MATH ACTIVITY

Modern Lift Equation

Name: _____

Lift = coefficient x density x velocity squared x wing area
two

Using the modern lift equation one can calculate the amount of lift produced at a given velocity for a given wing area. Or, for a given velocity, you can determine how big to make the wings to lift a certain weight.

The modern lift equation and the lift equation used by the Wright Brothers in 1900 are slightly different. The lift coefficient of the modern equation is referenced to the dynamic pressure of the flow, while the lift coefficient of the earlier times was referenced to the drag of an equivalent flat plate. So the value of these two coefficients would be different even for the same wing and the same set of flow conditions.

Click here to investigate the designs of the Wright aircraft from 1900 to 1905 using the modern lift equation. This interactive exercise is provided to us by NASA.

Modern Lift Equation exercise:
http://www.grc.nasa.gov/WWW/Wright/airplane/lifteq.html