Attachment F (Physics)

RETAIN ORIGINAL ON SITE

2011-2012 Williams Settlement Recommended Materials List

**Physics**

The essential items needed to teach UC “D” Laboratory Science Physics 1,2 is based on an understanding that a minimum of 20% of the instructional minutes must be dedicated to hands-on laboratory experiences. These laboratory experiences may be drawn directly from the currently adopted *Hewitt* *Conceptual Physics* *Lab Guide*, the District Core Labs developed and revised through the District professional learning community Course-Alike meetings, or through site-based curriculum development efforts.

To determine whether or not your school site meets Williams Settlement sufficiency, **please perform an inventory of the listed laboratory items and indicate quantities of each item available at your site.**

The core lab materials lists are provided as a reference, but do not define the *specific* required materials since individual school sites may be able to offer an equivalent experience for the topic with different materials.

The following items are also listed on the Sample Physics by Core Lab document for your reference.

**BASIC and CONSUMABLE LAB EQUIPMENT**

ALL of the following materials should be available at the school site for Physics teachers, although items may be shared between teachers. Sites may replace or substitute materials with comparable items.

**Recommended site quantities:** Demo=1-2 items; Group=10 items; Class=40 items

| **Quantity (see note)** | **Description** | **Used in Core Lab #** | **Amount Available****(@ your site)** |
| --- | --- | --- | --- |
| Group or Demo | “Picket Fence” for Photogate | 2 |  |
| Group | 90° Angle Clamp | 1, 9 |  |
| Group | Aluminum Rails (1.25m 5/8”, 0.5m ½”) | 1 |  |
| Group | Ammeter | 13, 14 |  |
| Group | Baby Food or other Small Jar | 10 |  |
| Group | Ball Bearing | 1 |  |
| Group | Balloons (2) | 11 |  |
| Group | Bathroom Scales (2) | 6 |  |
| Group | Batteries D Cell 1.5V (2) + battery holder  | 14 12, 13, 15 |  |
| Group | Beaker 400 mL | 10 |  |
| Group | Bocce Ball | 2 |  |
| Group | C Clamp | 1, 2, 6 , 10 |  |
| Group | Carbon Discs for Ticker Tape | 1, 2 |  |
| Group | Card stock | 9 |  |
| Group | Circuitvision or equivalent computer application or applet  | 14 |  |
| Group | Clip Board | 5 |  |
| Group | Coffee Filters | 2 |  |
| Group | Computer with internet connectivity | 8, 10, 11, 16, 17 |  |
| Group | Computer with Probeware Software | 1, 2, 4, 6 , 7, 9, 10 |  |
| Group | Constant curvature refractive medium (plexiglass, glass or plastic tray) | 18 |  |
| Group | Cow magnet | 16 |  |
| Group | Diaper | 7 |  |
| Group | Drinking Straws (4) | 3 |  |
| Group | Electronic Balance 500g (±0.1g) | 4, 9 |  |
| Group | Erlenmeyer Flask 250 mL | 10 |  |
| ***Quantity (see note)*** | ***Description*** | ***Used in Core Lab #*** | ***Amount Available******(@ your site)*** |
| *Group* | *Force Probes for Computer (2)* | *6, 7* |  |
| *Group* | *Galvanometer* | *16* |  |
| *Group* | *Hex nuts 1” (5) or (5) 10-50g masses* | *4,9* |  |
| *Group* | *Hot Plate* | *10* |  |
| *Group* | *Hover Puck (battery powered)* | *3* |  |
| *Group* | *Ice* | *10* |  |
| *Group* | *Iron filings* | *15* |  |
| *Group* | *Iron nail* | *15* |  |
| *Group* | *Large Syringe (60 cc)* | *10* |  |

