Making Sense of the Five Senses ELL STEAM Lesson Brief

Students use knowledge from across the disciplines to strengthen their understanding of each subject’s content and its related careers through topic or theme oriented realistic problem-based activity-rich lessons.

Theme that this lesson would tie to: Physiology – Health

Specific Topic Concept within that theme: Identification and Use of the Five Senses

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<tr>
<th>PROJECT IDEA + brief notes &amp; supplies</th>
<th>BASIC CONCEPTS</th>
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| **Concept:** Students will learn about the five senses and have experiences that make them aware of the world around them in a new way to provide a common focus for English Language Learners to connect ideas across content areas as they explore new concepts and language. Experimentation to identify the five senses, descriptive words and related body functions will lead to discoveries in how technology impacts the five senses. Students will collect, analyze information to communicate orally and in writing about the five senses. Construction of Maps, cultural music presentations and playing games increases understanding of the five senses as a means of experiencing culture and functioning with visual cues in the community. | **Science** –

- **Concepts** – Identify, Use and Apply the Five senses to explore

- **Goal / Objectives** – Name the body part used for each sense and use the five senses to describe observations. Evaluate the use of the five senses to develop a heightened awareness of the world.

- **Standards** – K-1Aa-c Identify the sounds and their source of vibrations in everyday life. b. Compare different sounds. c. Identify the ear as a receiver of vibrations that produce sound. K1Ab – Describe physical properties of objects by using the senses.

- **Careers** – Biomedical Scientist, medical assistant, pharmacist, psychologist, neurologist, (muscle specialist), internist, ENT doctor, optometrist, dermatologist, dentist

- **Project** – Students will engage in various science experiments to engage the five senses and detail the parts of the body they used. Students will test taste by sampling different items (bitter, sweet etc.) and then orally describing those items and taking observation notes to describe what parts of the body they use to taste and how other parts of their body reacted to that taste. Students will touch various items (fuzzy, hard, soft, smooth, silky), and then orally describe those items and take observation notes on the body parts they use to feel and the sensations & reactions they had. Students will listen and describe different sounds taking observation notes to explain how the ears help them work. Students will feel and hear vibrations adding to their notes and if/how other parts of their body ‘felt’ the sounds – (video clip from Mr. Holland’s Opus when
foods to experience taste, students will participate in experiments with each of the senses. Students will complete a simple observation note format to detail the sense, the part of the body and language. Students will continue to expand their knowledge by developing an understanding of how technologies have been developed to enhance or suppress the senses. Organization, collection and analysis of data will be conducted to describe the physical characteristics and properties of objects and different tastes. Students will expand their understanding of the five senses by constructing a “Feelie Book” and writing and discussing the five senses. The cultural significance of taste, sight, smell, touch and hearing exploration will increase student knowledge through music, games and artistic expression. Students will construct a map and describe the cultural connections to the map and extend knowledge to talk about safety and visual cues in the American Culture and in their own.

Skill level (Grade Range): The students are elementary (K -4) English Language Learners. The class is a diverse mix of multilingual, multilevel students in various stages of language development.

Timing of Lesson: This is small group instruction and each group has 30 minutes everyday. The lesson will extend September through December.

Basic Supplies:
All Subjects:
Individual Subjects:
Science: Observation Note paper
Sound: water glasses, tuning fork, twirl, video, conch shell, blocks video, conch

his son puts the speakers on the floor to feel the music. Students will smell different scents (garlic, mint, lemon etc.) and then describe the scents and body parts used to help them smell in their observation notes and how other parts of their body reacted to that smell. Students will be shown different items and will describe the items using the physical characteristics related to each sense such as color, size, shape etc. Students will add to their observation notes to detail the parts of the speech they used with the sense of sight.

• Assessment – Student written observations notes will identify the five senses, parts of the body associated with the sense and words that could be used to describe items  Students will compare the vibrations they felt and how the ear works to help them hear.

• Extension – Student orally/or with simple written language presents observations to group in the target language.

