

Construction & Equipment of Science Labs

- Physics
- Chemistry
- Biology
- Computer



INVEST IN EDUCATION



TAMEER-E-MILLAT FOUNDATION

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1. Need Assessment

- No education is complete without practical application of knowledge.
- In order for secondary schools to be upgraded to higher secondary status (Matric: Class 11 & 12), the school must have functioning Biology, Chemistry and Physics labs.
- To inspire, educate and equip school children with computing skills and give them the hard and soft skills needed to become the technologists of tomorrow.

2. Standard Demand

List of Schools Requiring Labs

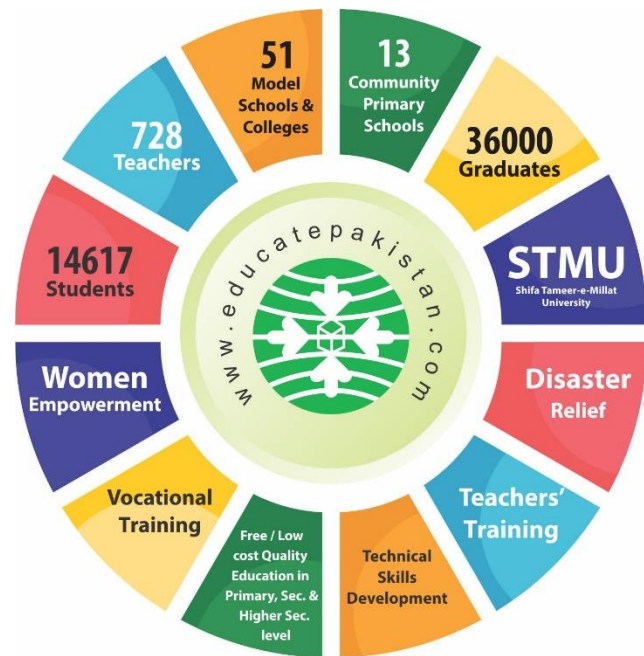
| School | Area | Year started |
|-----------------------------------|--------------------------|--------------|
| TMMS for Girls | Khewra, Jehlum | 1987 |
| Begum Safia Nawaz TMMS | Lilla Town, Jehlum | 1992 |
| TMMS for Girls | Wahali Zer, Chakwal | 1992 |
| TMMS | Jinnah Town, Skardu | 1993 |
| Hafiz Maqbool Elahi TMMS | P.D.Khan, Jhelum | 1993 |
| TMMS for Boys | Dharyala Jalip, Jhelum | 1993 |
| Pir Muhamad TMMS | Bhooma Bath, Gujranwala | 1994 |
| Sardar TMMS for Girls | Kamalia, Toba tek Singh | 1995 |
| TMMS for Girls | TMCE, Fateh Jang, Attock | 1996 |
| Munir Arshsd TMMS for Girls | Laber, Multan | 1996 |
| TMMS | Tarlai Kalan, Islamabad | 1997 |
| Anjuman Noor e Islam TMMS | Kahuta, Rawalpindi | 1997 |
| Imam Din TMMS | Mian Chanu, Khanewal | 2000 |
| Hazara TMMS for Girls | Shinkiari, Mansehra, KPK | 2005 |
| Muhamad Akram Khan TMMS | Dhariwal, Gujranwala | 2007 |
| Maryam Noor TMMS | Chawinda, Sialkot | 2007 |
| TM Children Public School | Dana Raghzai, Waziristan | 2009 |
| PPL-TM Primary School | Naushki, Balochistan | 2012 |
| Tameer-e-Millat Foundation School | Kala Gujran, Jhelum | 2017 |



3. Introduction

Founded by (late) Dr. Zaheer Ahmad in 1987, Tameer-e-Millat Foundation (TMF) is a charitable, non-profit organization working for the promotion of education, skills development, women empowerment, and social welfare, with special emphasis to the underprivileged areas. TMF is registered under Societies Act, XXI of 1860.

