Science K-2: Soft and Smooth, Rough and Bumpy

Intended Audience: Students with significant cognitive disabilities

# **Standards:**

SC.K.L.14.1 Recognize the five senses and related body parts.

SC.K.N.1.4 Observe and create a visual representation of an object which included its major features.

SC.K.N.1.5 Recognize that learning can come from careful observation.

SC.1.L.14.1 Make observations of living things and their environment using the five senses.

SC.1.N.1.2 Using the five senses as tools, make careful observations, describing objects in terms of number, shape, texture, size, weight, color, and motion, and compare their observations with others.

SC.2.L.14.1 Distinguish human body parts (brain, heart, lungs, stomach, muscles, and skeleton) and their basic function.

SC.2.N.1.2 Compare the observations made by different groups using the same tools.

# **Learning Objectives:**

1. Students will identify touch as one of the five senses.

2. Students will use their sense of touch to make observations about different materials.

3. Students will sort/categorize items that have different textures and physical characteristics.

# **Vocabulary:**

1. touch: to handle or feel and object, person, or animal

2. nerves: carry information to your brain

3. texture: the appearance or feel of something

4. observation: to pay attention to something specific

5. sort/categorize: to group items according to certain characteristics (i.e. the way they feel)

**Materials:**

* Book: Soft and Smooth, Rough and Bumpy: A Book about Touch by Dana Meachen Rau, illus. by Rick Peterson
* Book available as an online read aloud: [Smooth and Soft, Rough and Bumpy: A Book about Touch](https://www.youtube.com/watch?v=o-6UES5tgLc)
* Prepare prior to instruction: visual supports for objects and other academic content
* 5 objects that are soft and smooth
* 5 objects that are rough and bumpy with a lot of texture
* 2 bags to put objects in ( one for each texture type)
* 2 hula hoops or large circles on the floor as an organizer
* Paper graphic organizer (optional)

# **Essential/Guiding Questions:**

1. Why is your sense of touch important?

2. What does your sense of touch help you know?

3. How does our brain and skin/fingertips help with our sense of touch?

**Lesson Presentation:**

**Activating Prior Knowledge:**

1. Show students 3 or 4 objects that all have different textures.

2. Pass each object around to each student. Ask: What do you Feel? How can you feel that?

3. Tell students that the objects, people, and animals that they touch all have different textures that help us identify what each is.

**Modeled instruction:**

1. Show students the book, Soft and Smooth, Rough and Bumpy: A Book About Touch or show the book online: [Smooth and Soft, Rough and Bumpy: A Book about Touch](https://www.youtube.com/watch?v=o-6UES5tgLc).

2. Preview vocabulary with visual supports.

3. Take a picture walk through the book prior to reading, asking students what they see on each page. Identify vocabulary and review meaning.

4. Read the book and tell students that they will experience some objects with different textures later in the lesson.

**Supported/Guided instruction:**

1. Review vocabulary and reread Soft and Smooth, Rough and Bumpy.

2. Show students each of the 10 objects. Ask about the texture: which is soft and smooth and which is rough and bumpy? Pass objects around to whole group or in small groups.

3. Chart each object on a two-column chart labeled soft and rough. Provide a visual for each by drawing a picture or using an image associated with each object paired with the word.

4. Ask students what organ in the body helps the skin determine the feel and texture? Refer back to the book or video, if necessary.

**Independent Work:**

1. Prior to independent work, place all of the soft objects in one covered box. Place the rough objects in another covered box.

2. Students will work in pairs or small groups to determine texture of the 10 objects without looking in the box. Adult supervision may be needed to assure that students use their sense of touch only.

3. Objects are placed in the appropriate hula hoop/circle to categorize by texture.

4. Students will check other groups’ task for correctness (optional).

**Small Group Suggestions:**

1. Students needing enrichment may read additional information about the five senses (See Additional Resources).

2. Students can match picture to picture or word to picture.

3. Students can complete independent work in a small group using a paper graphic organizer.

**Assessment:**

1. Students will categorize objects by texture.

2. Teachers should utilize district created rubrics to score student work.

**UDL:**

**Multiple means of representation:**

1. Students can point to objects and have a peer place the object in the correct category.

2. Students can identify fewer objects and their texture.

3. Students can match words instead of picture supports.

4. Students can work individually, in pairs, or in a small group.

5. Students can work independently with peer or adult supports.

**Multiple means of expression:**

1. All students should have access to expressive language/technology that is appropriate for their specific need.

2. Expression may come in the form of verbal responses, signed responses, pointing/gestures, eye gaze, or through the use of a low or high tech device.

3. Text to speech options are available for computers on the Word app, iPads and other hand held devices. Google Chrome offers free extensions, such as Selection Reader and Select and Speak-Text to Speech, and apps, such as Text to Speech, Text to Speech with Google Drive, and TTS Reader- Unlimited Text-to-Speech.

4. Speech to text options are also available from Google. Extensions include Voice Note II-Speech to Text, Online speech recognition, and Co: Writer Universal. Voice Note II is also available as an app; Speech notes-Speech to Text Notepad is available as well. Microsoft Word also has speech to text options.

5. Additional information about text to speech and speech to text options are available through your district Assistive Technology Department.

**Multiple means of engagement:**

1. Provide students different ways to manipulate objects and visuals (i.e. images on paper, computer images).
2. Students can use the book or an online version of the book for additional reference.

3. Encourage collaboration with peers in partners or small groups.

4. Allow students to work independently.

5. Allow students to be positioned for maximum learning engagement.

**Assistive Technology Recommendations:**

1. All students should have a means of expressive communication and a way to be actively engaged in learning.

2. Response modes may include, but are not limited to: eye gaze, gesturing or pointing to pictures/words/phrases, signing, low tech devices (GoTalks, etc.), or dynamic devices (iPad, etc.)

3. Lesson vocabulary, photos/pictures and graphic representations should be created and/or printed prior to the lesson to provide all students with an opportunity to be engaged in discussion.

4. When possible, provide students with text to speech options. Articles and passages from Readworks.org have this option.

5. If students are writing in response to text or writing as a means of sharing information, provide students with alternates to pencils. Speech to text and alternative pencils should be considered. Find more information about alternative pencils here: [Alternative Pencils](http://alternativepencils.weebly.com/)

**Technology Needed:**

* Smartboard, doc camera (optional, for showing text in the book)

**Additional Resources:**

* Video: [Exploring Textures](https://www.youtube.com/watch?v=SgjNbDyIfsQ)
* From readworks.org: [Your Sense of Touch](https://www.readworks.org/article/Your-Sense-of-Touch/b9a6872f-177f-4d27-bdee-a0c6318072ec#!articleTab:content/)
* From readworks.org: [Your Five Senses](https://www.readworks.org/article/Your-Five-Senses/7a624ee8-7178-42b8-86d3-4fdb78609773#!articleTab:content/)
* The Dr. Binocs Show: [The Five Senses](https://www.youtube.com/watch?v=q1xNuU7gaAQ)
* [Five Senses Rap](https://www.youtube.com/watch?v=iA1uLc1uEbI)
* [The Five Senses Video](https://www.youtube.com/watch?v=bMybpK7j8MM)  (with quiz)
* District-provided science resources