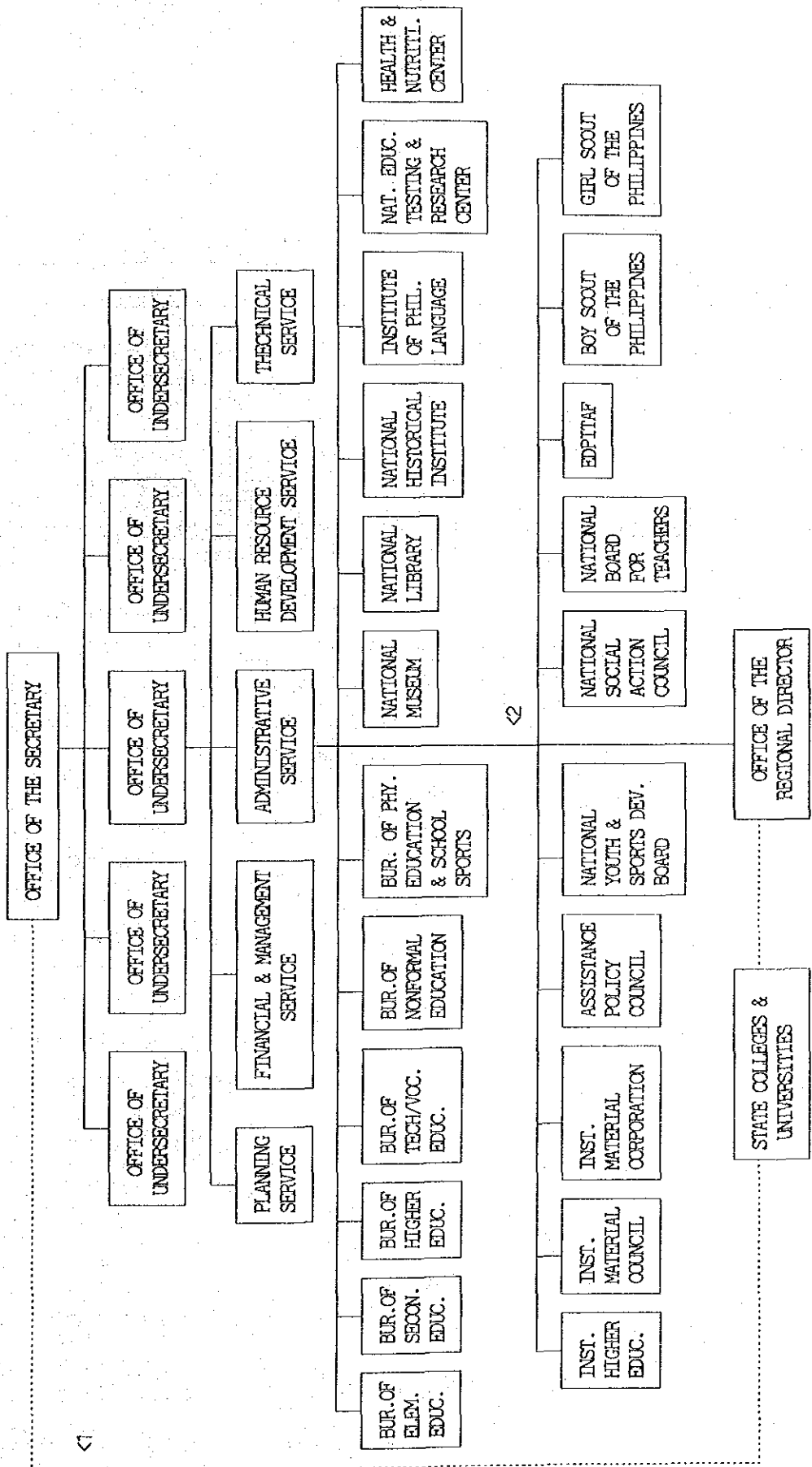
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Title	Source	Year
1)Medium-Term Philippine Development Plan 1987-1992	GOP	1986
2)Primer on the Secondary Education Development Program (SEDP)	DECS	1988
3)Appraisal of the Secondary Education Development Sector Project in the Philippines	ADB	1988
4)Bid Documents-Furnishing and Delivery of General Science, Biology and Math (Instructional Materials, SEDP, LOAN NO.989 PHICSF)	EDPITAF	1989
5)The Concept of Secondary Education Development Program Indicative Proposal	EDPITAF, DECS	1989
6)DECS Order '# 88 as amended (Standard Science, Math, Practical Arts Equipment for Secondary Schools)	DECS	1988
7)List of Minimum Standard Secondary Instructional Equipment with Unit Price,	EDPITAF	1989
8)Technical Specs of All Items in the 6 Subject Areas	EDPITAF	1990
9)List of Eqpt. Items Locally-manufactured.	EDPITAF	1989
10)List of Local Science Equipment Manufacturers (partial)	EDPITAF	1989
11)Educatinal Profile of Public Elemantary and Secondary Schools	DECS	1988/1989

Title	Source	Year
12) DECS Statistical Bulletin and Enrolment Projections Until 1992	DECS	1988/1989
13) Secondary Education Instructional Equipment Project Assistance Request Summary Revised as of 16 February 1990	EDPITAF	1990
14) Management Set-up of JICA-PMU (unrevised),	EDPITAF	1990
15) Initial Canvases of Warehouses in Metro Manila (with info. on cost per sq. m. and total floor area of each warehouse)	EDPITAF	1989
16) List of IMC Warehouses (Regional, City Division, Provincial, Division)	EDPITAF	1989
17) General Profile of DECS-requested Beneficiary Schools (i. e., non-JICA-TRSBP Recipients)	EDPITAF	1990
18) School Building Actual For Requirement for Newly Nationalized Secondary Schools,	EDPITAF	SY1989-1990
19) Proposed Budget for Newly Nationalized Secondary Schools	DECS	1990
20) DECS Budget for FY 1988, 1989, 1990	DECS	1988, 1989, 1990
21) Information on Teacher Salaries	DECS	1989
22) Project Budget of the JICA-Typhoon Resistant Schools, Phase I (Special Budget)	EDPITAF	1989

Title	Source	Year
Textbooks for Secondary Schools		
-Science & Technology	National Book Store	1989
-Biology, Biology-Laboratory Manual	-ditto-	1989
-Chemistry, Chemistry-Laboratory Manual, Teacher Manual	Basic Media Systems Inc.	1989
-Physics	Philippine Book Company	1989
-Trainee's Activity Guide for Basic Technology	NCTESD	1984
-Home Economics Livelihood Education	REX Book Store	1988
Philippine Statistical Year Book	NEDA	1987
ASIA 1990 Year Book	Eastern Economic Review	1989
The Making of a Vibrant Economy-The Philippine Economy in 1989 and Beyond	CRC	1989
SAMAR, 1768-1898	Bruce Cruikshank	1985
Maps		
-Roadmap of the Philippines, 1/1,000,000	National Bookstore Inc.	1985
-Manila Street, 8th Edition	- ditto -	1989

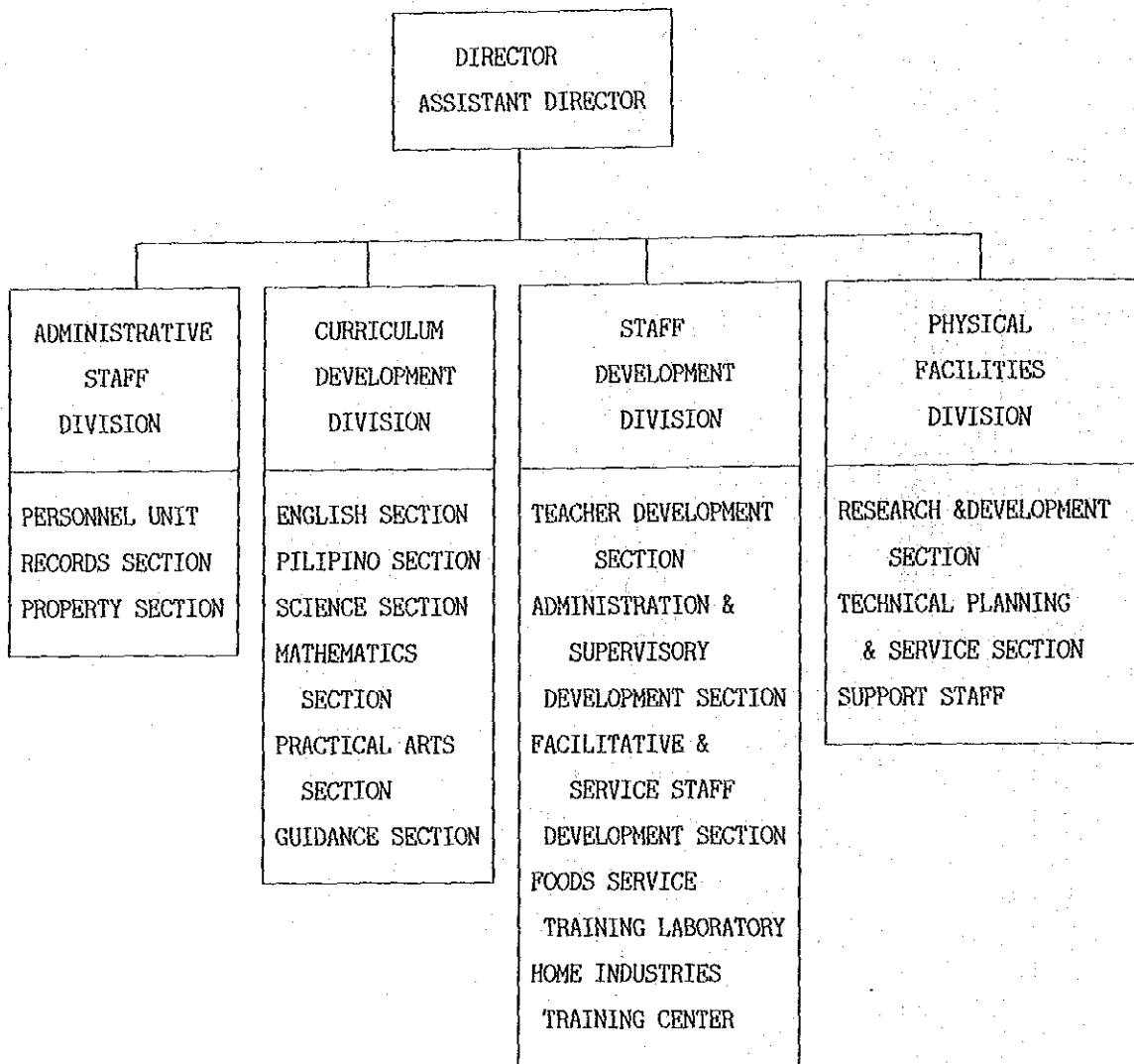
APPENDIX 2



REMARKS <1 : No direct control
 <2 : Attached agency

2.1 ORGANIZATION CHART OF DECS

2.2 ORGANIZATION CHART OF BSE



2.3 (1) PRESENT STATE OF PROVISION OF INSTRUCTIONAL EQUIPMENT
OF NATIONAL HIGH SCHOOLS IN REGION V <1

(1/6)