After a consistent struggle of 30 years, TMF has established 13 Community Primary Schools, 47 Primary/Secondary Model Schools, 4 Degree Colleges, 4 Vocational Training Centers, and 2 Technical Institutes across 25 districts spread over all five provinces of Pakistan. Under the educational network of TMF 32,000 students have graduated so far. TMF is committed to providing quality education to uplift the non-affording communities of Pakistan, without any discrimination.



Mission

“Tameer-e-Millat Foundation aims to provide quality education to every individual, in all academic and professional disciplines, without discrimination of gender, race, religion, socio-economic status or ethnicity.”



4. Sponsorship cost of providing lab and other equipment

SUMMARY OF ALL EXPENSES FOR PROJECT

| Description | Cost in PKR |
|--|--------------------|
| Equipment for Physics Lab | 280,195/- |
| Equipment for Biology Lab | 278,900/- |
| Equipment for Chemistry Lab | 221,650/- |
| Equipment & Computers for Computer Lab | 507,000/- |
| Total Cost | 1,287,745/- |



5. Breakdown of Equipment for Physics Lab

| Sr. # | Description | Qty | Unit Price | Total Amount |
|-------|------------------------------------|-----|------------|--------------|
| 1 | Furniture | 10 | 10000 | 100,000 |
| 2 | Galvanometer | 5 | 350 | 1750 |
| 3 | Capacitor of different size 2 | 10 | 20 | 200 |
| 5 | Battery 12 Volts (Pieces) | 5 | 450 | 2250 |
| 6 | Two way key | 10 | 90 | 900 |
| 7 | Stop watch | 10 | 90 | 900 |
| 8 | Connecting wire roll (Pieces) | 20 | 150 | 3000 |
| 9 | Slide wire bridge | 4 | 650 | 2600 |
| 10 | Jockey | 4 | 60 | 240 |
| 11 | Screw gauge | 20 | 450 | 9000 |
| 12 | Batteries Cell | 20 | 50 | 1000 |
| 13 | Sand paper | 30 | 25 | 750 |
| 14 | Voltmeter | 10 | 275 | 2750 |
| 15 | Rheostat of different range | 6 | 450 | 2700 |
| 16 | Thermistor | 10 | 150 | 1500 |
| 17 | Thermometer | 10 | 60 | 600 |
| 18 | Glass beaker | 10 | 60 | 600 |
| 19 | Micrometer | 5 | 450 | 2250 |
| 20 | Spirit lamp | 10 | 60 | 600 |
| 21 | Potentiometer | 5 | 350 | 1750 |
| 22 | Battery | 5 | 275 | 1375 |
| 23 | Fractional resistance box | 10 | 750 | 7500 |
| 24 | Multi range power supply | 2 | 2200 | 4400 |
| 25 | Step down transformer 220-12 volts | 2 | 650 | 1300 |
| 26 | AC power supply | 3 | 1600 | 4800 |
| 27 | AC ammeter | 5 | 450 | 2250 |
| 28 | AC voltmeters | 5 | 450 | 2250 |
| 29 | AC voltmeters | 5 | 450 | 2250 |
| 30 | Inductor (coil) | 5 | 800 | 4000 |
| 31 | Searle's apparatus | 4 | 600 | 2400 |
| 32 | Slatted weight (Box) | 1 | 150 | 150 |
| 47 | Sealed radioactive cobalt | 2 | 60 | 120 |
| 50 | Electric buzzer | 5 | 250 | 1250 |
| 51 | Set Squares | 10 | 75 | 750 |
| 52 | Plumb line | 10 | 35 | 350 |
| 53 | Wedge | 15 | 60 | 900 |



