**Change in Our World – Unit 2**

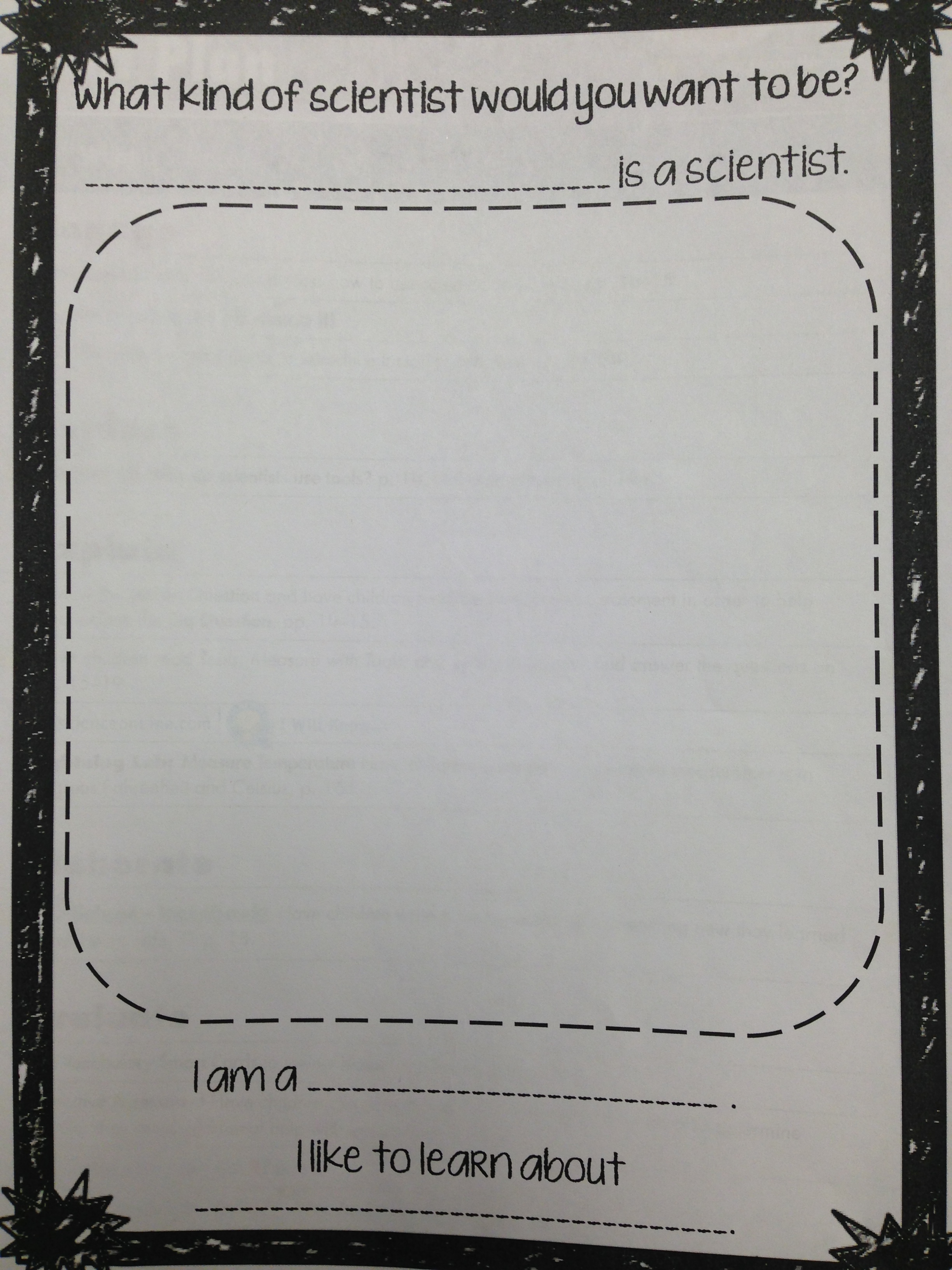
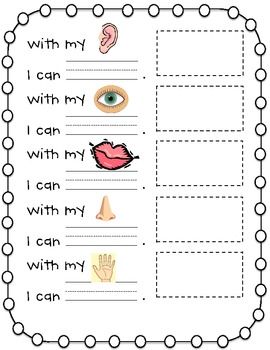
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| **Title of Unit** | Change in Our World | | **Grade Level** | 1st Grade |
| **Subject** | Science and ELA | | **Time Frame** | 1st Term (4 weeks) |
| **Developed By** | Helen Rodio and Amanda Huenke | | | |
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| **Stage 1 - Identify Desired Results** | | | | |
| **Established Goals: CCSS / CCCS / Big Ideas / Big Themes** | | | | |
| **Concept:** Argument and Evidence  **Big Ideas:** Changes occur in the real world. It is important to observe and document their influence on individuals and the environment; we use our senses to answer questions and give evidence to support our opinions and arguments; we explore our world by using our senses and asking questions  **Topics:** Scientific Method, What is Science?, 5 Senses  **Reconceived Standards:**   * Students will identify various skills that scientists use. (Analysis) * Students will decide appropriate tools and methods to answer scientific questions. (Evaluation) * Students will describe the importance and use of all five senses. (Comprehension) * Students will illustrate safe use of scientific tools. (Application) * Students will explain what science is and what scientists do. (Analysis)   **Received Standards:**   * **New Jersey Science Standards:**   + **5.1 Science Practices:** All students will understand that science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.     - **5.1.4.A.1** Demonstrate understanding of the interrelationships among fundamental concepts in the physical, life, and Earth systems sciences.     - **5.1.4.A.2** Use outcomes of investigations to build and refine questions, models, and explanations.     - **5.1.4.A.3** Use scientific facts, measurements, observations, and patterns in nature to build and critique scientific arguments.     - **5.1.4.B.1** Design and follow simple plans using systematic observations to explore questions and predictions.     - **5.1.4.B.2** Measure, gather, evaluate, and share evidence using tools and technologies.     - **5.1.4.B.3** Formulate explanations from evidence.     - **5.1.4.B.4** Communicate and justify explanations with reasonable and logical arguments.     - **5.1.4.C.2** Revise predictions or explanations on the basis of learning new information.     - **5.1.4.C.3** Present evidence to interpret and/or predict cause-and-effect outcomes of investigations.     - **5.1.4.D.1** Actively participate in discussions about student data, questions, and understandings.     - **5.1.4.D.2** Work collaboratively to pose, refine, and evaluate questions, investigations, models, and theories.     - **5.1.4.D.3** Demonstrate how to safely use tools, instruments, and supplies. * **New Jersey Health Standards:**   + 2.1.P.D Developing an awareness of potential hazards in the environment impacts personal health and safety.   + 2.1.P.D.1 Use safe practices indoors and out (e.g., wear bike helmets, walk in the classroom, understand how to participate in emergency drills, and understand why car seats and seat belts are used). * **Common Core – ELA Standards:**   + [CCSS.ELA-Literacy.RL.1.1](http://www.corestandards.org/ELA-Literacy/RL/1/1/) Ask and answer questions about key details in a text. (Knowledge)   + [CCSS.ELA-Literacy.RL.1.2](http://www.corestandards.org/ELA-Literacy/RL/1/2/) Retell stories, including key details, and demonstrate understanding of their central message or lesson. (Comprehension)   + [CCSS.ELA-Literacy.RL.1.3](http://www.corestandards.org/ELA-Literacy/RL/1/3/) Describe characters, settings, and major events in a story, using key details. (Comprehension)   + [CCSS.ELA-Literacy.RI.1.1](http://www.corestandards.org/ELA-Literacy/RI/1/1/) Ask and answer questions about key details in a text. (Knowledge)   + [CCSS.ELA-Literacy.RI.1.2](http://www.corestandards.org/ELA-Literacy/RI/1/2/) Identify the main topic and retell key details of a text. (Knowledge)   + [CCSS.ELA-Literacy.RI.1.3](http://www.corestandards.org/ELA-Literacy/RI/1/3/) Describe the connection between two individuals, events, ideas, or pieces of information in a text. (Comprehension)   + [CCSS.ELA-Literacy.RI.1.5](http://www.corestandards.org/ELA-Literacy/RI/1/5/) Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text. (Application)   + [CCSS.ELA-Literacy.RI.1.6](http://www.corestandards.org/ELA-Literacy/RI/1/6/) Distinguish between information provided by pictures or other illustrations and information provided by the words in a text. (Analysis)   + [CCSS.ELA-Literacy.SL.1.4](http://www.corestandards.org/ELA-Literacy/SL/1/4/) Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly. (Knowledge) | | | | |
| **Cross-curricular Integration (Interdisciplinary Teaching and Learning)**  Will you integrate this unit with other curricular areas? If so, what areas? In what ways will you connect the curricular areas? | | | | |
| **Science and Literacy (ELA):**  Literacy strategies and skills will be applied as students acquire information and communicate their learning and understanding in Science. Integration of Literacy and Science is critical for student success. It is essential that literacy strategy and skill instruction be purposefully and appropriately planned and embedded within Science instruction; i.e. planning for the literacy and social studies outcomes, differentiating, matching instruction to the learners, and in consideration of resources.  This unit will transition from a Social Studies unit that integrates Social Studies and Literacy (ELA) on individuals and groups. This unit will transition into a Science unit that integrates Science and Literacy (ELA). The next unit will be on weather and seasons and their impact on our world.  This unit integrates with our health standards as well. | | | | |
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| **Enduring Understandings**  If a student spends time with you during this unit, what is  absolutely essential that the student understand and  be able to transfer as a result of the experience (Rigor: Quadrant “D”)? | | **Essential Questions**  What provocative questions will foster inquiry, understanding, and transfer of learning (Relevance)?(Often, open-ended questions that stimulate reflective thought and inquiry and connect the knowledge and skills to the enduring understanding are used.) | | |
| *Students will understand that...*   * scientists ask questions about the world. * scientists use skills to learn about new things. * scientists use science tools and technology. * it is important to do science safely. * scientists ask questions and find answers. * scientists share the data they collect. * scientists make predictions (hypotheses). | | *Content specific….*  Big Idea:   * What questions do scientists ask? * What skills do scientists use? * How do scientists share data? * What is science? * How do literary and informational texts (books) teach us about science, the five senses, and the scientific method?   Topical:   * How do scientists use tools and technology? * How do scientists find answers? | | |