Items	Standard Quantity Per School	REGION V (292 SCHOOLS)		
		Required Quantity	No. of Schools with Existing Items	Total Quantity
GENERAL SCIENCE				
1. Platform Balance	4	1168	5	5
2. Terrestrial Globe	1	292	5	5
3. Laboratory Apparatus Repair Kits	1	292	3	3
4. Water Analysis Outfit	1	292	0	0
5. Seismograph Model	1	292	0	0
6. Anemometer with Vane	1	292	4	6
7. Rain Gauge	1	292	1	1
8. Aneroid Barometer	1	292	0	0
9. Magnetizer	4	1168	3	3
10. Hand Lens (Biconvex)	4	1168	13	18
11. Pulley Set	4	1168	9	16
12. Magnetic Compass	4	1168	7	8
13. Stop Watch	4	1168	7	7
14. Tray, Wooden	4	1168	0	0
BIOLOGY				
1. Pocket Magnifier	4	1168	0	0
2. Dissecting Set	4	1168	7	11
3. Microscope, Compound, with Lens Cleaning Set	4	1168	12	17
4. Human Anatomy Chart with Overlays	1	292	3	4
CHEMISTRY				
1. Triple Beam Balance	1	292	2	3
2. Iron Stand	4	1168	3	5
3. Utility Clamp	4	1168	2	2
4. Iron Ring	4	1168	4	4
5. Electrolysis Apparatus	1	292	2	4
6. PH Meter	1	292	0	0
7. Wire Gauge	4	1168	2	2
8. Test Tube Holder	4	1168	10	10
9. Test Tube Rack	4	1168	9	10
10. Cork Borer/Stopper Set	1	292	4	27
11. Tripod	4	1168	0	0
12. Test Tube Brush (Small)	4	1168	0	0
13. Test Tube Brush (Large)	4	1168	0	0

Remarks <1: Referred to the survey result by EDPITAF, 1989

Items	Standard Quantity Per School	REGION V (292 SCHOOLS)		
		Required Quantity	No. of Schools with Existing Items	Total Quantity
14. Spatula Set (Small, Medium, Large)	2 each	584	0	0
15. Cabinet for Chemicals	1	292	0	0
16. Wash Bottle	4	1168	0	0
17. Periodic Table, Wall Chart	1	292	0	0
18. Atomic Molecular Model Kit	1	292	0	0
19. Alcohol Burner	4	1168	0	0
20. Pinch Cock	4	1168	0	0
PHYSICS				
1. Convex and Concave Mirrors	4	1168	6	8
2. Demonstration Lens Set	1	292	1	1
3. Spring Balance, Newton	8	2236	3	4
4. Spiral Springs Set	4	1168	2	2
5. Meter Stick	4	1168	13	39
6. Acceleration Recording Timer	4	1168	4	6
7. Dynamic Carts	4	1168	3	3
8. Electroscope	1	292	1	1
9. Prism Set	4	1168	1	1
10. Magnet (Bar)	4	1168	0	0
11. Magnet (Ring)	4	1168	0	0
12. Magnet (U-shape)	4	1168	8	14
13. Magnet (Alcomax)	4	1168	0	0
14. Transistor Radio Demo Set	1	292	1	2
15. Multi Tester, Analog	4	1168	0	0
16. Ripple Tank	2	584	0	0
17. Logic Gates (Circuit Trainer)	4	1168	0	0
18. Set of Tuning Forks	2	584	2	3
19. Resonance Apparatus	1	292	0	0
20. Electric Motor/Generator	4	1168	0	0
21. Free Fall Apparatus	1	292	0	0
22. Photometer Set	1	292	0	0
23. Incandescent Optical Light Source for Optics Experiment	1	292	2	2
24. Scientific Calculator	8	2236	0	0
25. Biconvex & Biconcave Lens Set	1	292	0	0
GLASSWARE				
1. Mercurial Thermometer (-10 to 110oC)	6	1752	7	11
2. Mercurial Thermometer (-10 to 360oC)	4	1168	0	0
3. Petri Dish	6	1752	7	16

Items	Standard Quantity Per School	REGION V (292 SCHOOLS)		
		Required Quantity	No. of Schools with Existing Items	Total Quantity
4. Glass Slide	4	1168	14	131
5. Cover Glass	4	1168	9	101
6. Graduated Cylinder (Glass 10ml)	6	1752	6	9
7. Graduated Cylinder (Glass 100ml)	6	1752	10	17
8. Graduated Cylinder (Glass 500ml)	6	1752	0	0
9. Graduated Cylinder (Plastic 50ml)	4	1168	0	0
10. Graduated Cylinder (Plastic 100ml)	4	1168	0	0
11. Beaker (100ml)	6	1752	0	0
12. Beaker (250ml)	6	1752	8	24
13. Beaker (500ml)	6	1752	6	14
14. Beaker (1000ml)	6	1752	0	0
15. Test Tube (15mm,20mm)	2 dozens	584	16	82
16. Erlenmeyer Flask 250ml	6	1752	3	6
17. Mortar and Pestle	4	1168	5	8
18. Reagent Bottle (250ml)	4	1168	2	5
19. Reagent Bottle (500ml)	4	1168	0	0
20. Reagent Bottle (1000ml)	4	1168	0	0
21. Funnel	6	1752	10	12
22. Stirring Rod	6	1752	3	4
23. Medicine Dropper	6	1752	0	0
24. Evaporating Dish	6	1752	4	15
25. Pipette (Plastic 1ml)	1	292	0	0
26. Pipette (Plastic 10ml)	1	292	0	0
CONSUMABLES				
1. Litmus Paper (Red, Blue)	4	1168	-	-
2. Filter Paper(10 sheets/pack)10		2920	-	-
3. PH Paper	4	1168	-	-
4. Zinc Plate Set	1	292	-	-
5. Copper Plate	1	292	-	-
6. Nichrome Wire	1	292	-	-
7. Copper Wire	1	292	-	-
CHEMICALS				
1. Lead Pellets	0.5kg 1	292	-	-
2. Sulfur Powder	0.25kg 1	292	-	-
3. Bromothymol Blue	0.5L 1	292	-	-

Items	Standard Quantity Per School	REGION V (292 SCHOOLS)		
		Required Quantity	No. of Schools with Existing Items	Total Quantity
4. Ethanol	0.5L 1	292	-	-
5. Phenolphthalein	0.5L 1	292	-	-
6. Benedict Solution	0.5L 1	292	-	-
7. Copper Sulfate (Crystals)	0.5L 1	292	-	-
8. Carbon Tetrachloride	0.25kg 1	292	-	-
9. Nitric Acid	0.5L 1	292	-	-
10. Phenol	0.5kg 1	292	-	-
11. Iodine	0.5L 1	292	-	-
12. Benzoic Acid	0.25kg 1	292	-	-
13. Naphthalene Balls	0.25kg 1	292	-	-
14. Iron Fillings	0.5kg 1	292	-	-
15. Sodium Hydroxide (Pellets)	0.5kg 1	292	-	-
16. Magnesium Ribbon	25g 1	292	-	-
17. Yeast	0.5kg 1	292	-	-
18. Calcium Oxide	0.5kg 1	292	-	-
19. Denatured Alcohol	0.5kg 1	292	-	-
20. Copper Dust	0.25kg 1	292	-	-
21. Calcium Carbide	0.25kg 1	292	-	-
22. Lead Nitrate (Crystals)	0.25kg 1	292	-	-
23. Potassium Iodide	0.25kg 1	292	-	-
24. Ferric Chloride	0.25kg 1	292	-	-
25. Potassium Ferricyanide	0.25kg 1	292	-	-
26. Potassium Chromate	0.25kg 1	292	-	-
27. Potassium Dichromate	0.25kg 1	292	-	-
28. Potassium Bromide	0.25kg 1	292	-	-
29. Boric Acid (Crystals)	0.25kg 1	292	-	-
30. Calcium Chloride	0.25kg 1	292	-	-
31. Ammonium Chloride	0.5kg 1	292	-	-
32. Zinc Nitrate	0.5kg 1	292	-	-
33. Sulfuric Acid	0.5L 1	292	-	-
34. Manganese Dioxide	0.25kg 1	292	-	-
35. Acetic Acid	0.5kg 1	292	-	-
36. Sodium Bicarbonate	0.25kg 1	292	-	-
37. Hydrogen Peroxide	0.25kg 1	292	-	-
38. Potassium Nitrate	0.25kg 1	292	-	-
39. Potassium Chloride	0.25kg 1	292	-	-
40. Sodium Sulfate	0.25kg 1	292	-	-
41. Ammonium Solution	0.5L 1	292	-	-
42. Hydrochloric Acid	0.5L 1	292	-	-

HOME ECONOMICS

1. Sewing Machines	4	1168	8	20
2. Pressure Cooker	2	584	1	1
3. Meat Grinder	1	292	2	2

Items	Standard Quantity Per School	REGION V (292 SCHOOLS)		
		Required Quantity	No. of Schools with Existing Items	Total Quantity
4. Electric/Gas Range (with Gas Cylinder)	1	292	6	6
5. Blender	1	292	4	4
6. Mixer	1	292	4	4
7. Casserole Set	1	292	5	18
8. Electric Iron	1	292	2	2
9. Set of Dinnerware	1	292	10	23
10. Set of Silverware	1	292	11	21
11. Glassware Set	1	292	15	51
12. Set of Frying Pan	1	292	7	12
13. Kitchen Knife Set	2	584	5	16
14. Cutting Devices	1	292	14	22
15. Mixing Bowl Set	1	292	10	23
16. Kettle	1	292	13	26
17. Bakeware Set	2	584	7	24
18. Set of Measuring Spoons	2	584	9	20
19. Set of Measuring Cups	2	584	18	18
INDUSTRIAL ARTS				
1. Stock and Die Set	4	1168	0	0
2. Pipe Wrench Set	4	1168	0	0
3. Pipe Vise	4	1168	1	2
4. Hack Saw	4	1168	7	14
5. Pliers, Diagonal Cutting	4	1168	7	13
6. Screwdriver Set	4	1168	5	10
7. Utility Tester	4	1168	1	1
8. Wire Stripper and Cutter	4	1168	2	3
9. Hand Drill	4	1168	6	10
10. Cold Chisel Set	4	1168	7	12
11. Hammer - Claw	4	1168	3	7
12. Hammer - Ball Pein	4	1168	12	23
13. Hammer - Cross Pein	4	1168	6	9
14. Rule, Steel	4	1168	6	7
15. Tape Rule (10', 33')	4	1168	10	11
16. Tin Snip	4	1168	3	4
17. Soldering Gun	4	1168	2	2
18. Machinist Vise	4	1168	2	2
19. Vise Grip Pliers	4	1168	2	2
20. Bench Grinder	1	292	2	2
21. Hand Saw (Rip and Cross cut)	4	1168	15	29
22. Hand Plane (Jack & Smooth Plane)	4	1168	13	19
23. Hand Brace	4	1168	3	5
24. Zigzag Rule (Folding Rule)	4	1168	8	12
25. Wood Chisel Set	4	1168	10	20

