Muscular System Worksheet

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Part 1: Building a Foundation

Which type of muscle is voluntary and striated?

Hint: Think about the muscles you can control.

- ◯ Smooth
- ◯ Cardiac
- ◯ Skeletal
- ◯ None of the above

Which of the following are functions of the muscular system?

Hint: Consider the various roles muscles play in the body.

- ☐ Movement
- ☐ Digestion
- ☐ Heat production
- ☐ Blood filtration

Describe the role of tendons in the muscular system.

Hint: Think about how tendons connect muscles to bones.

List the three types of muscles and provide one characteristic of each.

Hint: Consider the different muscle types and their unique features.

1. Skeletal muscle

2. Cardiac muscle

3. Smooth muscle

Part 2: Understanding and Interpretation

How do smooth muscles differ from skeletal muscles in terms of control?

Hint: Think about which muscles you can consciously control.

- ◯ Smooth muscles are voluntary, skeletal muscles are involuntary.
- ◯ Both are voluntary.
- ◯ Smooth muscles are involuntary, skeletal muscles are voluntary.
- ◯ Both are involuntary.

Which of the following statements about muscle contraction are true?

Hint: Consider the process of how muscles contract.

- ☐ ATP is not required for muscle contraction.
- ☐ Actin and myosin filaments slide past each other.
- ☐ Muscle contraction is initiated by neurotransmitters.
- ☐ Muscles can contract without nerve signals.

Explain how the neuromuscular junction facilitates muscle contraction.

Hint: Think about the connection between nerves and muscles.

Part 3: Application and Analysis

Which muscle type would be primarily involved in the digestion process?

Hint: Consider the muscles that work automatically in the digestive system.

- ◯ Skeletal
- ◯ Cardiac
- ◯ Smooth
- ◯ None of the above

During exercise, which of the following adaptations occur in muscles?

Hint: Think about how muscles respond to physical activity.

- ☐ Hypertrophy
- ☐ Atrophy
- ☐ Increased ATP production
- ☐ Decreased blood supply

Describe a real-world scenario where the sliding filament theory is demonstrated.

Hint: Think about everyday activities that involve muscle movement.

Part 4: Evaluation and Creation

What is the primary reason for muscle fatigue during prolonged exercise?

Hint: Consider what happens to muscles when they are overworked.

- ◯ Lack of oxygen
- ◯ Depletion of ATP
- ◯ ExcessIVE calcium
- ◯ Increased neurotransmitter release

Analyze the following scenarios and identify which could lead to muscle atrophy:

Hint: Think about conditions that affect muscle use.

- ☐ Regular resistance training
- ☐ ProlongED bed rest
- ☐ Immobilization of a limb
- ☐ Consistent aerobic exercise

Compare and contrast the roles of actin and myosin in muscle contraction.

Hint: Think about how these proteins interact during contraction.

Which intervention would most effectively prevent muscle atrophy in an immobilized limb?

Hint: Consider methods to maintain muscle activity.

- ◯ Increasing protein intake
- ◯ Electrical muscle stimulation
- ◯ Applying heat packs
- ◯ Taking muscle relaxants

Propose strategies to enhance muscle recovery post-exercise:

Hint: Think about what aids in muscle recovery.

- [ ] Adequate hydration
- [ ] Sleep and rest
- [ ] StretchING and cooling down
- [ ] Consuming high-fat meals

Design a weekly exercise plan that targets all major muscle groups and promotes overall muscle health. Include types of exercises and their benefits.

Hint: Think about a balanced approach to exercise.