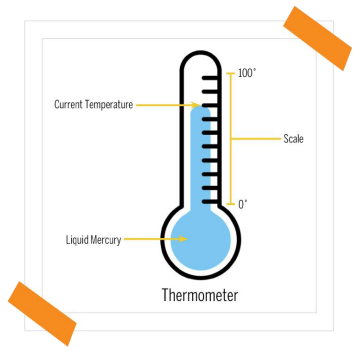
HOW TO BUILD A THERMOMETER

AN ANEMOMETER IS USED TO MEASURE WIND SPEED. WHILE THERE ARE MANY DIFFERENT TYPES , USED FOR DIFFERENT ENVIRONMENTS, SITUATIONS, AND MEASUREMENTS (LIKE LASER AND ULTRASONIC), TODAY WE WILL BE MAKING A FUN AND SIMPLE ANENOMETER., WHICH IS USUALLY CALLED A "ROBINSON ANENOMETER". IT WILL USE THE CUPS TO CATCH THE WIND, CAUSING THE DEVICE TO SPIN. THE AMOUNT OF TIMES IT SPINS IN A GIVEN AMOUNT OF TIME, WILL TELL YOU HOW FAST THE WIND IS MOVING. IN THIS EXPERIMENT, WE'LL LEARN HOW TO MAKE AND CALIBRATE IT.

MATERIALS:

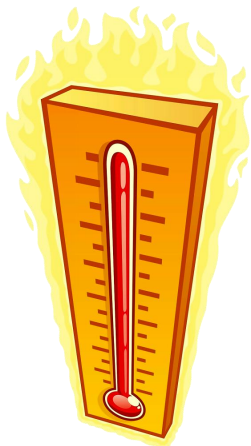
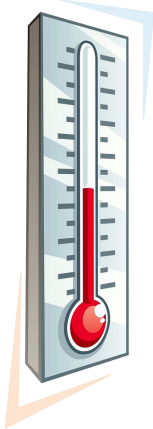
- WATER
- PLAY DOUGH
- CLEAR STRAW
- GLASS BOTTLE
- MEASURING CUP
- COOKING OIL (ANY TYPE)
- RED FOOD DYE (OPTIONAL)
- RUBBING ALCOHOL (OPTIONAL)



USING THE RUBBING ALCOHOL IN COMBINATION WITH THE WATER, WILL HELP THE LIQUID RESPOND FASTER TO TEMPERATURE CHANGES. THE OPTIONAL RED FOOD DYE WILL HELP SEE THE TEMPERATURE CHANGES BETTER.

PROCEDURE:

1. FILL THE GLASS BOTTLE TO THE TOP WITH WATER – OPTIONAL: DUMP 1/2 OF THE WATER AND FILL W/ ALCOHOL.
2. OPTIONAL :ADD RED FOOD DYE TO MIXTURE IN BOTTLE.
3. ADD MIXTURE TO YOUR BOTTLE CAREFULLY.
4. MAKE SURE LIQUID IS TO THE TOP OF BOTTLE.
5. FLATTEN A BIG PIECE OF PAY DOUGH AND RUN THE STRAW TRHOUGH IT. REMOVE THE STRAW FROM PLAYDOUGH, AND SECURE A FIRM SEAL AROUND THE BOTTLE OPENING. IF YOUR BATTLE HAS A LID, ADD SOME PLAYDOUGH AROUND THE STRAW TO SEAL IT AND PREVENT AIR FROM GETTING IN, SINCE IT WILL AFFECT THE ACCURACY OF THE THERMOMETER, AS WELL AS CAUSE LIQUID TO SLOWLY EVAPORATE.
6. USE EYEDROPPER TO FILL ABOUT 2 INCHES OF THE STRAW WITH EXTRA LIQUID MIXTURE, LET IT SIT FOR 1 1/2 HOURS, AND CHECK TO SEE IF TI LIQUID IS STILL IN THE STRAW. IF STRAW IS LOW OR EMPTY, REFILL AND WAIT ANOTHER HOUR.
7. ONCE YOU ARE SURE THAT THE LIQUID WILL STAY IN THE STRAW, ADD A DROP OF ALCHOLOL TO IT. THIS WILL PREVENT THE LIQUID FROM EVAPORATING BY CREATING A SEAL FOR YOUR THERMOMETER.

THE CONDITION OF THE STRAW WILL HELP YOU TELL WHEN A ROOM IS HOTTER OR COLDER THAN NORMAL. IF YOU WANT TO CALIBRATE YOUR THERMOMETER, YOU CAN PAIR IT SIDE BY SIDE WITH A REAL THERMOMETER, AND PLACE THEM IN DIFFERENT PLACES AROUND YOUR HOUSE. AS YOU DO SO, USE A THIN MARKER TO SHOW THE DIFFERENT TEMPERATURES.

ETXRA: TO MAKE IT EVEN MORE EXCITING, USE DIFFERENT COLOURED MARKERS AND RECORD YOUR FNDINGS ON A NOTECARD TO USE IT FOR REFERENCE. FOR EXAMPLE RED:5OF, GREEN 8OF ETC.