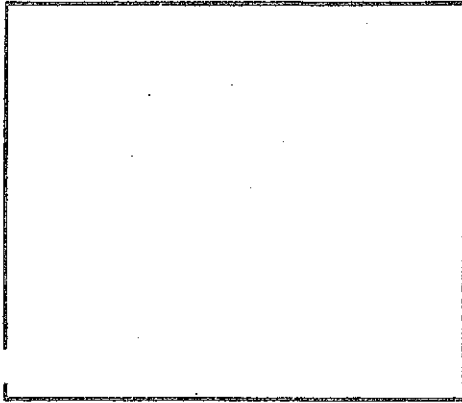


Learning Set 3.1 What are Thermal Energy and Chemical Energy?

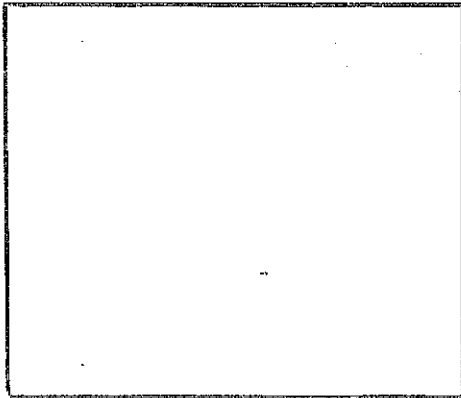
DO NOT SNAP OR BEND THE SMALL METAL PIECE IN THE HAND WARMER UNTIL DIRECTED!

Drawing #1 (Drawing of hand warmer BEFORE It had been activated.)



Record your observations below:

Drawing #2 (Drawing of hand warmer AFTER It has been activated.)



Record your observations below:

Analyze Your Results

1. What changes did you observe in the hand warmer after it was activated?

2. What do you think caused the changes in temperature? Think about the events that occurred immediately after it was activated to help you justify your answers?

3. List three types of energy can you identify in the hand warmers? What are the indicators of each type? Can you think of any factors that might affect the amount of energy?

Energy Type	Indicators	Factors that that effect amount of energy

4. Compare and contrast the operations of a hand warmer to the operation of a pop-up toaster. How are they alike? How are they different?

They are alike because:

They are different because:

5. Can you think of other ways to generate these types of energy?
