

Springboard 5

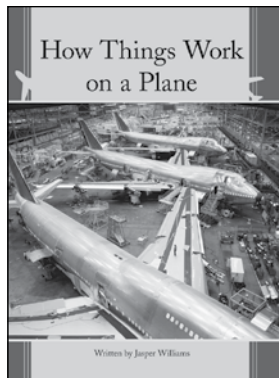


How Things Work on a Plane

Fact

Text Type	1900–2400 words	2400–3000 words	3100–3500 words
Information Report (Compare/Contrast)	Simpson Desert, Mojave Desert	Daintree Rainforest, Amazon Rainforest	Murray River, Mississippi River
Biography	Steve Irwin	Douglas Mawson	Fred Hollows
Explanation	How Things Work on a Farm	How Things Work on a Plane	How Things Work at a Hospital
Recount (Disaster)	The King's Cross Fire Disaster	The Beaconsfield Mine Disaster	The New Orleans Flood Disaster

We have designed these lesson plans so that you can have the plan in front of you as you teach, along with a copy of the book. Suggestions for teaching have been divided into questions and discussion that you may have with students before, during, and after they read. You may prefer to explore the meaning and the language in more detail before students read. Your decisions will depend on the gap between students' current knowledge and the content, vocabulary, and language of the book they are about to read. The more information students have up front, the easier it will be for them to read the text.



HOW THINGS WORK ON A PLANE

Middle level fact

Text type: Explanation

Reading age 10.1–10.9

Word count 2400–3000

Guide questions for teachers are in *italics*.

Before Reading

Activate prior knowledge by asking students what an explanation is. Write the word on the board.

What does the word explain mean? Invite discussion. Tell students that it means to give clear information about a subject, which enables someone else to understand it.

Ask students to take turns explaining to a partner how things work in a school. After both partners have taken their turn, discuss the factors which made the explanations easy to understand, and those which made them difficult to understand.

Ask students what is important when giving an explanation. Assist them to understand that an explanation should be clear, concise, and accurate.

COVER

Before Reading

Read the title and examine the cover photograph. Discuss what the book may be about. *What do you know about how things work on a plane?* Invite students to share prior knowledge.

Ask students if they have ever been on a plane. Discuss students' own experiences of flying.

Read the blurb. What additional information does this give you? What do you expect to find inside this book? Guide the discussion to build understandings of the content of this book. Invite students to discuss the following.

What are the parts of a plane?

How does a plane work?

What sort of people work at an airport and on a plane?

Why might people want to become pilots?

CONTENTS PAGE

Open the book. Discuss features of the contents page. *Where would you go to learn about becoming a pilot?* Students should quickly respond with the page number. Repeat for other pages. Encourage quick responses. *What do you know about information books?* Students should indicate that the reader can choose where they would like to start.

Students should also mention the terms *glossary* and *index*. Ask students to explain what each term means. Visit each of these pages to clarify that the glossary provides meanings for new or tricky words about the topic, and the index provides the page numbers to help the reader locate particular things in the book.

Revisit the contents page. Discuss the term *introduction*. *What does this mean?* Guide students to understand that an introduction provides background information about the topic which will help them understand the more detailed information that follows.

INTRODUCTION

Before Reading

Invite students to discuss the photo and caption. *What are some of the reasons people fly on planes? What does plane travel enable that was not possible before planes were invented?*

Read the introduction and find out some general information about planes and plane travel. Take note of the different purposes planes serve.

After Reading

Invite students to share what they know about planes.

What does the term take for granted mean?

Why might planes be used to carry cargo?

How are military planes different from passenger planes?

Is there anything that is not, or that cannot be transported by plane? Encourage inferences.

PARTS OF A PLANE AND HOW THEY WORK

Before Reading

Read the title. Walk through and discuss the photos and diagrams in this section of the book to build content knowledge prior to reading.

Prompt students to the bold words *fuselage*, *cabin pressurization*, *altitude*, *retractable*, and *instruments*, and discuss what they may mean. Check the glossary meanings.

Read this section of the book. As you read, take note of some interesting facts about the parts of a plane and how they work. Be ready to share what you find out with the group.

After Reading

Revisit each section and discuss.

What is the fuselage?

Why is it necessary to pressurize the cabin? What could happen if the cabin is not pressurized?

How many wings does a plane have?

What special purpose does the wing have?

Why is the tail so important? What does the term vertical stabilizer mean?

Describe what you know about the landing gear.

What sort of engines do most passenger planes have? How do jet engines work?

What is the cockpit? Who sits in the cockpit? What is a copilot? What is the purpose of the instrument panel in the cockpit? How do the instruments help the pilot?

HOW TO BECOME A PILOT

Before Reading

Read the title and walk through the photos to discuss. *How do you think you might become a pilot?* Invite inferences. *Read this chapter and take note of what is involved in becoming a pilot.*

After Reading

Can anyone become a pilot? What is involved?

Why do you think a medical test is important for pilots?

What do you think a private pilot licence is? What is a licence?

What is meant by the word salary?

What kinds of emergency procedures do you think students must learn?

What do you think a commercial licence might be?

What sort of people might become pilots? Invite inferences.

