

# SUN PROTECTION

**Subtopic:** What Gives Skin its Color? **Age Group:** 8-10 **Time:** 45 min

## OBJECTIVE: SWBAT

- State that melanin gives skin color
- State that the amount of melanin is what makes skin darker or lighter
- Discuss whether melanin makes us different

## MATERIALS

- Paper
- Pencils
- Small paper or plastic cups (enough for class)
- Unsweetened lemonade or another unsweetened drink, water could work too (enough for class)
- Sugar
- Something to stir lemonade
- Spoon OR One set of measuring spoons
- FOR VARIATION (see Guided Practice): 3 jugs of pre-mixed lemonade of varying sweetness.

*\*Facilitator should have things set up before students arrive to make the lesson flow smoothly. S/he can either pour the lemonade when s/he is giving it to each student or prepare them before class.*

*\*If there is a sugar-sensitive student, you can have him/her work with another student and be a “journalist” and ask the student questions about what the drink tastes like as the sugar is added.*

## ASSESSMENT

1. At the end of the Introduction to New Material, Facilitator will assess whether students understand that melanin gives skin color by asking review questions.
2. During Guided Practice, Facilitator will assess whether students are able to understand the logical flow and connection between the experiment they just did and skin color.
3. During Closing, Facilitator will assess whether students have understood material by asking review questions.
4. During Closing, Facilitator will assess whether students are able to thoughtfully discuss skin color.

## OPENING

**2 min**

1. Facilitator explains that throughout history, there has been a lot of discussion about skin color and what it means. Sometimes people are treated differently because their skin is a different shade, but really, it's just Science that makes us have different skin color. What is the real reason we have different shades of skin? It just comes down to something called melanin.

## INTRODUCTION TO NEW MATERIAL

**3 min; Materials: None.**

1. Facilitator tells students to repeat after him/her: “Melanin.”
2. Facilitator then explains some people call it pigment, and it is what gives our skin color.
3. Facilitator asks students, “So what gives skin color?”
  - a. Students should say “melanin.”

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## GUIDED PRACTICE

*15-20 min; Materials: Paper, pencils, unsweetened lemonade (or lemon water), small paper or plastic cups for students, spoon/straw (something to pour sugar and something to stir lemonade), and sugar*

1. Facilitator says they are going to break into pairs or groups and explains the activity.
  - a. Each person is going to get a small cup filled with lemonade.
  - b. Each pair or group will come up and the Facilitator will put sugar in their cups.
  - c. Students will then sit down and write down two things: What they are drinking and how sweet it is.
  - d. Then students will come up again and repeat. This will happen a total of three times. Students should have a total of three observations written down with the drink they are drinking and the sweetness of it written each time. Students' work should look something like this:
    - i. I am drinking lemonade. It is not very sweet.
    - ii. I am drinking lemonade. It is kind of sweet.
    - iii. I am drinking lemonade. It is very sweet!
  - e. VARIATION: Instead of having students come up and Facilitator adding sugar, Facilitator can have 3 jugs with pre-mixed lemonade of varying sweetness and just pour a little in each cup when students come up during each trial.
2. Facilitator will put a very small amount of sugar (if s/he has measure spoons, it might make it easier) in their cups the first time. A medium amount the second time. The last time the facilitator will put in a lot of sugar. Facilitator needs to make sure the lemonade gets sweeter each time. S/he can have his or her own glass test before giving to students.
3. After all three trials are done and students have written down their sentences, Facilitator asks what they wrote down for each time they added sugar.
  - a. What were they drinking on the first trial? How sweet was it?
  - b. Facilitator repeats for second and third trial.
4. Facilitator asks, "So, even though we kept adding sugar, it was still lemonade every time?"
  - a. Students should respond, "Yes"
5. Facilitator says, "So then, even though something changed, it was still just lemonade?"
  - a. Students should respond, "Yes."
6. Facilitator then says, "Well this is just like skin. The lemonade is just like skin and the sugar is just like melanin. What does melanin do again?"
  - a. If students do not know, Facilitator can remind them that it gives skin color.
7. Facilitator, "So what did the sugar do to the lemonade? If we had more or if we had less?"
  - a. Students should respond that it makes it sweeter.
  - b. If students do not know, then Facilitator can ask a pointed question like, "Did it change the taste somehow? How?"
8. Facilitator then says, "Sugar gives lemonade sweetness depending on how much there is. So if sugar is like melanin, and melanin gives skin color, what will it do to skin color depending on if a person has more or less melanin?"
  - a. If students cannot come to the conclusion that it will make skin darker or lighter, Facilitator can ask a direct question like, "Will it change the shade? Do you think it could change the color?"

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## INDEPENDENT PRACTICE

None.

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## CLOSING

### ***5-10 min; Materials: None***

1. Facilitator asks students if they can tell him/her what gives skin color.
2. Facilitator asks if anyone can explain how melanin works or what it does.
3. Facilitator asks students what they think now that they know the only thing that makes someone's skin darker than another's is melanin.