| | | | | |
|-----|--|----|-----|------|
| 56 | Start stop switches | 1 | 90 | 90 |
| 57 | Drop plate | 10 | 350 | 3500 |
| 58 | Steel ball | 10 | 20 | 200 |
| 59 | Ticker tape | 10 | 100 | 1000 |
| 61 | Split cork | 10 | 25 | 250 |
| 62 | Helical spring | 10 | 450 | 4500 |
| 63 | Meldes apparatus | 5 | 550 | 2750 |
| 64 | Pan | 4 | 25 | 100 |
| 65 | Rubber pad | 10 | 20 | 200 |
| 66 | Tuning forks (Pack) | 5 | 300 | 1500 |
| 67 | Slotted weight in kilogram (Box) | 4 | 450 | 1800 |
| 68 | Free fall apparatus with electromagnetic | 5 | 850 | 4250 |
| 69 | Slotted with hangers | 30 | 150 | 4500 |
| 70 | Resonance tube | 5 | 850 | 4250 |
| 71 | Electric calorimeter | 3 | 250 | 750 |
| 72 | Ball jar apparatus | 4 | 650 | 2600 |
| 75 | NOR OR AND gates | 10 | 160 | 1600 |
| 76 | Glass slab (Pack) | 20 | 20 | 400 |
| 77 | Drawing board | 30 | 90 | 2700 |
| 78 | Drawing pins (Pack) | 5 | 25 | 125 |
| 79 | Common Pins (Pack) | 5 | 25 | 125 |
| 80 | Protector | 30 | 60 | 1800 |
| 81 | Set square | 15 | 75 | 1125 |
| 82 | White paper (Ram) | 2 | 375 | 750 |
| 83 | Concave mirror (Pack) | 10 | 40 | 400 |
| 84 | Convex mirror (Pack) | 10 | 40 | 400 |
| 85 | Meter rod | 30 | 75 | 2250 |
| 86 | Needles | 30 | 10 | 300 |
| 87 | Plumb line | 20 | 35 | 700 |
| 88 | Water in beaker | 2 | 60 | 120 |
| 89 | Iron stand | 20 | 375 | 7500 |
| 90 | Prison | 30 | 60 | 1800 |
| 91 | Optical bench | 15 | 450 | 6750 |
| 92 | Lens upright | 10 | 70 | 700 |
| 93 | Needle upright | 10 | 70 | 700 |
| 94 | Glass strip | 15 | 25 | 375 |
| 99 | Sand paper | 10 | 20 | 200 |
| 100 | Galvanometer | 10 | 350 | 3500 |
| 101 | High resistance box | 5 | 950 | 4750 |
| 102 | Low resistance box | 5 | 850 | 4250 |



| | | | | |
|--------------|-----------------------|----|-----|---------------|
| 103 | Bar magnet | 10 | 90 | 900 |
| 104 | U magnet | 10 | 90 | 900 |
| 105 | Compass needle | 10 | 20 | 200 |
| 107 | Thermostat unit | 5 | 150 | 750 |
| 109 | Vernier calipers | 20 | 350 | 7000 |
| 110 | Solid cylinder | 20 | 20 | 400 |
| 111 | Calculator | 10 | 175 | 1750 |
| 112 | Ball bearing | 15 | 10 | 150 |
| 113 | Spherometer | 5 | 275 | 1375 |
| 114 | Glass plate | 10 | 25 | 250 |
| 115 | Concave lens (Pack) | 5 | 25 | 125 |
| 116 | Convex lens (Pack) | 5 | 25 | 125 |
| 117 | Gravesend's apparatus | 5 | 750 | 3750 |
| 118 | Spring balance | 15 | 80 | 1200 |
| 119 | Plane mirror strip | 15 | 5 | 75 |
| 121 | Stout cork | 10 | 650 | 6500 |
| 123 | Steel roller | 10 | 75 | 750 |
| 124 | Digital balance | 2 | 650 | 1300 |
| 140 | Voltmeter | 10 | 275 | 2750 |
| 141 | Balance key | 10 | 300 | 3000 |
| Total | | | | 280195 |



