

# § 112.39 Physics

## Knowledge and Skills

### Tools

| Fisher Science Education 2012 Catalog Page #     | Suggested Quantity | Fisher Part # | Description                                   | Unit Price | Suggested Price |
|--|--------------------|---------------|---|------------|-----------------|
| <b>Scientific Calculators</b>                    |                    |               |   |            |                 |
| 37   | 30                 | S63096        | TI-83 PLUS GRAPHING CALCULATOR                | \$164.00   | \$4,920.00      |
| <b>Computers</b>                                 |                    |               |   |            |                 |
| <b>Data Acquisition Probes</b>                   |                    |               |   |            |                 |
| 9  | 8                  | S98243-42ND   | NEULOG DIGITAL DISPLAY UNIT                   | \$90.00    | \$720.00        |
| 9  | 8                  | S98243-7ND    | NEULOG VOLTAGE SENSOR                         | \$62.00    | \$496.00        |
| 4  | 8                  | S98243-9ND    | NEULOG FORCE LOGGER SENSOR                    | \$159.50   | \$1,276.00      |
| 8  | 8                  | S98243-22ND   | NEULOG SOUND SENSOR                           | \$65.00    | \$520.00        |
| 6  | 8                  | S98243-23ND   | NEULOG MOTION SENSOR                          | \$151.25   | \$1,210.00      |
| 9  | 8                  | S98243-44ND   | NEULOG DISPLAY BATTERY MODULE                 | \$65.00    | \$520.00        |
| <b>Triple Beam Balances</b>                      |                    |               |   |            |                 |
| 843  | 8                  | S40020        | OHAUS BALANCE TRIPLE BEAM W/SS PLATE          | \$148.85   | \$1,190.80      |
| 844  | 8                  | S97281        | OHAUS BALANCE TRIPLE BEAM PRO BALANCE         | \$175.05   | \$1,400.40      |
| <b>Meter Sticks</b>                              |                    |               |   |            |                 |
| 43   | 15                 | S32051        | SOLID HARD MAPLE METER STICKS                 | \$4.40     | \$66.00         |
| <b>Content Specific</b>                          |                    |               |   |            |                 |
| <b>Multimeters (current, voltage, resonance)</b> |                    |               |   |            |                 |
| 727  | 8                  | S442081       | FS* TRACEABLE* Digital Auto Range Multimeters | \$54.75    | \$438.00        |
| <b>Batteries</b>                                 |                    |               |   |            |                 |
| On-line  | 3                  | 17-926B       | C CELL RAYOCAC* ALKALINE MAXIMUM 6/PK         | \$10.73    | \$32.19         |
| On-line  | 3                  | 17-926A       | D CELL RAYOCAC* ALKALINE MAXIMUM 6/PK         | \$12.12    | \$36.36         |
| On-line  | 3                  | 17-926E       | 9 volt RAYOCAC* ALKALINE MAXIMUM 6/PK         | \$22.38    | \$67.14         |
| On-line  | 3                  | 17-926C       | AA CELL RAYOCAC* ALKALINE MAXIMUM 8/PK        | \$9.61     | \$28.83         |
| On-line  | 3                  | 17-926D       | AAA CELL RAYOCAC* ALKALINE MAXIMUM 8/PK       | \$10.05    | \$30.15         |
| <b>Clamps</b>                                    |                    |               |   |            |                 |
| On-line  | 8                  | S99420        | MOHR PINCHCOCK CLAMPS 10 MM                   | \$2.10     | \$16.80         |
| On-line  | 8                  | S99422        | MOHR PINCHCOCK CLAMPS 16 MM                   | \$2.10     | \$16.80         |
| <b>Prisms</b>                                    |                    |               |   |            |                 |
| 685  | 8                  | S96195        | BOX SET OF 6 PRISMS                           | \$39.60    | \$316.80        |
| <b>Collision Apparatus</b>                       |                    |               |   |            |                 |
| 639  | 8                  | S52053A       | COLLISION IN 2-D APPARATUS                    | \$13.95    | \$111.60        |
| <b>Protractors</b>                               |                    |               |   |            |                 |
| 42   | 30                 | S90491A       | CLEARVIEW TRANSPARENT PLASTIC PROTRACTOR      | \$0.75     | \$22.50         |

