Name _____ Class _____ Date _____

Skills Worksheet

Reinforcement

Muscle Map

Complete this worksheet after you finish reading the section "The Muscular System."

Each of the boxes below is labeled with one of the three types of muscle tissue in your body. Write each note in the correct box. Some of the notes can be used more than once.

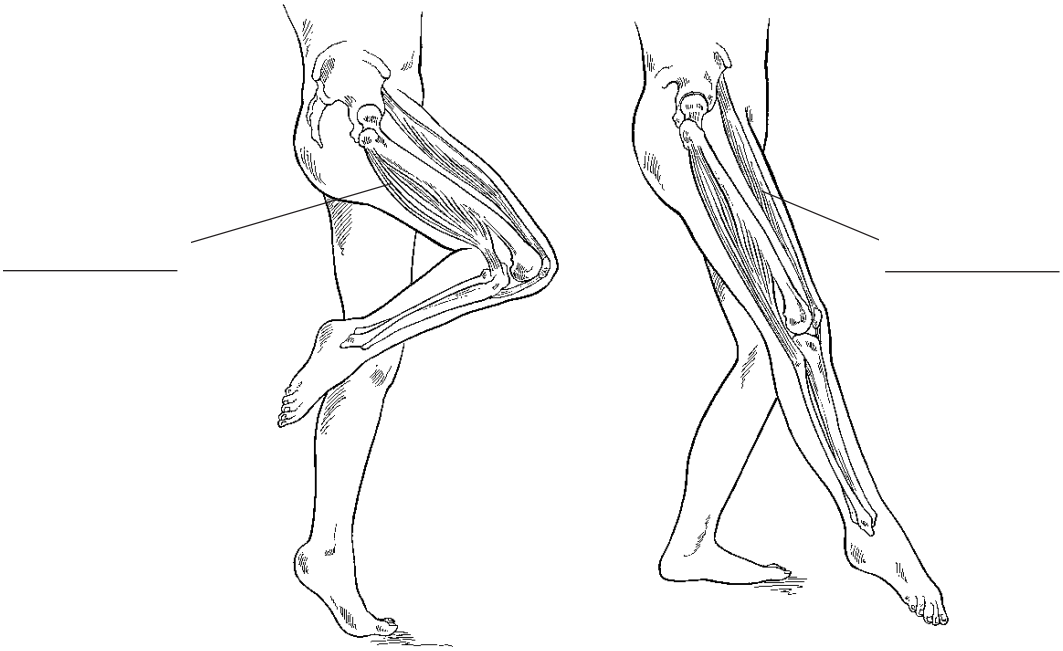
Three Types of Muscle

Skeletal	Cardiac	Smooth

Notes

- moves bones
- involuntary
- voluntary
- often work in pairs
- in the heart
- moves food
- in blood vessels
- in the digestive tract
- pumps blood

A flexor is a muscle that bends a part of your body when it contracts. An extensor is a muscle that extends a part of your body when it contracts. Label the flexor muscle and the extensor muscle on the diagram below.



18. Answers will vary. Sample answer: Leg bones are long and skinny while skull bones are thin and wide. Many skull bones are curved. Leg bones enable walking and standing while skull bones are designed to protect the brain.
19. Answers will vary. Sample answer: The skin on the elbows is thin, loose, and sometimes rough. The skin on the fingertips is thicker, but more sensitive to touch. The skin on elbows allows the elbow to bend because it is loose and can stretch. The skin on the fingers is important for the sense of touch.
20. Answers will vary. Sample answer: The robot would need a ball-and-socket joint. A ball-and-socket joint allows movement in all directions.
21. Answers will vary. Sample answer: Dense bones that are filled with marrow weigh more than hollow bones. Because most birds fly, they need lighter bones. So, birds' bones are hollow.
22. Sample answer: If a bone is broken, flexors or extensors likely will not work properly. These muscles will not be able to pull on a bone in the way that they do when a bone is not broken. Also, if the area where the muscle attaches is damaged, the ability of the muscle to pull on the bone may be affected.
23. dermis; collagen
24. Answers will vary. Sample answer: Sweat glands release sweat to cool the body.
25. Answers will vary. Sample answer: Oil glands release oil to keep hair flexible and waterproof the epidermis.
26. C
27. F; hair follicle

Reinforcement

THE HIPBONE'S CONNECTED TO THE…

From left to right and top to bottom: pelvic girdle, fibula, skull, clavicle, ribs, humerus, vertebral column, radius, ulna, femur, patella, and tibia

1. hinge joint
2. ball-and-socket joint
3. gliding joint

MUSCLE MAP

Skeletal Muscle: moves bones, involuntary, voluntary, often work in pairs
Cardiac Muscle: in the heart, involuntary, pumps blood
Smooth Muscle: in blood vessels, in the digestive tract, moves food, involuntary
Leg on left-hand side: flexor
Leg on right-hand side: extensor

Critical Thinking

1. Answers will vary. Sample answers: Engineered tissues would provide a permanent solution for skin and organ loss. Patients would not have to wait for a matching donor organ.
2. Answers will vary. Sample answers: The procedure is relatively new, so it is probably very expensive. The long-term success rate is unknown.
3. Answers will vary. Sample answer: No. The use of engineered tissue is unethical. Scientists should not have the power to make living skin or body organs. Sample answer: Yes. The use of engineered tissue is ethical because it improves the quality of life for burn patients.
4. Answers will vary. Sample answer: What have been the long-term results of other patients who underwent the same treatment? What does this procedure cost? What are the other possible treatments?
5. Answers will vary. Sample answer: Internal organs are more complex than skin. While skin is made up of one type of tissue, internal organs are made up of a combination of tissues. Each type of tissue has specialized cells that perform specific functions.