

Name _____
Period _____
Entry # _____

The Candle Model

Problem: How could a burning candle be a model for what happens in your body cells?

Prediction: A burning candle and my body cells both

Materials:

Procedure:

1. Using the graduated cylinder, measure 15 ml of Bromothymol Blue (BTB) solution. Pour 15 ml of BTB solution into the beaker.
2. Take off the metal base from the candle and turn in over. Place it into the beaker and place the candle on top. (See Figure 12.1 p.100)
3. After the teacher lights the candle, record the color of the BTB and any changes that you observe as the candle is burning on the data table.
4. After the candle has been burning for at least one minute, set a square piece of foil over the top of the beaker. Fold the edges of the foil down over the sides of the beaker.
5. **Do not remove** the foil! Swirl the solution gently around the bottom of the beaker for 1 minute, as shown in Figure 12.2 p.101.
6. Record on the data table the color of the BTB and any changes that you observed after putting the foil on the beaker.

Data

What to Record	After the Candle Is Lit	After the Beaker is Covered and Swirled
Color of BTB		
Other Changes (Observe the flame, candle and inside of beaker)		

Conclusion (Answer with complete sentences except *)

1. *List the two ingredients that are involved in the burning of the candle.
2. What happened to the flame when you covered the beaker with foil? Why?
3. *What can you see in the beaker when the flame goes out? _____
4. *What gas remains in the beaker when the flame has gone out?

5. What do you think caused the color change in the BTB after the beaker was covered with foil?
6. *BTB is an indicator for what substance? _____
7. *Name two other indicators that we have used in this class and what they were used for:
8. Read p. 99 'Oxidation-One Process, Two Forms'. What happens during oxidation?
9. *Name the form of oxidation that occurs with the burning of a candle:

10. *Cellular Respiration is a form of oxidation that occurs in your body cells. What did you see as the candle burned that would be absent in cellular respiration?

11. *What ingredient of combustion do you think is also an ingredient for cellular respiration? _____
12. What is the answer to the Investigative Question? Refer to your data in your answer.