2011-2012 Williams Settlement Recommended Materials List

**Earth Science**

The essential items needed to teach UC “G” Laboratory Science Earth Science 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 *Holt Earth Science* *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 Earth Science by Core Lab document for your reference.

**BASIC LABORATORY EQUIPMENT**

ALL of the following materials should be available at the school site for Earth Science 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 #** | **# Available** |
| --- | --- | --- | --- |
| Group | ANEMOMETER | 24 |  |
| Class | APRON | 2, 3, 7, 8, 9, 19 – 22, 26 |  |
| Group | AQUARIUM, 10-15 gallons, with lid | 18 |  |
| Group | BAKING PAN, clear glass, 33x23x5 cm | 20 |  |
| Group | BALL | 11 |  |
| Group | BEAKER, 250 mL | 19 |  |
| Group | BEAKER, 600-1000 mL | 9 |  |
| TWO Groups | BOWLS, cereal | 14, 21, 22, 26 |  |
| Group | BOX, transparent, shoe-box style | 1, 11, 14 |  |
| Demo | BUNSEN BURNER, with rubber tubing | 2, 9 |  |
| Demo | CHAIR, on wheels | 3 |  |
| Group | COMPASS, drawing | 12 |  |
| Group | CONTAINER, plastic, with lids | 14 |  |
| Group | CONVECTION TUBE | 9 |  |
| Group | DEW POINT, humidity instrument | 15 |  |
| Group | DISSECTING MICROSCOPE | 5 |  |
| Demo | EMISSIONS TUBES, 3 different gases | 2 |  |
| Demo | FIELD GUIDES, several different kinds | 24 |  |
| Group | GLOVES, heat resistant | 19 |  |
| Group | GRADUATED CYLINDER, 100 mL | 19 |  |
| Group | HAND LENS | 7, 24 |  |
| Group | HARD OBJECTS (i.e. shell, key, paper clip, coin) | 26 |  |
| Group | HOT PLATE | 9, 19 |  |
| Group | HYGROMETER, hair and electric | 15 |  |
| Group | ICE CUBE TRAYS | 20 |  |
| Class | ICE PACKS, small | 18 |  |
| Group | JAR, glass, with lid | 13 |  |
| Group | LAMP, desk or heat lamp, adjustable, with 100W incandescent bulb | 13, 18, 21, 22 |  |
| Group | LANDFORM, plastic | 1 |  |
| Group | LENS, concave (or convex), for eyepiece | 4 |  |
| Group | LENS, convex, for objective | 4 |  |
| Group | LIGHT METER | 24 |  |
| Group | MATCHES, box, or Bunsen burner striker | 2, 9, 18 |  |
| Group | MEASURING CUP SET | 14 |  |
| Group | MEASURING SPOON SET | 19 |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Group | MEDICINE DROPPER | 7 |  |
| Group | METAL, thin sheets | 13, 17 |  |
| Group | METER STICK | 6, 21, 22 |  |
| Group | MIRROR | 14 |  |
| Group | NEODYMIUM MAGNET | 5 |  |
| Demo | PENCIL, grease, red and yellow, box | 19 |  |
| Demo | PIN, straight, dressmaker’s, box | 4 |  |
| Group | PSYCHROMETER, sling | 15 |  |
| Group | PVC PIPE, cut into pieces | 5 |  |
| Group | RAIN GAUGE | 24 |  |
| Group | ROCK SAMPLES | 7 |  |
| Group | ROLLING PIN, or large wooden dowel | 8 |  |
| Group | RUBBER, thin sheets, beige or tan color | 17 |  |
| Class | SAFETY GOGGLES | 2 – 4; 7 – 10; 13; 14; 17 – 22; 24 |  |
| Demo | SAFETY GOGGLES SANITATION CABINET | 2 – 4; 7 – 10; 13; 14; 17 – 22; 24 |  |
| Demo | SAND PAPER, pack | 17 |  |
| TWO Groups | SODA CANS, empty | 14 |  |
| Group | SPECTROPSCOPE, diffraction grating | 2 |  |
| Demo | SPECTRUM TUBE POWER SUPPLY | 2 |  |
| Demo | STAMPS, small, various types | 25 |  |
| Demo | TEST TUBES, box | 3 |  |
| Group | THERMOMETER, dry bulb | 24 |  |
| Class | THERMOMETER, Celsius, non-mercury | 13, 14, 18, 19, 21, 22, 24 |  |
| Group | THERMOMETER, wet bulb | 24 |  |
| Demo | TURNTABLE, or Lazy Susan | 18 |  |
| Group | TWEEZERS | 26 |  |
| Group | WIND VANE | 24 |  |
| Group | WOOD, thin sheets | 17 |  |

