



# SensoREAL

**STEM<sup>2</sup>D Topics:**  
**Science, Design,**  
**Mathematics**

**Target Population:**  
**Students, ages 13–15**



**SENSOREAL** is part of the **Student Activities Series** developed by FHI 360 for Johnson & Johnson's WiSTEM<sup>2</sup>D initiative (**W**inning in **S**cience, **T**echnology, **E**ngineering, **M**athematics, **M**anufacturing, and **D**esign). The series features interactive and fun, hands-on activities for youth.

# SensoREAL

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## ACTIVITY DESCRIPTION

In this hands-on team-based activity, students will use cosmetic products to explore the psychological aspects of science. They will learn how the user expectations are integrated into the design and development of beauty products. The students will then design and execute their own sensory testing on two cosmetic products. With the results obtained, they will reflect on the principles of design thinking, for example the rationale and how the results will inform future formula optimization decisions.

## ESTIMATED TIME



This session typically takes **90 minutes** to complete and should be conducted in **one session**.

## STUDENT DISCOVERIES

**Students will:**

- Learn how user expectations are integrated into the design and development of cosmetic products.
- Learn about sensory testing and different types of sensory attributes.
- Participate in a team-based learning experience, where they will design their own sensory testing and use it to rate different textured cosmetic products.
- Build important STEM<sup>2</sup>D—Science, Technology, Engineering, Mathematics, Manufacturing, and Design—skills, such as creative thinking, critical thinking, problem solving, decision making, and teamwork.
- Realize that STEM<sup>2</sup>D offers diverse and exciting career opportunities.
- Have fun experiencing STEM<sup>2</sup>D.



## STEM<sup>2</sup>D Skills

- Collaboration
- Communication
- Creative Thinking
- Critical Thinking
- Analyzing Data
- Decision Making
- Drawing Conclusions
- Laboratory Skills
- Problem Solving
- Teamwork

## GETTING READY

### Materials:

- Pre-Activity Checklist
- Computer with projector
- PowerPoint: SensoREAL
- Tell My Story Form
- Hand wipes or paper towels (for clean-up)
- Pen/pencil, 1 per group of 2
- 2–3 cosmetic products of different texture and type (e.g., lotion, gel, face wash, body scrub, moisturizer)
- SensoREAL Materials, 1 set of the following materials per activity leader (for demonstration) and 1 per student team
  - SensoREAL Sensory test template (student handout)
  - 2–3 small plastic bowls/jar
  - 2–3 ice cream or popsicle sticks (to use as applicator)
  - 15 mL (1 tsp) of cosmetic sample A
  - 15 mL (1 tsp) of cosmetic sample B
  - 15 mL (1 tsp) of cosmetic sample C
  - Tissue

### PRE-ACTIVITY CHECKLIST:

#### SENSOREAL

The following checklist helps activity leaders plan and prepare to conduct SensoREAL activity with students.

#### DID YOU...

- Read Spark WiSTEM<sup>2</sup>D. This is essential reading for all volunteers interested in working with youth. It defines the STEM principles and philosophy and provides research-based strategies and tips for engaging and interacting with female students. Download at [www.STEM.org](http://www.STEM.org)
- Visit the implementation site and observe the young people? (optional) If so, take note of the following:
  - How does the site encourage student participation? For example, do the young people raise their hands when responding to questions or during discussions? How are interruptions handled? Do you see any potential problems managing the class of young people?
  - What does the site do to make each student feel important and at ease?
  - How is the room arranged? Will you need to move desks or chairs for any part of your presentation?
  - How can you engage the site representative in your presentation?
- Meet with and finalize the logistics with the site representative?
  - Confirm the date, time, and location of the activity?
- Recruit additional volunteers?

### Estimated Cost

Activity leaders can expect to incur less than \$30.00 (excluding optional items) in materials costs when completing this activity with 30 students organized into teams of two students.

### Activity Leader Preparation

- Read **Spark WiSTEM<sup>2</sup>D**. This is essential reading for all volunteers interested in working with youth. It defines the STEM<sup>2</sup>D principles and philosophy and provides research-based strategies and tips for engaging and interacting with students. Download at [www.STEM<sup>2</sup>D.org](http://www.STEM<sup>2</sup>D.org).
- Review the **Pre-Activity Checklist** (at the end of this document) for details and specific steps for planning, preparing, and implementing this activity.
- See the **STEM<sup>2</sup>D Student Activities Overview** for additional information.

