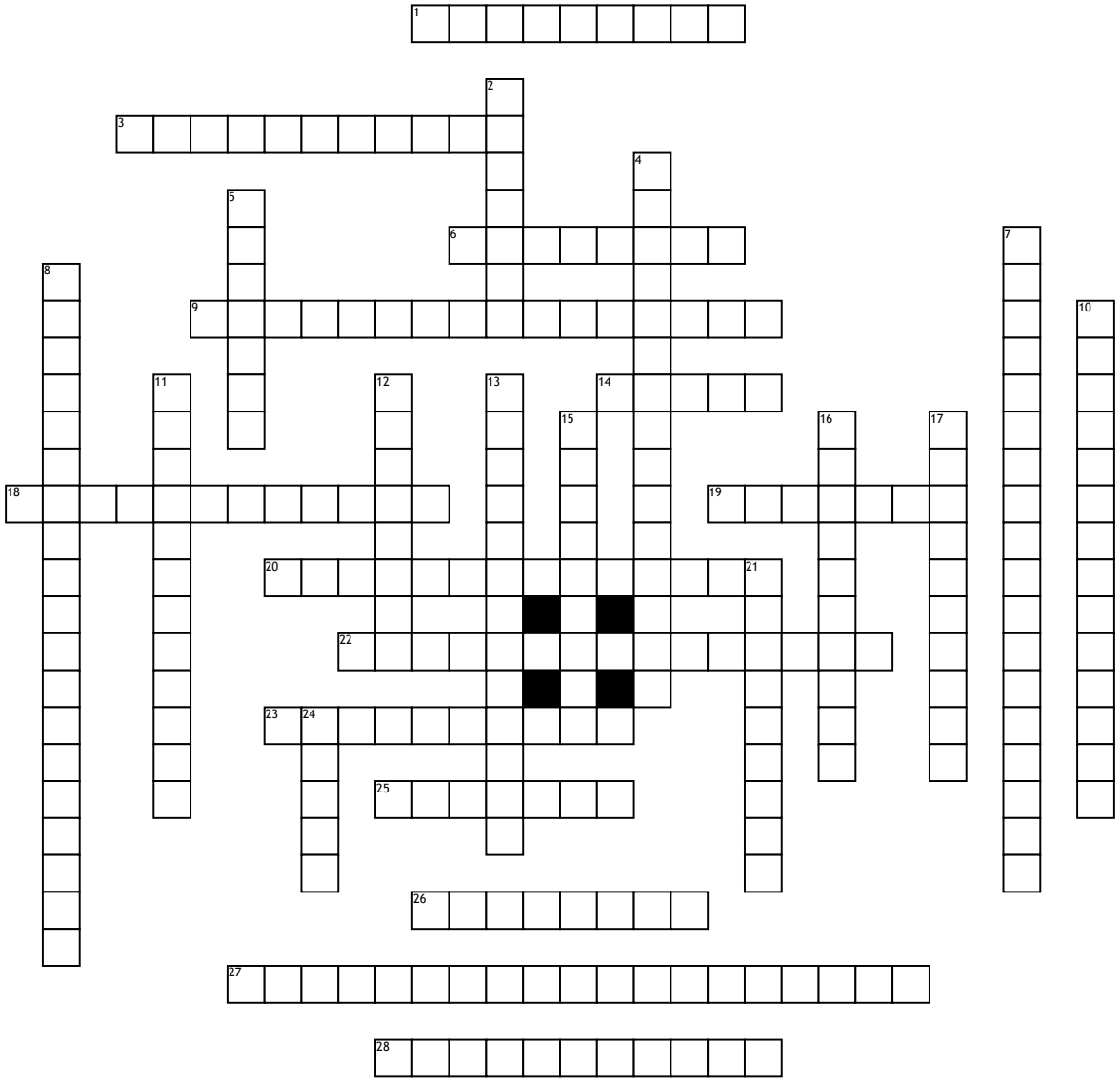
Name: _____ Date: _____

Biomechanical Principles



Across

1. the perpendicular distance from the line of action of a force on a lever to its fulcrum

3. force generated by biomechanical activity which tends to drawthe opposite ends of a muscle towards each other

6. a vertical plane dividing the standing body into left and right halves

9. the angle between the overall muscle and its fibers

14. the time rate of doing work (work / time OR force x velocity)

18. the mechanical analysis of biological systems

19. the muscle most directly involved in creating movement

20. force which acts contrary to muscle force (gravity, inertia, friction)

22. an object's rotational speed

23. the resisting force encountered by an object moving through a fluid or by a fluid moving past or around an object

25. the pivot point of a lever

26. an arched back

27. the angle through which an object rotates

28. the concept that training is most effective when resistance exercises bear key similarities to the sports activity in which the improvement is sought

Down

2. a muscle whose fibers have featherlike arrangement

4. rotational work per unit of time or torque times angular velocity

5. a vertical plane dividing the standing body into anterior and posterior halves

7. the body standing erect with arms down and palms forward

8. the ratio of movement arm through which an applied force acts to that through which a resistive force acts

10. the product of torque and angular displacement

11. the rate at which speed changes

12. the resistive force encountered while attempting to move two surfaces in contact relative to each other

13. the force required to accelerate an object (mass x acceleration)

15. when muscle length does not change because the contractile force is equal to the resistive force

16. when a muscle shortens because its contractile force is greater than the resistive force

17. a muscle that can slow down or stop a movement

21. when a muscle lengthens because its contractile force is less than the resistive force

24. an object that, when subjected to a force whose line of action does not pass through its pivot point, exerts force on any object impeding its tendency to rotate