Technology & Engineering –
• Concepts –Application of technology
• Goal / Objectives - Improve comprehension and vocabulary using interactive links to help explore more about the five senses.
• Students will make and use devices to show they understand how such things can be constructed to assist their senses in being more or less powerful.
• Standards – Nets 3.6 Locate, organize, analyze, evaluate, synthesize and ethically use information from a variety of sources and media.
• Careers – Automotive Engineer, Computer Hardware Engineer, Cost Estimator, Civil Engineer Technicians, Lens grinder, Clothing designer
• Project - Watch a videos showing how our senses work. Students will interact with and use different technologies that improve people’s use of the five senses and consider the differences of using ‘bionic’ helpers. For instance: how a hearing aid and microphones help one to hear, how glasses, lenses and blindfolds impact sight, how gloves or a weighted blanket can be used with touch, etc. Students will construct a telephone that they could use as a communication device using recycled and/or found items. Students will describe the telephones they created according to their senses
shell, blocks, xylophone, bowl, water, seed, food color, colored sugar.

Sight: blindfold, eye patch, CD’s., eye chart, kaleidoscope, telescope, light refracting glasses, color paddle, multi-image magnifier.

Touch: shells, wooden block, sponge blocks, small logs, stones, marbles, corks, pinecones, bags, cloths, Braille Alphabet Cards, jars

Smell: herbs; basil, mint, rosemary, thyme, marjoram, cotton balls, coffee, rubbing alcohol, lemon juice, scratch and smell stickers,

Taste: spoons, cups, sugar, salt, coffee, chili peppers, soy sauce, spicy sauce, honey,

Language Arts: books Puff…Flash…Bang by Gail Gibbons, At the Beach by Huy Voun Lee, I Read Signs by Tana Hoban, The Bear’s Bicycle by Emilie McLeod, Faces by Shelley Rotner, Look at Your Eyes by Paul Showers, Red Light Green Light by Margaret Wise Brown, Silent Lotus by Jeanne M. Lee, A Visit to Oma by Marisabina Russo.

graphs, realia, posters, worksheets, safety signs

Social Studies: food items from various cultures, worksheet to answer the question, International doll collection.

Art: crayons, markers, construction paper

PE: location with space to engage in folkdance and games

Music: Student performance place for song, and paper

Technology and Engineering: weighted

but also relate how certain features will improve the sound or hearing ability.

- **Assessment** – Students will apply a technology that is used to help one with the five senses and then use the target language to describe how the item helped or hindered their senses. Some examples would be a weighted blanket, ball seat, glasses, ear muffs etc. Students will explain how the telephone they constructed will improve their ability to communicate with others and how they would improve current telephones to make them easier to use for people learning a language.

- **Extension** - Students bring in an example of how the senses work to share with the group from another class’ lesson.

**Math –**

- **Concepts** – Collect, Compare, Classify, Organize & Chart

**Goal / Objectives** - Connect new information about math operations to previous experiences using realia and manipulatives.

**Standards** – ccss-KMDA 1,2,3  1) Describe measurable attribute of objects such as length and weight 2) Directly compare two objects with as measurable attribute and describe the difference.  3) Classify objects into given categories, count the number of each object and sort the categories by count.

- **Careers** – Mathematical Technician, Logistics Engineer, Nanosystems Engineer

- **Project** – Collect and organize data in a simple bar graph, sort objects based on their properties (weight, size, texture). Students use the taste graph and decide whether it is salty, sweet, sour or bitter. Students write sentences relating one taste to some other similar taste. They will incorporate multiple uses of specific English vocabulary in illustrated math sentences. (e.g. How many are left when you take away?

- **Assessment** – Students use the taste graph and decide whether each item is salty, sweet, sour or bitter. Students write sentences relating one taste to some other similar taste. Student creates a graph that accurately displays the data.