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| --- | --- | --- | --- |
| *Group* | *Large Test Tube*  | *10* |  |
| *Group* | *Lead Shot (BB’s) 250g* | *10* |  |
| *Group* | *Light source (collimated) or laser with glass rod segment for dispersion* | *18* |  |
| *Group* | *Low Friction Dynamics Carts (2)* | *3, 4, 8, 9* |  |
| *Group* | *Low Friction Pulleys (2)* | *3, 4, 9* |  |
| *Group* | *Low Friction Track 1.5-2m for Low Friction Carts* | *3, 4, 8, 9*  |  |
| *Group* | *Marbles (2)* | *3, 9* |  |
| *Group* | *Mass 100g or equivalent*  | *7* |  |
| *Group* | *Mass 20g or equivalent* | *10* |  |
| *Group* | *Masses 200g (2)* | *6* |  |
| *Group* | *Masses 500g or equivalent (6)* | *5* |  |
| *Group* | *Matches* | *10* |  |
| *Group* | *Metric Rulers (2)* | *9* |  |
| *Group* | *Motion Detector for Computer* | *1, 2* |  |
| *Group* | *Needle compass* | *15* |  |
| *Demo* | *Newton’s Cradle* | *8* |  |
| *Group* | *Nichrome wire (22 gauge or thinner)* | *14* |  |
| *Class* | *Notebook Paper* | *15* |  |
| *Group* | *Notebook Paper (2)* | *7* |  |
| *Class* | *Paper clips* | *4, 9, 10, 15* |  |
| *Group* | *Paper Lunch Bag* | *7* |  |
| *Group* | *Paper or Styrofoam cups (8)* | *7, 17* |  |
| *Group* | *Paper Towel* | *7* |  |
| *Group* | *Peanut* | *10* |  |
| *Class* | *Pennies or other objects to be used as markers (8)* | *12* |  |
| *Group* | *Photogate* | *2, 4, 9* |  |
| *Group* | *Photogate interface for computer* | *4* |  |
| *Group* | *Plane mirror - small* | *18* |  |
| *Group* | *Pole-labeled bar magnets (2)* | *15* |  |
| *Group* | *Raw Egg* | *7* |  |
| *Group* | *Ring Stand* | *1, 6, 9, 10* |  |
| *Group* | *Rubber Bands* | *6, 7* |  |
| *Group* | *Rubber Stopper single hole to fit test tube* | *10* |  |
| *Group* | *Screw Base for 3 V Light Bulbs (4)* | *13, 14* |  |
| *Group* | *Screw Base Light Bulbs 3V (4)* | *12, 13, 14* |  |
| **Quantity (see note)** | **Description** | **Used in Core Lab #** | **Amount Available****(@ your site)** |
| Group | Sealable Sandwich Bags (2) | 7 |  |
| Group | Shoes (student supplied) | 5 |  |
| Group | Slinky spring | 17 |  |
| Group | Spring Scales (2) | 3 |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Group | Spring Scales 5N- 10N | 6 |  |
| Group | Stopwatch | 1, 17 |  |
| Group | Temperature Probes for Computer (2) | 10 |  |
| Group | Test Tube | 10 |  |
| Group | Test Tube Clamps for Ring Stand (2) | 10 |  |
| Group | Thread or braided nylon fishing line 20# | 4, 7, 11 |  |
| Group | Three-finger or equivalent clamp  | 1, 9 |  |
| Group | Ticker Tape | 1, 2 |  |
| Group | Ticker Tape Machine | 1, 2 |  |
| Group | Transparent Tape | 9, 11 |  |
| Group | USB interfaces for computer probeware (2) | 1, 2, 4, 6, 7, 9, 10 |  |
| Group | Variable DC Power Supply | 14 |  |
| Demo | Video Encyclopedia of Physics Demonstrations or equivalent demonstrations | 15 |  |
| Group | Voltmeter | 14 |  |
| Group | Water | 10 |  |
| Group | Wave demonstration spring – thin - 2m | 17 |  |
| Group | Wax Paper | 11 |  |
| Group | Wire leads with alligator clip ends (8) | 16, 13, 14 |  |
| Group | Wire segment (solid copper best) 10 cm | 12 |  |
| Group | Wire Segment 1 m for current induction | 15, 16 |  |

RETAIN ORIGINAL ON SITE

**SCHOOL:** **DATE:**

**PRINCIPAL:** **SIGNATURE:**