UNINCORPORATED HEAT DEMOS

DEMONSTRATIONS OF SEVERAL THERMAL PHENOMENA

Name:_____ Per:_____ Date:_____

1. THERMOSCOPES

a. Draw the Galilean thermoscope and label its parts.

b. Prediction. What will happen if the Galilean thermoscope is heated? Justify your prediction.

c. Observation. What happened when the thermoscope was heated and why did this happen?

d. Why is this device called a thermo*scope* instead of a thermo*meter?*

e. Draw and label the second device.

f. What does it do when its temperature is increased?

g. The second device is a ___thermoscope ___thermometer because...

2. BIMETALLIC STRIPS

a. What is a bimetallic strip?

b. Which metal is known on the bimetallic strip used in class?

c. What will the bimetallic strip do when heated if the unknown metal is
   i. aluminum.

   ii. steel.

d. What is the unknown metal?

e. Why do bimetallic strips exhibit this behavior?

f. What is a practical use of a bimetallic strip?

3. THE CANDLE

a. How does a candle work?
   i. Draw a detailed, labeled diagram of a candle in operation.

ii. What "elements" are required for the flame? Where can each be found and how do they get to the flame?

iii. What is the role of convection in sustaining the flame?

b. How would a candle work in an orbiting space shuttle?
i. Discuss the shape and duration of the flame.

ii. How can the flame be sustained?

4. FLAMEPROOF PAPER
a. What three "elements" are required for the regular paper to burn and where can each one be found?

b. Why does the flameproof paper not burn? Which element or elements listed above are eliminated? Include an explanatory illustration in your response.

5. MIRACLE THAW™
a. Describe the arrangement of the demonstration.

b. What is the result of the demonstration?

c. How does the competition between the Styrofoam plate and the Miracle Thaw turn out and what does the result mean?

d. How does the competition between the aluminum-covered Miracle Thaw and the regular Miracle Thaw turn out and what does the result mean?

e. Draw a diagram showing the side by side by side race between the three ice cube melters, showing which one is winning and which is losing.

6. BUBBLE BALL
A glowing-hot brass ball is immersed into hot (60 °C – 70 °C) water.
a. Draw and label an illustration of the phenomenon. Also describe it in words.

b. Name and describe the phenomenon that best explains this observation.