
Los Cinco Sentidos: A Science Unit

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Abstract

Culturally and linguistically diverse learners in elementary school environments need the support of native language instruction and mirroring to reinforce or bolster content area instruction in English. Creating an opportunity for second language learners to develop comprehension in their native language will not only enhance English language learning, but will also give students a feeling of self-confidence and self-esteem derived from the teacher's efforts to place importance on the students' cultures and heritage language. The present article describes a series of learning centers developed to provide early elementary students with a foundation in the area of science, focused on the five senses and their role in the scientific process. The activities are designed for use with heritage language learners in Spanish.

"Diverse learners have multiple pathways to knowing, multiple pathways to learning."
(Richard Donato, "Valuing Diversity in Learners". WGBH, 2004)

Introduction

According to Hall-Haley, "Students don't divest themselves of their cultural and linguistic background; they bring that with them to the classroom." (Hall-Haley, "Valuing Diversity in Learners". WGBH, 2004.) For this reason, it is essential to provide heritage language learners with the chance to express themselves in their native languages within the context of academic subject areas and curriculum standards.

This very necessary support can be implemented simply by making the experience as interactive and sensitive to learning styles as possible in accordance with current best practices. As teachers, we can achieve this by varying strategies and, "presenting instruction in ways that reflect their (students') own intelligences and learning styles." (Donato, "Valuing Diversity in Learners". WGBH, 2004.) The following series of learning activities were developed to provide early elementary students with a foundation in the area of science, focused on the five senses. There are two activities for each sense. Depending on time available, these activities can be built as a unit, taking each day to examine one of the five senses and culminating in a "Five Senses Fair" that will allow the students to express their knowledge and will give the teacher a chance to

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assess student comprehension. If time is limited, each activity can be used independently of the others. The activities are designed for use with heritage language learners in Spanish; however, they can also be used in partial immersion classrooms or with English speaking students who are learning Spanish.

The objectives of these activities are two-fold. Primarily the students will gain a functional understanding of what our five senses are and how we use them. Students will begin to make connections between the use of the five senses and the impact of the use of these faculties on scientific inquiry and processes as defined by curriculum standards. The standard for Scientific Processes in the New Jersey Core Curriculum Content Standards describes this link.

“Students best learn science by doing science. Science is not merely a collection of facts and theories, but a process, a way of thinking about and investigating the world in which we live. This standard addresses those skills that are used by scientists as they discover and explain the physical universe skills that are an essential and ongoing part of learning science.” (N.J. Core Curriculum Content Standards, http://www.state.nj.us/njded/cccs/s5_science.htm)

In addition, students will use and learn words in Spanish that they may already know, but they will now have a science context in which to use them. These activities are designed for early elementary school age students and can be scaffolded to meet the needs of diverse levels of native language fluency. Within the activities and as a part of the overarching goals of the following unit, the National Standards in Foreign Language Education are addressed (<http://www.actfl.org/files/public/execsumm.pdf>). At the center of this unit are the standards of communication and connections, as a means to show what students know about language and a way to join the language instruction with content area learning.

Cinco Sentidos

Introduction — ¿Cuales son los cinco sentidos?

Brainstorm with the students on the five senses. Next, provide them with the following chart. This visual way of presenting the cinco sentidos will help them understand and match each sense with a part of the body. This task can be completed by the students as a group with guidance. Students will probably know the words to be used in each space, but these can also be provided by the teacher. The fourth column can be used by students who have additional words or pictorial ideas for each sense.

La Vista	Yo _____ con...	Los ojos	
El Oído	Yo _____ con...	Los oídos/Las orejas	
El Olfato	Yo _____ con...	La nariz	
El Tacto	Yo _____ con...	Los dedos	
El Gusto	Yo _____ con...	La lengua	

La Vista - Yo veo con los ojos.

El Olfato - Yo huelo con la nariz.

El Gusto - Yo saboreo con la lengua.

