Temperature

1. Make copies of Student Resource Page 1.1, *Vocabulary*, and distribute to students. Discuss the definitions with students as they come up throughout the section.

2. Ask students: **Do you think it’s hot in here? Warm? Cold?** Like any group of individuals, students will probably disagree on how it feels in the room. Tell students that they are about to compare how something else feels: Hot, Warm, or Cold.

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**Can You Tell the Temperature?**

**20 minutes**  
**Whole Class**

**Objectives**  
- Students compare how warm or cold water feels to their hands.

**Materials**  
*For the class*  
3 buckets  
* ice  
* room-temperature water  

*For the teacher*  
1 hot pot  
1 ice chest  
4 *index cards or paper slips*  

*Not provided in the kit*

**Inquiry Focus**  
- Compare
1. Students compare cold and room-temperature water.
In small groups, have students take turns putting one index finger into Bucket 3 for 5 seconds. Ask: **How does Bucket 3 feel?** *(cold)* Place the Cold label in front of Bucket 3. Then have them quickly put the same finger into Bucket 2. Ask: **How does the water in Bucket 2 feel?** *(warm)* Place the Warm label in front of Bucket 2.

2. Students compare very warm and room-temperature water.
Next, have each student put a finger from their other hand into Bucket 1 for 5 seconds. Ask how the water feels *(hot)* and place the Hot label in front of Bucket 1. Tell students to quickly put the same finger into Bucket 2. Ask: **How does the water in Bucket 2 feel now?** *(cool)* Place the Cool label in front of Bucket 2.

3. Students discuss temperature.
Point out that the water in Bucket 2 feels warm or cool depending on how your finger felt. Discuss the fact that people do not make good thermometers.

4. Students apply the concept.
Have students put their hands on their foreheads. Ask: **What is the temperature of your forehead?** *(Answers will vary depending on the temperature of students’ hands.)* If your hand was cold, how would your forehead feel? *(warm)* If your hand was hot, how would your forehead feel? *(cool)*

**Assessment**
Ask: You dip your toe in a tub of water and the water feels very warm. Is your toe warmer or cooler than the water in the tub? *(cooler)*

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**In Advance**
- Heat water in the hot pot until it is very warm. See Safety for Step 2. You may use hot tap water instead.
- Put three buckets numbered 1, 2, 3 on a large table. Add the very warm water to Bucket 1. Add room-temperature water to Bucket 2. Add tap water and ice to Bucket 3. Remove ice after about 10 minutes.
- Write four labels on index cards or slips of paper: Hot, Cold, Warm, Cool.

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**Safety**

**Step 2:** Never give students water above 120°F. Check the water temperature with the teacher’s thermometer *(°F/°C)* to be sure students cannot get burned.