| **Knowledge:**  What knowledge (topics and facts) will student acquire as a result of this unit? This content knowledge may come from the indicators, or might also address pre-requisite knowledge that students will need for this unit. | | **Skills**  What skills will students acquire as a result of this unit? List the skills and/or behaviors that students will be able to exhibit as a result of their work in this unit. These will come from the indicators. | | |
| *Students will know...*   * A scientist can be anyone who explores and asks/answers questions about the world around them. * Scientists use their five senses of touch, taste, smell, hear, and sight. * Scientists infer information using their senses and things they know about the world. * Scientists use tools such as a hand lens, ruler, scissors, goggles, gloves, pan balance, thermometer, measuring cup, rain gauge, clock, etc. safely. * Scientists can share data in many ways such as through graphs, pictures, writing, photographs, presentations, etc. * A hypothesis is a prediction. | | *Students will be able to…*   * Recognize that scientists ask questions about the world. * Create and discuss science questions and explain why they are science questions. * Identify skills scientists use to learn about new things. * Demonstrate how to use some science equipment and tools safely. * Describe the steps scientists use to ask and find questions. * Identify how scientists share the data they collect. | | |

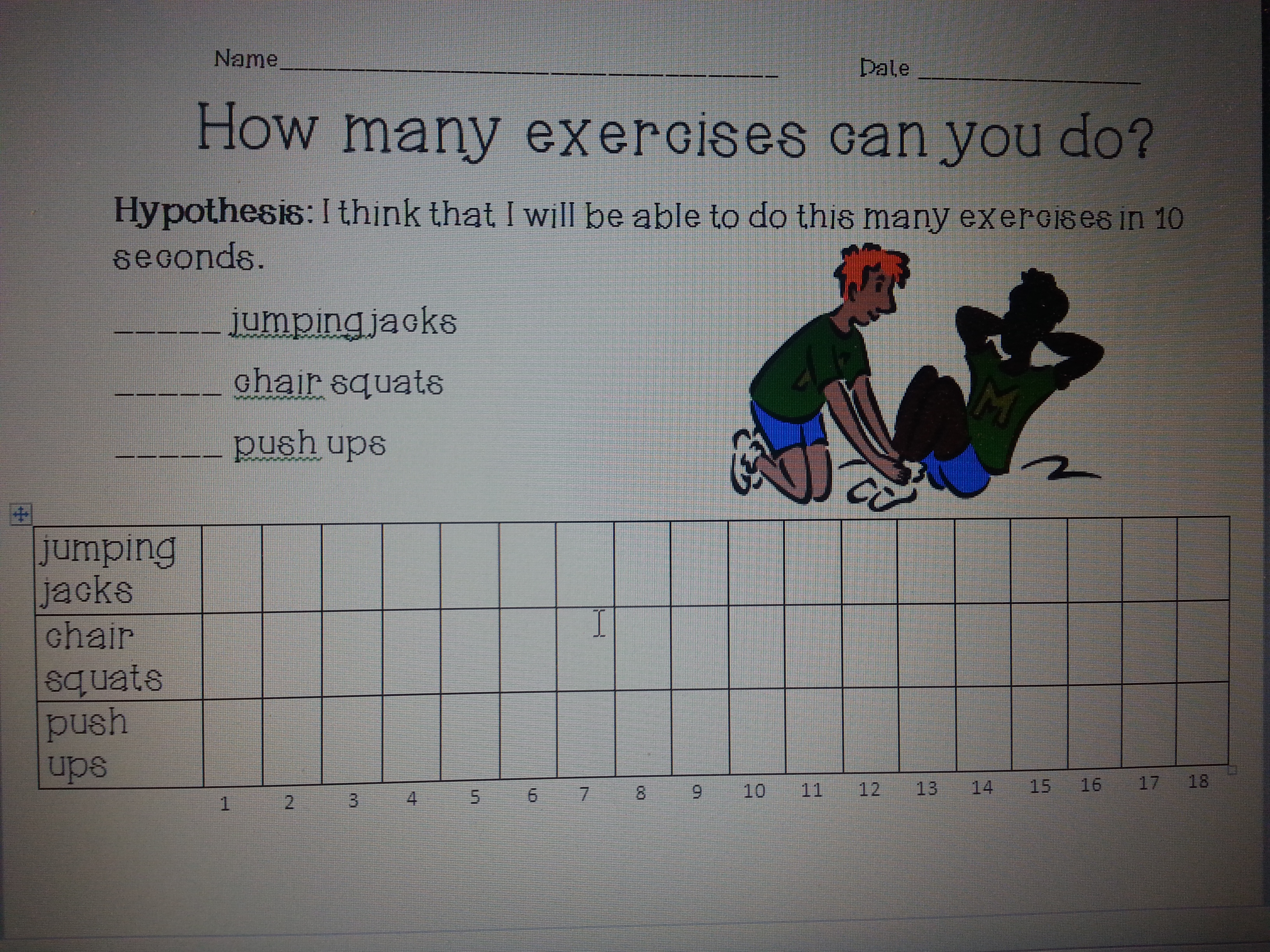
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| **Stage 2 – Assessment Evidence** | | |
| **Performance Task**  Through what authentic performance task will students demonstrate the desired understandings, knowledge, and skills? (Typically, the P.T. describes the learning activity in narrative form. The P.T. usually includes a scenario or situation that requires students to apply knowledge and skills to demonstrate their understanding in an authentic, real life situation {Relevance}. Describe your performance task scenario below)  By what criteria will performances of understanding be judged? | | |
| **GRASPS Elements of the Performance Task** | | |
| ***G*** *– Goal*  *What should students accomplish by completing this task?* | Goals:   * Identify and describe the purpose of scientific tools. (Formative) * Identify and describe the purpose of the five senses. (Formative) * Create and discuss science questions and explain why they are science questions. (Formative) * Describe what a scientist is. (Formative/Summative) * Make a hypothesis (prediction) based on prior knowledge. (Formative) * Record and present data. (Formative) * Describe an object using all five senses appropriately. (Formative) * Identify the five senses based on the body parts they relate to and illustrate an example of an object you use that sense to identify. (Summative)   Role:   * Scientists, researchers, observers, questioners, and presenters   Audience:   * Teachers and/or peers   Situation:   * Students will debate and discuss with peers their understanding of science and scientists. * Students will present their knowledge to a teacher by participating in hands on labs/activities and completing lab reports.   Products:   * Test, lab reports, small group work/interviews | |
| ***R*** *– Role*  *What role (perspective) will your students be taking?* |
| ***A*** *– Audience*  *Who is the relevant audience?* |
| ***S*** *– Situation*  *The context or challenge provided to the student.* |
