Challenge:

Materials

- Stopwatch
- NFL or NCAA Sized Football
- Masking Tape
- Lab Notebook
- Apple or Android Smartphone

Before starting the activities be sure to copy CHART B and CHART C into your Lab Notebook to record the data you will collect from your experimentation.

CHART B

What type of route is the running? (Curl Route, Slant Route, Go Route)	What speed will the receiver have to run to complete the play?	What level of velocity will be required to complete the path? (High - 50-75 mph, Medium - 26-49 mph, Low - 0-25 mph)	How many seconds did it take the receiver to complete the play?
40-Yard Dash			
Go route			
Slant route			
Curl route			

CHART C

What type of route is the running? (Curl Route, Slant Route, Go Route)	What speed will the receiver have to run to complete the play?	What level of velocity will be required to complete the path? (High - 50-75 mph, Medium - 26-49 mph, Low - 0-25 mph)	How many seconds did it take the receiver to complete the play?

Activity 1:

1) Get a partner to complete this activity with
2) Mark off a two lines 40 yards apart as a start and finish line
3) Take turns with your partner to run a 40 yard dash while the other records the time on a stopwatch or Smartphone stopwatch app.
4) Download a free speedometer app for your smartphone to calculate your speed in miles per hour (mph) using the distance and time to run.
5) Record your results in CHART B in your Lab Notebook

Activity 2:

1) You and your partner should each run a go route for 5 seconds while the other records the distance they ran in that time in CHART B in the Lab Notebook.
2) Now have each of you run a 10 yard curl route and record the time in CHART B
3) Once done running the routes make and record the appropriate velocity calculations.
4) Determine the required velocity a football would need to be thrown to make the passes for these routes. Record in CHART B whether the ball velocity registers as low, medium or high

Activity 3:

1) Download a football playbook app on your Android or Apple Smartphone to help design your plays and calculate the velocity of the thrown football.
2) You should design the play in your handbook using X's and O's and record the elements of force that they believe they will need to complete the play.
3) Answer the questions proposed in CHART C

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