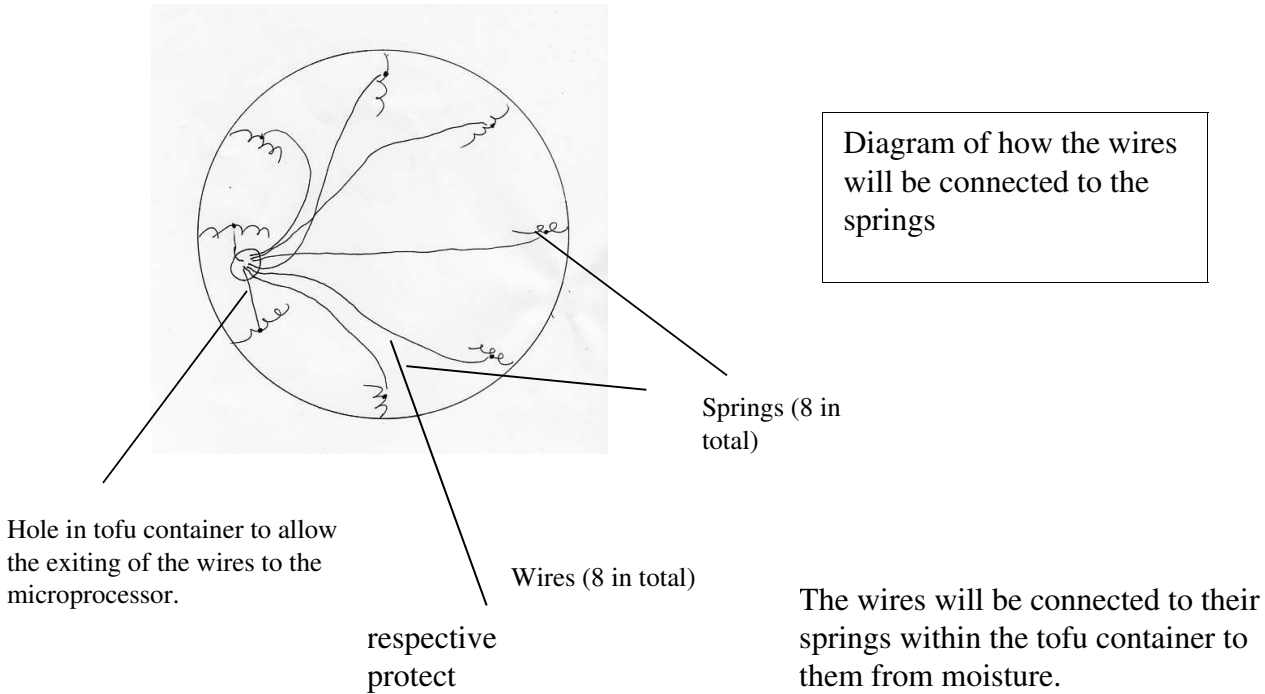


**Description:**

This device measures the wind direction using a wind sock. As the wind sock moves in the wind, it rotates a wooden dowel. The wooden dowel is attached to a metal plate that touches springs which represent a compass orientation. The contact between the spring and the metal plate completes a circuit, letting the microprocessor know which spring was touched. There will be a resistor fitted to the device on the wire from the ball bearing to the metal plate to prevent short-circuiting. The metal plate is connected to the power source as shown in the above diagram 1. The device, excepting the wind sock will be housed within a tofu container to protect it from moisture. The wooden dowel will be

allowed to traverse due to the use of ball bearings as shown in the above diagrams. The springs will be wired as such:



### Assembly details

All of the external wires will be insulated- outdoor type wires- the type found on exterior Christmas lights to protect the wires. The wire and resistor on the wooden dowel itself will be glued on using superglue. A slot will be cut in the dowel to allow the mounting of the metal plate. The plate will be inserted in the slot and will then be secured using metal screws and super glue. The wooden dowels will be joined together using nails. The wind sock will be attached to the dowel using string, which will be threaded and tied through two holes in the dowel. The springs will be attached to the tofu container using hot glue. The wires attached to the ball bearings, metal plate and springs will be soldered on.

### Statistics

#### Cost/parts list

Part	Cost
Tofu container	Free
Wooden dowels	\$2.00-3.00
Springs	Free (salvage from pens)
Metal plate	Free

Wires	\$0.50-1.00
Solder	Free
Super glue and hot glue	\$0.25
Metal screws and nails	\$0.25
string	Free
Wind sock	Free
Ball bearings	\$5.00-10.00
Resistor	\$0.25
<b>Total</b>	<b>\$8.25-14.75</b>

**Accuracy:** This device can measure the wind direction as either N, NW, W, SW, S, SE, E or NE.

**Power demand:** This device would use little power, as all we need is sufficient power to pass through the resistor installed on this device, which will have a low resistance and complete a circuit when the spring touches the metal plate.

**Feasibility/ Simplicity:** All of the required parts are readily available and the design is straightforward. All of the components, except the resistor can be found in the group member's houses. The resistor is available through the class parts catalogue.

**Durability:** Tofu containers are very durable and the wooden dowels should be sufficiently strong to survive strong winds. The device is very waterproof and thus the internal devices should be able to function for a long time.