| ***P*** *– Product, Performance*  *What product/performance will the student*  *create?* |
| ***S*** *– Standards & Criteria for Success*  *Create the rubric for the Performance Task* | Standards:   * Grading for five senses activity/lab * Grading key for test | |
| **Performance Evidence**  Through what evidence (work samples, projects, surveys, observations, quizzes, tests, journals or other means) will students demonstrate achievement of the desired results? What formative and summative assessments will be used throughout the unit to arrive at the outcomes. | | **Student Self-Assessment**  In what ways will students reflect upon or self-assess their learning? |
| * Pre-assessments (Formative) * Checks for Understanding (Formative) * Discussion (Formative) * Debate (Formative) * Student questions/comments (Formative) * Teacher questions and prompts (Formative) * Observation/Anecdotal records (Formative) * Interview (Formative) * Five Senses activity (Summative) * Test (Summative) | | * Traffic light * Use reflective questions, prompts, and responses * What do I know? What did I learn? How am I a scientist? |

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| **Stage 3 – Learning Plan**  What teaching and learning experiences (WHERETO) will you use to:   * achieve the desired results identified in Stage 1? * equip students to complete (with understanding) the assessment tasks identified in Stage 2? | | | | |
| **Where are your students headed? Where have they been? How will you make sure the students know where they are going?**  **What experiences do the learners bring to the unit? How have the interests of the learners been ascertained? Have the learners been part of the pre-planning in any way? What individual needs do you anticipate will need to be addressed?**  **Learning environment: Where can this learning best occur? How can the physical environment be arranged to enhance learning?** | | | | |
| |  |  | | --- | --- | | **W**  **H**  **E**  **R**  **E**  **T**  **O** | Where – We will start the unit with students understanding that anyone can be a scientist. Then they will learn about the skills, tools, and processes that scientists use. Next they will situate this knowledge in the context of specific lab opportunities. Throughout the unit, students will learn about what science is and what scientists do. We will use labs, hands on activities, and discussion for each topic to determine student readiness. | | Hook – We will build student interest by introducing students to different types of science/scientists and the things they do and study. Students will illustrate themselves as a scientist as we emphasize that anyone can be a scientist by exploring and asking questions about the world around them. | | Equip -   * Class discussion about science and scientists * Turn and share with a neighbor your ideas about science and scientists * Develop vocabulary – science, scientist, hypothesis, observe, tools, safety, measure, five senses (sight, touch, taste, hear, smell) * Practice identifying key facts in nonfiction texts and how they relate to the main topic * Model how to use five senses to describe an object and students will use five senses to describe an object * Compare and contrast different objects using the five senses * Use age-appropriate resources to learn about influential leaders, such as Albert Einstein, and use graphic organizers to record information about the leader. | | Rethink – Provide opportunities for students to discuss what they know and think. Ask students lots of questions to help them articulate their ideas. | | Evaluate – Students will consider how they are scientists. They should see that they have the skills and ability to be scientists. | | Tailor – If needed, students will receive extra support in creating their project, reading about their influential leader, recording facts about them, and/or provide them with a graphic organizer. | | Organization –   * Plan science labs and hands on activities * Prepare objects to explore/describe with five senses as well as a graphic organizer * Plan an end of unit test | | | | | |
