

Name _____ Teacher _____ Date _____

Activity 4.2: Grading the Observing Ethanol Burning Worksheet

*This worksheet has “grading” in the title because at this point, students can be held accountable for correct answers. Level 4 (correct) responses to the questions are in **blue bold italics** below. There are also comments about common Level 2 and Level 3 responses to help you with grading and making decisions about what to emphasize in future lessons.*

Red italics suggest ways to grade student responses by giving them points for correct or partially correct answers. There are 12 points total on this worksheet.

Use this worksheet to complete the Ethanol Burning investigation and to record your observations, measurements, and class results.

A. Steps in the investigation: *Check the box as you complete each step.*

1. Add ethanol to an open glass Petri dish.
2. Turn on a digital scale so that it reads “0” g. Place the Petri dish with ethanol on the scale. Record the mass of the ethanol and Petri dish in Part C.
3. Fill another Petri dish with fresh blue BTB. Record the time and color of the BTB in Part C.
4. Place the Petri dish with BTB next to the Petri dish with ethanol. Be sure the large container lined fits on top of the two dishes.
5. Light the ethanol with the lighter. Then, immediately put the large container on top of both the glass Petri dish with burning ethanol and the Petri dish of BTB. Observe: the flame will go out quickly inside the container
6. After about 20 minutes, remove the container. Observe the color of the BTB. Record this in Part C.
7. Place the Petri dish with ethanol on the digital scale and record the mass in Part C.

B. Observations during the investigation: *Record your macroscopic-scale observations below. Use drawings and/or words.*

Observations will vary from group to group, but every student should record observations from his or her group.

2 points for detailed observations that include drawings and/or words

C. Measurements during the investigation: Record your measurements in the table. Results will vary from group to group, but every student should record results from his or her group.

6 points total for chart

Measurements Before	Measurements After
Mass of Petri dish with ethanol before Time: _____ Mass: _____ g <i>1 point for time and mass</i>	Mass of Petri dish with ethanol after Time: _____ Mass: _____ g Change in mass: _____ g <i>1 point for time and mass</i> <i>1 point for correctly calculated change in mass</i>
Color of BTB before Time: _____ Color of BTB: _____ <i>1 point for time and color</i>	Color of BTB after Time: _____ Color of BTB: _____ Change in color: _____ <i>1 point for time and color</i> <i>1 point for change in color</i>

D. Results for the whole class: Make notes about how the observations and measurements of other groups compared to yours. Describe patterns in your class data.

1. Changes in mass of the Petri dish with ethanol:

Student answers should reflect patterns in class data. Generally mass should go down.

2 points

2. Changes in color of BTB:

Student answers should reflect patterns in class data. Generally the BTB should turn yellow.

2 points