# Step-by-Step Instructions: SENSOREAL

## 1. Welcome and Introductions (5 minutes)

- Welcome the students.
- Introduce yourself by saying your name, title, and your organization/company.
- **(Today's Plan Slide)** Review the agenda. Explain that students will learn about STEM<sup>2</sup>D concepts relating to the production of cosmetic products. They will understand how user expectations are integrated into the design and development of beauty products. Finally, they will design their own sensory test and use it to rate two beauty products and discuss their findings with the class.
- They will also learn about STEM<sup>2</sup>D subjects and careers that are involved in beauty and cosmetic field.
- Initiate an opening discussion to center students to the concepts of STEM<sup>2</sup>D and cosmetics. Consider asking:
  - What is STEM<sup>2</sup>D? What do you know about STEM<sup>2</sup>D?
  - How do you think science and design are used every day in the workplace?
  - How might they be used in the beauty and cosmetic industry?
  - What kinds of careers do you think people with an interest or degree in science and design would have?
  - Give examples of Johnson & Johnson and other job title and careers that align with this activity and the cosmetic field.

## 2. Warm-Up Activity (5 minutes)

- **(How Much Do You Know About Cosmetic Products? Slide)** Initiate the lesson and topic discussion.
- Show the images of the cosmetics products and ask the students:
  - Can you identify each image? What are they?
  - What are some reasons why people use cosmetic products?
  - Do you know of any cosmetic brand that belong to Johnson & Johnson?



### KEY WORDS

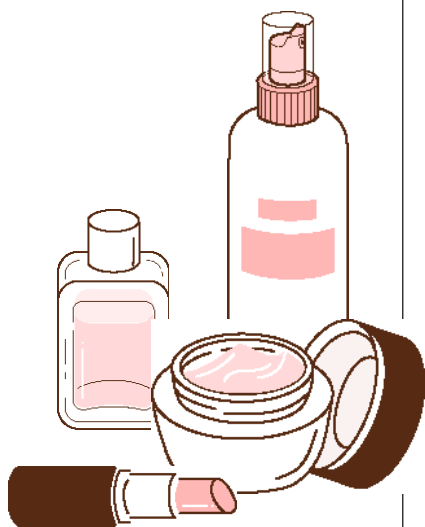
- Competitive Market
- Consumer
- Cosmetics
- Emulsion
- Producers
- Research and Development (R&D)
- Sensory Analysis
- Sensory Attributes
- Sensory Testing
- Sensory Test Questionnaire





## TIPS ON STARTING CONVERSATIONS

- What area of STEM<sup>2</sup>D interests you?
- What area of STEM<sup>2</sup>D is your favorite?
- Why did you choose that area of STEM<sup>2</sup>D as your favorite?
- When you consider your future, what are you most excited about?
- What would your dream job be?
- Where do you see yourself in five to ten years?
- What does the perfect workday look like to you? Are you working with others or alone? Do you solve problems? Are you fixing or building things?



- Do you believe consumer (the person using the product) feedback is involved in the design and creation of cosmetic products? Why? Why not?

### 3. Content Presentation (15 minutes)

- **(Cosmetic Products Slide)** Introduce cosmetics by stating:
  - Cosmetic products are mixtures of chemical compounds, some naturally derived, and others created synthetically in a laboratory by scientists and engineers.
  - Cosmetic product uses include personal and skin care, for example cleansing to protect the skin and hair from product build up, moisturizing to supply nutrients to the skin, and using makeup to enhance one's appearance. Some cosmetic products combat the growth of pimples in teenagers as they start puberty, while others treat conditions like dandruff and dry skin.
  - There are four (4) general types of cosmetic products:
    - **Decorative** – lip gloss, lip sticks, foundation, eyebrow pencils, mascara
    - **Skincare** – moisturizers, lotions, face cream, face mask, sunscreen
    - **Haircare** – shampoos, conditioners, moisturizer, oil, and scalp treatments
    - **Perfume** – body mist, perfume, cologne, etc.
  - Girls generally gain interest in decorative and skin care products in their early teens. This often continues well into their adulthood.
- **(Sensory Testing and Attributes Slide)** Introduce sensory testing by stating:
  - The cosmetic industry is a very competitive market for the companies (producers) who are developing and selling their products and the people using the items (consumers). Everyone wants the best product! But how do they get there?
  - The cosmetic industry uses sensory testing as an important part of designing cosmetic products. It allows companies to consider and integrate consumer feedback into the design of their products, to make more suitable products.

