

MATH ACTIVITY

Calculating An Airplane's Speed

Name: _____

DESCRIPTION: Years after the first successful powered air flight, Orville and Wilbur Wright produced the first airplane for the United States Army. They made a machine that could fly for at least one hour at an average speed of 40 miles (64 km) per hour. Over time, various advances in commercial air flight have enabled people to travel long distances in short amounts of time. Today, planes regularly travel in excess of 500 miles per hour.

BACKGROUND: A jet plane's airspeed can be determined by subtracting the wind speed from groundspeed. (Airspeed = Groundspeed – Wind speed)

ACTIVITY: A jet airplane traveling at a groundspeed of 640 miles (1,030 km) per hour departed at 10 a.m. Pacific Standard Time (PST) on a direct flight from San Francisco to Chicago. The plane is cruising at an altitude of 30,000 feet with 20 mile-an-hour (32-km) tailwinds. There are no cross winds, updrafts or downdrafts.

1. Use an atlas or almanac to determine the distance between San Francisco and Chicago.
2. What is the plane's air speed?
3. How long will the plane be in the air?
4. What time will it be when the plane lands in Chicago which is in Central Standard Time (CST), taking into account the time change?
5. What generalization could you make about the plane's arrival time if it were traveling the same speed *against* 20 mile-an-hour-winds?