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

**CONSUMABLE MATERIALS**

The following materials are *consumable* and should be reviewed annually and maintained in sufficient quantities to support *all* sections of Earth Science for the academic year. 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)** |
| --- | --- | --- | --- |
| Demo | ADDING MACHINE PAPER, large roll | 6 |  |
| Demo | ALUMINUM FOIL, large roll | 4, 14 |  |
| Demo | BABY OIL, large bottle | 3 |  |
| Demo | BAGS, plastic, disposable, Ziploc, large box | 5, 11, 14 |  |
| Group | CARDBOARD, or foam core board, large pieces | 1, 14, 17 |  |
| Demo | CLAY, modeling, several pounds of FOUR different colors | 8, 13, 19, 26 |  |
| Demo | DISTILLED WATER. large container | 19 |  |
| Demo | EGGS, large flat | 10 |  |
| Demo | ELEMENTS, chemicals, FOUR types, powdered | 2 |  |
| Demo | FLEXIBLE BOUNDARY MATERIAL (i.e. candy bars, clay, crackers) | 9 |  |
| Demo | FOAM CUPS, large box | 14 |  |
| Demo | FOAM INSULATING OR PACKING MATERIAL, roll or box | 14 |  |
| Group | FOOD, small pieces (i.e. marshmallows, apple slices, bell peppers) | 14 |  |
| Demo | FOOD COLORING, four colors, large bottles | 9, 20 |  |
| Demo | GLYCERIN, bottle | 3 |  |
| Demo | HYDROCHLORIC ACID, bottle, 10% dilute | 7 |  |
| Demo | INCENSE STICKS, box | 18 |  |
| Demo | KNIFE, plastic, disposable, box | 8, 10, 11 |  |
| Demo | NEWSPAPER | 11, 26 |  |
| Demo | PAINT, 1 can tempura each of: black flat finish, white, light blue | 13, 14, 17 |  |
| Demo | PAPER, soft carbon, pack | 26 |  |
| Demo | PLASTER OF PARIS, large container | 26 |  |
| Demo | PLASTIC WRAP, LARGE ROLL | 14 |  |
| Demo | PLATE, paper, box | 10 |  |
| Demo | SAND, large bag | 11 |  |
| Demo | SOIL, large bag | 21, 22 |  |
| Demo | SPOON, plastic, disposable, box | 26 |  |
| Demo | STRAWS, box | 14, 19 |  |
| Demo | TABLE SALT, large box | 19 |  |
| Demo | WAX PAPER, large roll | 26 |  |

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

**OTHER RECOMMENDED EQUIPMENT**

**The following items are NOT used in the Earth Science Core Labs but are necessary for demos, storage, lab prep, etc.** These materials are recommended but not essential, and should be purchased by the site over time in order to build a basic Earth Science program.

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

|  |  |  |
| --- | --- | --- |
| **Quantity (see note)** | **Description** | **Amount Available****(@ your site)** |
| Demo | ABSORBENT CLOTH |  |
| Group | ACTIVATED CHARCOAL, for filter |  |
| Demo | ALTITUDE FINDER, PLASTIC, METRIC |  |
| Group | BAKING SODA, small |  |
| Group | BAROMETER, 3-scale aneroid |  |
| Group | BEAKER, 100 mL |  |
| Group | BRICK |  |
| Demo | BRUSH, beaker and bottle type |  |
| Group | CALIPER, Vernier, metric, plastic |  |
| Group | CLOTH FABRIC SQUARES, multi-colors |  |
| Group | CLOTH TIES, ~50 cm long |  |
| Demo | CLOUD CHART |  |
| Demo | CLOUD FORMATION KIT |  |
| Group | Common Igneous Rocks |  |
| Group | Common Metamorphic Rocks |  |
| Group | Common Sedimentary Rocks |  |
| Group | COMPASS, magnetic |  |
| Demo | CONTOUR MODEL KIT |  |
| Demo | CONDUCTION KIT |  |
| Demo | COPPER WIRE, 18 gauge, 4 oz. |  |
| Group | CORK |  |
| Demo | CORIOLIS KIT |  |
| Group | CULTURE DISH, 3.5” diameter |  |
| Demo | Density Current Tank |  |
| Demo | DETERGENT |  |
| Demo | DIATOMACEOUS EARTH, or clay-based cat litter, bag |  |
| Demo | Electronic Balance, 200g |  |
| Group | FABRIC SAMPLES, cotton, wool, polyester |  |
| Group | FANS, small, desk |  |
| Group | FLASHLIGHT, plastic |  |
| Group | FLASKS, Erlenmeyer |  |
| Group | FOSSIL ASSORTMENT |  |
| Demo | FREEZER |  |
| Demo | GAUZE, squares or roll |  |
| Group | GEIGER COUNTER |  |
| Group | GEOLOGIC TIME POSTER |  |
| Group | GLASS PLATES, 3x3”, flint glass |  |