El Oído - Yo oigo con los oídos

El Tacto - Yo toco con los dedos.

La Vista —

Yo veo colores. First, show the students a large picture of a rainbow. Then, the students put on smocks and paint the colors of the rainbow using presnet paper, brushes, and paint. If you have enough materials to do this all at once, you can assess their comprehension of the colors by telling them which color to paint and to differentiate for more advanced students, you can give instructions as to what shapes to paint as well. Another variation can be to give students instructions on how to mix colors to achieve other shades. When giving instructions, use repetitive phrases like, “¿Pueden pintar... una estrella roja? Use the phrase, “Yo veo...(i.e. rojo, verde)” review the concept of colors. After you have modeled this, call on students to give the color directions, for example, “Yo veo morado”. Discuss the value of the sense of sight (La Vista) and how colors gain their meanings with this sense. Intelligences used: visual, bodily-kinesthetic, verbal, interpersonal.

Yo veo el orden de las cosas. Set up several different groups of items in patterns on tables. Put a divider on the table so that students can only see the group of items from one side. Depending on the age of the students, divide them into groups of 2 or 4 and ask them to look at the pattern for two minutes and then give them two minutes to go to the other side of the table and recreate the pattern they observed using duplicates of the objects. Students can each take a turn with the objects on the tables and

then, if time remains, you can switch the patterns and challenge their sense of sight. Finish this activity by asking why our sense of sight is important. Use the answers to make a group list and help students demonstrate comprehension. Intelligences used: visual, bodily-kinesthetic, verbal, interpersonal, logical/mathematical.

El Olfato —

Huele bien / Huele mal ¿Cómo huele? Students are given happy face labels and sad face labels. Then each student gets to walk to a table and smell an item. After smelling the item, the child has to consider his/her own feeling about it and places his/her label in a corresponding spot on the chart that says Huele bien :) / Huele mal :(. This is repeated with several other items. Upon completion, count with the class the number of students who liked and disliked each “olor”. This activity can be done on several separate charts or with one graph on a large piece of paper with pictures to match the items smelled. Intelligences used: logical/mathematical, visual/spatial, bodily/kinesthetic, intrapersonal, interpersonal

¿Qué hueles? — In this activity students must smell numbered items that are not visible to them (you can use brown paper bags or coffee cans). Then, younger students can be given a page with pictures that could match the scents and must circle the things they smelled. Students can also either write the word for what they believe each smell to be or can draw a picture of the items. At the end of the activity, the teacher can reveal the items and discuss the students’ guesses. Ask students how they could be sure of what the objects were? Can they describe the scents? Be sure to discuss the fact that it is much harder to recognize a scent without seeing the object. Intelligences used: bodily, intrapersonal, interpersonal, logical/mathematical.

El Oído —

Yo oigo instrumentos. At this interactive center, students are able to see several musical instruments and then are asked to close their eyes. The teacher, or a selected student, plays an instrument and then asks the students to tell the class which instrument was heard using the phrase, “Yo oigo...”. You can either tell the students the words for the instruments in Spanish or allow them to say them in English and then give them the Spanish word after they answer. Then give students a chance to test your ears by challenging you to the same activity. Students can complete the activity by taking part in a musical jamboree with the instruments. Intelligences used: musical, verbal, bodily, interpersonal.

Yo oigo sonidos del mundo. This activity can be done with all different types of sounds, not just instruments. During the “Oído” lesson I used sound files on my computer of common “sonidos” to do a similar activity. You may also have printed pictures of the items to which the students are listening so that they can match the picture with the sound on a simple grid or numbered page. This activity gives a great opportunity for discussion and is another chance to explain how the senses work together to give us the best understanding of things around us. In addition, it challenges the students to express themselves in Spanish to explain or describe the sounds they hear. Intelligences used: musical/rhythmic, verbal/linguistic, visual/spatial, interpersonal