| **In what ways will you engage students at the beginning of the unit?** | | | | |
| We will build student interest by introducing students to different types of science/scientists and the things they do and study. Students will illustrate themselves as a scientist as we emphasize that anyone can be a scientist by exploring and asking questions about the world around them. | | | | |
| **What activities / events will help students experience and explore the enduring understandings and essential questions in the unit? How will you equip them with needed skills and knowledge?** | | | | |
| **#** | **Lesson Title** | **Lesson Activities** | **Cross-curricular** | **Resources** |
| 1 | Hook: What is Science? Who is a scientist? | We will build student interest by introducing students to different types of science/scientists and the things they do and study using poster collection. Students will illustrate themselves as a scientist as we emphasize that anyone can be a scientist by exploring and asking questions about the world around them.  Watch the Untamed Science video part I online so students see peers model asking science questions about their world. Listen to the science song online “I Want to Know”. | No | Interactive Science textbook by Pearson and online resources  From Head to Toe by Eric Carle  It’s Pumpkin Time! By Zoe Hall  Pumpkin Pumpkin By Jean Titherington  Pumpkins in Fall By Steck-Vaughn  The Apple Pie Tree By Zoe Hall  I Am an Apple by Jean Marzollo  My Five Senses By Aliki  Science Tools Big Book  Scholastic News Magazines and website (as appropriate)  Science A-Z materials  Reading A-Z materials  Did It Take Creativity to Find Relativity, Albert Einstein?By Melvin and Gilda Berger    I Am Albert Einstein by Grace Norwich and  Ute Simon    The Modern Inventions of Benjamin Franklin Now & Ben by Gene Barretta |
| 2 | 5 Senses | Read My Five Senses By Aliki aloud to the class. Discuss what the five senses are and what parts of our body we use for each of our five senses.  Sing along to the 5 senses sing along (<https://www.youtube.com/watch?v=lvBXWMvOGOk>).  Use the five senses clickable on the smartboard (explain from lesson 2).  Students use their sense of touch only in a lab to learn more about the importance of their 5 senses. “Blind” students with a partner to feel a Fundations card picture and guess what the picture is using only their sense of touch. Model for students then they work together with a partner while half of the class is re-reading Seven Blind Mice or My Five Senses on the carpet. Groups switch. Discuss with students how they are acting like a scientist. How did they use their senses/body parts?  Students must name one of the five senses and what body part it goes with to conclude the lesson.  Make connections to From Head to Toe. What body parts do we use for each of our five senses?  As a sight practice game to relate to the five senses, students can play this NASA Find the Difference game at the computer center (<http://www.nasa.gov/audience/forkids/kidsclub/flash/games/levelone/KC_Not_Same.html>).  When reading, It’s Pumpkin Time!, Pumpkin Pumpkin, Pumpkins in Fall, The Apple Pie Tree, and I Am an Apple make references and connections to 5 senses. Make Comparisons between books. | Yes |
