Name: _____ **Date:** _____

Answer Key: Blast Into the Body! Advanced 2nd Grade Exercise Physiology Mission

Rising young scientists design fitness blueprints and analyze how lungs and muscles adapt when the playground becomes a high-performance lab.

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1. Imagine you are designing a new sport called 'Sky-Ball.' If players have to jump for 20 minutes, which long-term change would help their bodies perform best?

Answer: B) Their lungs get better at moving oxygen to their muscles.

Chronic adaptation means the body gets better at specific tasks over time. Efficient lungs help the body keep moving during long activities.

2. When an athlete stops a heavy game of 'Freeze Tag' to rest, their body begins a process called _____ to fix tiny muscle tears and get stronger.

Answer: C) Recovery

Recovery mechanisms allow the body to repair itself after exercise, ensuring muscles grow back stronger than they were before.

3. True or False: If a student practices balancing on one foot every day for a month, their brain and muscles learn to work together more efficiently.

Answer: A) True

This is a chronic adaptation where the nervous system and muscles improve their coordination through regular practice.

4. You notice your friend's face is very red and they are breathing fast after a race. Which physiological response are you observing?

Answer: B) An acute response

Acute responses are immediate changes, like sweating or fast breathing, that happen the moment we start exercising.

5. If you are sprinting as fast as you can to catch a bus, your body uses its _____ energy system for a quick burst of power.

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Answer: C) Immediate

Short, powerful bursts of movement rely on energy stored directly in the muscles for instant use.

6. True or False: Your heart rate stays exactly the same when you transition from sitting at a desk to playing tag.

Answer: B) False

The heart must pump faster during exercise to deliver more oxygen and nutrients to the active muscles.

7. Why would a coach ask players to walk slowly for five minutes after a hard soccer game?

Answer: B) To help the body wash away waste products and start recovery.

A cool-down assists the recovery mechanism by keeping blood flowing to remove lactic acid and other waste.

8. A scientist studying how a gymnast's heart changes after years of training is looking at a _____ adaptation.

Answer: B) Chronic

Chronic describes changes that happen over a long period due to consistent exercise or training.

9. Which of these is a 'fuel' your body uses during a long, steady hike in the woods?

Answer: A) Oxygen and stored energy

During steady (aerobic) exercise, the body uses oxygen to turn stored fats and sugars into energy.

10. True or False: Sweat is an acute response that helps the body stay cool while working hard.

Answer: A) True

Sweating is an immediate reaction to the heat produced by muscles during physical activity.