Items	Standard Quantity Per School	REGION V (292 SCHOOLS)		
		Required Quantity	No. of Schools with Existing Items	Total Quantity
26. Center Punch Set	4	1168	1	1
27. C-Clamp	4	1168	5	9
28. Bar Clamp	4	1168	1	1
29. Carpenter's Square (Combination Type)	4	1168	3	4
30. Try-Square	4	1168	7	16
31. Electric Arc Welder	1	292	0	0
32. Marking Gauge	4	1168	7	8

2.3 (2) PRESENT STATE OF PROVISION OF INSTRUCTIONAL EQUIPMENT
OF NATIONAL HIGH SCHOOLS IN REGION VIII <1

(1/6)

Items	Standard Quantity Per School	REGION VIII (280 SCHOOLS)		
		Required Quantity	No. of Schools with Existing Items	Total Quantity
GENERAL SCIENCE				
1. Platform Balance	4	1120	18	18
2. Terrestrial Globe	1	280	16	25
3. Laboratory Apparatus Repair Kits	1	280	0	0
4. Water Analysis Outfit	1	280	2	3
5. Seismograph Model	1	280	0	0
6. Anemometer with Vane	1	280	0	0
7. Rain Gauge	1	280	3	3
8. Aneroid Barometer	1	280	4	5
9. Magnetizer	4	1120	8	25
10. Hand Lens (Biconvex)	4	1120	35	113
11. Pulley Set	4	1120	25	81
12. Magnetic Compass	4	1120	13	13
13. Stop Watch	4	1120	10	18
14. Tray, Wooden	4	1120	0	0
BIOLOGY				
1. Pocket Magnifier	4	1120	0	0
2. Dissecting Set	4	1120	11	50
3. Microscope, Compound, with Lens Cleaning Set	4	1120	32	70
4. Human Anatomy Chart with Overlays	1	280	17	76
CHEMISTRY				
1. Triple Beam Balance	1	280	8	68
2. Iron Stand	4	1120	29	83
3. Utility Clamp	4	1120	13	67
4. Iron Ring	4	1120	25	107
5. Electrolysis Apparatus	1	280	4	6
6. PH Meter	1	280	1	1
7. Wire Gauge	4	1120	30	214
8. Test Tube Holder	4	1120	42	173
9. Test Tube Rack	4	1120	33	86
10. Cork Borer/Stopper Set	1	280	19	140
11. Tripod	4	1120	0	0
12. Test Tube Brush (Small)	4	1120	0	0
13. Test Tube Brush (Large)	4	1120	0	0

Remarks <1: Referred to the survey result by EDPITAF, 1989

Items	Standard Quantity Per School	REGION VIII (280 SCHOOLS)		
		Required Quantity	No. of Schools with Existing Items	Total Quantity
14. Spatula Set (Small, Medium, Large)	2 each	560	0	0
15. Cabinet for Chemicals	1	280	0	0
16. Wash Bottle	4	1120	0	0
17. Periodic Table, Wall Chart	1	280	0	0
18. Atomic Molecular Model Kit	1	280	0	0
19. Alcohol Burner	4	1120	0	0
20. Pinch Cock	4	1120	0	0
PHYSICS				
1. Convex and Concave Mirrors	4	1120	13	31
2. Demonstration Lens Set	1	280	3	11
3. Spring Balance, Newton	8	2240	11	31
4. Spiral Springs Set	4	1120	22	79
5. Meter Stick	4	1120	38	57
6. Acceleration Recording Timer	4	1120	9	19
7. Dynamic Carts	4	1120	14	48
8. Electroscope	1	280	5	5
9. Prism Set	4	1120	7	9
10. Magnet (Bar)	4	1120	0	0
11. Magnet (Ring)	4	1120	0	0
12. Magnet (U-shape)	4	1120	20	29
13. Magnet (Alcomax)	4	1120	0	0
14. Transistor Radio Demo Set	1	280	1	4
15. Multi Tester, Analog	4	1120	2	2
16. Ripple Tank	2	560	3	11
17. Logic Gates (Circuit Trainer)	4	1120	2	3
18. Set of Tuning Forks	2	560	19	20
19. Resonance Apparatus	1	280	3	13
20. Electric Motor/Generator	4	1120	4	6
21. Free Fall Apparatus	1	280	3	3
22. Photometer Set	1	280	0	0
23. Incandescent Optical Light Source for Optics Experiment	1	280	2	2
24. Scientific Calculator	8	2240	0	0
25. Biconvex & Biconcave Lens Set	1	280	7	39
GLASSWARE				
1. Mercurial Thermometer (-10 to 110oC)	6	1680	33	97
2. Mercurial Thermometer (-10 to 360oC)	4	1120	0	0
3. Petri Dish	6	1680	17	78

Items	Standard Quantity Per School	REGION VIII (280 SCHOOLS)		
		Required Quantity	No. of Schools with Existing Items	Total Quantity
4. Glass Slide	4	1120	31	390
5. Cover Glass	4	1120	18	110
6. Graduated Cylinder (Glass 10ml)	6	1680	20	26
7. Graduated Cylinder (Glass 100ml)	6	1680	39	117
8. Graduated Cylinder (Glass 500ml)	6	1680	0	0
9. Graduated Cylinder (Plastic 50ml)	4	1120	0	0
10. Graduated Cylinder (Plastic 100ml)	4	1120	0	0
11. Beaker (100ml)	6	1680	0	0
12. Beaker (250ml)	6	1680	41	61
13. Beaker (500ml)	6	1680	0	0
14. Beaker (1000ml)	6	1680	0	0
15. Test Tube (15mm,20mm)	2 dozens	560	36	689
16. Erlenmeyer Flask 250ml	6	1680	28	106
17. Mortar and Pestle	4	1120	24	43
18. Reagent Bottle (250ml)	4	1120	17	88
19. Reagent Bottle (500ml)	4	1120	0	0
20. Reagent Bottle (1000ml)	4	1120	0	0
21. Funnel	6	1680	10	12
22. Stirring Rod	6	1680	3	4
23. Medicine Dropper	6	1680	0	0
24. Evaporating Dish	6	1680	4	15
25. Pipette (Plastic 1ml)	1	280	0	0
26. Pipette (Plastic 10ml)	1	280	0	0
CONSUMABLES				
1. Litmus Paper (Red, Blue)	4	1120	-	-
2. Filter Paper(10 sheets/pack)	10	2800	-	-
3. PH Paper	4	1120	-	-
4. Zinc Plate Set	1	280	-	-
5. Copper Plate	1	280	-	-
6. Nichrome Wire	1	280	-	-
7. Copper Wire	1	280	-	-
CHEMICALS				
1. Lead Pellets	0.5kg 1	280	-	-
2. Sulfur Powder	0.25kg 1	280	-	-
3. Bromothymol Blue	0.5L 1	280	-	-

Items	Standard Quantity Per School	REGION VIII (280 SCHOOLS)		
		Required Quantity	No. of Schools with Existing Items	Total Quantity
4. Ethanol	0.5L 1	280	-	-
5. Phenolphthalein	0.5L 1	280	-	-
6. Benedict Solution	0.5L 1	280	-	-
7. Copper Sulfate (Crystals)	0.5L 1	280	-	-
8. Carbon Tetrachloride	0.25kg 1	280	-	-
9. Nitric Acid	0.5L 1	280	-	-
10. Phenol	0.5kg 1	280	-	-
11. Iodine	0.5L 1	280	-	-
12. Benzoic Acid	0.25kg 1	280	-	-
13. Naphthalene Balls	0.25kg 1	280	-	-
14. Iron Fillings	0.5kg 1	280	-	-
15. Sodium Hydroxide (Pellets)	0.5kg 1	280	-	-
16. Magnesium Ribbon	25g 1	280	-	-
17. Yeast	0.5kg 1	280	-	-
18. Calcium Oxide	0.5kg 1	280	-	-
19. Denatured Alcohol	0.5kg 1	280	-	-
20. Copper Dust	0.25kg 1	280	-	-
21. Calcium Carbide	0.25kg 1	280	-	-
22. Lead Nitrate (Crystals)	0.25kg 1	280	-	-
23. Potassium Iodide	0.25kg 1	280	-	-
24. Ferric Chloride	0.25kg 1	280	-	-
25. Potassium Ferricyanide	0.25kg 1	280	-	-
26. Potassium Chromate	0.25kg 1	280	-	-
27. Potassium Dichromate	0.25kg 1	280	-	-
28. Potassium Bromide	0.25kg 1	280	-	-
29. Boric Acid (Crystals)	0.25kg 1	280	-	-
30. Calcium Chloride	0.25kg 1	280	-	-
31. Ammonium Chloride	0.5kg 1	280	-	-
32. Zinc Nitrate	0.5kg 1	280	-	-
33. Sulfuric Acid	0.5L 1	280	-	-
34. Manganese Dioxide	0.25kg 1	280	-	-
35. Acetic Acid	0.5kg 1	280	-	-
36. Sodium Bicarbonate	0.25kg 1	280	-	-
37. Hydrogen Peroxide	0.25kg 1	280	-	-
38. Potassium Nitrate	0.25kg 1	280	-	-
39. Potassium Chloride	0.25kg 1	280	-	-
40. Sodium Sulfate	0.25kg 1	280	-	-
41. Ammonium Solution	0.5L 1	280	-	-
42. Hydrochloric Acid	0.5L 1	280	-	-
HOME ECONOMICS				
1. Sewing Machines	4	1120	12	32
2. Pressure Cooker	2	560	8	11
3. Meat Grinder	1	280	3	3

