Takeoff!

by Ashleigh Young

Book Summary

People have always dreamed of flying. After countless failures, people discovered the ability of flight. This book explores how people made it happen.

Features of the Book

- History of human flight
- Report with scientific explanations
- Diagrams and photographs
- Causes and effects
- Comparisons

Purpose

Takeoff! can be used to introduce and reinforce the following skills and understandings:

- **S** categorising information;
- **S** identifying a sequence of events;
- **S** discussing early attempts at flight and how these contributed to the development of powered aircraft;
- **S** summarising.

Investigation Tools

The Guided Reading Lesson

- **S** Categorising information
- **S** Identifying a sequence of events
- **S** Discussing early attempts at flight and how these contributed to the development of powered aircraft

Introducing the text

On the board, chart the different kinds of "flying machines" or aircraft that the students know of, from the past as well as the present.

– *How could we sort these into groups? What are the things that some of them have in common?*

Spend a few minutes brainstorming the kinds of aircraft and identifying different ways that they could be grouped, for example by power source, shape, use, speed, distance they can travel, and so on. Encourage the students to see that there are different ways of grouping them and these will change depending on the criteria.

Tell the students that the book they are about to read gives a brief history of flight. Read the blurb together and add any new ideas about kinds of aircraft to the list.

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Reading and discussing the text

– *Why do you think people have been so obsessed with the idea of flying?*
– *What extremes have they gone to in order to fly?*

Ask the students to read the introduction and Chapter 1, looking for possible answers, then discuss their responses.

– *As you read, look for discoveries or ways of thinking that proved to be important milestones in the history of flight.*
– *Remembering our discussion of kinds of aircraft, think about those that were developed first and the impact of successive discoveries.*

The students can read to the end of Chapter 5, pausing at the end of each chapter to discuss what they have read. Update the list and groupings of aircraft, refining the criteria.

– *What have we learnt about the materials used to build aircraft? How have materials changed?*
– *What have been the significant changes in the ways aircraft are powered, from pedal power to jet engines?*
– *How did each new development build on the successes and failures of previous experiments?*

Return to the explanations of lift (page 13) and controlling an aircraft (page 24).

– *How important has the example of birds been on the development of modern aircraft?*
– *How are aircraft similar to birds? What features are different?*

Discuss the future of aircraft, using what the students have learnt.

– *Of the categories we discussed earlier, which group has the most promise for the future? Why?*
– *What problems might aircraft designers of the future have to deal with?*

Discuss their responses, then ask the students to read to the end of the book.

– *Why do you think the author included the story about the Greek cyclist in the conclusion? What message did she want to leave us with?*

Revisiting the Text

The activities below can be used immediately after the guided reading lesson, during later reading sessions as mini-lessons, or as independent activities.

S Identifying a sequence of events

The students can reread the book, noting dates and developments in the story of flight. Discuss the order of events. Encourage the students to conclude that although development may not have been tidy and linear, it is possible to identify a sequence of the major events. Help them to identify other aspects of each event and to record their findings on the blackline master on page 83.

S Summarising

The students can combine the timeline exercise above with writing a summary of the book, using the events as the basis for each section. They may like to produce (individually or in small groups) an illustrated history of flight.

S Discussing early attempts at flight and how these contributed to the development of powered aircraft

Review the information about some of the less-successful developments in flight, including the mythical wings of Icarus and Daedalus and the ill-fated *Hindenburg*. The students can select one example to investigate, finding out the background of their example and why it was not successful in the long term. The students can then record their findings.