Science K-2: What’s That Smell?!

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 understand the importance of the sense of smell.

 2. Students will categorize pleasant and unpleasant smells based on opinion.

 3. Students will recognize that the brain helps us understand what we are smelling.

# **Vocabulary:**

1. smell: to recognize and odor or scent

2. nostrils: the two opening at the bottom of your nose

3. odor: the scent or smell of something

4. cilia: tiny hairs in the back of your nose

5. mucus: helps to trap odor, dirt, and dust

6. nerves: tiny cords that run through your whole body

**Materials:**

* Sniff, Sniff: A Book about Smell by Dana Meachen Rau, illus. by Rick Peterson
* Book available as an online read-aloud: [Sniff, Sniff: A Book About Smell](https://www.youtube.com/watch?v=ZUo7rz05HaU)
* Prepare prior to instruction: visual supports for academic content
* 5 pleasant smelling items in glass jars or containers (i.e. dryer sheet, lavender, peppermint) being mindful of allergies
* 5 unpleasant or unusual smelling items in glass jars or containers (i.e. pickles or pickle juice, olives, dirt) being mindful of allergies
* A simple graphic organizer for students to chart/graph their opinions on pleasant or unpleasant smells

# **Essential/Guiding Questions:**

 1. What is the purpose of your sense of smell?

 2. What does your sense of smell help you identify?

 3. How does our brain help with our sense of smell?

**Lesson Presentation:**

**Activating Prior Knowledge:**

1. Have students close their eyes. With their eyes closed, see if they can identify a common smell when presented to them. They should not be able to see where the smell is coming from.

2. Ask students: How does your nose know what that smell is?

3. Tell students that there are so many smells in the world, some are pleasant and some are not, but our noses and brains work together for our sense of smell.

**Modeled instruction:**

1. Show students the book, Sniff, Sniff: A Book About Smell or show the book online: [Sniff, Sniff: A Book About Smell](https://www.youtube.com/watch?v=ZUo7rz05HaU).

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 different smells later in the lesson; some are good, and some are not so good. (Opinions on smells will vary.)

5. Model smelling something from one of the glass jars. Give them your opinion on whether it is a pleasant or unpleasant smell. Remind students that your like or dislike of a certain smell or odor is your opinion.

**Supported/Guided instruction:**

1. Review vocabulary and reread Sniff, Sniff: A Book About Smell.

2. Show students two containers with things that smell. Ask students: what do you think this will smell like?

3. Have students smell, then chart their response/opinion on a simple graphic organizer.

4. Ask students what organ in the body helps the nose determine if something smells good or bad? (brain) Refer back to the book or video, if necessary.

**Independent Work:**

1. Prior to independent work, place all of the items to smell in individual jars.

2. Students will work in pairs or small groups to determine if they find the smell of the item pleasant or unpleasant. Adult supervision may be needed to assure that students use their sense of smell only and are careful with containers.

3. Students will document their opinion about each smell on the graphic organizer.

4. Students will reconvene in a whole group to chart opinions for all (or some) of the items.

**Small Group Suggestions:**

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

2. Students provide opinions on fewer items.

3. Students can write in science journals their opinion about one or more of the items.

4. Students can write in science journals a comparison of two or more items.

5. Students can create a collage (or visual board) of items that have a pleasant smell.

**Assessment:**

1. Students will give their opinion on pleasant and unpleasant smells and recognize that the brain helps the nose to smell.

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

**UDL:**

**Multiple means of representation:**

1. Students can point to the items that had a pleasant or unpleasant smell.

2. Students can choose their own items to smell from home, cafeteria, etc.

3. Students can have a peer chart their opinions.

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 state their opinion.

2. Be aware of allergies and students’ individual sensory concerns when engaging with smells.

3. Students can use the book or an online version of the book for additional reference.

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

5. Allow students to work independently.

6. 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:**

* 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)