**Mini Lamps and Sockets**

|            |   |        |                                       |         |         |
|------------|---|--------|---------------------------------------|---------|---------|
| <b>714</b> | 8 | S43905 | MINIATURE LAMPS 1.5V 10/PK            | \$9.90  | \$79.20 |
| <b>713</b> | 8 | S43902 | SCREW-BASE MINIATURE RECEPTACLE 10/PK | \$11.70 | \$93.60 |

**Hand-held Spectroscope**

|                |   |           |                                    |         |          |
|----------------|---|-----------|------------------------------------|---------|----------|
| <b>688</b>     | 8 | S42581A   | QUANTITATIVE ANALYSIS SPECTROSCOPE | \$8.70  | \$69.60  |
| <b>On-line</b> | 8 | S53022-1A | SPECTROSCOPE KIT                   | \$59.85 | \$478.80 |

**Hot Plates**

|            |   |        |                                |          |            |
|------------|---|--------|--------------------------------|----------|------------|
| <b>900</b> | 8 | S50441 | CORNING* SCHOLAR* 170 HOTPLATE | \$179.00 | \$1,432.00 |
|------------|---|--------|--------------------------------|----------|------------|

**Slotted and Hooked Lab Masses**

|            |   |         |   |          |            |
|------------|---|---------|---|----------|------------|
| <b>849</b> | 8 | S40381A | SLOTTED STAINLESS-STEEL INDIVIDUAL WEIGHTS<br>500g, 100g, 50g, 10g, 5g, 1g, twoeach 200g, 20g, 2g | \$129.00 | \$1,032.00 |
| <b>849</b> | 8 | S97603A | WEIGHT HANGER FOR SLOTTED MASSES  | \$12.50  | \$100.00   |

**Discharge Tubes with power supply (H, He, Ne, Ar)**

|            |   |        |                            |         |          |
|------------|---|--------|----------------------------|---------|----------|
| <b>715</b> | 8 | S43705 | MOUNTED RESISTORS          | \$52.90 | \$423.20 |
| <b>716</b> | 8 | S43845 | RESISTANCE SPOOLS, MOUNTED | \$69.00 | \$552.00 |

**Friction Blocks**

|                |   |        |                 |        |         |
|----------------|---|--------|-----------------|--------|---------|
| <b>On-line</b> | 8 | S40916 | FRICTION BLOCKS | \$5.25 | \$42.00 |
|----------------|---|--------|-----------------|--------|---------|

**Trajectory Apparatus**

|                |   |        |                      |         |          |
|----------------|---|--------|----------------------|---------|----------|
| <b>On-line</b> | 4 | S52154 | TRAJECTORY APPARATUS | \$48.50 | \$194.00 |
|----------------|---|--------|----------------------|---------|----------|

**Electrostatic Kits**

|            |   |        |                       |          |          |
|------------|---|--------|-----------------------|----------|----------|
| <b>704</b> | 4 | S90716 | ELECTROSTATIC LAB KIT | \$234.00 | \$936.00 |
|------------|---|--------|-----------------------|----------|----------|

**90-degree rod clamps**

|            |   |         |                   |        |         |
|------------|---|---------|-------------------|--------|---------|
| <b>871</b> | 8 | S47765H | RIGHT ANGLE CLAMP | \$7.95 | \$63.60 |
|------------|---|---------|-------------------|--------|---------|

**Ring Stands with Rings**

|            |   |        |                                       |         |          |
|------------|---|--------|---------------------------------------|---------|----------|
| <b>874</b> | 8 | S47815 | RING STAND WITH 7.6 AND 10.2 CM RINGS | \$27.00 | \$216.00 |
|------------|---|--------|---------------------------------------|---------|----------|

**Ring Stand Screen**

|            |   |        |                     |         |         |
|------------|---|--------|---------------------|---------|---------|
| <b>867</b> | 1 | S95378 | DURABLE GAUZE 10/PK | \$19.15 | \$19.15 |
|------------|---|--------|---------------------|---------|---------|