- **Extension** - Students utilize technology to create a graph.
<table>
<thead>
<tr>
<th><strong>blanket, gloves, glasses, ear muffs, ear plugs</strong></th>
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<tbody>
<tr>
<td><strong>Math:</strong> Graphs, blocks</td>
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**IT Resources:**
- **ScienceKids**
  [http://www.sciencekids.co.nz/](http://www.sciencekids.co.nz/)
- **Activities for Kids**
  [www.education.com/activity/article](http://www.education.com/activity/article)
- **How the body works resource**
  [kidshealth.org/kid](http://www.kidshealth.org/kid)
- **Videos and Music**
  [www.youtube.com](http://www.youtube.com)
- **Wise answers for Questions**
  [www.wisegeek.org](http://www.wisegeek.org)
- **The whole Brain Atlas**
  [http://www.med.harvard.edu/AANLIB/home.html](http://www.med.harvard.edu/AANLIB/home.html)
- **Exploratorium Exhibits**
  [http://exploratorium.edu/](http://exploratorium.edu/)

**Other Resources:**
- **Books:**
  - Puff...Flash...Bang by Gail Gibbons,
  - At the Beach by Huy Voung Lee,
  - I Read Signs by Tana Hoban,
  - The Bear’s Bicycle by Emilie McLeod,
  - Faces by Shelley Rotner,
  - Look at Your Eyes by Paul Showers,
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| Misc: world map, dolls from various cultures, food labels from different cultures |

**LA –**

- **Concepts** — Acquire English with meaningful communication activities that motivate students to produce language and use the vocabulary, patterns and structure they need. Students incorporate language patterns and structures as well as every day and content area vocabulary into their listening/reading, speaking/writing repertoires.
- **Goal / Objectives** — Develop pronunciation and fluency naturally as they use language for purposeful activities. Respond to questions and write answers in a complete sentence.
- **Standards** — WIDA – ELD 1,2
  1) English Language Learners communicate for social and instructional purposes within the school setting. 2) English Language Learners communicate information, ideas, and concepts necessary for academic success in the content area of Language Arts.
- **Careers** — Distance Learning Coordinator, Historian, Museum Curator, Translator, Cultural Attaché, Tour Guide Director
- **Project** — Make a homemade telephone at home and share with the class. Use the hand alphabet to spell some of the safety words. Share the idea that sometimes a gesture means the same thing across many cultures and sometimes it means something different. Write about their favorite and least favorite herb scent. Compare and contrast the appearances of the smell and appearances of the herbs. Students construct a “Feelie Book” in which they tape or glue a different material or object on each page. Students label each page as rough, smooth, soft, hard. Write and draw about how things feel with the bare hands and compared with gloved hands. Students use the taste graph and decide whether it is salty, sweet, sour or bitter. Students write sentences relating one taste to some other similar taste. Create a book on the five senses. Locate the settings of the stories discussed in the world map and write three things about their culture. Write a recipe from their culture to share with the class. Show the various ingredients in the recipe and compare and contrast with the target language.
- **Assessment** — Students will complete assessment describing the sense/senses would you use to learn
countries, exotic fruits and vegetables.

Photos:
Hand Signals – Sight and Sound

Writing Sample

Taste Comparison

about this picture. They will draw lines from the body parts representing the senses to what they could learn using that sense. They will share their worksheets with the teacher and the class. They will choose which sense is most important to them and justify their choice. Students were able to compare and contrast items, and appropriately graph information. Students were able to describe in writing, mathematically and orally the five senses using examples shared in class. Students constructed their own telephone and described how it would help them hear and communicate. Students were successful at sharing a recipe from their culture and relating tastes to other similar tastes.

- Extension - Students articulate a plan for their project that would assist other language learners to understand the target language. Teacher will integrate content-area information and literature study into instruction. This will allow ELL/ESL students to use the language to make personal and authentic connections with their surroundings.

SS –

- Concepts –Construct Maps, analyze cultural, school and home connections
- Goal / Objectives – Detail locations of places on maps or globes using descriptive language with a group.
- Standards – WIDA-ELD 5 English Language Learners communicate information, ideas and concepts necessary for academic success in the content area of Social Studies. 2nd ESA- Construct maps with title and key. 3rd ESA – Compare how people’s needs have been met in different ways in different cultures at various times.
- Careers – Political Scientist, Government Property Inspector, Mapping Technician, Cartographer
- Project – Provide opportunities to involve students’ families making a crucial connection between the home culture and the school. Bring labels of food items from their homeland to share with the class. Use the world map to locate the continents of their homeland and identify the oceans of the world.
- Assessment – Students will construct a map that identifies the homelands of the students in the class and major waterways that surround them. Students
will orally describe some of the sights, sounds, tastes, touch and smells of the different locations based on the different cultures and their location in the world.

