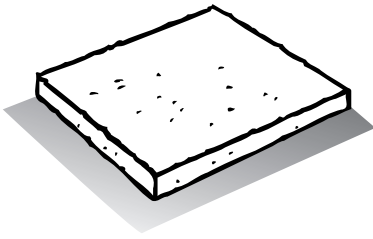


Making a Model of Your Skin

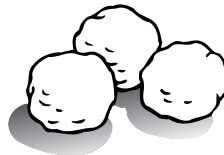
WHAT YOU NEED



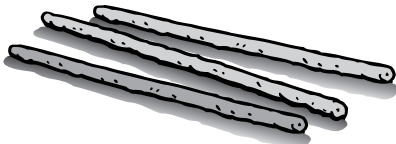
one piece of foam board
(30 cm × 30 cm × 5 cm)



black string or
thread (20 cm)



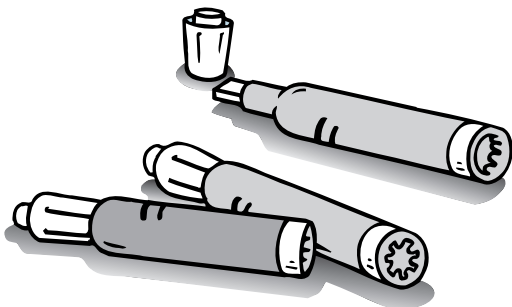
cotton balls



craft pipe cleaners
(red, blue, and yellow)



three toothpicks



markers in various colors



scissors



glue

Find Out

Do this activity to model the different parts of your skin.

Process Skills

Constructing Models
Communicating
Inferring

Time

- 30 minutes the first day
- 10 minutes several times over the next two weeks

WHAT TO DO



1. Cut the foam board in half.
2. Color the very top and the top third of the four sides with any color marker to **represent** the epidermis. The white part will **represent** the dermis.
3. Look in your textbook or other reference books for a model of the layers of the skin. Use the red, blue, and yellow craft pipe cleaners to **represent** blood vessels and sweat glands. Glue them on the inside of one of the halves of the foam board.

4. Use the black string to **represent** the nerve endings. Glue them on the inside of the other half of the foam board. Use the cotton balls to represent fat cells. Glue them to the bottom of the inside pieces of the foam board.
5. **Draw** a sweat gland on the inside of one of the foam boards with markers.
6. When the glue is dry, put the two halves together. Break the toothpicks in half and insert them in the top of your model, **representing** hair. Add any other details to your model that you want.
7. After your skin model is done, **write** five to ten questions that someone can answer by pointing to the skin model and saying its name. Example: What part of the skin will contract when the body is cold? Answer—point to blood vessels.
8. **Ask** your classmates your questions about the skin.



Questions about the Skin

Question	Answer
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

Conclusions

1. What could you add to your skin model to show what determines skin color?

Spots of melanin could be added at the base of the epidermis. The amount of melanin helps determine skin color.

2. What is the difference between the dermis and epidermis layers in your model?

The epidermis should be thinner. The dermis contains blood vessels, nerve endings, and fat cells.

New Questions

1. Why do you think desert animals have thicker skin than humans?

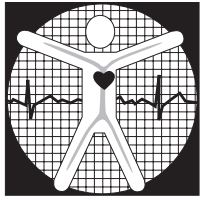
Desert animals have thicker skin to keep body liquids from evaporating.

2. Why do you think the skin has so many functions?

The skin is your largest organ and makes the first physical contact with environmental factors outside the body. It helps regulate heat and cold, protects the body from diseases, and attempts to maintain an equilibrium between the inner parts of the body and the immediate environment.



Name _____



ACTIVITY

The Sense of Touch

Use the hand lens. **Look** at the skin on the back of your hand, your forearm, and some part of your leg. **Draw** what you see.

Back of Your Hand

Forearm

Leg

What do you **predict** will happen when cold water is dropped on each of these areas?

Answers will vary.

Put a drop of water on each spot. **Record** your observations in the chart.

Answers will vary.

Cold Water On	What I Saw	What My Partner Felt
Forearm		
Back of Hand		
Leg		

Conclusions

- ① Compare your predictions with your observations.
Answers will vary based on student predictions.

- ② How did you **react** to each drop of water on your skin?
Answers will vary. The skin on the back of your hand and forearm is more sensitive than the skin on your leg. Students may have reacted differently, especially if very cold water was used.

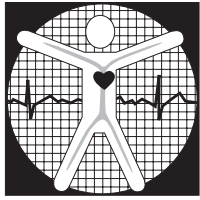
- ③ Did the water react the same way each time? Answers will vary.
Explain.
If the skin is oily, the water may roll off because the oil is waterproof. If the skin is dry, the water will not roll off as quickly.

Asking New Questions

- ① Why did different parts of your skin react differently?
Answers will vary. Possible answers: The layers of skin are thicker or thinner in different places. The nerve endings may be closer to the surface or there may be more nerve endings. The skin also may be oily or dry, which can cause different reactions.

- ② **Predict** how the skin on the top of your foot might respond to a drop of cold water. What about the skin on the sole of your foot? Test your prediction.
Answers will vary. The skin on the top of the foot is usually quite sensitive, while the soles of your feet are not.

Name _____



ACTIVITY

Facial Wrinkles

Use your mirror. Look at the lines in the skin on your face as you smile and frown. **Draw** what you see.

Smiling

Frowning

Predict what will happen when you try to fold 20 sheets of paper.
Answers will vary.

Conclusions

- ① Compare your **predictions** with your **observations**.
Answers will vary based on student predictions.

- ② Which paper was easier to fold, the single sheet of paper, the stack of 10, or the stack of 20? **Compare** what the folds looked like on each of these faces.
Answers will vary. The single sheet folds easily. The folds in the single sheet should be deeper and more noticeable. Thicker stacks of paper are harder to fold, and folds in them are less visible. The folds in the stack of 20 may not be noticeable at all.

- ③ How can the sheets of paper be **compared** to the layers of your skin?
When the layers of skin are thick, the wrinkles are not as noticeable. When the layers are thin, the wrinkles are more noticeable.

Asking New Questions

- ① How do you think the sun or smoking can make the wrinkles in your skin more noticeable?
Answers will vary. Possible answers: the UV rays from the sun and smoke damage some of the layers of your skin. With fewer layers, the wrinkles in your skin are more noticeable.

- ② How does your face wrinkle when you are crying? Can you fold your paper to demonstrate this?
Students should observe their own faces and attempt to model the lines. The folds will vary.