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One Touchy Topic

TARGETING STUDENTS' SENSE OF TOUCH THROUGH MULTIPLE ACTIVITIES

Photo by Marco Michelini

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ABSTRACT: This article provides exploratory experiences for First Grade students to refine their understanding of their sense of touch and develop their observation skills. The activities scaffold from open-ended exploratory investigations to application activities in which students categorize items using their understanding of touch. The activities also make explicit links to help students develop language and writing skills. *This activity promotes National Science Education Content Standards A and B, and Iowa Teaching Standards 1, 2, 3, 4, 5, and 6.*

Young children bubble with curiosity about their surroundings, which provides a natural platform for their science education. Because of this, their science learning should be rich with experiences. Through these experiences we help students understand both the content and process of science. This activity was designed for our First Grade students, but could be modified for other grades. During our unit on the five senses we have students explore various items through their sense of touch. Throughout the lesson students are encouraged to refine and reflect upon their touch-based observations.

Activating Prior Knowledge

We start the learning process by posing to students the question

- How do we learn about the world around us?

We begin with this open-ended question to gauge students' thinking and to encourage students to think about how we learn new things. After asking the question, we have students share ideas with a partner before sharing with the whole group. Having each student share with a peer before

sharing with the whole class helps students gain confidence in their ideas and feel more comfortable sharing with the class. This partner sharing also provides us with an opportunity to assess students' knowledge as we walk around the classroom and listen to student discussions. Once students have finished their small group discussions, we come together as a whole class to discuss their ideas.

Students' ideas about how we learn about the world around us can vary greatly. Oftentimes students note that they can read, watch, listen, or ask a teacher or parent. While these are all valid approaches, we want to focus students in on the sense of touch. If necessary, we ask questions such as

- What are ways that we can learn about something if it is in front of you?
- How would you determine whether something is soft or rough?
- How could you identify an object in front of you if it is very dark?
- How is holding something in your hands different than just looking at it?

Exploration of Our Sense of Touch

As students begin to consider the benefits of using touch as a way to learn about things, we use three activities to investigate the sense of touch. These activities are completed over multiple days to provide students ample opportunity to gain a wide array of experiences using touch. Students work in table groups of 3 or 4 to complete each activity. One of the main purposes of each activity is to help students become more proficient in their ability to describe and categorize objects using their sense of touch.

Activity #1 - Mystery Bags

This activity helps students develop descriptive words to explain what they feel in each of several mystery bags. Through our guidance students focus on describing, rather than naming, the items in the bags. Additionally, students are encouraged to refine their descriptions.

FIGURE 1

Materials List for Mystery Bags Activity

- brown paper bags
- a variety of objects that portray a range of textures, such as:
 - cotton balls
 - fur
 - wood coins
 - sponge
 - grass
 - leather
 - feather
 - koosh ball

We introduce the exploration by having two volunteers come to the front of the classroom. One student places their hand in a pan of cool water; the other places their hand in a pan of warm water. Ask the volunteers to describe what they feel. If a volunteer stops at one or two descriptions, ask how else he or she could describe what they feel. To help the class make connections to their classmates' descriptions we ask the class,

- How do the testers know how to describe the water?
- What are other words that likely describe what our volunteer feels?
- What questions do you have for the testers?

After students have discussed the warm/cold water demonstration we ask,

- How do we use our sense of touch to explore the world around us?

Students typically note that we can feel things with our hands and feet or that we can touch things to feel if they are hot and cold. Given the previous demonstration, these responses are not surprising. To explore student thinking more deeply we ask

- What else can you find out through touch?

We accept several students answers before saying,

Our next activity will require you to explore what is in a mystery bag by using **ONLY** your sense of touch. During this activity there will be no peeking! When I bring a mystery bag to your table, each person must feel what's inside and describe what you feel to your table partners. Then you will write in your science notebook some describing words about what you felt in your bag. Afterwards you will draw a picture of what you think is inside the bag.

Each group is given one bag. The bag is passed around to each group member and everyone within the group feels what is inside the mystery bag. Because we know students will be curious about the objects in the bags, we do not expect them to be silent. Yet, we do want students to spend some time thinking about how to describe their object. To accomplish this goal we have students individually write words that describe what they felt and draw a picture in their science notebooks of what they think is inside the bag. After everyone has finished writing describing words and drawing their pictures, bags are rotated so that each group receives a new bag. The process is repeated until all mystery bags have been explored by each group.