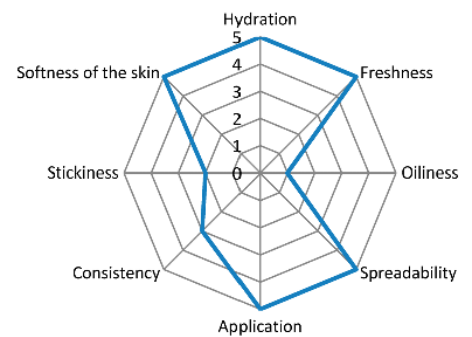
- It helps the companies gain insight into what consumers are thinking, uses data to refine and fulfill consumer needs, and integrate both art and science into one space.
- Sensory testing results depends on the area of the body the product is applied, for example, the lips, skin, hair, and therefore needs constant feedback for product improvement. This process of improvement is critical to the Research and Development (R&D) field.
- As the world's biggest maker of health care products, Johnson & Johnson seeks to help people everywhere live longer, healthier, happier lives. Aveeno, Johnsons Baby, Neutrogena, and Clean & Clear are example Johnson & Johnson products.
- The sensory attributes guide is a list of common features that are used in cosmetic evaluation to determine a product's qualities.

- Some example sensory attributes are highlighted in the spiderweb at right and include:

- Softness
- Stickiness
- Oiliness
- Freshness

- **(Sensory Test Questionnaire Slide)**

- A sensory test questionnaire is a set of questions that allows consumers to rate attributes of different products on a scale.
- The scale can go from 1 to 5, where:
  - 1 – Dislike, disagree, difficult etc.
  - 5 – Like, strongly agree, easy etc.
- Each sensory test is unique because everyone might ask different questions.
  - How well does a product spread?
  - How hydrating does a product feels on the skin?
- The information collected is subjective and used in two ways:
  - **Comparison** — Sample A is easier to spread compared to Sample B
  - **Majority Perception** — 8 out of 10 responses said that the Sample is somewhat greasy.





## TIPS FOR MAKING CONNECTIONS

Encourage students to:

- Ask questions if they don't understand.
- Summarize what they have learned.
- Explain their thinking process aloud.
- Explain in their own words how sensory testing works.
- Outline the results from the sensory test.
- Describe how they applied their critical thinking skills to develop their sensory questionnaire.
- Compare and contrast the different textured products.



- Consumer feedback is used for product formula optimization by the R&D team.

### 4. Learning Activity (55 minutes)

#### Introduce the activity. Explain:

- **(Sensory Testing of Cosmetic Products Slide)** Break the group into teams of two people and instruct the teams to sit together.
- Introduce the activity using the instructions below. Indicate:
  - Today, we are going to do a team-based activity where you will design a sensory test and use it to rate two or three different textured cosmetic products.
  - You will then determine which of the products has the highest score and discuss your results as a class.
  - Follow along in your student handout for the step-by-step process.
- **(Instructions – Define the Test Slide)** Explain the following steps for designing the sensory test and rating the cosmetic products:
  - You work together to define your test, design the test questionnaire, and conduct the test of your products.
  - There is no right or wrong in a sensory test, so be creative and have fun designing your test.
  - To define the parameters of your test, use the key words and questionnaire template in your student handout.
  - Pick two attributes from the list, where you can get either similar results (comparability) or drastically different results (disparity).
  - You may also come up with your own attribute and write it in the table. Be sure to include your definition.
- **(Instructions – Design the Questionnaire Slide)**
  - To design your questionnaire, you will generate four to five (4 to 5) questions with responses on a scale of 1–5.
  - Be sure to define with 1-5 mean.
- **(Instructions – Conduct the Test Slide)**
  - To conduct the test of your cosmetic products, you will determine who in your team is the tester and who is the recorder (ask and record the responses). You will then follow the step-by-step instructions in your handout.

- You will then calculate the total and average scores for each of the products and record them in the table provided.
- Finally, you will review and answer to your best ability the questions in your student handout.
- **(Results Discussion Slide)** Regroup the students as a class and explain the expected results from the sensory test:
  - Expected Results
  - High score – The product is desired by consumers.
  - Middle score – The product is partially desired by consumers and may need minor changes in the formula for improvement.
  - Low score – The product is undesirable by consumers.
- Ask the students the following questions about the activity:
  - Were the results as you have expected it?
  - Why did you choose the two (2) attributes to test?
  - What was your team’s thought process in the design of your questions?
  - Based on your feedback to the questions, how would you improve the two products?
  - Are there any other attributes you would test? What are they? Why?
  - How might you or a lab scientist improve your cosmetic product with the lowest rating?
- Probe the students to make a real-world connection for the activity. Consider asking one of the following questions:
  - Do you use cosmetic products?
  - Did you know body washes and shampoos are also cosmetic products and are developed by scientists?
  - How often do you apply skin care products (e.g., moisturizer, serum, or masks)?
  - Do you know the importance of sunscreen?
- **(STEM<sup>2</sup>D Careers in the Cosmetic Industry Slide)** Highlight the following as example careers in the cosmetic industry:
  - Analytical Chemist
  - Clinical Scientist
  - Consumer Scientist



