



SCIENCE

POST-LESSON PLAN

Lesson Title

- Science in Motion: Performance & Recovery

Basic Information

- Grade Level: 4–8
- Duration: 60 minutes
- Subject Areas: Science (Life & Physical), Career Exploration, English Language Arts

Lesson Objectives

- Encourage students to explore biology and physics concepts applied to movement and recovery.
- Connect professional practices (like data tracking, recovery science, and workload management) to students' own experiences with exercise and wellness.
- Show students how science supports real-world careers in sports medicine and athletic performance.

Learning Objectives

- **Students will:**
 - Identify scientific principles like force, velocity, and workload management.
 - Explore how professionals measure, track, and apply data to improve performance.
 - Predict how these science tools and concepts can improve outcomes.
 - Reflect on their own connection to sports, science, and wellness.

Vocabulary

- **Workload Management** – Tracking how much an athlete runs, lifts, or exerts to prevent overtraining.
- **Velocity** – The speed of something in a given direction (like a player sprinting downfield).
- **Recovery Science** – Techniques that help muscles and tissues heal after stress, like stretching, massage, or rest.
- **Force** – The strength or energy applied during movement, such as how hard a player pushes against the ground when sprinting.

- **Performance Data** – Measured information (like distance run, speed, or stops/starts) that helps coaches and scientists keep athletes at their best.

Standards Alignment

Next Generation Science Standards (NGSS)

- MS-PS2-2: Plan an investigation to provide evidence that the change in an object's motion depends on forces.
- MS-PS3-1: Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and the speed of an object.
- MS-ETS1-3: Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution.

Common Core ELA Standards

- RI.4–8.1: Refer to details and examples to explain and infer.
- W.4–8.2: Write informative and explanatory texts.
- SL.4–8.1: Engage effectively in collaborative discussions.
- SL.4–8.4: Present claims and findings clearly.

Career Technical Education (CTE) Standards

- CRP 2: Apply academic and technical skills.
- CRP 4: Communicate clearly and effectively.
- CRP 7: Employ valid and reliable research strategies.
- CRP 10: Plan education and career paths aligned to personal goals.

Lesson Components & Educator Guidance

1. Warm-Up: Science in Sports Medicine (15 min)

Begin this portion of the lesson by writing the word “science” on the board. Then ask students what they think science has to do with keeping Rams players strong, fast, and healthy.

Chart student responses where all can see. As answers come in, highlight connections to the kinds of work Reggie and his team handle, which include things like:

- **Biology:** Understanding muscles, bones, and injuries.
- **Physics:** Measuring speed, force, and movement on the field.
- **Data Science:** Tracking how far and fast players run to prevent overtraining.
- **Recovery Science:** Using stretching, taping, and technology to help athletes heal.

Next, have students do a quick brainstorm and partner share-out. Use the following prompts to guide them:

- Write down three ways you think science helps athletes perform better.
- Share with a partner and compare your ideas.
- Add one new idea to your list after hearing your partner’s thoughts.

Teacher Tip: Some students may default to general answers like “working out” or “eating healthy.” Push them to think deeper by asking, “What science is behind that? What would you need to measure, track, or test?” This shifts the focus from surface-level habits to the science principles that Reggie’s team applies.

2. Science in Action Activity (25–30 min)

Pass out the [Performance & Recovery Science worksheet](#), and frame the task for students. Remind them/reinforce that athlete performance and recovery specialists use science to measure, track, and improve athlete performance. Then, let them know they are moving into their shoes to think like them.

Break students into pairs or small groups and review this high-level activity overview:

- Each group will be given a short set of scenarios or data points.
- Students identify which science concepts (velocity, force, recovery, workload) apply to the scenario.
- Groups brainstorm how sports scientists might use data or recovery tools to keep players healthy and performing at their best.

Teacher Tip: Reinforce that although math is fundamental to sports science, this exercise is specifically about identifying the science at work. Encourage students to connect concepts back to their own lives (running in PE, recovering after exercise, noticing fatigue).

3. Share & Reflect (10–15 min)

Once groups finish their worksheet scenarios, have each share one of their responses with the class (pick either A, B, or C so all scenarios get represented).

As groups present, capture their key science connections on the board, and encourage students to notice patterns:

- Which concepts came up most often?
- Which adjustments or data signals were most creative or surprising?

Materials Needed

- Performance & Recovery Science Worksheet (print or digital)
- Whiteboard or virtual board for class notes/patterns
- Pencils, pens, or digital devices for group work

Assessment

- Completion of the Performance & Recovery Science Worksheet
- Quality of group discussion and scenario analysis
- Contributions to class sharing and reflection