

Supply List for Course 1 of the Weather and Climate Class for Teachers  
July, 2014

Most of the write-ups will list a website or store where we found the hard to get parts, but our sources change each year. This is the most updated list as of July 11<sup>th</sup>, 2014. We've added a few of the activities that we didn't get to in the course, as well.

**Wednesday AM Activities**

**What is energy?**

1 balloon car • 1 pull-back race car • 1 popper • 1 groan tube • 1 physics flyer

[www.orientaltrading.com](http://www.orientaltrading.com)

**Can energy be created or destroyed?**

1 solar cell night light device with 1 AA rechargeable battery: Big Lots, Kmart, Target, Walmart (Watch for summer sales)

One AA battery analog clock: [www.sierratradingpost.com](http://www.sierratradingpost.com)

1 stopwatch: [www.windycitynovelties.com](http://www.windycitynovelties.com)

One AA battery incandescent flashlight: [www.orientaltrading.com](http://www.orientaltrading.com)

One AA battery fan: [www.amazon.com](http://www.amazon.com)

**How much energy does it take to climb a set of stairs?**

Scale: Walmart

Ruler: Walmart

M&Ms: Walmart

**What's beyond the rainbow?**

Rainbow glasses: [www.rainbowsymphony.com](http://www.rainbowsymphony.com) [www.3dglasesonline.com](http://www.3dglasesonline.com)

**Can you see beyond the rainbow?**

Pyramex welding goggles with stationary lenses [www.fullsource.com](http://www.fullsource.com)

IR plastic or gels for goggles: The IR plastic is listed in the write-up.

More affordable is to order two theatre gels (Palace Blue and Blood Red) and

layer them together in the goggles [www.stagespot.com](http://www.stagespot.com)

Ceramic IR bulbs (Zoo Med ReptiCare) [www.amazon.com](http://www.amazon.com)

**Would you get a sunburn on Mars?**

Ultraviolet detecting beads—UV Beads: [www.teachersource.com](http://www.teachersource.com)

**What's the difference between red light and blue light?**

Phosphorescent paper: [www.papilio.com](http://www.papilio.com)

One red LED light & One blue LED light [www.amazon.com](http://www.amazon.com)

Finger lights: [http://www.amazon.com/Laser-Finger-Lights-80-LED/dp/B008JE5KZY/ref=sr\\_1\\_2?ie=UTF8&qid=1405437026&sr=8-2&keywords=finger+lights](http://www.amazon.com/Laser-Finger-Lights-80-LED/dp/B008JE5KZY/ref=sr_1_2?ie=UTF8&qid=1405437026&sr=8-2&keywords=finger+lights)

**Why do the solar insects work under incandescent bulbs, but not the fluorescent bulbs?**

Incandescent floodlight bulb and compact fluorescent floodlight bulb: Walmart

Gooseneck desk lamp: Target

Solar grasshoppers: [www.dx.com](http://www.dx.com)

### Wednesday PM Activities

#### **Can you “see” thermal radiation?**

Mug warmers: Walmart, Target, Hobby Lobby  
Blindfolds

#### **What do “infrared thermometers” measure?**

One Infrared thermometer: <http://www.sainsonic.com/sainsonic-dt-8580-infrared-thermometer-gun-orange-gray-wide-temperature-range-58-f-to-1076-f.html>

#### **What makes a gas a greenhouse gas?**

Party hats: [www.partycity.com](http://www.partycity.com)  
Homemade arrow for direction of the electric field

#### **What is the “greenhouse effect”?**

One Infrared thermometer: <http://www.sainsonic.com/sainsonic-dt-8580-infrared-thermometer-gun-orange-gray-wide-temperature-range-58-f-to-1076-f.html>

#### **How does the atmosphere keep the earth warmer?**

Four identical pieces of glass (You can use glass from the same size picture frames or have it cut at a glass store. Spray one side of one glass plate with flat black paint.)  
4 clear rubber feet on the bottom of each piece of glass as spacers [www.uline.com](http://www.uline.com)  
Infrared thermometer: <http://www.sainsonic.com/sainsonic-dt-8580-infrared-thermometer-gun-orange-gray-wide-temperature-range-58-f-to-1076-f.html>  
Gooseneck desk lamp with incandescent flood type bulb: Target

#### **How does the earth cool itself off?**

World map placemat [www.ouraycolorado.com](http://www.ouraycolorado.com)  
Infrared thermometer: <http://www.sainsonic.com/sainsonic-dt-8580-infrared-thermometer-gun-orange-gray-wide-temperature-range-58-f-to-1076-f.html>