## TIPS ABOUT STEM<sup>2</sup>D CAREERS

Share with students that there are many different kinds of careers related to STEM<sup>2</sup>D. Possible STEM<sup>2</sup>D careers related to this activity:

- Analytical Chemist
- Clinical Scientist
- Consumer Scientist
- Fragrance Evaluator
- Medical Safety Analyst
- Microbiologist
- Perfumer
- Product Developer
- Regulatory Specialist
- Research & Development Scientists
- Research & Development Engineers
- Technical Transfer Process Engineer



## TIPS FOR WORKING WITH STUDENTS

- Ask open-ended questions to encourage student reflection and discussion. For example:
  - How did you decide what attributes to use in your test?
  - What factors determined the design of your sensory test?
  - Would you change about your test design and why?
  - What have you learned so far in this process?
- Help students stay on track with time during the group activity.
- Move around the learning space and provide support when necessary.
- Encourage all students to participate.
- Encourage girls to take on leadership roles in their groups.
- Provide support and answer questions, as needed.

- Fragrance Evaluator
- Medical Safety Analyst
- Microbiologist
- Perfumer
- Product Developer
- Regulatory Specialist
- Research & Development Scientists
- Research & Development Engineers
- Technical Transfer Process Engineer

### 5. 5. Student Reflection (10 minutes)

- **(What Did We Learn? Slide)** Ask students to reflect on the activity. Have students spend a few minutes thinking about the following questions:
  - What did you learn about cosmetics and sensory testing?
  - What was difficult to understand about sensory testing?
  - What did you learn about working in a team?
  - What would you change about the sensory testing activity if you were to do it again?
- **(Reflection Slide)**
  - How do you think this activity relates to a career in research and development (R&D) and/or working at Johnson & Johnson?
  - Can you see yourself as a STEM<sup>2</sup>D professional? Why or why not?
  - What do you need to do to make this happen?
  - What is one thing you learned that you did not know coming into today?
- Thank students for joining you today and encourage them to continue exploring careers in STEM<sup>2</sup>D.

## Extended Learning

Here are a few ways to extend the learning:

- Try repeating this activity with different cosmetic products. Possibly test the same type of products and compare them to see if there are any differences or similarities. For example, skin care versus haircare products.
- Group the teams who tested the same attributes. Ask them to compare the questions they developed and the scores for their two products. As a collective group, they will share with the class similarities and interesting things they found. If there are no teams with the same attributes, use it as an opportunity to discuss the class distribution and how it ties into consumer feedback.
- Try **The Suncare Project** to learn how you can use cosmetic products to protect your skin from the sun.

## Key Words

- **Competitive Market:** A structure where multiple companies (producers) compete directly and indirectly to provide their products and services to consumers.
- **Consumer:** A person who purchases goods for direct use.
- **Cosmetics:** Mixtures of chemical compounds, some naturally derived, and others created synthetically in a laboratory by scientists and engineers.
- **Emulsion:** A mixture of liquids that do not mix. The most common example is oil and water, which creates a dispersion of oil droplets into the water molecules.
- **Producers:** Companies who are developing and selling their products and services.
- **Research and Development (R&D):** A process to create new products and processes to improve our existing offerings. For example, skin care products, medicines, tools for surgery, computer software, and cell phone applications.
- **Sensory Analysis:** A scientific discipline that applies principles of experimental design and statistical analysis to the use of human senses for the purposes of evaluating consumer products.
- **Sensory Attributes:** A list of common characteristics that are used in cosmetic evaluation to determine a product's attributes.

- **Sensory Testing:** Sensory testing involves the evaluation of a person's perception to assess the integrity of the peripheral nervous system. It is an important part of designing cosmetic products, where companies consider consumer feedback, to make more suitable products.
- **Sensory Test Questionnaire:** A set of questions that allows consumers to rate attributes of different products on a scale.