6. Breakdown of Equipment for Biology Lab

| Sr. # | Description | Qty | Unit Price | Total Amount |
|-------------------------------|---|-----|------------|--------------|
| 1 | Furniture | 10 | 10000 | 100,000 |
| 2 | Microscope (Compound) | 5 | 3700 | 18500 |
| 3 | Copper sulphate | 5 | 200 | 1000 |
| 4 | Potassium iodide | 5 | 300 | 1500 |
| 5 | Spirit | 5 | 150 | 750 |
| 6 | Antisera for blood groups | 3 | 650 | 1950 |
| 7 | Iodine solution | 10 | 150 | 1500 |
| 8 | Benedicts solution | 30 | 75 | 2250 |
| 9 | Glucose solution | 30 | 75 | 2250 |
| <u>Charts</u> | | | | |
| 10 | Internal structure of dicot stem | 25 | 75 | 1875 |
| 11 | Internal structure of the monocot stem | 25 | 75 | 1875 |
| 12 | Chick embryo (Slide) | 10 | 450 | 4500 |
| 13 | Mitosis | 15 | 85 | 1275 |
| 14 | Meiosis | 15 | 85 | 1275 |
| 15 | Eye structure | 15 | 85 | 1275 |
| 16 | Mesophyll cells of plants | 15 | 85 | 1275 |
| <u>Models</u> | | | | |
| 17 | Paramecium | 10 | 600 | 6000 |
| 18 | Amoeba | 10 | 600 | 6000 |
| 19 | Animal and plant cells | 10 | 600 | 6000 |
| 20 | Dissecting / dissection bon | 10 | 600 | 6000 |
| 21 | Chloroform | 10 | 150 | 1500 |
| <u>Prepared slides</u> | | | | |
| 22 | Bacteria | 10 | 60 | 600 |
| 23 | Nostoc | 10 | 75 | 750 |
| 24 | Euglena | 10 | 60 | 600 |
| 25 | Volvox | 10 | 60 | 600 |
| 26 | Spectrophotometer | 3 | 25000 | 75000 |
| 27 | Chromatographic filter paper | 10 | 150 | 1500 |
| 28 | Rhizopus (fungi) | 10 | 60 | 600 |
| 29 | Slides of blood cells (Red, White, Platelets) | 10 | 60 | 600 |
| 30 | Male pinus cone | 10 | 60 | 600 |
| 31 | Female pinus cone | 10 | 75 | 750 |
| <u>Glassware</u> | | | | |
| 32 | Test tubes | 50 | 10 | 500 |



| | | | | |
|--------------|---|----|------|----------------|
| 33 | Thistle funnel | 50 | 20 | 1000 |
| 34 | Slides | 20 | 150 | 3000 |
| 35 | Cover slips | 10 | 45 | 450 |
| 36 | All phylum 1000 Set (Preserve Specimens 2-Sets) | 5 | 1200 | 6000 |
| 37 | Ganong's Potometer | 20 | 190 | 3800 |
| 38 | Human skeleton | 5 | 2500 | 12500 |
| 39 | Bodies for frog dissection | 10 | 150 | 1500 |
| Total | | | | 278,900 |



7. Breakdown of Equipment for Chemistry Lab

| Sr. # | Description | Qty | Unit Price in PKR | Total Amount in PKR |
|-------|-------------------------------|-----|-------------------|---------------------|
| 1 | Furniture | 10 | 100,000 | 100,000 |
| 2 | Burette | 20 | 300 | 6000 |
| 3 | Measuring flask | 20 | 150 | 3000 |
| 4 | Thistle funnel | 10 | 20 | 200 |
| 5 | Woulff bottle | 10 | 35 | 350 |
| 6 | China dish | 20 | 30 | 600 |
| 7 | Delivery tube | 15 | 300 | 4500 |
| 8 | Thermometer | 20 | 60 | 1200 |
| 9 | Cork | 20 | 10 | 200 |
| 10 | Glass rod | 40 | 20 | 800 |
| 11 | Bunsen Burner | 20 | 350 | 7000 |
| 12 | Tripod stand | 20 | 75 | 1500 |
| 13 | Wire gauze | 40 | 10 | 400 |
| 14 | Iron stand | 10 | 375 | 3750 |
| 15 | Test tube | 50 | 10 | 500 |
| 16 | Test tube stand | 10 | 60 | 600 |
| 17 | Test tube holder | 20 | 20 | 400 |
| 18 | Beaker different ml | 30 | 60 | 1800 |
| 19 | Spirit lamp | 20 | 60 | 1200 |
| 20 | Platinum wire | 50 | 20 | 1000 |
| 21 | Volumetric flask different ml | 20 | 150 | 3000 |
| 22 | Digital balance | 10 | 650 | 6500 |
| 23 | Titration flask | 20 | 150 | 3000 |
| 24 | Round bottom flask | 10 | 90 | 900 |
| 25 | Dropper | 10 | 10 | 100 |
| 26 | Sand bath | 10 | 20 | 200 |
| 27 | crucibles | 25 | 35 | 875 |
| 28 | Condenser | 35 | 275 | 9625 |
| 29 | Beehive shelf | 45 | 40 | 1800 |
| 30 | Pipette | 30 | 60 | 1800 |
| 31 | DH paper | 45 | 60 | 2700 |
| 32 | Glass watch | 45 | 10 | 450 |
| 33 | Graduated cylinder | 45 | 150 | 6750 |
| 34 | Desiccators | 10 | 1200 | 12000 |
| 35 | Polystyrene cup | 35 | 20 | 700 |
| 36 | Chromatographic paper sheet | 30 | 150 | 4500 |
| 37 | Filter paper | 100 | 60 | 6000 |