| 3 | Science Questions | Read Interactive Science textbook p. 6-9. Watch Got It video and take Got It quiz (for lesson 1) on the smartboard as a class to review the content from the textbook.  Reveal photographs one quarter at a time. Have students share in their group what they think/predict and what they still wonder. Have some students share ideas and wonderings with the class before revealing each quarter of the photograph.  Model some science questions about the classroom and explain why they are science questions. If there is time, go for a walk outside and discuss science questions that students have about the world around them and discuss WHY these are science questions.  When rereading, It’s Pumpkin Time!, Pumpkin Pumpkin, Pumpkins in Fall, The Apple Pie Tree, and I Am an Apple, ask students what science questions they still have about pumpkins and apples. | Yes |
| 4 | Science Skills | Read Interactive Science textbook p. 11-13. Watch Got It video and take Got It quiz (for lesson 2) on the smartboard as a class to review the content from the textbook.  Students use their sense of smell only in a lab to learn more about the importance of their 5 senses. In small groups, students will use their sense of smell to identify pungent objects in cups that are covered with a paper towel that has some holes punched in it. Students will attempt to draw and label the objects without being able to see or touch them. After all groups are finished, objects will be revealed. Discuss what misconceptions students had during this lab. How were they acting like a scientist? How did they use their senses? | Yes |
| 5 | Science Tools and Safety | Read Interactive Science textbook p. 14-17. Watch Got It video and take Got It quiz (for lesson 3) on the smartboard as a class to review the content from the textbook.  Read Science Tools big book and discuss how to use the tools safely.  *Centers*: (SW rotate to 2 out of 4)   1. IPad game or watch video on IPad 2. Game board activity: SW use a game piece to identify tools around the table, placing their designated piece of the tool they think is being described. 3. SW measure the length/height of pumpkins and apples or their different parts using science tools. 4. Play tool matching game (Memory).   Conclusion: SW circle the tools a scientist might use – WS  *Differentiation*- Higher students will need to identify specific tools - WS | Yes |
| 6 | Finding Answers and the Scientific Method | Watch BrainPOPjr video: Scientific Method. Take online “easy” quiz at the conclusion of video as a class. SW hold their fingers up to designate their answer: 1 = A, 2 =B, 3 = C, 4 = D. Teacher will take the most popular answer.  Expose students to Scientific Method posters. Make references to these as they complete labs.  Sink or Float lab. Distribute objects to each group. SW make hypothesis on whether 5 different objects will sink or float when placed in water. They will write an F for Float or an S for Sink based on their predictions in the correct column. Then students will test their hypothesis by placing each object into water. Record data. As a class, determine a conclusion on what we have learned through the experiment.  \*\*Use objects that tie into current Shared Reading Unit.  Read Science A-Z book(s) as whole class via smartboard. (Hypothesis and/or Draw Conclusions) | Yes |
