



My Kick Extension

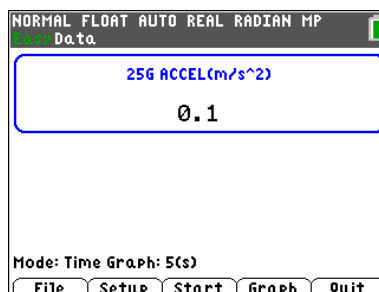
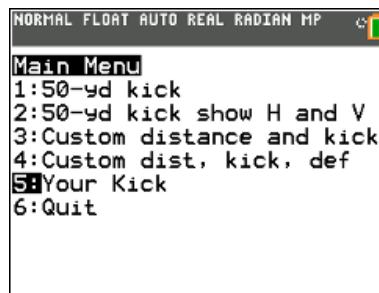
In this extension, students will collect data from their own kick and see whether they kick a ball as well as the kicker in the story.

Extension Materials

- Compatible TI Technologies:
 - TI-84 Plus CE with EasyData® app
- Data collection devices:
 - Vernier 25-g Accelerometer
 - Vernier EasyLink®

Instructions for Data Collection:

1. Connect the EasyLink® cable with the 25-g accelerometer.
2. Connect the EasyLink to the TI-84 Plus CE USB port.
3. The Vernier EasyData app should automatically launch.
4. Tie the Accelerometer the leg you will kick with. It should be positioned slightly above the ankle making sure that the arrow on the accelerometer is pointing forward and as level to the ground as possible.
5. If the EasyData app did not auto launch, open the EasyData® app and note that the accelerometer is displaying a live reading.
6. Adjust the accelerometer so that the acceleration being measured is as close to $0 \frac{m}{s^2}$ as possible.





7. Set up the data collection as follows:
 - a. Choose Setup and option 2: Time Graph
 - b. Choose Edit
 - c. Set the time between samples to 0.01 seconds and choose next
 - d. Set the number of samples to 300 and choose next
 - e. Choose OK
8. When you are ready to collect kick data, press start and hold still for 1 second then kick as though you were kicking a football. *Note: in order to improve the accuracy of the data collection, do NOT step with your kick foot first.*
9. Your data will graph and should appear similar to the graph shown here.
10. Choose Main, then Quit, and choose OK to exit the EasyData® app.
11. Run the program TheKick and from the main menu choose option 5: Your Kick.
12. Choose your level:
 - a. Superhero acts as though you had superpowers
 - b. Professional acts as though you were an all pro kicker
 - c. Realistic shows approximately what your real kick may look like.
13. Input the kick distance and angle
14. The calculator will determine your kick velocity based on your kick data and the character you chose.
 - a. Based on the graph, did you make the kick? Justify your response.

Answer: Answers will vary. Make sure students are using the trace feature to justify their responses.

- b. Can you use realistic to kick a 35 yard field goal with your data?

Answer: Answers will vary but many will fall short.