Items	Standard Quantity Per School	REGION VIII (280 SCHOOLS)		
		Required Quantity	No. of Schools with Existing Items	Total Quantity
4. Electric/Gas Range (with Gas Cylinder)	1	280	12	12
5. Blender	1	280	3	6
6. Mixer	1	280	3	6
7. Casserole Set	1	280	17	54
8. Electric Iron	1	280	4	25
9. Set of Dinnerware	1	280	23	65
10. Set of Silverware	1	280	21	70
11. Glassware Set	1	280	25	55
12. Set of Frying Pan	1	280	17	17
13. Kitchen Knife Set	2	560	10	33
14. Cutting Devices	1	280	23	66
15. Mixing Bowl Set	1	280	21	63
16. Kettle	1	280	26	72
17. Bakeware Set	2	560	16	161
18. Set of Measuring Spoons	2	560	22	45
19. Set of Measuring Cups	2	560	19	22
INDUSTRIAL ARTS				
1. Stock and Die Set	4	1120	0	0
2. Pipe Wrench Set	4	1120	0	0
3. Pipe Vise	4	1120	1	2
4. Hack Saw	4	1120	7	14
5. Pliers, Diagonal Cutting	4	1120	7	13
6. Screwdriver Set	4	1120	5	10
7. Utility Tester	4	1120	1	1
8. Wire Stripper and Cutter	4	1120	2	3
9. Hand Drill	4	1120	6	10
10. Cold Chisel Set	4	1120	7	12
11. Hammer - Claw	4	1120	3	7
12. Hammer - Ball Pein	4	1120	12	23
13. Hammer - Cross Pein	4	1120	6	9
14. Rule, Steel	4	1120	6	7
15. Tape Rule (10', 33')	4	1120	10	11
16. Tin Snip	4	1120	3	4
17. Soldering Gun	4	1120	2	2
18. Machinist Vise	4	1120	2	2
19. Vise Grip Pliers	4	1120	2	2
20. Bench Grinder	1	280	2	2
21. Hand Saw (Rip and Cross cut)	4	1120	15	29
22. Hand Plane (Jack & Smooth Plane)	4	1120	13	19
23. Hand Brace	4	1120	3	5
24. Zigzag Rule (Folding Rule)	4	1120	8	12
25. Wood Chisel Set	4	1120	10	20

Items	Standard Quantity Per School	REGION VIII (280 SCHOOLS)		
		Required Quantity	No. of Schools with Existing Items	Total Quantity
26. Center Punch Set	4	1120	1	1
27. C-Clamp	4	1120	5	9
28. Bar Clamp	4	1120	1	1
29. Carpenter's Square (Combination Type)	4	1120	3	4
30. Try-Square	4	1120	7	16
31. Electric Arc Welder	1	280	0	0
32. Marking Gauge	4	1120	7	8

2.4 (1) LIST OF REQUESTED SCHOOLS IN REGION V AND THEIR OUTLINE

(1/3)

SCHOOL NAME/ADDRESS	ENROLLMENT (SY 1989 - 1990)					TOT. NO OF TE- ACHERS	1990 PROPOSED BUDGET		FACILITY AVAILABLE			UTILITY AVAILABLE	
	TOTAL	1ST YR	2ND YR	3RD YR	4TH YR		TOTAL BUDG (P 1,000)	OPERATION/ MAINTEN(%)	CR	SL	IA/HE	WATER/ELEC	
1 Marcial Ran. Mem. Sch., Quinobatan, Albay	2,958	972	762	673	561	114	6,147	—	60	3	2	+	+
2 San Lorenzo BHS, Tabaco, Albay	718	222	225	150	121	12	741	5.8	10	1	1	+	+
3 Polangui Cen. Comp. HS Polangui, Albay	3,721	1,043	1,024	891	763	133	8,535	—	78	2	2	+	+
4 Masaragig BHS, Quinobatan, Albay	363	—	—	—	—	13	351	8.1	4	1	0	—	+
5 Libon Agro-Indl HS, Libon, Albay	551	—	—	—	—	14	335	21.5	9	1	3	+	+
6 Sabon HS, Cas, Albay	445	—	—	—	—	13	841	3.4	8	1	0	—	+
7 Malipot BHS, Quinobatan, Albay	377	—	—	—	—	9	563	5.1	6	1	0	+	+
8 Matacon HS, Polangui, Albay	445	149	149	111	66	6	782	3.7	6	0	0	+	+
9 San Antonio HS, Tabaco, Albay	492	178	136	99	79	13	787	3.7	14	1	1	+	+
10 Cavasi HS, Ligao, Albay	327	122	91	70	44	6	289	5.0	5	1	1	+	+
11 Bariw HS, Camalig, Albay	495	—	—	—	—	8	512	8.4	7	1	0	+	+
12 Paulba HS, Ligao, Albay	615	219	160	131	105	9	727	4.0	5	1	0	—	+
13 Malabog HS, Daraga, Albay	1,001	311	316	201	173	26	1,464	5.0	15	2	1	+	+
14 Pagasa BHS, Legaspi, Albay	1,988	767	564	360	297	58	5,153	—	23	2	1	+	+
15 Tabaco NHS, Tabaco, Albay	3,942	1,265	1,024	890	763	133	7,618	—	80	1	1	+	+
16 Babotalani BHS, Paracale, Camarines Norte	455	—	—	—	—	12	663	4.4	11	1	1	+	+
17 Matacong BHS, Imelda, Camarines Norte	295	—	—	—	—	8	521	5.2	5	1	1	+	+
18 Rizal BHS, Sta. Elena, Camarines Norte	704	—	—	—	—	14	1,472	4.2	10	1	1	+	+
19 Basud BHS, Basud, Camarines Norte	837	281	218	180	158	19	870	5.0	15	1	0	+	+
20 Virzons HS, Virzons, Camarines Norte	1,169	365	350	275	179	37	1,609	5.1	21	2	3	+	+
21 Impig NHS, Impig, Camarines Sur	958	346	268	203	151	30	4,159	—	15	1	1	+	+
22 Salvacion BHS, Bato, Camarines Sur	460	178	123	103	56	8	440	5.7	8	1	1	—	+
23 Salacion BHS, Tigao, Camarines Sur	780	314	231	135	100	12	1,119	6.8	8	1	1	+	+
24 San Ramon BHS, Lagonoy, Camarines Sur	529	91	84	178	166	13	1,161	4.3	8	2	0	+	+
25 San Isidro BHS, Libmanan, Camarines Sur	716	256	203	145	112	12	754	6.7	12	1	1	+	+
26 Agdangan BHS, Baco, Camarines Sur	367	117	112	80	58	—	442	5.7	7	1	1	—	+
27 Sta. Justina BHS, Buhí, Camarines Sur	360	—	—	—	—	9	366	5.5	5	2	1	—	+
28 Palsong BHS, Bula, Camarines Sur	496	165	135	108	88	10	824	5.2	8	1	1	+	+
29 Sto. Tomas BHS, Camaligan, Camarines Sur	358	127	101	74	56	13	754	6.7	12	2	0	+	+
30 San Isidro BHS, Pampora, Camarines Sur	323	100	88	75	60	12	—	—	14	1	0	+	+
31 San Fernando BHS, San Fernando, Cam. Sur	541	176	157	113	95	9	629	8.0	10	1	0	—	+
32 Hobo BHS, Minalabá, Camarines Sur	399	151	111	66	61	8	673	3.0	7	1	1	—	+
33 La Purisima BHS, Nabua, Camarines Sur	560	170	168	117	105	12	1,160	4.4	8	1	1	+	+
34 Tambon BHS, BHS, Tinambac, Cam. Sur	381	122	142	80	37	—	668	3.0	6	1	1	+	+
35 Tinambac BHS, Tinambac, Camarines Sur	1,015	340	320	215	140	21	1,340	5.7	16	1	0	+	+
36 Bula NHS, Bula, Camarines Sur	1,164	666	219	151	128	20	3,075	—	15	1	1	+	+
37 Milaor BHS, Milaor, Camarines Sur	684	231	169	156	128	11	—	—	11	1	1	+	+
38 Nabua NHS, Nabua, Camarines Sur	3,758	970	980	955	853	104	8,308	—	80	2	1	+	+
39 San Francisco BHS, Bulan, Sorsogon	326	—	—	—	—	7	1,108	1.5	4	1	0	+	+
40 San Isidro BHS, Dulán, Sorsogon	223	85	52	46	40	6	726	2.3	6	1	0	+	+
41 Casiguran VHS, Casiguran, Sorsogon	1,063	324	288	296	155	44	3,673	—	28	1	1	+	+
42 Bulan VHS, Bulan, Sorsogon	2,019	667	549	419	384	101	6,410	—	29	1	17	+	+
43 Abuyog BHS, Sorsogon	164	55	49	27	33	6	—	—	5	1	0	—	+
44 Sorsogon NHS, Sorsogon	4,599	1,319	1,129	1,177	974	112	10,469	—	108	2	2	+	+
45 Macalaya BHS, Castilla, Sorsogon	285	117	70	43	55	6	263	6.3	6	1	1	+	+
46 Bagacay BHS, Qubat, Sorsogon	266	—	—	—	—	10	427	5.8	8	1	0	+	+
47 Pilar Productivity Dev. HS, Pilar, Sorsogon	738	253	192	170	123	16	580	11.3	10	1	1	+	+