**SPRING SCALES**

|                |   |         |                                    |         |          |
|----------------|---|---------|------------------------------------|---------|----------|
| <b>On-line</b> | 8 | S40142C | COLOR CODED SPRING SCALE 1000G/10N | \$5.85  | \$46.80  |
| <b>On-line</b> | 8 | S40142D | COLOR CODED SPRING SCALE 2000G/20N | \$5.85  | \$46.80  |
| <b>On-line</b> | 8 | S40142E | COLOR CODED SPRING SCALE 3000G/30N | \$5.85  | \$46.80  |
| <b>On-line</b> | 8 | S40142F | COLOR CODED SPRING SCALE 5000G/50N | \$5.85  | \$46.80  |
| <b>On-line</b> | 8 | S40142G | MULTI COLOR, SET OF SIX            | \$34.65 | \$277.20 |

**Knife Blade Switches**

|            |   |        |  |        |         |
|------------|---|--------|--|--------|---------|
| <b>712</b> | 8 | S44400 | KNIFE SWITCHES SINGLE POLE, SINGLE THROW | \$1.95 | \$15.60 |
| <b>712</b> | 8 | S44401 | KNIFE SWITCHES SINGLE POLE, DOUBLE THROW | \$2.70 | \$21.60 |
| <b>712</b> | 8 | S44402 | KNIFE SWITCHES DOUBLE POLE, SINGLE THROW | \$4.80 | \$38.40 |
| <b>712</b> | 8 | S44403 | KNIFE SWITCHES DOUBLE POLE, DOUBLE THROW | \$4.75 | \$38.00 |

| <b>Bar Magnets</b>                                     |    |            |   |          |            |
|--|----|------------|---|----------|------------|
| 697  | 8  | S95965     | PAINTED READ AND BLUE BAR MAGNETS                 | \$16.50  | \$132.00   |
| <b>Horseshoe Magnets</b>                               |    |            |   |          |            |
| 697  | 8  | S95962     | HORSESHOE MAGNET -SMALL SIZE                      | \$6.40   | \$51.20    |
| 697  | 8  | S95963     | HORSESHOE MAGNET-MEDIUM SIZE                      | \$8.75   | \$70.00    |
| <b>Plane Mirrors</b>                                   |    |            |   |          |            |
| On-line  | 1  | S42355     | PLANE MIRROR 10 PACK                              | \$26.50  | \$26.50    |
| <b>Convex Lenses</b>                                   |    |            |   |          |            |
| 684  | 3  | S42401     | DOUBLE CONVEX LENSES 38MM 5CM FOCUS 10/PK         | \$3.80   | \$11.40    |
| On-line  | 30 | S95357     | DOUBLE CONVEX LENSES 38MM 15CM FOCUS SOLD AS EACH | \$4.80   | \$144.00   |
| 684  | 3  | S42405     | DOUBLE CONVEX LENSES 38MM 30CM FOCUS 10/PK        | \$3.80   | \$11.40    |
| <b>Pendulum Support</b>                                |    |            |   |          |            |
| 645  | 8  | S96186     | PENDULUM SUPPORT CLAMP                            | \$21.00  | \$168.00   |
| <b>Power Supply</b>                                    |    |            |   |          |            |
| 725  | 1  | S441586    | FOUR -IN-ONE-POWER SUPPLY                         | \$159.25 | \$159.25   |
| <b>Stopwatches</b>                                     |    |            |   |          |            |
| 966  | 30 | S90208     | FB WATER-RESISTANT STOPWATCH                      | \$11.15  | \$334.50   |
| 964  | 3  | S65330     | MYCHRON STUDENT TIMER 12/PK                       | \$86.50  | \$259.50   |
| <b>Dynamics Demonstration Equipment</b>                |    |            |   |          |            |
| 627  | 15 | S90705     | DYMANIC CAR SET                                   | \$27.95  | \$419.25   |
| <b>Cathode Ray Tubes with Horseshoe Magnets</b>        |    |            |   |          |            |
| 721  | 1  | S43944     | CANAL RAY CATHODE TUBE                            | \$254.00 | \$254.00   |
| <b>Carbon Paper</b>                                    |    |            |   |          |            |
| <b>Graph Paper</b>                                     |    |            |   |          |            |
| On-line  | 1  | S45635     | LAB GRAPH AND MASTER PAPER                        | \$32.00  | \$32.00    |
| <b>Magnetic Compasses</b>                              |    |            |   |          |            |
| 695  | 15 | S95971     | MAGNETIC COMPASS                                  | \$118.25 | \$1,773.75 |
| <b>Polarized Film</b>                                  |    |            |   |          |            |
| 689  | 1  | S83161     | POLARIZED FILM 50 X 50 100/PK                     | \$272.00 | \$272.00   |
| <b>Celsius Thermometer</b>                             |    |            |   |          |            |
| On-line  | 30 | 13 201 663 | SPIRIT THERMOMETER -20-110                        | \$4.53   | \$135.90   |
| <b>Graphing Technology - See Graphing Calcultators</b> |    |            |   |          |            |
| <b>Laser Pointers</b>                                  |    |            |   |          |            |
| 28   | 1  | S68612     | UV/Laser/White Light Pointer                      | \$40.75  | \$40.75    |

