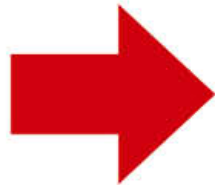




Are You Ready?

Listen to me.



Eyes on me.



FAST READING

Classic English Junior Level 5 - Unit 16 Inventions

Lesson

6

Leonardo's Helicopter



Lesson Structure

1	Learning Objective
2	Warm-up
3	Reading Preparation—Vocabulary
4	Genre
5	Fast Reading
6	Wrap-up

You are going to read an article called
"Leonardo's Helicopter."
In the article you will learn:



Genre

Narrative nonfiction



Key Words and Phrases

observe, air current, press, base on, device,
lift, major, helicopter

Riddle time.

- I can fly but I don't have any wings.
 - I can transport people but I'm not an airplane.
 - I can take off and land but I don't need runways.
- what am I?





Let's

Go!



Reading Preparation—Vocabulary

02:00

Learn and say.

**ob•serve** ✓

Joe looks through a powerful telescope to **observe** stars.

**air current**

Birds use warm **air currents** to help them fly.

Use a **key word** or **phrase** to make a sentence:

Reading Preparation—Vocabulary

02:00

Learn and say.

**press** ✓

The child **pressed** her nose against the window.

**base on**

Based on hard work, Jim fulfilled his dream and became a famous artist.

Use a **key word** or **phrase** to ask a question:

Reading Preparation—Vocabulary

02:00

Learn and say.



de•vice *n*



This is a **device** for measuring blood pressure.



lift *v*



Mary can **lift** a weight of 140 pounds.

Use a **key word** to ask a question:

Reading Preparation—Vocabulary

02:00

Learn and say.



ma•jor adj



Water shortage is a **major** problem in the desert.



hel•i•cop•ter n



Helicopters are very useful for mountain explorations.

Use a **key word** to make a sentence:



**Let's
Read!**



Read and learn the features of narrative nonfiction.



Narrative nonfiction

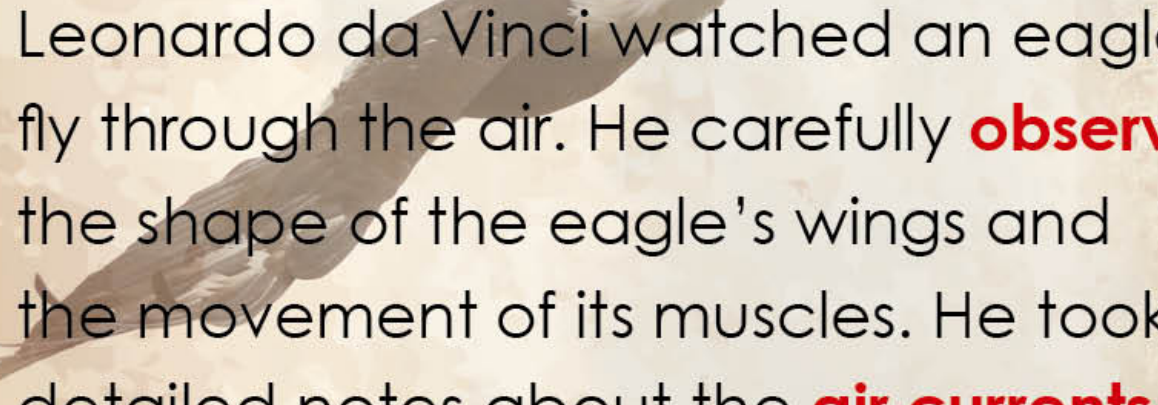
It gives you the facts about the **real people, places** and **events**.

Example:

Walt Disney was born on 5
December, 1901, in Chicago.
When he grew up, he took
lessons at the Kansas City Institute
and later Chicago Art Institute.
He became the cartoonist for
the school magazine.



