GOAL GETTERS WORKSHEET

MATH & SCIENCE IN KINESIOLOGY

GRADES 9-12

What Is Kinesiology?

Kinesiology is the scientific study of human movement. It combines biology, physics, and math to analyze performance, biomechanics, injury prevention, and overall health. Careers in kinesiology include physical therapy, sports science, and athletic training.

Math Exercises

1. A runner's speed is **8 meters per second (8 m/s)**. How far do they travel in **45 seconds**?
2. Heart rate data shows beats of **72, 78, 84, and 90 bpm** during a workout. Find the average heart rate.
3. A force of **500 Newtons (N)** moves an object **2 meters**. Calculate the work done (Work = Force × Distance).
4. If oxygen consumption increases linearly from **2.0 liters per min (L/min)** to **3.5 L/min** over **10 minutes**, what is the rate of increase per minute?

Science Exercises

1. Explain how biomechanics can reduce sports injuries.
2. How does muscle fiber type affect athletic performance?
3. Describe the relationship between force, mass, and acceleration in human movement.
4. Why is recovery time important for muscle growth?

Grades 9–12 Science Reading Links

Forces, Motion & Biomechanics – physics concepts behind human movement and forces on the body.
https://www.khanacademy.org/science/physics

Human Biology – Muscles & Movement – muscle fiber types and movement biology.
https://www.khanacademy.org/science/biology/human-biology

Exercises generated using AI tools (ChatGPT)

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Goal Getter Challenge

Record a short video explaining how you solved at least one math problem and one science problem from above.

Be clear, specific, and confident in your explanation. Show understanding by explaining why you chose certain steps or formulas. Make eye contact when possible and speak from knowledge rather than notes.

The first three students with the best submissions will earn Yungry swag.

Students who solve additional problems and provide precise, confident explanations may earn higher-end swag.

Submission deadline: February 28th

Want more practice? Visit Khan Academy to explore more math and science problems related to these topics.

Khan Academy Practice Links

- **Algebra & Linear Relationships:** https://www.khanacademy.org/math/algebra
- **Statistics & Data Analysis:** https://www.khanacademy.org/math/statistics-probability
- **Physics of Motion & Work:** https://www.khanacademy.org/science/physics/work-and-energy