| | | | | |
|--------------|-----------------|-----|------|----------------|
| 38 | Funnel | 100 | 75 | 7500 |
| 39 | Spatula | 45 | 60 | 2700 |
| 40 | Kipps apparatus | 5 | 1800 | 9000 |
| 41 | Periodic table | 20 | 90 | 1800 |
| 42 | Mask packets | 5 | 400 | 2000 |
| 43 | Gloves packets | 5 | 550 | 2750 |
| Total | | | | 221,650 |



8. Breakdown of Equipment for Computer Lab

| Sr. # | Description | Qty | Unit Price in PKR | Total Amount in PKR |
|--------------|---------------------------------|-----|-------------------|---------------------|
| 1 | Furniture | 15 | 10,000 | 150,000 |
| 2 | Tower Branded Computer Used | 15 | 20,000 | 300,000 |
| | Intel Core i-3 Processor | | | |
| | 2 GB RAM | | | |
| | 500 GB Hard Drive | | | |
| | 17" Monitor Used | | | |
| | CD Rom | | | |
| | New Key board and Mouse | | | |
| 3 | Networking of fifteen Computers | | | 17,000 |
| 4 | HP 1102 LaserJet Printers | 1 | 15,000 | 15,000 |
| 5 | UPS | 1 | 25,000 | 25,000 |
| Total | | | | 507,000 |



9. Construction with Fixtures of One Lab Room

| S.No. | Item | Quantity | Unit Cost | Total Cost |
|-------|----------------|----------|-----------|----------------|
| 1. | Cement Bag | 125 | 530 | 66,250 |
| 2. | Bricks | 12600 | 13 | 163,000 |
| 3. | Sand | 600 cft | | 8,000 |
| 4. | Crush | 350 cft | | 9,000 |
| 5. | Paint | 50 Ltr | 300 | 15,000 |
| 6. | Paint Putty | 20 Kg | 200 | 4,000 |
| 7. | Door | 2 | 10,000 | 20,000 |
| 8. | Window / Grill | 4 | 20,000 | 80,000 |
| 9. | Tiles / Marble | 400 | 350 | 140,000 |
| 10. | Electricity | | 10,000 | 10,000 |
| 11. | Plumbing | | 10,000 | 10,000 |
| 10. | Labour | | | 100,000 |
| | TOTAL | | | 625,250 |

**Costs are for build cycle of 2017-2018 and are subject to revision. Rates are calculated on average construction cost and may vary for different locations.*



10. Pictures



Computer Lab



Chemistry Lab



Biology Lab



Physics Lab



11. Contact Information

IN PAKISTAN

Tameer-e-Millat Foundation

Sector H-8/4, Islamabad

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12. Payment Options

PAK RUPEES ACCOUNT

AL-BARAKA BANK LTD.

Branch: Shifa International Hospital, Islamabad

Account Title: Tameer-e-Millat Foundation

Account No.: PK47AIIIN0000109103644018

DOLLAR ACCOUNT

MCB BANK LTD.

Branch: Main Civic Center, Islamabad

Account Title: Tameer-e-Millat Foundation

Account No.: 0613-02010085334