## Resources and References

Adapted from the Johnson & Johnson WiSTEM<sup>2</sup>D Youth Programs' Race to Inspire program in partnership with JA (Junior Achievement) Singapore. Developed by FHI 360 with the Oat Latte team, Chernis Low, Estelle Gu, and Vanessa Chong.

Presentation slide 9: Censi, Roberta, Dolores Vargas Peregrina, Giovanna Lacava, Dimitrios Agas, Giulio Lupidi, Maria G. Sabbieti, and Piera Di Martino. 2018. "Cosmetic Formulation Based on an Açai Extract" *Cosmetics* 5, no. 3: 48. <https://doi.org/10.3390/cosmetics5030048>

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# PRE-ACTIVITY CHECKLIST:

## SensoREAL

*The following checklist helps activity leaders plan and prepare to conduct the SENSOREAL activity with students.*

### DID YOU...

- Read **Spark WiSTEM<sup>2</sup>D**? *This is essential reading for all volunteers interested in working with youth. It defines the STEM<sup>2</sup>D principles and philosophy and provides research-based strategies and tips for engaging and interacting with students. Download at [www.STEM2D.org](http://www.STEM2D.org).*
- Visit the implementation site and observe the young people? (*optional*) If so, take note of the following:
  - How does the site encourage orderly participation? For example, do the young people raise their hands when responding to questions or during discussions? How are interruptions handled? Do you see any potential problems managing the class of young people?
  - What does the site do to make each student feel important and at ease?
  - How is the room arranged? Will you need to move desks or chairs for any part of your presentation?
  - How can you engage the site representative in your presentation?
- Meet with and finalize the logistics with the site representative?
  - Confirm the date, time, and location of the activity?
  - Confirm the technology needs? Do you need to bring a computer and a projector to show the PowerPoint? Or, does the site have one that you can borrow? Does the site have Internet access? Can you use it during the activity to show the videos?
  - Confirm the number of students attending? Knowing this will help you decide how to separate the class into teams and/or pairs, as well as the appropriate materials to purchase.
- Recruit additional volunteers?
- Prepare for the activity? Did you:
  - Read the entire activity text prior to implementation?
  - Customize the activity and tailor the PowerPoint, if desired, to reflect your background and experiences, as well as the cultural norms and language of the students in your community?

- Review the notes section of the slides in the PowerPoint for information to be shared?
- Complete the Tell My Story Form, which will prepare you to talk about your educational and career path with the students? If desired, include key points about your story on the PowerPoint (see ***Tell My Story Slide***).
- Practice your presentation, including the hands-on, minds-on activity? Be sure to:
  - Do the activity; make sure you are able to explain the concepts to students, if needed, and that you know the correct answers.
- Obtain the required materials? (See the ***Materials and Estimated Materials Costs*** sections.)
- Photocopy the Student Handouts?
- Set up the site appropriately for the activity? Specifically:
  - Make sure tables and chairs are arranged to accommodate teams of # students.
  - INSERT activity-specific set up instructions.
  - Set up the computer and projector for the PowerPoint presentation. Be sure that speakers and an Internet connection are available to show the video.
  - If additional volunteers are available, assign adults to specific teams.
- Bring a camera, if desired, to take photographs.
- Obtain and collect permission slips and photo release forms for conducting the activity if applicable?
- Have fun!**

# TELL MY STORY FORM

*This form will help activity leaders and other volunteers prepare to talk about their STEM<sup>2</sup>D interests, education, and career path.*

## ABOUT YOU

Name: \_\_\_\_\_

Job Title: \_\_\_\_\_

\_\_\_\_\_

Company: \_\_\_\_\_

When/Why did you become interested in STEM<sup>2</sup>D? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

What do you hope young people will get out of this activity? \_\_\_\_\_

\_\_\_\_\_

## FUN FACT

Share a little about your background. Ideas:

- Share a memory from childhood when you had your first 'spark' or 'interest' in STEM.
- Detail your journey. Highlight what you've tried, what you learned, steps to success, etc.
- Failures or setbacks are also great to talk about, as well as difficulties and/or challenges and how you overcame them.

