Fitness Assessment & Training

PSK4U | Student laboratory assignment | 1 of 4

Prepare for your investigation

Name: _____ Date: _____ Class: _____

Research question

How do training frequency, intensity and recovery influence predicted changes in selected fitness measures?

Learning goal: use the virtual model to gather evidence, explain fitness assessment & training and communicate a supported conclusion.

Materials: WorksheetGalaxy virtual laboratory, this assignment, calculator or spreadsheet if needed. Virtual observations only; do not recreate hazardous procedures or perform physical fitness tests without teacher approval.

1. Define two relevant scientific terms from the Background Information tab. (K/U)

2. Write a prediction or hypothesis with a scientific reason. (K/U, T/I)

3. Identify the variable or feature compared, the measured outcome and constants or consistent observation criteria. (T/I)

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Perform the virtual laboratory

Open the corresponding virtual lab and read Background Information. Follow the investigation instructions below. Record authentic simulated results; do not invent data.

• Review the three assessment indicators and identify what each can and cannot measure.

• Run a baseline assessment for a fictional participant and record the values.

• Set a four-week training plan with frequency, intensity and session duration; run the simulation.

• Repeat with a different training variable while keeping other variables constant. Run at least three plans total, including a lower-recovery comparison.

• Compare simulated changes in endurance, muscular endurance and flexibility. Use the graph and data table as evidence.

• Complete the lab report: hypothesis, independent/dependent/controlled variables, evidence, limitations and an accessible training recommendation.

Record each completed observation using the simulator’s record control when available. Use Data & Graphs to review results. Export CSV if available; attach additional rows or screenshots when needed.

Record the exact settings and any changes to the method.

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Observations & results

Enter the actual results. Keep trial IDs consistent between continued tables. Attach the full exported data or extra sheets when the procedure requires more rows. Include units as displayed.

Data table 1

Trial / item	Profile	Plan	Sessions/week	Intensity	Minutes

Data table 1 — continued (2)

Trial / item	Recovery	Distance (m)	Push-ups	Reach (cm)

Qualitative observations / sample calculation (show units where applicable)

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Analysis, conclusion & assessment

4. Present a labelled graph of a measured relationship, or an annotated diagram / comparison chart for qualitative investigations. Attach it separately. Explain the pattern using recorded evidence. (C, T/I)

5. Analysis: compare three plans with numerical evidence (K/U, A)

6. Explain specificity, progressive overload and recovery (K/U, A)

Conclusion and evaluation: answer the research question, revisit the prediction using evidence, identify a model limitation and propose an improvement. (T/I, A)

Submit this assignment plus your completed Lab Report (printed or saved as PDF from the lab) and any supporting data/figures.

K/U: accurate concepts /10	T/I: method, data, reasoning /12	C: clear tables, units, report /8	A: explanation, conclusion, transfer /10

Total: /40