|         |    |        |   |         |            |
|---------|----|--------|---|---------|------------|
|         |    |        | <b>Ballistic Carts</b>  |         |            |
| 636     | 16 | S96177 | BALLISTIC CARTS   | \$72.00 | \$1,152.00 |
|         |    |        | <b>Resonance Tubes</b>  |         |            |
| On-line | 8  | S65098 | RESONANCE TUBE KIT  | \$21.50 | \$172.00   |
|         |    |        | <b>Periodic Table</b>   |         |            |
| 470     | 1  | S45514 | FS*CLASSROOM PERIODIC CHART LECTURE                           | \$38.30 | \$38.30    |
|         |    |        | <b>Iron Filings</b>   |         |            |
| 699     | 1  | S95968 | COARSE FILINGS  | \$7.55  | \$7.55     |
| 699     | 1  | S95969 | FINE FILINGS, SPRINKLE JAR                                    | \$5.75  | \$5.75     |
|         |    |        | <b>White Craft Paper (rolls)</b>                              |         |            |
|         |    |        | <b>Copper Wire</b>  |         |            |
| 715     | 1  | S4821A | BARE COPPER WIRE  | \$22.45 | \$22.45    |
| 715     | 1  | S4821B | HOOK-UP WIRE RED  | \$22.90 | \$22.90    |
|         |    |        | <b>Nylon Thread or String</b>                                 |         |            |
|         |    |        | <b>Electromagnetic Spectrum Charts</b>                        |         |            |
| 465     | 1  | S42464 | ELSECTROMAGNETIC SPECTRUM CHART                               | \$72.05 | \$72.05    |
|         |    |        | <b>Slinky springs</b>   |         |            |
| 675     | 8  | S96191 | HELICAL WAVE FORM SLINKY*                                     | \$12.00 | \$96.00    |
|         |    |        | <b>Wave Motion Ropes</b>                                      |         |            |
|         |    |        | <b>Real-time technology-LISTED UNER NeuLog* Neuron Logger</b> |         |            |
|         |    |        | <b>Tuning Forks</b>   |         |            |
| 678     | 8  | S96194 | TUNING FORKS, SET OF 8 WITH MALLETS                           | \$36.00 | \$288.00   |
| 678     | 8  | S68768 | TUNING FORK ACTIVATOR   | \$10.90 | \$87.20    |

### Implied and Mentioned Equipment

|         |    |         |                                |          |          |
|---------|----|---------|--------------------------------|----------|----------|
|         |    |         | <b>Chemical Splash Goggles</b> |          |          |
| 785     | 30 | S47615  | GOGGLE SPLSH IND VENT 1PR/PK   | \$6.10   | \$183.00 |
|         |    |         | <b>Aprons</b>                  |          |          |
| 780     | 30 | S47382  | BLUE APRON MED 27"W X 42"L     | \$7.80   | \$234.00 |
| 780     | 30 | S475612 | RUBBERIZED APRON 27 X 42IN     | \$11.45  | \$343.50 |
|         |    |         | <b>Gloves</b>                  |          |          |
| 795     | 1  | S47341  | GLOVE N-DEX LP 4MIL MED 100/PK | \$26.45  | \$26.45  |
| 796     | 2  | S473383 | SMALL PF LATEX GLOVES 100/PK   | \$75.05  | \$150.10 |
| 796     | 8  | S47368  | HEAVY-DUTY RUBBER GLOVES 12/PK | \$71.90  | \$575.20 |
|         |    |         | <b>Eye/Face Wash</b>           |          |          |
| On-line | 1  | S477014 | FACE/EYE WASH                  | \$419.20 | \$419.20 |
|         |    |         | <b>Fire Blanket</b>            |          |          |