- Extension - Complete a survey on the importance of the five senses in the local community. Invite a police officer to discuss safety at home, on the streets, in the park and on the playground. Include in the discussion the sights that one might see such as signs, traffic lights that help one to be safe, the sounds of traffic, and the feel of the sidewalk under foot to let them know where it is safe to walk. Prepare questions in advance and write a thank you letter to follow up. Students will describe safety in their own country or culture to compare with the presentation and identify the sights, sounds, smells, taste and touch of safety in their own culture.

- Discuss what is ‘sensed’ about the world in various regions. For example: student will describe the region and climate of the area and the resulting fruits or food items, they might taste. ex: warmer climates = tropical fruits, wetter climates, tropical colors of birds and fruit, animal camo (blending into environments) = rice, etc. – smell of regions – rainforest, deserts, snow vs. rain – different ways animals ‘see, hear, smell, feel and taste.’

Art –
- Concepts –Provide hands-on experience with activities so students can assimilate the new vocabulary and concept through experiential learning.
- Goal / Objectives - Design and produce models that use their imaginations to create their work.
- Standards – I 3c Create an original artwork that communicates ideas about the following – community, group identity.
- Careers – Craft Artist, Film and Video Editors, Commercial and Industrial Designer, Make-up Artist, Curator
- Project – Draw the shapes of traffic and safety signs. Discuss importance of visual representations for people learning a language. Students finger-paint pictures of what they like to touch for a kinesthetic texture based experience. They write a word describing what they have painted as soft, hard, smooth, rough etc.
• **Assessment** – Students assessed according to their ability to identify the safety symbols and describe the visual cues. Students will describe how symbols or visual cues communicate cultural ideas for instance: stop signs, walk signs, traffic lights etc. Student finger-painting will be an original piece that represents the personal feeling.

• **Extension** - Students bring in other examples of symbols that help them navigate in a community where they are learning a language.

**PE** –

• **Concepts** – Promote multicultural traditions through children’s games.

• **Goal/Objectives** – Compare and contrast traditional games for healthy development that acquires physical, social and cognitive skills.

• **Standards** – I A1 Illustrate the functions of the five senses. Recognize the influence peers have on people, shared interest, goals and values.

• **Careers** – Health Specialist, Fitness Instructor, Athletic trainer, Occupational Therapists.

• **Project** – Students will share a children’s game from their culture and describe the senses used to play the game. Students may also share a folkdance from their culture.

• **Assessment** – Students will be assessed in their ability to demonstrate a game from their culture and use of the target language. And understanding of the roles the senses play in playing the game.

• **Extension** - Students will watch a video clip of culturally relevant games in the community in which they live and play some of the games. Students will play games such as Blind Man’s bluff to understand the impact of missing a sense on playing a game.

**Music** –

• **Concepts** – Promote healthy and creative expression and awareness of their emotions.

• **Goal/Objectives:** Improve cognitive skills through listening and use of new words. Develop pronunciation and fluency naturally as they use language for purposeful activities.

• **Standards** – 1C Describe the function of music in various settings and cultural events. Discuss and demonstrate appropriate listening behavior for various types of performances.
| **Careers** – Music Composer and Arranger, Music producer and director, Singer |
| **Project** – Discuss the importance of music and sound as a part of culture. Create a presentation to share music from their culture. |
| **Assessment** – Students will be assessed on their listening behavior as they hear the song to ensure that they are demonstrating appropriate behavior for a performance. Student’s correct translation of the song into the shared target language. Students will orally explain how the song helps them to understand their cultural heritage. |
| **Extension** – Student will listen to one another and connect the importance of sound to their culture. Student will bring in a song that represents the culture they are learning and describe why they picked the song. |