

Up, Up, Up!

The Wright brothers came home with more ideas. They knew the design and structure of the glider were right. The controls of the glider also worked. But the brothers wanted the next glider to have more **lift** to keep it in the air. This meant their design needed to change.

The Next Glider

They looked at the wings again. They believed bigger wings would give the glider more lift. To get the right size, they calculated lift. They also calculated how much **drag** would hold the plane back. And they changed the type of fabric wrapped around the wings.

Even though they made many changes, this glider did not work either. It still did not have enough lift. The glider was also hard to control. The brothers were very disappointed. Their hard work had not yet paid off.

SCIENCE

The Four Forces

There are four forces that affect how things fly. *Weight* is the force of gravity, which pulls a plane down. *Lift* moves a plane upward. It is created by the wings of a plane. *Thrust* moves a plane forward in motion with force created by an engine. *Drag* pulls a plane back, in the opposite direction of motion. The four forces need to balance out one another for a plane to successfully fly.

