



STEM Goals for Level 4 Elementary Learners

Solve Problems by Setting up Experiments, Identifying Variables, & Planning Data Collection Use Fractions, Decimals, and Basic Computation To Describe What You Observe			
Challenge	Description	Grade 4	PAGE
4.1. Are We There Yet?	How does length of the track affect time & speed?	Scientific Inquiry Make use of and analyze models, such as tables and graphs to summarize and interpret data. Defining Relationships Graphically Locate points on a number line and in a coordinate grid Determine start time, elapsed time, and end time	3-14
4.2 What a Drag!	How does weight of the vehicle affect time and speed?	Forces, Motion, Time, Distance and Speed Investigate and describe that seeing how a model works after changes are made to it may suggest how the real thing would work if the same were done to it. Defining Relationships Mathematically Organize and display data in line plots and frequency tables using a variety of categories and sets of data	15-25
4.3. It Works!	How does weight of the vehicle affect work?	Forces, Motion, Distance, Work, Speed and Scientific Terms Make Predictions (hypotheses) based on Patterns in Data and Graphs. Gather and question data from many different forms of scientific investigations Determine equivalent expressions Compare, order, and describe decimals with or without using the symbols (<, >, or =)	26-34
4.4. Two Rounds, GO FAST! QUALIFYING COUNTS	Side by Side Racing: What setup will maximize the time (of your vehicle on a circle track?	ALL TOGETHER NOW! Identifying Variables. Setting up Experiments.	35-42
4.5. The Power Drag Challenge	What weight will give the highest Power _F from a standing start? If you collect the right data, you will find the answer.	What is the difference in work and work done in some amount of time? Using Patterns in Data to Solve Problems	43-53
4.6. The Power U-Turn Challenge	What weight will give the highest Power _F from a standing start on a U-Turn track?	Forces and Motion, Work and Power, Speed, Distance and Time Experiment, Predict Based on Data, Solve the Problem	54-65
Appendix	Focus Lessons Sample Plans Sample Answer Sheets		66-86