LEONARDO'S HELICOPTER

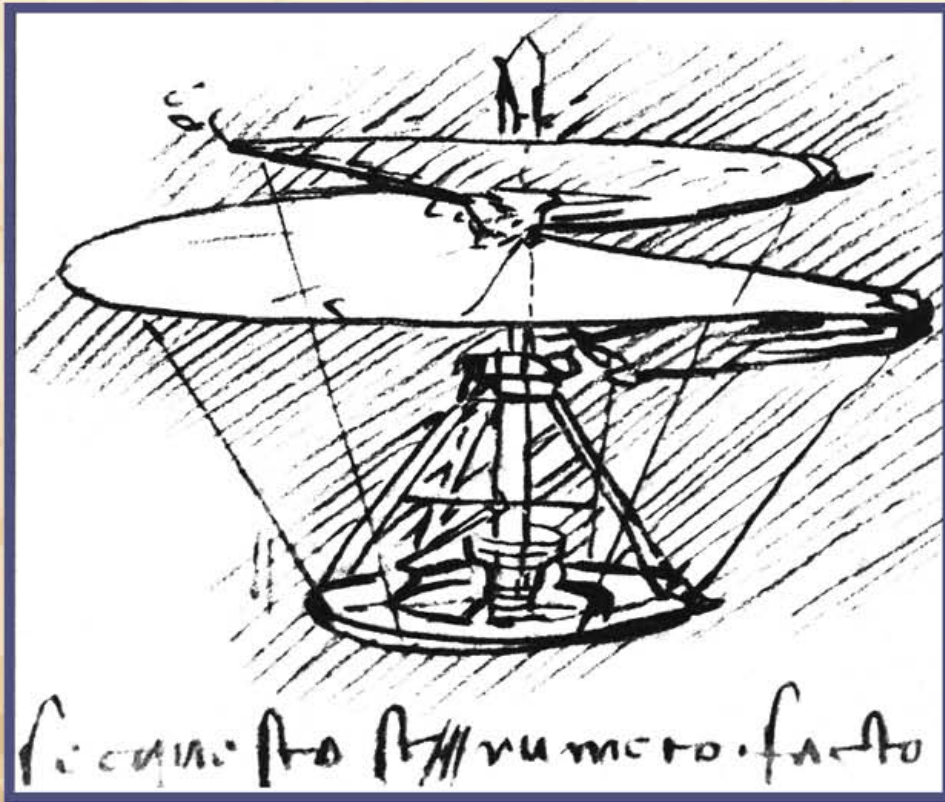


Leonardo da Vinci watched an eagle fly through the air. He carefully **observed** the shape of the eagle's wings and the movement of its muscles. He took detailed notes about the **air currents**.

Suddenly he realized that the eagle's wings **pressed** down against the air and the air pressed back up against the wings. This air pressure was the secret to flight! And if an eagle could fly, he thought, so could a person.



How did Leonardo find the secret to flight?



Based on his studies of air currents and bird flight, Leonardo designed a strange-looking machine. Leonardo's drawings show a **device** with a rotating spiral "wing." As the wing turned, he reasoned, the air pressure below the wing would become greater than the air pressure above it.

This difference in pressure would **lift** the machine into the air, just as the pressure against the eagle's wings lifted the bird.



What was the key factor that lifted the machine into the air?

Leonardo called his flying machine an “ariel screw.” As good as the idea was, there were two **major** problems with it.

First, the combustion engine hadn’t been invented yet, and there was nothing in existence that was powerful enough to turn the large screwlike wing.

Also, Leonardo would have had to rely on wood, rope, and cloth to build his machine. These materials were far too heavy to make a device that could fly.



What were the two major problems with Leonardo’s flying machine ?

Fast Reading

03:00

It was not until 1885 that a successful gasoline-powered engine was developed, and in the 1930s **helicopter** flight finally became practical and safe.

But it was an artist on a sunny hill in Italy four hundred years before who first dreamed that it could happen.



When did helicopter flight finally become practical?



Wrap-up

02:00

I Can Do It

We learned about genre and the following key words and phrases.

Genre

Features of narrative nonfiction:

- real people
- real places
- real events

Key Words and Phrases

observe, air current, press,
base on, device, lift, major,
helicopter



