Speed Labs:

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Speed Lab 1: Bouncy Balls

Bounce the tennis ball as many times as you can in 30 seconds. Record the results as trial 1 in the table below. Repeat 3 times, then calculate the average of all 3 trials. Repeat with the other types of balls.

	Trial 1	Trial 2	Trial 3	Average
Tennis Ball				
Racquetball				
Golf Ball				
Ping Pong Ball				

1. What was your average bounce speed for a tennis ball? _____________
2. What was your average bounce speed for a racquetball? _____________
3. What was your average bounce speed for a golf ball? _____________
4. What was your average bounce speed for a ping-pong ball? _____________
5. Which ball can you bounce the fastest? _____________

Speed Lab 2: Strenuous Stairs

How fast can you run up the stairs & back? Choose 1 person only from your pair and time how long it takes for them to run from the very bottom to the very top of the stairs, and back.
RULE: you must touch every step, and no skipping or jumping.
Complete 3 trials, fill in the table below and calculate the average speed.

Speed Formula

Trial	Distance	Time	Speed
1			
2			
3			
Average			

1. Was one trial faster than another? ____ if so, explain why. If not, why not?

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2. How does average speed differ from instantaneous speed?

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3. Did your velocity and/or acceleration change during this part? Explain.

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Lab: Gillum's Go-getters!

How speedy are your classmates? Five students from this class are going to run 100-meter sprints. Their times will be recorded by 5 classmates at 20-meter intervals. The rest of the class will cheer on the runners!

	Red **Runner 1**		Orange **Runner 2**		Green **Runner 3**		Blue **Runner 4**		Purple **Runner 5**	
Distance (meters)	Time (s)	Speed (m/s)	Time (s)	Speed (m/s)	Time (s)	Speed (m/s)	Time (s)	Speed (m/s)	Time (s)	Speed (m/s)
0										
20										
40										
60										
80										
100										

Data Analysis

1. Calculate the **speed** for each runner at each meter mark listed above. Record above.

2. Which runner was the **fastest**? ________________

a. What was their acceleration during the last 40 meters?

b. Did this runner maintain a constant speed? How do you know?

3. Which runner was the **slowest**? ________________

a. What was their acceleration during the last 40 meters?

Did this runner maintain a constant speed? How do you know?

4. Which runners **accelerated** during the race? _________________________

5. Which runners **decelerated** during the race? _________________________

6. Do you think this data is accurate? Explain.

Position-Time Graph: Make a position-time graph of all 5 runners. Each runner will be a different line color-coded according to the color listed on the previous page.

Speed-Time Graph: Make a speed-time graph for *only the fastest runner*. You will need to calculate their speeds at each of the 10-meter marks.