El Tacto —

Yo toco algo... (suave, duro, áspero, lisa, agudo, frío, caliente) In this center, students are asked to touch items in five different numbered paper bags without looking at the items. Be sure to use several natural items such as pine cones, feathers, and shells. If this is used as review, the students will be able to interact with each other to use the descriptive words above. You can ask the students to tell you “En qué bolsa hay algo suave?” They can work together to find the correct item and then actually look at the items together and describe the way they feel. Be sure to review the words and concepts with students to activate prior knowledge before the activity begins. At the conclusion of the activity, discuss how “El Tacto” can help keep us safe or can signal us to be careful (for example when we come in contact with sharp or hot objects). Intelligences used: bodily/kinesthetic, interpersonal, verbal/linguistic, naturalist

¿Cuántas cosas hay en la mano? — In this activity, students will be asked to count and identify items using only their hands and fingers. You can use boxes with holes cut in the tops for easy access by students’ hands. Inside each box, place 1-10 pieces or objects. It is best for the objects to all be the same so the students can focus on determining quantity. This can be done with several different boxes and students can report verbally or on an answer sheet about their findings. At the conclusion, remove the items from each box so the students can see the items and check their sense of touch. Remind them that by taking the items out of the box they are now activating another sense which allows them to confirm their original findings. Intelligences used: bodily/kinesthetic, logical/mathematical, visual/spatial, interpersonal

El Gusto —

Yo saboreo algo... (picante, amargo, dulce, salado). The first activity that can be used to teach the concepts and words is an actual tasting activity using facial expressions as well as body language as reactions to each taste. Go through the four aforementioned tastes and ask the students to help you create a facial expression for each one. Then ask students to taste each item as you give it to them. Using words and/or the facial expressions, they can show you how it tastes. Be sure to show the students what they are tasting to avoid unnecessary apprehension. CAUTION: Be sure to check with parents regarding allergies prior to doing a tasting lesson!! Some great things to use for this activity are: BBQ or flavored chips, lemon, candy or fruit, and pretzels. After completing this activity, ask students to draw a picture of their favorite taste and assist them as they write an explanation for why. Intelligences used: Bodily, interpersonal, intrapersonal, verbal.

¿Cómo saborean estas cosas?

The second activity for “el gusto” is a visual activity in which students need to recall the meanings of the descriptive words for taste. Use a bottle of hot sauce or a chili pepper, a bag of pretzels, a lollipop, and a lemon. Create one page for each descriptive word and a matching picture to the items used on it. Cover the pictures on the paper, but not the words. Ask students to organize the items using the words. For preliterate students, read each word. Once the items are matched, students can look at the covered pictures to check their own work. After completing this activity,

students can make their own paper plate taste grids by dividing the paper plate in four parts and drawing items for each taste. Students can take this home and use it as a learning tool with their families. Intelligences used: bodily/kinesthetic, logical/mathematical, verbal/linguistic, visual/spatial

The five senses (*cinco sentidos*) is an exciting and interesting unit to use with heritage language learners to prove to them how much they know and can demonstrate academically in their own language. It is a unit that lends itself well to interactive and fun learning centers. Students' enthusiasm during this unit creates an environment that allows students to truly own the concepts they are exploring. Each student is able to construct his or her own understanding of what the five senses mean to them. Continuous discussions at the conclusion of each activity as a means to compare and contrast or analyze the ways we use our senses will help the students synthesize what they are learning. By teaching this unit or series of activities using learning centers, you are providing a fluid and comfortable class set-up that will maximize your students' willingness to take risks in their native language. "Planning is the pivotal part of being able to accommodate the variety of diverse learners in the classroom." (Haley, "Valuing Diversity in Learners". WGBH, 2004) Ultimately, the basic ideas and emphasis placed on linguistic diversity within this type of learning atmosphere will translate and augment comprehension in heritage learners' science studies and across all academic areas in English.

References

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- New Jersey Core Curriculum Content Standards, retrieved on October 1 2006 from http://www.state.nj.us/njded/cccs/s5_science.htm