**OTHER RECOMMENDED EQUIPMENT (continued):**

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

|  |  |  |
| --- | --- | --- |
| **Quantity (see note)** | **Description** | **Amount Available****(@ your site)** |
| Group | GLOBES, each: traditional; physical with oceans (raised relief); transparent celestial, write-on |  |
| Demo | GLOVES, box, disposable |  |
| Demo | GRADUATED CYLINDER, 1000 mL |  |
| Group | LIMEWATER |  |
| Group | Luster Collection |  |
| Group | MAGNET, steel bar with poles marked |  |
| Demo | MEASURING TAPE, metric |  |
| Demo | METAL DENSITY SAMPLES KIT; also IRONWOOD & PUMICE |  |
| Demo | MICROSCOPE SLIDE, glass, box |  |
| Demo | Mid-Atlantic Ridge Chart |  |
| Demo | MINERAL IDENTIFICATION AND STUDY KIT |  |
| Group | Mohs Hardness Collection |  |
| Demo | NAILS, box |  |
| Demo | Ocean Floor Chart |  |
| Group | PAN, black shallow, and 40x30x10 cm |  |
| Demo | pH, NITROGEN, PHOSPHATE, POTASSIUM KIT |  |
| Demo | pH TEST STRIPS, 0-14 range, box or roll |  |
| Demo | PLANETARIUM, Trippensee, hand driven illuminated |  |
| Demo | PLASTIC CUPS, small, box |  |
| Group | Plastic Jar, 250 mL |  |
| Group | Plastic Jar, 125 mL |  |
| Group | Plastic Jar, 60 mL |  |
| Demo | PLASTIC TUB |  |
| Demo | PLATE TECTONICS MODEL / MOVEMENT ACTIVITY KIT |  |
| Demo | PLANETARY MODEL KITS |  |
| Demo | POWDERED CLAY, bag |  |
| Group | PROTRACTOR, 6”, 180 degrees |  |
| Demo | RIBBON, red and blue, rolls |  |
| Group | RING STANDS AND SUPPORT RODS |  |
| Demo | RIPPLE TANK, with wave generator |  |
| Demo | ROPE, thin, 2-5 m |  |
| Group | RUBBER STOPPERS, with and without hole |  |
| Demo | SAWDUST, bag |  |
| Group | SCALES, triple beam |  |
| Group | SCOOPULA, stainless steel |  |
| Group | Screen Sieve and Set |  |
| Demo | Sedimentator |  |
| Demo | SHAKE TABLE |  |
| Group | SLINKY |  |
| Demo | SOIL TEXTURE KIT |  |

**OTHER RECOMMENDED EQUIPMENT (continued):**

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

|  |  |  |
| --- | --- | --- |
| **Quantity (see note)** | **Description** | **Amount Available****(@ your site)** |
| Group | Solar System Chart |  |
| Group | STAR AND PLANET FINDER |  |
| Group | STEREOMICROSCOPE, dual illumination, 2X and 4X,  |  |
| Group | STOPWATCH, electronic, LED |  |
| Group | Streak Plate, 5 cm x 5 cm |  |
| Demo | STREAM TABLE |  |
| Demo | SUN MODEL |  |
| Demo | SUNSCREEN, bottle |  |
| Group | SYRINGES |  |
| Demo | TELESCOPE, Celestron NewStar 130 SLT |  |
| Group | TEST TUBE HOLDER, opens to 25 mm |  |
| Group | TEST TUBE RACK, polyethelene, holds 12 test tubes, 5 pins |  |
| Demo | THREAD |  |
| Demo | TOOTHPICKS, large box |  |
| Demo | TOPOGRAPHIC MAPS |  |
| Demo | TORNADO DEMO TUBE |  |
| Group | UTILITY CLAMPS |  |
| Demo | UV LAMP KIT |  |
| Group | UV SENSITIVE PAPER |  |
| Demo | VINEGAR, largest size |  |
| Group | WASH BOTTLE, polyethelene, 250 mL, narrow mouth |  |
| Group | WATCH GLASS, flint glass, 3” |  |
| Group | WEATHER MONITOR STATION/PROBEWARE |  |
| Demo | WIRE CUTTERS |  |
| Group | WOOD BLOCKS |  |
| Group | WORLD MAPS |  |

RETAIN ORIGINAL ON SITE

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

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