|  |   |             |   |          |            |
|--|---|-------------|---|----------|------------|
| On-line  | 1 | S47559B     | NOMEX FIRE BLANKET                              | \$111.30 | \$111.30   |
| <b>Fire Extinguisher</b>                               |   |             |   |          |            |
| 791  | 1 | S51214      | FIRE EXTINGUISHER 5 LB                          | \$86.00  | \$86.00    |
| <b>Graduated Cylinders</b>                             |   |             |   |          |            |
| On-line  | 3 | S31858      | TEKK CYLINDER 25ML 6/PK                         | \$56.60  | \$169.80   |
| On-line  | 3 | S31860      | TEKK CYLINDER 100ML 6/PK                        | \$78.25  | \$234.75   |
| <b>Optics Bench</b>                                    |   |             |   |          |            |
| 681  | 8 | S42301      | STUDENT OPTICS BENCH                            | \$25.40  | \$203.20   |
| <b>Broken Glass Disposal Container</b>                 |   |             |   |          |            |
| On-line  | 1 | 11-394-450  | SCIENCEWARE* WASTE DISPOSAL CAN                 | \$49.69  | \$49.69    |
| <b>Radiation Monitor</b>                               |   |             |   |          |            |
| 721  | 1 | S440973     | SMALL GEIGER TUBE                               | \$258.00 | \$258.00   |
| 720  | 1 | S52008      | CLOUD CHAMBER                                   | \$95.55  | \$95.55    |
| <b>Caliper</b>   |   |             |   |          |            |
| 44   | 8 | S90187B     | FSE* TRACEABLE* DIGITAL CARBON FIBER CALIPER    | \$33.25  | \$266.00   |
| <b>Optics Kit</b>                                      |   |             |   |          |            |
| 683  | 8 | S65110      | ECONOMY OPTIC KIT                               | \$32.35  | \$258.80   |
| <b>Pulley with Table Clamp</b>                         |   |             |   |          |            |
| 629  | 1 | S96179      | ADVANCED PULLEY DEMONSTRATION SET               | \$496.00 | \$496.00   |
| 629  | 8 | S99358      | PULLEY DEMONSTRATION SET FOR STUDENTS           | \$262.00 | \$2,096.00 |
| <b>Stroboscope</b>                                     |   |             |   |          |            |
| 690  | 1 | S99631      | PORTABLE STROBOSCOPE                            | \$400.00 | \$400.00   |
| <b>Ripple Tank with Wave Generator</b>                 |   |             |   |          |            |
| 675  | 1 | S99347      | RIPPLE TANK (can be used on overhead projector) | \$414.00 | \$414.00   |
| <b>Motion Detectors - REFER TO NeuLog Data Package</b> |   |             |   |          |            |
| <b>Photogates</b>                                      |   |             |   |          |            |
| 7  | 8 | S98243-25ND | NeuLog* PHOTOGATE SENSOR                        | \$75.00  | \$600.00   |
| <b>Inclined Plane</b>                                  |   |             |   |          |            |
| 625  | 8 | S40900      | DELUXE INCLINED PLANE WITH PULLEY               | \$99.75  | \$798.00   |
| <b>Electroscope</b>                                    |   |             |   |          |            |
| 703  | 8 | S96207      | PITH ELECTROSCOPE                               | \$12.00  | \$96.00    |
| 703  | 8 | S43262      | FLASK-TYPE STUDENT ELECTROSCOPE                 | \$20.25  | \$162.00   |
| 704  | 3 | S90716      | ELECTROSTATIC LAB                               | \$234.00 | \$702.00   |
| <b>Ballistic Pendulum</b>                              |   |             |   |          |            |
| 643  | 1 | S97562      | 3B SCIENTIFIC* ECONOMY BALLISTIC PENDULUM       | \$101.00 | \$101.00   |
| <b>Micrometer</b>                                      |   |             |   |          |            |
| 45   | 8 | S90549      | MICROMETER                                      | \$20.75  | \$166.00   |