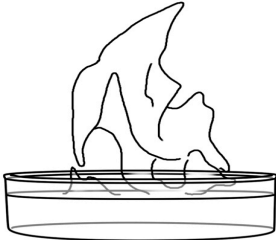


## 4.1 Predictions and Planning Tool: Investigating Ethanol Burning

### A: Your ideas about what happens when ethanol burns

	<p>Matter Movement: Draw and label arrows showing your ideas about materials moving into and out of the flame.</p> <p>Matter Change: Explain your ideas about chemical changes that are taking place inside the flame.</p> <p><i>Remember:</i></p> <ul style="list-style-type: none"> <li>• <i>Materials that go into the flame are reactants in chemical changes</i></li> <li>• <i>Materials that come out of the flame are products of chemical changes</i></li> </ul> <p>Energy Change: Explain your ideas about energy changes that are taking place inside the flame.</p>
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### B. Your ideas and predictions about using investigation tools for evidence about the Three Questions

- How can you use three tools to detect or measure matter and energy movement and changes?
  - A digital balance that can measure matter movement by detecting very small changes in mass.
  - BTB that can detect matter change by changing color if there is more carbon dioxide in the air.
  - Your senses: You can observe what happens before, during, and after the flame burns.

Question	Which tool(s) (circle)?	What data will your tool(s) collect and how will the data help answer the question?	What do you predict will happen? What will you observe?
How will you measure and observe <u>movement of matter</u> ?	Scale BTB Senses		
How will you detect and record <u>matter changes</u> ?	Scale BTB Senses		
How will you detect and observe <u>energy changes</u> ?	Scale BTB Senses		

### C. Your plans for the investigation

Use the back of this page or a separate worksheet to draw and explain your ideas about how to set up the investigation and use the tools.