| 7 | Sharing Data | Read Interactive Science textbook p. 25-27. Complete graphs on pages 26 & 27 as a whole class. Watch Got It video and take Got It quiz (for lesson 5) on the smartboard as a class to review the content from the textbook.  Create class bar graph by surveying class about what kind of pumpkin or apple food they like the best. Reference shared reading books.  Working with a partner, SW count and record how many exercises they can each do in an allotted time span. First, create a hypothesis of how many exercises they think they can do in 10 seconds. Fill in hypothesis on WS. Once exercises are complete, they will record their data using a horizontal bar graph. SW complete the graph for their own data.  SW switch their data with another group to be able to interpret their data and make a conclusion. |  |
| 8 | Science Leaders | Working in small groups, learn about several science leaders that have impacted Science by making discoveries and inventions that have influenced the way we view our world using Did It Take Creativity to Find Relativity, Albert Einstein?, I Am Albert Einstein, and The Modern Inventions of Benjamin Franklin Now & Ben. Discuss how the leaders did this? SW share 1-2 facts about why the scientist is important.  SW go to their seat and take notes on Benjamin Franklin and Albert Einstein in their *Famous Leaders* book. SW paste the person’s name on a new page, draw a picture of each person, write down 1 major accomplishment, birth date and birth place. |  |
| 9 | Centers | Throughout the week, provide opportunities to explore centers that allow students to explore the 5 senses and the Scientific Method.  Art Center: Labeling apple craft.  5 senses sort |  |
| 10 | Summative Assessment | -SW complete a 5 senses WS. They will need to identify the sense that corresponds to each body part. They will also need to draw something they can observe with that sense.  -Science Chapter Test |  |
| **Special Considerations**:   * Each lesson will begin and end with an essential question * Several of the lessons will be 2-3 periods/days long * Some instruction will occur during Shared Reading block and some will occur during Science literacy block * Some of the teaching will occur in small groups during centers * Additional resources will be added * Differentiation will occur as needed | | | |  |

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| **Assess and Reflect (Stage 4)** | |
| **Reflections / Considerations (Self-assessment)** | **Comments** |
| **Unit and Areas of Study:**  **Did I maintain alignment and integrity between and among Stage 1, Stage 2, and Stage 3?** |  |
| **Adaptive Dimension:**  **Did I make purposeful adjustments to the curriculum content (not outcomes), instructional practices, and/or the learning environment to meet the learning needs and diversities of all my students?** | For struggling students:  For students who need a challenge: |
| **Instructional Approaches:**  **Did I use a variety of teacher directed and student centered instructional approaches?** |  |
| **Resource-based Learning:**  **Did the students have access to various resources on an ongoing basis?** |  |
| **Content and Perspectives/Gender Equity/Multicultural Education:**  **Have I nurtured and promoted diversity while honoring each child’s identity?** |  |

Adapted from: Wiggins, Grant and J. McTighe. (1998). *Understanding by Design*, Association for Supervision and Curriculum Development.

**[](http://www.teacherspayteachers.com/Product/Exploring-My-5-Senses-Unit-479061)**

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