## EDUCATION AND CAREER PATH

What classes/courses did you take in secondary school and in college that helped or interested you most? \_\_\_\_\_

\_\_\_\_\_

How did you know you wanted to pursue a STEM<sup>2</sup>D career? \_\_\_\_\_

\_\_\_\_\_

What was your postsecondary path, including the institution you attended and your degree? *If you switched disciplines, make sure you explain why to the students.* \_\_\_\_\_

\_\_\_\_\_

What your current position entails. *Be sure to include how you use STEM<sup>2</sup>D during a typical work day.* \_\_\_\_\_

\_\_\_\_\_

# SensoREAL

## Student Handouts

### Sensory Testing of Cosmetic Products

In this team-based activity, you will:

1. Design and craft questions to develop a sensory test.
2. Use your sensory test to rate two (2) different textured cosmetics products.
3. Determine which of the two products has the highest score.
4. Discuss your team's results with the class.

### Step 1: Defining the Test

Select two (2) attributes from the list of common sensorial attributes used.

With your team member, pick 2 attributes where you can get either similar results (*comparability*) or drastically different results (*disparity*). Or come up with your own and write it down in the empty space provided.

Check here if selected	Attribute	Definition
<input type="checkbox"/>	Spreadability	Ease of application of the sample
<input type="checkbox"/>	Ease of absorption	Ease of absorption of the sample on the skin
<input type="checkbox"/>	Freshness	"Cooling" sensation on the skin
<input type="checkbox"/>	Stickiness	Feeling of stickiness on skin after application
<input type="checkbox"/>	Smoothness	No roughness when applying
<input type="checkbox"/>	Moisture level	Perception of water when rubbing.
<input type="checkbox"/>	Greasiness	Amount of oily residue on skin after 30s
<input type="checkbox"/>	Shininess	Amount of shininess on skin after 30s
<input type="checkbox"/>		
<input type="checkbox"/>		
<input type="checkbox"/>		

## Step 2: Designing the Questionnaire

Generate 4-5 questions about the attributes and add them to the template provided below. The questions need to be clear, straightforward, and subjective. Be sure to define what 1–5 will mean (see examples below).

Here are some examples to inspire you:

- How sticky was the sample on skin 30s after application?
- How fast did the sample absorb in the skin?

Here are some examples of how a sensory test will look like:

How easy was it to spread the sample on skin? <i>(1 being hardest to spread, 5 being easiest to spread)</i>					
	1	2	3	4	5
Sample A	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sample B	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Sample A was <b>easier</b> to spread on the skin compared to Sample B. <i>(1 being do not agree, 5 being strongly agree)</i>					
	1	2	3	4	5
Do you agree with the statement above?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

# Sensory Testing Questionnaire

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## NOTES

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### QUESTION 1

	1	2	3	4	5
Sample A	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sample B	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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### QUESTION 2

	1	2	3	4	5
Sample A	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sample B	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**QUESTION 3**

	1	2	3	4	5
Sample A	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sample B	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**QUESTION 4**

	1	2	3	4	5
Sample A	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sample B	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**QUESTION 5**

	1	2	3	4	5
Sample A	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sample B	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Step 3: Conducting the Test/Rating Products

Now that you have your questionnaire, you are ready to set your test instructions. This will ensure that each person is applying the samples in a reproducible manner.

For this activity, we have written out the instructions for you, in the table below by role and the steps to follow.

#### Instructions

RECORDER	TESTER
<p><b>STEP 1</b></p> <p>Read the questionnaire to understand what you will be observing.</p>	<p><b>STEP 2</b></p> <p>Scoop a pea-size amount of Sample A and place on your lower left forearm.</p> <p>Rub the sample in with circular motions, noticing how the sample feels.</p> <p>Let dry for 30s and reevaluate how the sample feels.</p>
<p><b>STEP 3A</b></p> <p>Ask the questions to the tester, one by one.</p> <p>Record the responses as the tester responds.</p>	<p><b>STEP 3B</b></p> <p>Answer the questions as accurately as possible.</p>
<p><b>STEP 4</b> Repeat the process for other samples.</p>	
<p><b>STEP 5</b> Calculate your <u>total and average score</u> for each of the products.</p>	
<p><b>STEP 6</b> Review and answer the questions in your student handout.</p>	

Record your calculations here:

	Scores	Total	Average
Sample A			
Sample B			

## Think About It

Answer the following questions:

Were the results as you have expected it? \_\_\_\_\_

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Why did you choose the two attributes you did? \_\_\_\_\_

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What was your team's thought process in the design of your questions? \_\_\_\_\_

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Are there any other attributes you would test? What are they? Why? \_\_\_\_\_

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How might you or a lab scientist improve your cosmetic product with the lowest rating? \_\_\_\_\_

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How does this activity relate to you? Do you use cosmetic products? \_\_\_\_\_

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