SCHOL NAME/ADDRESS	ENROLLMENT (SY 1989 - 1990)					TOT. NO OF TE- ACHERS	1990 PROPOSED BUDGET		FACILITY AVAILABLE			UTILITY AVAILABLE	
	TOTAL	1ST YR	2ND YR	3RD YR	4TH YR		TOTAL BUDG (P 1,000)	OPERATION/ MAINTEN(%)	CR	SL	IA/HE	WATER/ELEC	
48 Prieto Diaz HS, Prieto Diaz, Sorsogon	703	—	—	—	—	22	587	8.4	9	1	1	+	+
49 Gallanea NHS, Irosin, Sorsogon	2,240	606	532	574	528	80	—	—	35	1	1	+	+
50 Rizal NHS, Cubat, Sorsogon	495	—	—	—	—	9	395	6.2	5	1	0	+	+
51 Masbate NCHS, Masbate, Masbate	3,692	1,172	920	880	720	132	10,565	7.8	62	3	7	+	—
52 Calabanga HS, Calabanga, Camarines Sur	1,781	579	510	380	312	50	2,329	7.0	7	2	1	+	+
53 Cataingan NHS, Cataingan, Masbate	1,453	465	454	281	253	39	2,988	7.9	23	2	4	+	—
54 Pili NHS, Pili, Camarines Sur	1,453	413	391	360	289	44	4,004	4.0	15	1	2	+	+
55 San Fernando HS, San Fernando, Masbate	880	252	232	210	186	28	1,259	5.0	16	1	1	+	—
56 Naga HS, Tiwi, Albay	824	289	210	191	134	16	728	12.3	10	1	2	+	+
57 Omacbad HS, Castilla, Sorsogon	748	252	214	162	110	16	739	9.9	14	1	1	+	+
58 Cotacot HS, Camalig, Albay	730	214	195	139	122	15	1,187	6.0	9	1	1	+	+
59 San Pascual HS, San Pascual, Masbate	590	211	155	126	98	20	858	6.9	12	1	1	+	—
60 San Isidro HS, Magarao, Camarines Sur	499	207	149	80	63	16	1,127	7.1	4	1	1	+	+
61 Bagananco RHHS, Bagananco, Catanduanes	493	140	131	119	103	27	—	—	10	1	2	+	+
62 San Jose HS, Bobon, Camarines Sur	440	136	135	90	79	12	1,041	5.0	1	1	1	+	+
63 Hobo NHS, Hobo, Masbate	425	153	126	79	67	13	593	8.8	7	1	1	+	—
64 Caranoran RHHS, Caranoran, Catanduanes	407	123	101	104	99	22	—	—	12	1	2	—	+
65 Tubli HS, Caranoran, Catanduanes	401	129	127	73	72	13	748	9.4	5	1	1	+	+
66 Don Gonzalo NHS, Ragay, Camarines Sur	335	116	101	67	51	10	691	8	6	1	1	+	—
67 Santos E. Conag HS, Esperanza, Masbate	270	104	74	51	41	8	332	13.8	1	1	1	+	+
68 Daguit NHS, Labo, Camarines Norte	260	92	73	48	47	8	753	8.7	4	1	1	+	+
69 Banquerohan HS, Legaspi City	—	—	—	—	—	—	—	—	5	1	1	+	+
70 Donsol NCHS, Donsol, Sorsogon	1,944	601	500	466	377	72	5,519	8.1	23	2	1	+	+
71 Sto. Domingo NHS, Sto. Domingo, Albay	1,505	444	426	368	267	39	1,926	7.5	18	1	1	+	+
72 Anislag HS, Daraga, Albay	1,477	589	435	247	176	34	4,900	4.1	10	1	1	+	+
73 San Miguel RHHS, San Miguel, Catanduanes	644	193	192	143	116	29	902	5.6	12	1	0	—	+
74 Baras RHHS, Baras, Catanduanes	581	177	179	118	107	27	897	5.1	9	1	0	—	+
75 San Rafael HS, Tigaon, Camarines Sur	456	172	147	97	40	11	1,577	3.0	6	1	0	+	+
76 Jovellar HS, Jovellar, Albay	421	155	109	93	64	10	716	8.0	9	1	1	+	+
77 Parakid HS, San Fernando, Camarines Sur	383	149	106	73	55	9	367	14.4	6	1	0	—	+
78 Supang Datag HS, Caranoran, Catanduanes	321	115	84	61	61	13	724	7.2	6	1	0	+	—
79 Catanduanes NHS, Virac, Catanduanes	2113	643	512	504	454	103	—	—	30	0	12	—	+
80 Jose Panganiban HS, J. Panganiban, C. Norte	1832	—	—	—	—	85	5,174	8.0	20	0	1	+	+
81 Ces Polytechnic School, Ces, Albay	1007	315	276	249	167	23	1,680	5.2	13	—	1	+	+
82 Bato Rasul NHS, Bato, Catanduanes	725	238	191	154	142	47	—	—	8	1	0	—	+
83 San Francisco HS, Mailipot, Albay	880	—	—	—	—	19	—	—	10	1	1	+	+
84 Tulay ra Lupa HS, Labo, Camarines Norte	668	225	183	148	112	28	2,725	7.8	15	1	2	—	+
85 Del Gallego HS, Del Gallego, Camarines Sur	570	175	144	145	106	15	—	—	10	1	1	+	+
86 Cabesa HS, Bacacay, Albay	567	199	176	101	91	15	—	7.3	11	1	1	+	+
87 Viga RHHS, Viga, Catanduanes	546	180	160	108	98	24	—	—	8	1	4	—	+
88 Sta. Lutgarda HS, Catubao, Camarines Sur	518	173	147	108	90	14	1,064	5.6	8	2	1	—	+
89 San Juan HS, Libranan, Camarines Sur	510	175	140	99	96	8	995	8.0	3	1	0	—	+
90 Abucay HS, Pilar, Sorsogon	481	170	137	92	82	13	512	10.7	12	1	1	+	+
91 BU pilot HS, Rapu-Rapu, Albay	440	148	105	94	93	10	293	—	9	1	1	—	+
92 Colacling HS, Lupi, Camarines Sur	429	138	118	104	69	12	—	—	8	1	0	+	+
93 Carolina NHS, Naga City	427	160	129	88	50	11	771	7.1	6	1	1	+	+
94 Gignoto Rural NHS, Gignoto, Catanduanes	412	130	110	92	80	21	—	—	5	1	1	—	+
95 Villahermosa HS, Rapu-Rapu, Albay	393	141	103	80	69	9	—	—	4	1	0	+	+
96 Pili HS, Bacacay, Albay	375	138	132	68	37	7	682	9.7	4	1	0	—	+
97 San Felipe HS, Basud, Camarines Norte	343	129	103	61	50	5	425	14.1	3	1	0	+	+

SCHOOL NAME/ADDRESS	ENROLLMENT (SY 1989 - 1990)					TOT. NO OF TE- ACHERS	1990 PROPOSED BUDGET		FACILITY AVAILABLE			UTILITY AVAILABLE	
	TOTAL	1ST YR	2ND YR	3RD YR	4TH YR		TOTAL BUDG (P 1,000)	OPERATION/ MAINTEN.(%)	CR	SL	IA/HE	WATER/ELEC	
98 Talaonga NIS, Sta. Magdalena, Sorsogon	319	99	79	75	66	13	1,636	—	4	1	1	+	+
99 Larap Hs, J. Panganiban, Camarines Norte	289	100	75	59	55	8	1,003	14.5	3	1	0	+	-
100 Itaran HS, Polangi, Albay	279	115	79	43	42	7	289	16.0	8	1	0	+	+
101 Gibgos HS, Caramoan, Camarines Sur	244	72	61	70	41	8	298	—	3	1	0	+	-
102 Magnesia HS, Virac, Catanduanes	201	62	56	52	31	8	541	13.2	4	1	0	+	-
103 Caditaaan HS, Magallanes, Sorsogon	*182	62	47	37	36	7	446	9.1	3	1	0	-	+
104 Sagrada HS, Tinambao, Camarines Sur	*169	59	47	36	27	6	248	17.5	3	1	0	-	+
105 Batan HS, Rapu-Rapu, Albay	*165	62	46	35	22	5	1,031	13.2	2	1	1	+	+

Source: EDPITAF, March 13, 1990

Remarks: * It is expected that by the year 1992 the number would have reached 200 students in high school.

2.4 (2) LIST OF REQUESTED SCHOOLS IN REGION VIII AND THEIR OUTLINE

(1/3)

SCHOOL NAME/ADDRESS	ENROLLMENT (SY 1989 - 1990)					TOT NO OF TEACHERS	1990 PROPOSED BUDGET		FACILITY AVAILABLE			UTILITY AVAILABLE	
	TOTAL	1ST YR	2ND YR	3RD YR	4TH YR		TOTAL BUDG. (P 1,000)	OPERATION/ MAINTEN(%)	OR	SL	IA/HE	WATER	ELEC
1 Tanauan SCHI, Tanauan, Leyte	1,322	456	340	277	249	52	—	—	16	1	1	—	+
2 Kausagan BHS, Palo, Leyte	*150	30	35	46	39	6	—	—	3	1	1	—	+
3 Julita BHS, Julita, Leyte	504	161	152	106	85	12	—	—	9	0	1	+	+
4 Albuera NHS, Albuera, Leyte	792	206	240	163	183	26	1,870	8.1	14	1	1	—	+
5 Carigara NHS, Carigara, Leyte	745	251	230	144	120	18	7,235	7.3	7	1	1	—	+
6 Granja Kalinawan BHS, Jaro, Leyte	1,332	385	396	323	228	36	9,674	3.6	24	1	1	+	+
7 Balocawehay BHS, Abuyog, Leyte	958	176	196	106	80	10	—	—	8	1	0	—	+
8 Cabacungan BHS, Dulag, Leyte	245	73	66	68	38	5	—	—	4	1	0	+	+
9 Tunga BHS, Tunga, Leyte	838	291	209	213	125	22	—	—	12	1	1	+	+
10 Mangan BHS, Merida, Leyte	351	117	114	63	57	9	—	—	3	0	1	—	+
11 Burauen BHS, Burauen, Leyte	969	254	232	235	228	36	1,921	5.7	20	2	1	+	+
12 Sta. Fe BHS, Sta. Fe, Leyte	634	235	192	115	92	14	2,122	5.5	6	0	1	+	+
13 Mahaplag BHS, Mahaplag, Leyte	853	297	250	168	138	17	—	—	13	1	1	+	+
14 Lucoon BHS, Naval, Biliran	*131	50	27	27	27	6	—	—	3	1	0	+	—
15 Tabon-Tabon BHS, Tabon-Tabon, Leyte	387	116	107	100	64	10	—	—	4	1	0	—	+
16 Patco BHS, Dagan, Leyte	254	81	73	60	40	4	—	—	3	1	0	+	—
17 Sta. Mesa BHS, Tanauan, Leyte	364	107	107	99	51	8	—	—	2	0	1	+	+
18 Tabango NHS, Tabango, Leyte	579	192	145	129	113	32	840	7.1	9	1	4	—	+
19 Dunga BHS, Baybay, Leyte	471	150	130	114	77	10	—	—	2	0	0	+	+
20 Matlang BHS, Isabel, Leyte	566	156	177	134	89	13	—	—	8	1	1	+	—
21 San Miguel BHS, San Miguel, Leyte	557	200	153	114	90	13	3,458	19.2	7	0	1	—	+
22 Minuhang BHS, Barugo, Leyte	395	132	112	91	60	4	—	—	10	1	0	+	+
23 Sta. Rosa BHS, Barugo, Leyte	301	78	103	80	40	11	1,713	8.4	7	0	1	—	+
24 Javier BHS, Javier, Leyte	554	191	181	116	66	10	—	—	9	1	1	+	+
25 Wright NHS, Wright, Samar	612	180	166	161	105	34	4,300	4.7	13	1	6	—	+
26 Wright NHS, Wright, Samar	528	197	152	95	84	14	—	—	7	1	0	+	+
27 Basey NAS, Basey, Samar	406	142	100	87	77	26	—	—	9	1	1	—	—
28 Taft NHS, Taft, Samar	792	237	218	170	167	27	485	10.0	15	1	0	+	—
29 Dolores NHS, Dolores, Samar	1,846	542	480	459	365	56	5,000	1.6	34	1	1	—	—
30 Lavean SCHI, Lavean, Samar	391	119	102	81	89	25	3,483	12.0	17	1	2	+	—
31 Balangiga NAS, Balangiga, Samar	571	215	138	133	85	9	940	1.3	15	1	0	+	—
32 Cipriol NHS, Cipriol, E. Samar	429	124	117	109	79	26	—	—	12	1	1	+	—
33 Malabog NHS, Malabog, N. Samar	250	70	63	53	54	11	1,000	15.0	4	1	1	+	—
34 Bobon BHS, Bobon, N. Samar	*161	54	54	26	27	5	970	7.7	3	1	0	+	—
35 Salocho NHS, Salocho, E. Samar	432	109	119	111	93	11	2,000	5.0	7	1	0	+	—
36 Gen. MacArthur NHS, Gen. MacArthur, E. Samar	420	128	113	103	76	23	—	—	16	1	1	—	+
37 Samar NHS, Taft, E. Samar	368	116	113	73	66	37	532	18.5	4	2	4	—	+
38 Bobon SCF, Bobon, N. Samar	568	177	153	130	108	25	—	—	9	2	6	—	+
39 Washington BHS, Cataman, N. Samar	*162	50	50	36	26	6	256	7.8	3	1	0	+	—
40 Polangi BHS, Cataman, N. Samar	*180	80	40	30	30	6	1,148	2.6	3	1	0	+	—
41 Alegria BHS, San Isidro, N. Samar	632	188	163	154	127	13	3,174	7.9	9	0	1	—	+
42 Oquendo BHS, Calbayog City, N. Samar	442	131	125	102	84	17	1,752	7.3	8	1	1	+	+
43 Trinidad BHS, Trinidad, N. Samar	446	145	145	93	63	15	540	5.1	4	1	0	+	+
44 San Policarpo BHS, Calbayog City, N. Samar	479	133	160	104	82	18	—	—	12	1	0	—	+
45 Tarabucan BHS, Tarabucan, N. Samar	*176	62	50	32	32	7	—	—	3	0	1	—	+
46 Mondragon BHS, Mondragon, N. Samar	326	121	93	63	49	14	—	—	6	1	2	—	+
47 Lavezanas AIS, Lavezanas, N. Samar	1,015	278	330	270	137	29	950	15.0	5	1	0	+	+
48 Leyte NHS, Tacloban City, Leyte	5,806	1,765	1,638	1,211	1,172	183	20,830	0.7	46	12	12	—	+