#### **Why does it get colder on clear nights than on cloudy nights?**

Infrared thermometer: <http://www.sainsonic.com/sainsonic-dt-8580-infrared-thermometer-gun-orange-gray-wide-temperature-range-58-f-to-1076-f.html>

### Thursday AM Activities

#### **Does air weigh anything?**

2 Fizzkeepers for 2 liter bottles [www.jokari.com](http://www.jokari.com)  
Balance

#### **How can you demonstrate the weight of the air?**

Weather Balloon [http://www.amazon.com/dia-Professional-Weather-Balloon-150g/dp/B0081UGJ9W/ref=sr\\_1\\_2?ie=UTF8&qid=1405437114&sr=8-2&keywords=weather+balloon](http://www.amazon.com/dia-Professional-Weather-Balloon-150g/dp/B0081UGJ9W/ref=sr_1_2?ie=UTF8&qid=1405437114&sr=8-2&keywords=weather+balloon)  
Fog machine [www.amazon.com](http://www.amazon.com)  
Air blower <http://www.airhead.com/watersports/pumps/120/air-pig-120v-pump.html>  
Giant Beach Ball (5 foot beach ball better for classes)  
<http://www.beachballs.com/signature-special-edition-3-0-beach-balls-5-ft-signature-series-se-beach-balls.asp>

#### **What causes pressure?**

Rope: Ace Hardware, Home Depot, Lowes

**Can you “see” air pressure?**

1 pump cap (Fizzkeeper) [www.jokari.com](http://www.jokari.com)

**If hot air rises, why is it cold in the mountains?**

Tire valve to fit in cap of bottle (Tire stores or Ace Hardware)

Bike pump with pressure gauge [www.amazon.com](http://www.amazon.com)

LCD aquarium thermometer [www.petco.com](http://www.petco.com)

**How can gravity make things go up? (Solar hot air balloon)**

Cheap, thin (.3 to .5 mil, at most!) black plastic garbage bags: Ace Hardware

**Why do thunderstorms tend to form in the afternoon? (Part 1 – Tipping point)**

2” PVC rounded pipe cap: Home Depot or Lowes

**Why do thunderstorms tend to form in the afternoon? (Part 2 – Be the parcel)**

Clipboards

Notepad and marker

**Thursday PM Activities**

**What is the opposite of sweating?**

2 hot plates [www.amazon.com](http://www.amazon.com)

2 cooking pots (one with water, one without)

2 large metal spoons

2 miniature chocolate bars

**How can freezing make something warmer?**

Sodium acetate reusable heat pack [www.branders.com](http://www.branders.com)

**Do plants “sweat”?**

Glass aquarium: Walmart

**Why are clouds white?**

One ultrasonic mister [www.amazon.com](http://www.amazon.com)

**Why can warm air “hold” more moisture than cold air?**

Hand boiler toy [www.officeplayground.com](http://www.officeplayground.com)

Dice: Dollar Store – Various sites for math manipulatives

**Do cities affect the weather?**

Tire valves to fit in the cap of 2 liter bottles (Tire stores or Ace Hardware)

Air freshener (Glade Powder Fresh) (Target, Grocery stores)

Bike pump with pressure gauge [www.amazon.com](http://www.amazon.com)

**Friday AM Activities**

**Where are the forests? Where are the deserts?**

One large inflatable Earth [www.herffjones.com](http://www.herffjones.com)

**Why is it tropical in the tropics?**

Solar grasshoppers: [www.dx.com](http://www.dx.com)

Gooseneck lamp: Target

**How do you make something move in a circle? (Still being written)**

Air powered pucks: [www.amazon.com](http://www.amazon.com)

Inflatable Hammers: [www.windycitynovelties.com](http://www.windycitynovelties.com)

**Why do hurricanes go counterclockwise in the northern hemisphere?**

Foam ball: Target, Toys 'R' Us, Walmart

**How does the spin of the earth lead to the spin of a storm? (Spin Tank)**

Round stepping stone pan [www.hobbylobby.com](http://www.hobbylobby.com) (Paint the inside white.)

Ceramic IR bulbs (Zoo Med ReptiCare) [www.amazon.com](http://www.amazon.com)

Model display turntable that rotates at approximately 3 rpm. [www.hobbytown.com](http://www.hobbytown.com)

14 ounce deep round steel tin cans [www.papermart.com](http://www.papermart.com)

**Friday PM Activities**

**Wedges Light** – Full game can be viewed at: <http://cmi.princeton.edu/wedges/>