Rover Performance Data Investigation

Unit 4 Project Brief

Engineering Scenario

Engineers use repeated trials and statistics to decide whether a rover system is reliable, predictable, and ready for more advanced testing.

Design Goal

Collect and analyze rover or mission-performance data using repeated trials, graphs, descriptive statistics, and kinematics when appropriate.

Criteria	• Investigation defines independent, dependent, and controlled variables. • Data set includes enough repeated trials to discuss variation. • Graphs and statistics support a clear engineering claim. • Conclusion acknowledges uncertainty, error, and next test steps.
Constraints	• Use an approved test setup and measurement method. • Keep test conditions consistent unless changing the independent variable. • Show calculations clearly enough for another team to check them.
Required Evidence	• Investigation question and variables • Procedure and safety notes • Data table and graph • Statistics and sample calculation • Claim-evidence-reasoning conclusion
Checkpoints	• Choose the test question • Plan variables and data collection • Run repeated trials • Analyze results • Write the engineering conclusion

Final Design Review Expectations

Your final review should clearly connect the problem, evidence, prototype decisions, testing results, limitations, and next recommended improvement. Strong teams show how data changed the design rather than only describing what they built.

Student Deliverable Reminder

Keep all sketches, calculations, data tables, photos, revision notes, and decisions in your engineering notebook or assigned project packet. The notebook should make your design process visible.