Remarks * It is expected that by the year 1992, the number would have reached 200 students in high schools.

SCHOOL NAME/ADDRESS	ENROLLEMENT (SY 1989 - 1990)					TOT NO OF TE- ACHERS	1990 PROPOSED BUDGET		FACILITY AVAILABLE			UTILITY AVAILABLE	
	TOTAL	1ST YR	2ND YR	3RD YR	4TH YR		TOTAL BUDG (P 1,000)	OPERATION/ MAINTEN(%)	CR	SL	IA/PE	WATER	ELEC
49 Alang-Alang HS, Alang-Alang, Leyte	1,136	376	338	243	179	23	2,216	5.6	19	4	1	-	+
50 Catarman NHS, Catarman, N. Samar	842	379	220	133	110	21	4,000	5.0	15	2	1	+	+
51 Tolosa BHS, Tolosa, Leyte	700	242	190	148	120	15	755	8.0	14	1	1	-	+
52 P. Rebadullah MAC, Catubig, N. Samar	650	195	174	145	136	26	5,248	5.4	7	1	1	+	+
53 San Roque NHS, San Roque, N. Samar	640	214	142	172	92	16	770	3.5	6	1	1	+	+
54 R.K. Kangleon Mem. Agro-Fisheries Tech. Inst. Bontoc, So. Leyte	469	163	101	107	98	24	900	2.4	7	1	1	+	+
55 San Antonio Rural HS, San Antonio, N. Samar	459	183	141	70	65	16	-	-	8	1	1	-	+
56 Mayonga BHS, Mayonga, Leyte	410	134	136	70	70	11	1,009	5.1	9	1	1	-	+
57 Plaridel BHS, Plaridel, Baybay, Leyte	397	124	108	85	80	12	850	2.9	9	1	1	-	+
58 Sta. Margarita HS, Sta. Margarita, Samar	339	117	102	62	58	9	-	-	6	1	1	-	+
59 Maripipi NHS, Maripipi, Leyte	374	122	86	72	94	20	550	6.4	6	3	9	-	-
60 Naval Sch. of Fisheries, Navai, Bitiran Leyte	244	107	53	55	29	18	400	15.0	9	2	2	-	+
61 Bolusao BHS, Bolusao, Lawaan, E. Samar	211	56	58	55	42	6	-	-	4	1	1	+	+
62 Don Vicente Orestes Romualdez Agri College, Burauen, Leyte	238	86	47	47	48	15	518	17.1	3	1	1	-	+
63 Dulag NHS, Dulag, Leyte	1,534	484	423	350	277	42	5,978	2.0	25	1	0	+	+
64 Villareal HS, Villareal, Samar	574	182	165	113	114	20	1,665	4.5	9	1	1	+	+
65 Tambis BHS, St. Bernardo, S. Leyte	403	143	117	83	60	10	-	-	6	0	1	+	+
66 San Ricardo NHS, San Ricardo, S. Leyte	325	91	100	78	56	14	3,554	2.0	7	0	1	+	+
67 Mercedes NHS, Mercedes, E. Samar	301	86	81	78	56	9	-	-	4	1	0	+	+
68 Tacloban City NHS, Bacagay, Tacloban City	744	248	173	186	137	23	870	2.9	5	1	0	+	+
69 Almeria HS, Almeria, Biliran, Leyte	640	195	194	125	126	19	-	-	10	1	1	-	+
70 Asuncion S. Melgar BHS, Capoccan, Leyte	530	162	165	113	90	15	-	-	7	1	1	-	+
71 Tudao HS, Kawayan, Biliran	462	152	106	101	103	14	705	11.3	7	1	1	-	+
72 Rawis HS, Hinabangan, Samar	457	188	119	81	69	14	800	7.2	6	1	0	+	+
73 Canipaan BHS, Hinabangan, S. Leyte	457	128	144	87	88	12	1,659	4.0	8	1	1	+	+
74 Valencia BHS, Ormoc City, Leyte	454	159	139	98	58	11	3,504	5.1	5	1	1	-	+
75 Quinapundan Proyl HS, Quinapundan, E. Samar	431	148	109	111	63	13	522	5.0	4	1	0	+	+
76 Hernani Prov. HS, Hernani, E. Samar	427	145	110	95	77	14	650	5.0	6	1	1	-	+
77 Sta. Cruz BHS, Malibog, S. Leyte	426	106	134	114	72	12	275	8.0	6	1	1	+	+
78 San Isidro Agro-Industrial School, San Isidro, N. Samar	373	123	79	98	73	21	3,430	2.7	5	1	1	+	+
79 Pagsulhugon BHS, Babatngon, Leyte	335	159	84	56	36	7	-	-	5	1	0	-	+
80 Sta. Rita NHS, Sta. Rita, Samar	317	92	86	81	58	10	770	3.5	6	1	1	+	+
81 R.K. Kangleon Mem. Agro-Fisheries Tech. Inst. Bontoc, So. Leyte	469	163	101	107	98	24	900	2.4	7	1	1	+	+
82 San Antonio Rural HS, San Antonio, N. Samar	459	183	141	70	65	16	-	-	8	1	1	-	+
83 Mercedes BHS, Silago, S. Leyte	278	87	72	61	58	9	-	-	5	1	1	+	+
84 Independencia BHS, Independencia, Talalora, Samar	218	185	58	40	35	6	350	5.0	4	0	1	-	+
85 Baugo BHS, Baugo, Maasin, S. Leyte	212	73	49	35	55	6	-	-	3	1	0	-	+
86 Daran HS, Daran, Samar	337	132	96	55	54	7	-	-	6	1	1	-	+
87 San Joaquin BHS, Palo, Leyte	510	158	147	114	91	8	-	-	4	1	0	-	+
88 Basey NHS, Basey, Samar	1,499	438	433	363	265	50	1,000	5.1	20	2	1	-	+
89 Bagacay BHS, Bagacay, Hinabangan, Samar	305	88	79	80	58	10	-	-	6	1	1	-	+
90 Llorente NHS, Llorente, E. Samar	713	219	185	168	141	26	2,680	1.3	12	1	1	-	+
92 Artache Natl. Agri. School, Oras, E. Samar	203	69	68	27	39	13	3,625	4.7	4	1	1	-	+

SCHOOL NAME/ADDRESS	ENROLLMENT (SY 1989 - 1990)					TOT NO OF TE- ACHERS	1990 PROPOSED BUDGET		FACILITY AVAILABLE			UTILITY AVAILABLE	
	TOTAL	1ST YR	2ND YR	3RD YR	4TH YR		TOTAL BUDG (P 1,000)	OPERATION/ MAINTEN(%)	CR	SL	IA/IE	WATER	ELEC
93 Alugan School of Craftsmanship, San Felicarpio, E. Samar	483	161	146	94	82	39	3,731	3.8	5	1	1		+
94 Jipapad BHS, Jipapad, E. Samar	234	75	57	57	45	6	—	—	4	1	1		+
95 San Joaquin BHS, San Joaquin, Calbayog N. Samar	343	134	95	70	43	9	—	—	4	1	1		+
96 Lacing NIS, Lacing, N. Samar	1,339	489	384	240	226	63	6,340	4.4	15	2	4		+
97 Merida VS, Merida, Leyte	1,095	371	315	229	181	32	3,607	5.6	9	1	4		+
98 Gala VS, Gamay, N. Samar	727	247	187	170	123	32	5,679	4.8	12	7	5		+
99 La Paz BHS, La Paz, Leyte	681	208	199	150	124	18	—	—	6	1	0		+
100 Biri BHS, Biri, N. Samar	375	134	101	82	58	11	—	—	3	1	1		+
101 San Rafael BHS, San Rafael, S. Leyte	352	96	97	93	66	8	—	—	5	1	0		+
102 Caridad BHS, Baybay, Leyte	312	104	76	79	53	8	—	—	4	1	0		+
103 Limasawa BHS, Limasawa, S. Leyte	310	90	69	82	69	9	—	—	7	1	1		+
104 Sta. Paz BHS, Sta. Paz, N. Samar	240	65	68	68	38	7	—	—	4	1	1		+
105 Leyte BHS, Merida, Leyte	214	75	51	49	39	5	—	—	4	1	1		+

