

Lesson Topic	Heating and Cooling Materials Hot and Cold Temperatures	Date	Tuesday, January 18, 2022,
Subject/Grade Level	Grade 2 Science	Time	2:25-3:10 45 minutes

Outcomes from Alberta Program of Studies	
General Learning Outcomes	<b>2–9</b> Recognize the effects of heating and cooling and identify methods for heating and cooling.
Specific Learning Outcomes	<b>SLE3:</b> Describe how heating and cooling materials can often change them; e.g. melting and freezing, cooking, burning.
Learning Objectives	
Students will know: how heating and cooling methods change objects.	
Students will be able to: describe the effects of heating and cooling.	
Prior to the lesson I need to:	Materials/ Equipment and Resources
Get chocolates and Ziploc baggies (Tannis bought)	Chocolate bars Ziploc Baggies My Changing Chocolate activity page

Time	Introduction
5-10 min	<ul style="list-style-type: none"> <li>● Have student meet at carpet</li> <li>● Ask students what happens when we put water in something cold? <ul style="list-style-type: none"> <li>○ Does it freeze? Immediately, about how long?</li> <li>○ Remind students that water turns from a liquid to solid when freezing</li> </ul> </li> <li>● Ask students what happens if we put an ice cube in the sun? <ul style="list-style-type: none"> <li>○ Does it melt? Immediately, about how long?</li> </ul> </li> <li>● Draw two circles on the Hot and Cold Anchor Chart</li> <li>● Write melting in one and freezing in the other</li> <li>● Brainstorm with students different objects that melt or freeze <ul style="list-style-type: none"> <li>○ Melting i.e. butter, ice, snow, candles, popsicles, chocolate, crayons, cheese</li> <li>○ Freezing i.e. water, food, pop, any liquid.</li> </ul> </li> </ul>

Time	Body (Learning Activities)
20-25 min	<ul style="list-style-type: none"> <li>● Have students grab their science folder and turn to My Changing Chocolate</li> <li>● Read the question aloud: “What will happen when you heat up chocolate?”</li> <li>● Brainstorm as a class. Write sentences on board for students to copy. <ul style="list-style-type: none"> <li>○ The chocolate will melt.</li> </ul> </li> <li>● Distribute chocolate and bags to each student</li> <li>● Have students put chocolate into bags <ul style="list-style-type: none"> <li>○ Have them write their names on their bags</li> </ul> </li> <li>● Have students put their bags into crockpot</li> <li>● Leave in the crockpot for 10-15 min <ul style="list-style-type: none"> <li>○ Have students draw a picture of what the chocolate looked like before we melted it while waiting for</li> <li>○ Brainstorm words together that describe the chocolate before it was heated.</li> </ul> </li> <li>● Get chocolate from the crockpot</li> <li>● Have students draw their results in their book.</li> <li>● Brainstorm words as a class to describe chocolate after melting</li> </ul>
Time	Closure
5-10 min	<ul style="list-style-type: none"> <li>● Write a conclusion as a class. <ul style="list-style-type: none"> <li>○ Ask the students what happened when we heated our chocolate</li> <li>○ Ask one or two students for the answer, ask the class if anyone thinks something different.</li> <li>○ Have students fill in the sentence</li> <li>○ When you heat up chocolate, <b>the chocolate melts.</b></li> </ul> </li> <li>● Have students each share their favourite chocolate bar</li> </ul>

Sponge Activity (Activities)	SPLAT→Name game to help me remember names, and students to end the day on a fun note.
------------------------------	---

**Assessment:**

- Formative Assessment→Students are able to make a prediction before our experiment and reflect on that hypothesis when forming a conclusion. Students should be able to describe the melting effect of objects that occurs when heat is applied.

**Differentiation:**

- Reading aloud the instruction and reviewing the activity with the class beforehand is an extra step to ensure that all students are aware of what the activity is asking them to do. Students might not be able to read one of the words in the directions, so reviewing it with them allows me to make sure that students understand what they are doing before I send them off.

- Write on the board what the class decides for the answer so that all students have accessibility to the correct answer. Writing it on the board also helps students practice identifying letters while providing the correct spelling of words.
- Completing this activity as a class provides students with guidance and structure throughout the activity ensuring focus and cooperation in reporting results.

**Resources:**

- Science (elementary) A.1(1996) - *education | Alberta.ca. education.Alberta.ca. (n.d.). Retrieved January 3, 2022, from <https://education.alberta.ca/media/159711/elemsci.pdf>*
- La belle Coccinelle & Let's Talk Teaching. *Hot & Cold: A Complete Unit About Temperature (in Celsius).*