

Lesson 3: Do Fat and Soap Melt at Different Temperatures?

Activity 3.1

Purpose

In this investigation you will measure the melting points of fat and soap to give you more information about the two substances.

+ Safety

Wear goggles during this investigation. Do not touch the top of the hot plates or the beaker. Touching these surfaces could cause severe burns.

Procedure

1. Examine your lab set up. The test tubes of soap and fat should be secured by the ring stand over a 500 ml beaker full of water resting on a hot plate.
2. Check that the fat and soap are submerged in the water.
3. Insert thermometers in the soap and fat test tubes.
4. Record the **starting temperatures** of the soap and fat in the data table.
5. Put on your goggles. Turn the hotplate on to medium-high and watch each beaker carefully. Start the stopwatch.
6. Watch each beaker carefully and record the temperature every 30 seconds. In the second data table record the temperature at which each substance begins to melt.
7. When the water begins to boil, record the final temperature of each substance and turn the burner off.
8. Remove the thermometers and clean them off.

Your Progress:

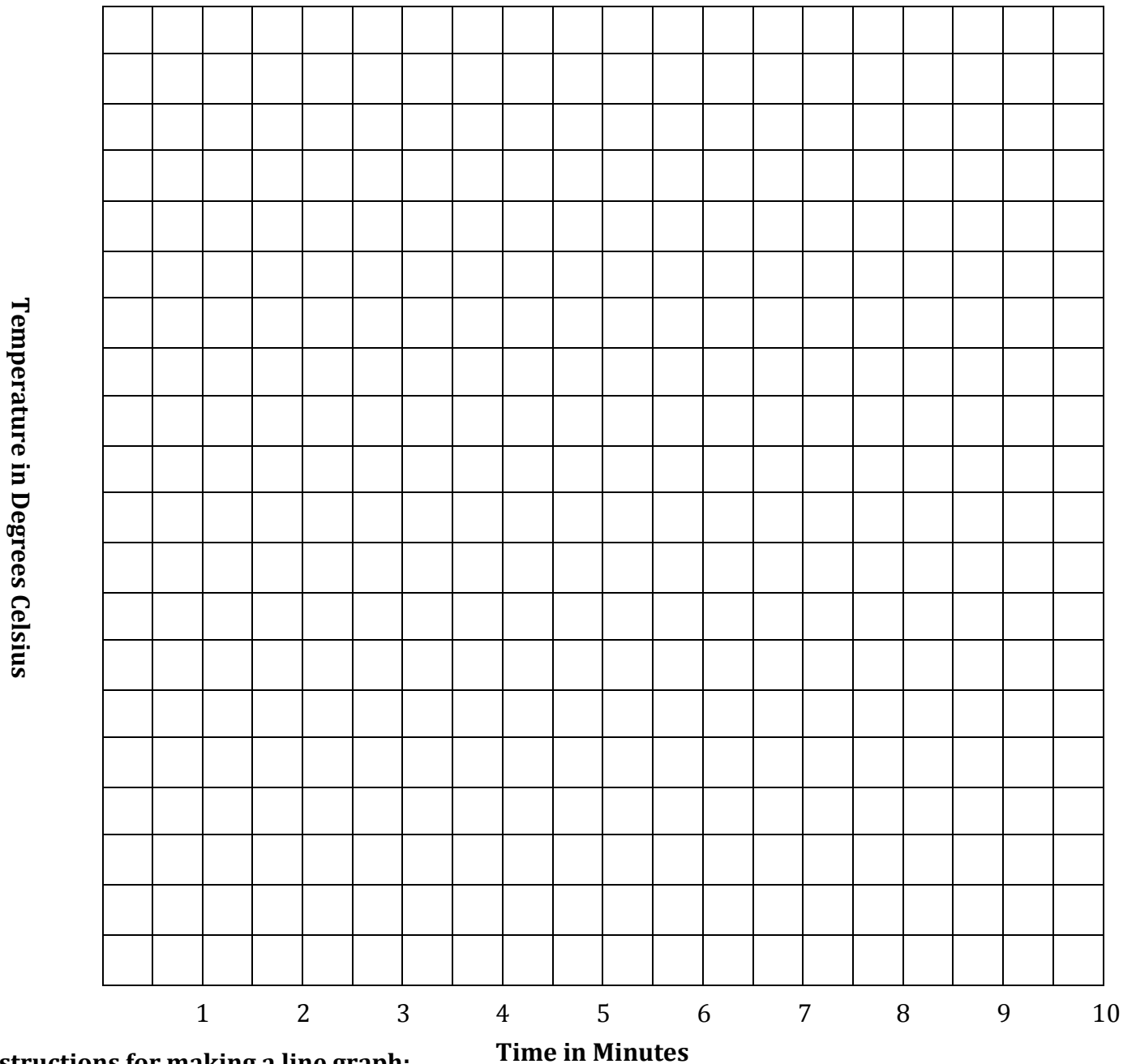
- Mastery
- Proficient
- Developing
- Beginning

Data

Time	Temperature of Fat	Temperature of Soap
Start		
0:30		
1:00		
1:30		
2:00		
2:30		
3:00		
3:30		
4:00		
4:30		
5:00		
5:30		
6:00		
6:30		
7:00		
7:30		
8:00		
8:30		
9:00		
9:30		
10:00		

	Temperature of Fat	Temperature of Soap
Melting Point:		

Temperature Change of Fat and Soap Over Time



Instructions for making a line graph:

1. Number the temperature scale on the y axis so that the lowest and highest temperatures fit and are spread evenly across the graph.
2. Choose a different color for each substance and label the key with that color.
3. Using the color you chose, plot each data point carefully on the graph.
4. Connect the data points with a smooth line or curve.

Key:

<input type="checkbox"/>	Temperature of Fat
<input type="checkbox"/>	Temperature of Soap

Conclusion

Based on the data from this experiment are soap and fat the same or different substance?

What specific evidence from your data tables can you use to back your claim?