Source: EDPITAF, March 13, 1990

2.5 REQUESTED EQUIPMENT AND QUANTITY

(1/5)

No	Items	Requested Quantity
GENERAL SCIENCE		
1.	Platform Balance	4
2.	Terrestrial Globe	1
3.	Laboratory Apparatus Repair Kits	1
4.	Water Analysis Outfit	1
5.	Seismograph Model	1
6.	Anemometer with Vane	1
7.	Rain Gauge	1
8.	Aneroid Barometer	1
9.	Magnetizer	4
10.	Hand Lens (Biconvex)	4
11.	Pulley Set	4
12.	Magnetic Compass	4
13.	Stop Watch	1
14.	Tray, Wooden	4
BIOLOGY		
1.	Pocket Magnifier	4
2.	Dissecting Set	8
3.	Microscope, Compound, with Lens Cleaning Set	4
4.	Human Anatomy Chart with Overlays	1
5.	Detachable Organ System	1
6.	Len Cleaning Set	1
7.	Triple Beam Balance	1
CHEMISTRY		
1.	Triple Beam Balance	1
2.	Iron Stand	4
3.	Utility Clamp	4
4.	Iron Ring	4
5.	Electrolysis Apparatus	1
6.	PH Meter	1
7.	Wire Gauge	4
8.	Test Tube Holder	4
9.	Test Tube Rack	4
10.	Cork Borer/Stopper Set	1
11.	Tripod	4
12.	Test Tube Brush (Small)	4
13.	Test Tube Brush (Large)	4
14.	Spatula Set (Small, Medium, Large)	2 each
15.	Cabinet for Chemicals	1
16.	Wash Bottle	8
17.	Periodic Table, Wall Chart	1
18.	Atomic Molecular Model Kit	1
19.	Alcohol Burner	8
20.	Pinch Cock	4
21.	Calorimeter	2

No	Items	Requested Quantity
PHYSICS		
1.	Convex and Concave Mirrors	4
2.	Demonstration Lens Set	1
3.	Spring Balance, Newton	4
4.	Spiral Springs Set	4
5.	Meter Stick	2
6.	Accaleration Recording Timer	4
7.	Dynamic Carts	4
8.	Electroscope	2
9.	Prism Set	4
10.	Magnet (Bar)	4
11.	Magnet (Ring)	4
12.	Magnet (U-shape)	4
13.	Magnet (Alcomax)	4
14.	Transistor Radio Demo Set	1
15.	Multi Tester, Analog	4
16.	Ripple Tank	4
17.	Logic Gates (Circuit Trainer)	4
18.	Set of Tuning Forks	1
19.	Resonance Apparatus	1
20.	Electric Motor/Generator	1
21.	Free Fall Apparatus	1
22.	Photometer Set	1
23.	Incandescent Optical Light Source for Optics Experiment	1
24.	Scientific Calculator	8
25.	Biconvex and Biconcave Lens Set	1
26.	Platform Balance	3
27.	Pulley	4
28.	Magnetic Compass	4
29.	Stop watch	2
GLASSWARE		
1.	Mercurial Thermometer (-10 to 110oC)	16 Overlaps 3 subjects
2.	Mercurial Thermometer (-10 to 360oC)	4
3.	Petri Dish	8
4.	Glass Slide	4
5.	Cover Glass	4
6.	Graduated Cylinder (Glass 10ml)	12 Overlaps 2 subjects
7.	Graduated Cylinder (Glass 100ml)	8 Overlaps 2 subjects
8.	Graduated Cylinder (Glass 500ml)	4
9.	Graduated Cylinder (Plastic 50ml)	4
10.	Graduated Cylinder (Plastic 100ml)	8
11.	Beaker (100ml)	4
12.	Beaker (250ml)	12 Overlaps 3 subjects
13.	Beaker (500ml)	12 Overlaps 3 subjects
14.	Beaker (1000ml)	4
15.	Test Tube (15mm,20mm)	2 dozens
16.	Erlenmeyer Flask 250ml	7 Overlaps 2 subjects
17.	Mortar and Pestle	8 Overlaps 2 subjects
18.	Reagent Bottle (250ml)	4
19.	Reagent Bottle (500ml)	4

No	Items	Requested Quantity
20.	Reagent Bottle (1000ml)	4
21.	Funnel	4
22.	Stirring Rod	8
23.	Medicine Dropper	8 Overlaps 2 subjects
24.	Evaporating Dish	4
25.	Pipette (Plastic 1ml)	1
26.	Pipette (Plastic 10ml)	1

CONSUMABLES

1.	Litmus Paper (Red, Blue)	4
2.	Filter Paper (Pack of 10 Sheets)	10
3.	PH Paper	1
4.	Zinc Plate Set	1
5.	Copper Plate	1
6.	Nichrome Wire	1
7.	Copper Wire	1

CHEMICALS

1.	Lead Pellets	0.5kg	1
2.	Sulfur Powder	0.25kg	1
3.	Bromothymol Blue	0.5L	1
4.	Ethanol	0.5L	1
5.	Phenolphthalein	0.5L	1
6.	Benedict Solution	0.5L	1
7.	Copper Sulfate (Crystals)	0.5L	1
8.	Carbon Tetrachloride	0.25kg	1
9.	Nitric Acid	0.5L	1
10.	Phenol	0.5kg	1
11.	Iodine	0.5L	1
12.	Benzoic Acid	0.25kg	1
13.	Naphthalene Balls	0.25kg	1
14.	Iron Fillings	0.5kg	1
15.	Sodium Hydroxide (Pellets)	0.5kg	1
16.	Magnesium Ribbon	25g	1
17.	Yeast	0.5kg	1
18.	Calcium Oxide	0.5kg	1
19.	Denatured Alcohol	0.5kg	1
20.	Copper Dust	0.25kg	1
21.	Calcium Carbide	0.25kg	1
22.	Lead Nitrate (Crystals)	0.25kg	1
23.	Potassium Iodide	0.25kg	1
24.	Ferric Chloride	0.25kg	1
25.	Potassium Ferricyanide	0.25kg	1
26.	Potassium Chromate	0.25kg	1
27.	Potassium Dichromate	0.25kg	1
28.	Potassium Bromide	0.25kg	1
29.	Boric Acid (Crystals)	0.25kg	1
30.	Calcium Chloride	0.25kg	1

No	Items	Requested Quantity
31.	Ammonium Chloride	0.5kg 1
32.	Zinc Nitrate	0.5kg 1
33.	Sulfuric Acid	0.5L 1
34.	Manganese Dioxide	0.25kg 1
35.	Acetic Acid	0.5kg 1
36.	Sodium Bicarbonate	0.25kg 1
37.	Hydrogen Peroxide	0.25kg 1
38.	Potassium Nitrate	0.25kg 1
39.	Potassium Chloride	0.25kg 1
40.	Sodium Sulfate	0.25kg 1
41.	Ammonium Solution	0.5L 1
42.	Hydrochloric Acid	0.5L 1
HOME ECONOMICS		
1.	Sewing Machines	4
2.	Pressure Cooker	2
3.	Meat Grinder	1
4.	Electric/Gas Range(with Gas Cylinder)	1
5.	Blender	1
6.	Mixer	1
7.	Casserole Set	2
8.	Electric Iron	1
9.	Set of Dinnerware	2
10.	Set of Silverware	1
11.	Glassware Set	2
12.	Set of Frying Pan	2
13.	Kitchen Knife Set	2
14.	Cutting Devices	2
15.	Mixing Bowl Set	2
16.	Kettle	2
17.	Bakeware Set	2
18.	Set of Measuring Spoons	2
19.	Set of Measuring Cups	2
20.	Casserole	1
21.	Rotary Egg Beater	1
INDUSTRIAL ARTS		
1.	Stock and Die Set	4
2.	Pipe Wrench Set	4
3.	Pipe Vise	4
4.	Hack Saw	4
5.	Pliers, Diagonal Cutting	4
6.	Screwdriver Set	4
7.	Utility Tester	4
8.	Wire Stripper and Cutter	4
9.	Hand Drill	4
10.	Cold Chisel Set	4
11.	Hammer - Claw	4
12.	Hammer - Ball Pein	4
13.	Hammer - Cross Pein	4

No	Items	Requested Quantity
14.	Rule, Steel	4
15.	Tape Rule (10', 33')	4
16.	Tin Snip	4
17.	Soldering Gun	4
18.	Machinist Vise	4
19.	Vise Grip Pliers	4
20.	Bench Grinder	1
21.	Hand Saw (Rip and Cross cut)	4
22.	Hand Plane (Jack and Smooth Plane)	4
23.	Hand Brace	4
24.	Zigzag Rule (Folding Rule)	4
25.	Wood Chisel Set	4
26.	Center Punch Set	4
27.	C-Clamp	4
28.	Bar Clamp	4
29.	Carpenter's Square (Combination Type)	4
30.	Try-Square	4
31.	Electric Arc Welder	1
32.	Marking Gauge	4
33.	Metal Cutting Chisel	4

2.6 EVALUATION RESULT OF SETTING UP OF QUANTITY OF EQUIPMENT

(1/5)

No	Items	Requested Quantity	Planned Quantity	Reason for Change
GENERAL SCIENCE				
1.	Platform Balance	4	4	-
2.	Terrestrial Globe	1	1	-
3.	Laboratory Apparatus Repair Kits	1	1	-
4.	Water Analysis Outfit	1	1	-
5.	Seismograph Model	1	1	-
6.	Anemometer with Vane	1	1	-
7.	Rain Gauge	1	1	-
8.	Aneroid Barometer	1	1	-
9.	Magnetizer	4	4	-
10.	Hand Lens (Biconvex)	4	4	-
11.	Pulley Set	4	4	-
12.	Magnetic Compass	4	4	-
13.	Stop Watch	1	4	Necessary by basic group
14.	Tray, Wooden ^{<1}	4	4	-
BIOLOGY				
1.	Pocket Magnifier	4	4	-
2.	Dissecting Set	8	4	Sufficient even by basic group
3.	Microscope, Compound, with Lens Cleaning Set	4	4	-
4.	Human Anatomy Chart with Overlays	1	1	-
5.	Detachable Organ System ^{<2}	1	0	Deleted from std. list
6.	Len Cleaning Set	1	0	Combined with microscope
7.	Triple Beam Balance	1	0	Commonly used with Chemistry No.1
CHEMISTRY				
1.	Triple Beam Balance	1	1	-
2.	Iron Stand	4	4	-
3.	Utility Clamp	4	4	-
4.	Iron Ring	4	4	-
5.	Electrolysis Apparatus	1	1	-
6.	PH Meter	1	1	-
7.	Wire Gauge	4	4	-
8.	Test Tube Holder	4	4	-
9.	Test Tube Rack	4	4	-
10.	Cork Borer/Stopper Set	1	1	-
11.	Tripod	4	4	-
12.	Test Tube Brush (Small) ^{<1}	4	4	-
13.	Test Tube Brush (Large) ^{<1}	4	4	-
14.	Spatula Set (Small, Medium, Large) ^{<1}	2 each	2 each	-
15.	Cabinet for Chemicals	1	1	-
16.	Wash Bottle ^{<1}	8	4	Changed on the basis of basic group
17.	Periodic Table, Wall Chart ^{<1}	1	1	-
18.	Atomic Molecular Model Kit ^{<1}	1	1	-

Remarks: ^{<1} Equipment added to the standard list in March 1990.^{<2} Equipment deleted from the standard list in March 1990.