As students work on discussing and making notes about the bags, we walk around listening to students' conversations and asking students questions about their drawings or writing. For example, we might point to a student's drawing

and ask why they drew a particular feature, then ask what descriptive word they wrote that fits with that part of their drawing. If the student has not written a word for a particular part of the drawing, we ask what word might be used. To push students' thinking about their descriptive words we might ask a table group what word they think best describes their object. If students say something vague such as "soft" we ask what the term means or how someone else might misunderstand their view of soft. After these prompts students typically compare the softness to other well-known objects such as blankets or cotton balls.

Through this exploration students are isolating their sense of touch and reflecting on how they can refine their observations and descriptions. While students have many experiences with touch, they typically have not reflected much on the sense. This concrete experience provides students a way to explore their sense of touch as well as build vocabulary used to describe objects using their sense of touch.

Activity #2 - Texture

Students have now completed an activity using unseen objects, and we now focus students' thinking on the texture of surfaces. Students often initially struggle with this activity because they want to use their sense of sight to describe the items. However, we take steps to help them focus on the sense of touch.

FIGURE 2
Materials List for Texture Activity

- a variety of objects that portray a range of textures (i.e., rough, smooth, soft, hard, etc.), such as:
 - marble
 - sock
 - rubber duck
 - rubber ball
 - toothbrush
 - balloon
 - wooden clothes pin
 - sponge
 - plastic drinking straw
 - plastic egg
 - eraser
 - plastic fruit

To begin this activity, we hold up two objects (such as an apple and an orange) with different textures, and ask

- What can you tell me about the feel of these two objects?

If students struggle, we pass the objects around to students and ask them to describe how the object feels. We now introduce the word texture to students and explain that how something feels when we run our fingers over it is the texture of the object.

We hand out an object to each student and ask each student to think about how they would describe the texture of their object. We may even encourage students to write about the

texture in their science notebooks. After students have had an opportunity to make observations about their object, have several students present to the class what they found out about their objects through the use of their sense of touch. After some sharing we have students arrange into groups of 4-6 to discuss which objects felt similar. Then have students sort their objects into categories based upon how they feel (e.g., rough, smooth, hard, soft).

After students have discussed and sorted the objects they next write a few sentences using the word texture. For example, Item X has a soft texture. We use this as a tool to check and reinforce understanding of the term. Having students write in their science notebook immediately after an experience helps them reflect on their learning and actively assimilate and/or accommodate both the term and concept of the word texture.

Activity #3 - Sorting

Now that students have several experiences on which they can draw related to their sense of touch, we want for them to begin applying this knowledge. We now have students use their sense of touch to organize different objects.

When we ask students how to organize things they often note that we can arrange things into groups. When students note grouping, we ask,

- What are some ways to make groups?
- What might be a way that someone makes groups when he/she goes to the grocery store?
- What kinds of groups do you see in a library?

After generating some initial ideas we ask students how we could use our sense of touch to group things. We encourage students to think about this to themselves, and then we introduce their task. Students each receive several items that they will sort into 2 or 3 groups using observations based on touch. While students sort their objects, we check in with students to discuss how they created their groups. These discussions give us a good idea as to what students are thinking regarding their sense of touch. We also have students write a few sentences and/or draw pictures in their science notebook to explain their groups.

FIGURE 3
Materials List for Sorting Activity

- feathers
- buttons
- plastic eyeballs
- wood chips
- cotton balls
- felt
- glue
- pencils
- paper

Conclusion

This series of activities helps First Grade students reflect meaningfully on both their sense of touch and how to more effectively describe their observations. By starting with concrete, open-ended activities and moving students toward categorizing and applying their prior experience we can increase students' understanding of touch-based observation as well as their critical thinking skills.

Importantly, we are not simply providing activities for students. As students explore, we encourage specific reflective practices that help students make connections rather than simply tell them our intended outcomes. While this is not easy, encouraging students to think, rather than be told, has tremendous implications for their development as students.

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