

6 Practice

6.1 Before You Go

You need a team of at the least two people. Go to a playground and try your horizontal accelerometer on a merry-go-round and your vertical accelerometer on a swing. One group should accurately maintain and time the periodic motion, while another group should ride and carefully measure the acceleration. Then compare your calculated acceleration with the measured value in the case of the merry-go-round. You will vastly improve your fair ride results by several practice sessions.

6.2 On the Way

Try to answer the following questions as you travel to the fair.

- How fast is the car or bus traveling in miles/h? In km/h? How fast in m/s?
- Measure the horizontal acceleration of the bus as it starts and stops.
- Measure the horizontal acceleration of the bus as it goes around curves. (Be sure to hold the accelerometer level.)
- What force does the bus apply to your body as the bus starts, stops, and changes direction?
- When the bus stops, what keeps you from continuing ahead in a straight line with constant speed (as in Newton's First Law)?