No	Items	Requested Quantity	Planned Quantity	Reason for Change
19.	Alcohol Burner	8	4	Changed on the basis of basic group
20.	Pinch Cock	4	4	-
21.	Calorimeter ^{<2}	2	0	Deleted from std. list
PHYSICS				
1.	Convex and Concave Mirrors	4	4	-
2.	Demonstration Lens Set	1	1	-
3.	Spring Balance, Newton	4	8	At least 2 pcs. necessary for 3 axis experiments
4.	Spiral Springs Set	4	4	-
5.	Meter Stick	2	4	Changed on the basis of basic group
6.	Acceleration Recording Timer	4	4	-
7.	Dynamic Carts	4	4	-
8.	Electroscope	2	1	For demonstration
9.	Prism Set	4	4	-
10.	Magnet (Bar)	4	4	-
11.	Magnet (Ring)	4	4	-
12.	Magnet (U-shape)	4	4	-
13.	Magnet (Alcomax)	4	4	-
14.	Transistor Radio Demo Set	1	1	-
15.	Multi Tester, Analog	4	4	-
16.	Ripple Tank	4	2	Unnecessary on the basis of basic group, but if only one, insufficient for wave observation
17.	Logic Gates (Circuit Trainer)	4	4	-
18.	Set of Tuning Forks	1	2	Insufficient for hearing tuning sound if only one
19.	Resonance Apparatus	1	1	-
20.	Electric Motor/Generator	1	4	Necessary by basic group
21.	Free Fall Apparatus	1	1	-
22.	Photometer Set	1	1	-
23.	Incandescent Optical Light Source for Optics Experiment	1	1	-
24.	Scientific Calculator	8	8	-
25.	Biconvex and Biconcave Lens Set	1	1	-
26.	Platform Balance	3	0	Commonly used with Gen. Science No. 1
27.	Pulley	4	0	Commonly used with Gen. Science No. 11
28.	Magnetic Compass	4	0	Commonly used with Gen. Science No. 12
29.	Stop watch	2	0	Commonly used with Gen. Science No. 13

Remarks: <1 Equipment added to the standard list in March 1990.

<2 Equipment deleted from the standard list in March 1990.

No	Items	Requested Quantity	Planned Quantity	Reason for Change
GLASSWARE				
1.	Mercurial Thermometer (-10 to 110oC)	16	6	Commonly used by basic group, with spare
2.	Mercurial Thermometer (-10 to 360oC)	4	4	-
3.	Petri Dish	8	6	Use by basic group
4.	Glass Slide	4	4	-
5.	Cover Glass	4	4	-
6.	Graduated Cylinder (Glass 10ml)	12	6	Commonly used by basic group, with spare
7.	Graduated Cylinder (Glass 100ml)	8	6	- ditto -
8.	Graduated Cylinder (Glass 500ml)	4	6	Use with basic group with spare
9.	Graduated Cylinder (Plastic 50ml)	4	4	-
10.	Graduated Cylinder (Plastic 100ml)	8	4	Use by basic group
11.	Beaker (100ml)	4	6	Use with basic group with spare
12.	Beaker (250ml)	12	6	Commonly used by basic group, with spare
13.	Beaker (500ml)	12	6	- ditto -
14.	Beaker (1000ml)	4	6	Use with basic group with spare
15.	Test Tube (15mm,20mm)	2 dozen	2 dozen	-
16.	Erlenmeyer Flask (250ml)	7	6	Commonly used by basic group, with spare
17.	Mortar and Pestle	8	4	Commonly use by basic group
18.	Reagent Bottle (250ml)	4	4	-
19.	Reagent Bottle (500ml)	4	4	-
20.	Reagent Bottle (1000ml)	4	4	-
21.	Funnel	4	6	Use by basic group with spare
22.	Stirring Rod	8	6	- ditto -
23.	Medicine Dropper	8	6	- ditto -
24.	Evaporating Dish	4	6	Commonly used by basic group, with spare
25.	Pipette (Plastic 1ml)	1	1	-
26.	Pipette (Plastic 10ml)	1	1	-
CONSUMABLES				
1.	Litmus Paper (Red, Blue)	4	4	-
2.	Filter Paper (Pack of 10 Sheets)	10	10	-
3.	PH Paper	1	4	Changed on the basis of basic group to observe color difference
4.	Zinc Plate Set	1	1	-
5.	Copper Plate	1	1	-
6.	Nichrome Wire	1	1	-
7.	Copper Wire	1	1	-

No	Items	Requested Quantity	Planned Quantity	Reason for Change	
CHEMICALS					
1.	Lead Pellets	0.5kg	1	1	-
2.	Sulfur Powder	0.25kg	1	1	-
3.	Bromothymol Blue	0.5L	1	1	-
4.	Ethanol	0.5L	1	1	-
5.	Phenolphthalein	0.5L	1	1	-
6.	Benedict Solution	0.5L	1	1	-
7.	Copper Sulfate (Crystals)	0.5L	1	1	-
8.	Carbon Tetrachloride	0.25kg	1	1	-
9.	Nitric Acid	0.5L	1	1	-
10.	Phenol	0.5kg	1	1	-
11.	Iodine	0.5L	1	1	-
12.	Benzoic Acid	0.25kg	1	1	-
13.	Naphthalene Balls	0.25kg	1	1	-
14.	Iron Fillings	0.5kg	1	1	-
15.	Sodium Hydroxide (Pellets)	0.5kg	1	1	-
16.	Magnesium Ribbon	25g	1	1	-
17.	Yeast	0.5kg	1	1	-
18.	Calcium Oxide	0.5kg	1	1	-
19.	Denatured Alcohol	0.5kg	1	1	-
20.	Copper Dust	0.25kg	1	1	-
21.	Calcium Carbide	0.25kg	1	1	-
22.	Lead Nitrate (Crystals)	0.25kg	1	1	-
23.	Potassium Iodide	0.25kg	1	1	-
24.	Ferric Chloride	0.25kg	1	1	-
25.	Potassium Ferricyanide	0.25kg	1	1	-
26.	Potassium Chromate	0.25kg	1	1	-
27.	Potassium Dichromate	0.25kg	1	1	-
28.	Potassium Bromide	0.25kg	1	1	-
29.	Boric Acid (Crystals)	0.25kg	1	1	-
30.	Calcium Chloride	0.25kg	1	1	-
31.	Ammonium Chloride	0.5kg	1	1	-
32.	Zinc Nitrate	0.5kg	1	1	-
33.	Sulfuric Acid	0.5L	1	1	-
34.	Manganese Dioxide	0.25kg	1	1	-
35.	Acetic Acid	0.5kg	1	1	-
36.	Sodium Bicarbonate	0.25kg	1	1	-
37.	Hydrogen Peroxide	0.25kg	1	1	-
38.	Potassium Nitrate	0.25kg	1	1	-
39.	Potassium Chloride	0.25kg	1	1	-
40.	Sodium Sulfate	0.25kg	1	1	-
41.	Ammonium Solution	0.5L	1	1	-
42.	Hydrochloric Acid	0.5L	1	1	-
HOME ECONOMICS					
1.	Sewing Machines		4	4	-
2.	Pressure Cooker		2	2	-
3.	Meat Grinder		1	1	-
4.	Electric/Gas Range (with Gas Cylinder)		1	1	-
5.	Blender		1	1	-

No	Items	Requested Quantity	Planned Quantity	Reason for Change
6.	Mixer	1	1	-
7.	Casserole Set	2	1	For demonstration
8.	Electric Iron	1	1	-
9.	Set of Dinnerware	2	1	For demonstration
10.	Set of Silverware	1	1	-
11.	Glassware Set	2	1	For demonstration
12.	Set of Frying Pan	2	1	For demonstration
13.	Kitchen Knife Set	2	2	-
14.	Cutting Devices	2	1	For demonstration
15.	Mixing Bowl Set	2	1	For demonstration
16.	Kettle	2	1	For demonstration
17.	Bakeware Set	2	2	-
18.	Set of Measuring Spoons	2	2	-
19.	Set of Measuring Cups	2	2	-
20.	Casserole	1	0	Deleted from std. list
21.	Rotary Egg Beater	1	0	- ditto -
INDUSTRIAL ARTS				
1.	Stock and Die Set	4	4	-
2.	Pipe Wrench Set	4	4	-
3.	Pipe Vise	4	4	-
4.	Hack Saw	4	4	-
5.	Pliers, Diagonal Cutting	4	4	-
6.	Screwdriver Set	4	4	-
7.	Utility Tester	4	4	-
8.	Wire Stripper and Cutter	4	4	-
9.	Hand Drill	4	4	-
10.	Cold Chisel Set	4	4	-
11.	Hammer - Claw	4	4	-
12.	Hammer - Ball Pein	4	4	-
13.	Hammer - Cross Pein	4	4	-
14.	Rule, Steel	4	4	-
15.	Tape Rule (10', 33')	4	4	-
16.	Tin Snip	4	4	-
17.	Soldering Gun	4	4	-
18.	Machinist Vise	4	4	-
19.	Vise Grip Pliers	4	4	-
20.	Bench Grinder	1	1	-
21.	Hand Saw (Rip and Cross cut)	4	4	-
22.	Hand Plane (Jack and Smooth Plane)	4	4	-
23.	Hand Brace	4	4	-
24.	Zigzag Rule (Folding Rule)	4	4	-
25.	Wood Chisel Set	4	4	-
26.	Center Punch Set	4	4	-
27.	C-Clamp	4	4	-
28.	Bar Clamp	4	4	-
29.	Carpenter's Square (Combination Type)	4	4	-
30.	Try-Square	4	4	-
31.	Electric Arc Welder	1	1	-
32.	Marking Gauge	4	4	-
33.	Metal Cutting Chisel	4	0	Deleted (overlapped with No. 10)

