



Lesson Plan: Investigating Materials Used in Schools

Level: Early Stage 1

Syllabus link: STe-4MW-ST “identifies that objects are made of materials that have observable properties”

LESSON OUTLINE

Students will identify types of materials found around their school and use hand-held digital thermometers to measure the temperature of the materials.

Resources/Materials:

- Worksheet (included)
- PowerPoint presentation available on SWAQ website
- Hand-held digital thermometers
- Clipboard



Description of activity:

In this lesson, students will work in pairs or small groups to identify types of materials found around their school and use hand-held digital thermometers to measure the temperature of the materials.

At the beginning of the lesson, use the PowerPoint presentation to familiarise students with the different types of materials. Explain that they will be going outside the classroom and will have to look for these materials around the school (you may want to restrict them to a certain area to make supervision easier).

Before taking your students outside, get them to practice using the hand-held digital thermometers in the classroom. They can measure each other’s temperatures by pointing the thermometer at the person’s forehead. Check that each group is able to successfully do this before taking them outside. You can also ask your students to predict which materials they think will be the hottest, and which will be the coldest.

Once outside, students will be trying to identify the materials and complete the worksheet. They will use a tick/cross to indicate whether or not they are able to identify each material. When a material is identified, they should then touch it to observe and record how it feels. For example, they may write “warm” or “cool” (a word cloud has been included at the end of the worksheet from which they can copy the words). In addition to this, they will point the hand-held digital thermometer at the material to measure its temperature, and then record this measurement in the final column of the worksheet. If they cannot see a material, they do not need to complete the final two columns of the worksheet for that material.

Once back in the classroom, conclude the lesson by asking students to share their results with the class. You may like to ask pairs/groups to tell you about their results, or you may also go through the list of materials and ask for a show of hands for whoever was able to identify each material. Discuss as a class and compare results about which material was the hottest/coolest.

As an extension, students can also compare their temperature measures to the air temperature as measured by the SWAQ station (and recorded on the SWAQ website at www.swaq.org.au/explore).

Things to note:

This activity involves students touching the materials to see how they feel. On hot days, certain materials (such as metal) can become very hot. If you are doing this activity on a particularly hot day, make sure that you test (by touching) the temperatures of the materials before doing the activity. If they are too hot, you should postpone the activity for a cooler day to ensure the safety of the students is maintained.

This activity can also be modified to exclude measuring the temperatures of the materials if you do not have access to any hand-held digital thermometers. In this case, simply delete the final column of the worksheet and allow students to make observations through touch only.

Additional Resources:

- ▶ A video demonstrating the use of infra-red thermometers on playground equipment (note that temperatures are measured in Fahrenheit).

<https://www.youtube.com/watch?v=DVLo6QDLkJA>

Key Questions to Ask

What was the hottest material?





What was the coolest material?

Were your predictions correct?


Were you surprised by the temperature/feel of any of the materials?

What material did you see being used the most around the school?

(Extension): How did the temperature of the materials compare with the air temperature?

Name of Material	What does it LOOK like?	Can you SEE it? Yes/No.	How does it FEEL? Touch it.	How HOT is it? Measure it.
Brick				
Wood				
Glass				
Concrete				

Grass				
Metal				
Dirt				
Sand				

Gravel				
Astroturf	