SAFE AND SOUND, 10,500 METRES UP

Before Reading

Read the title and discuss the photo and caption on page 16.

Prompt students to notice the bold word *turbulence* and check the glossary meaning.

What does the title suggest this chapter will be about? How could the flight attendant help keep people safe and sound?

Read this chapter and find out more. Be ready to share what you learn.

After Reading

Invite students to share what they have learned.

Why do you think many people are afraid of flying?

What is more dangerous than being in a plane? Why?

What are some of the safety issues on planes?

How can turbulence make a trip uncomfortable for passengers?

What are the most difficult parts of a flight? Why?

HOW SAFETY EQUIPMENT WORKS ON A PLANE

Before Reading

Read the title and discuss the photos, captions, and diagrams throughout this chapter. Build student knowledge of the content during the discussion.

Prompt students to the bold words *avionics* and *evacuate* and check the glossary meanings.

What does the title suggest this chapter will be about? What other kinds of safety equipment could be on a plane?

Read this chapter and find out more. Be ready to share what you learn.

After Reading

Invite students to share what they have learned.

How are planes built to be strong? Describe the process of making the windows stronger than normal windows.

Can the door of the plane accidentally open while in midair?

How do the avionics help keep planes safe?

Explain the crash procedures.

What is the black box? Why is the black box important?

A TYPICAL PLANE TRIP

Before Reading

Read the title and discuss the photos, captions, and diagram to build prior knowledge.

What do you expect to learn from this chapter?

What does the word typical mean?

Read this chapter and find out about a typical plane trip. Be ready to share what you learn.

After Reading

Invite students to share what they have learned.

What are some of the things you would expect to happen when you first board the plane? Why?

Describe what happens during take-off.

What do you think passengers see and hear during take-off?

What kinds of things usually happen while the plane is up in the air? Why don't passengers get a full menu to choose their food from?

What kinds of things happen on long flights?

Describe the landing.

⬆️ CODE BREAKER

A word-part that is added to another word is called an affix. If an affix is added to the beginning of a word, it is called a prefix. Pre means at the start. If an affix is added to the end of a word, it is called a suffix.

Explain that knowing what affixes mean can make it easier to read, write, spell, and understand them. It can also change the part of speech of the word.

Build new words from these words from the book:

- *behave*
- *disaster*
- *inhale*
- *investigate*

🗨️ MEANING MAKER

Have students work in pairs to think of two emergencies that could occur on a plane while it is mid-flight. Consider these questions:

- *What could be done to solve the problem?*
- *How could other passengers be affected?*
- *Is the situation life-threatening to anyone on board? Is it life-threatening to everyone?*
- *Is this the sort of emergency that could occur in real life?*

🔍 TEXT USER

This book uses diagrams with lots of text to help the reader understand or interpret the information contained in the diagram. Discuss why a book with a topic such as this needs to present more in-depth information to the reader to promote understanding. Support students to understand that this book contains specialized information about a topic of which many readers have limited background knowledge.

Revisit diagrams from the book and discuss how reader knowledge would be different if detailed explanations were not included.

🗨️ TEXT CRITIC

Who do you think knows the most about how planes work? Students should report that engineers, mechanics, pilots, and others who work in this field may be the most knowledgeable. *Do you think one of these people wrote this book? What makes you think that? If the author of this book is not from this industry, what other job might he have?* Discuss.

If the author writes about a lot of topics, and not just planes, how might he have acquired the information for this book? Could you write a book like this if you learned enough about a topic? What do you think you would need to learn? How could you make sure you did not make any mistakes?

If you were writing a book that explains how planes work, what would you need to be able to do well? Why would you need to be good at explaining things? Who could check your work to make sure it is true and correct?

USING MULTIPLE INTELLIGENCES

Naturalist, Spatial: Group students in pairs or small groups.

Design: Design the cabin of a luxury plane. Walk through the book and write a list of things that you must include. (S, V)

Create: Build a three-dimensional model of your design. (S)

Record: Record everything in your model that requires special equipment. (V)

MULTIPLE INTELLIGENCES

The theory of multiple intelligences was developed by Howard Gardner, a professor of education at Harvard University. Howard Gardner's theory suggests that the current view of intelligence, as measured by IQ tests, is far too limited and discriminates against students who think in different ways. He proposes taking a broader perspective and has identified eight different intelligences. These are:

verbal-linguistic intelligence – word smart

logical-mathematical intelligence – number/
reasoning smart

spatial intelligence – picture smart

bodily-kinaesthetic intelligence
– body smart

musical intelligence – music smart

interpersonal intelligence – people smart

intrapersonal intelligence – self smart

naturalist intelligence – nature smart

Multiple intelligences have enormous potential as a tool in furthering reading and language development. Traditionally, the teaching of language and reading has focused mainly on two intelligences: logical-mathematical and verbal-linguistic. This means that many students who possess different intelligences do not receive the necessary opportunities, encouragement, instruction, or reinforcement to succeed with reading as well as they might.

How Things Work on a Plane

Name _____

Graphic Organizer (before and during reading)

Record notes as you read the book.

Introduction _____

Parts of a Plane and How They Work _____

How to Become a Pilot _____

Safe and Sound, 10,500 Metres Up _____

How Safety Equipment Works on a Plane _____

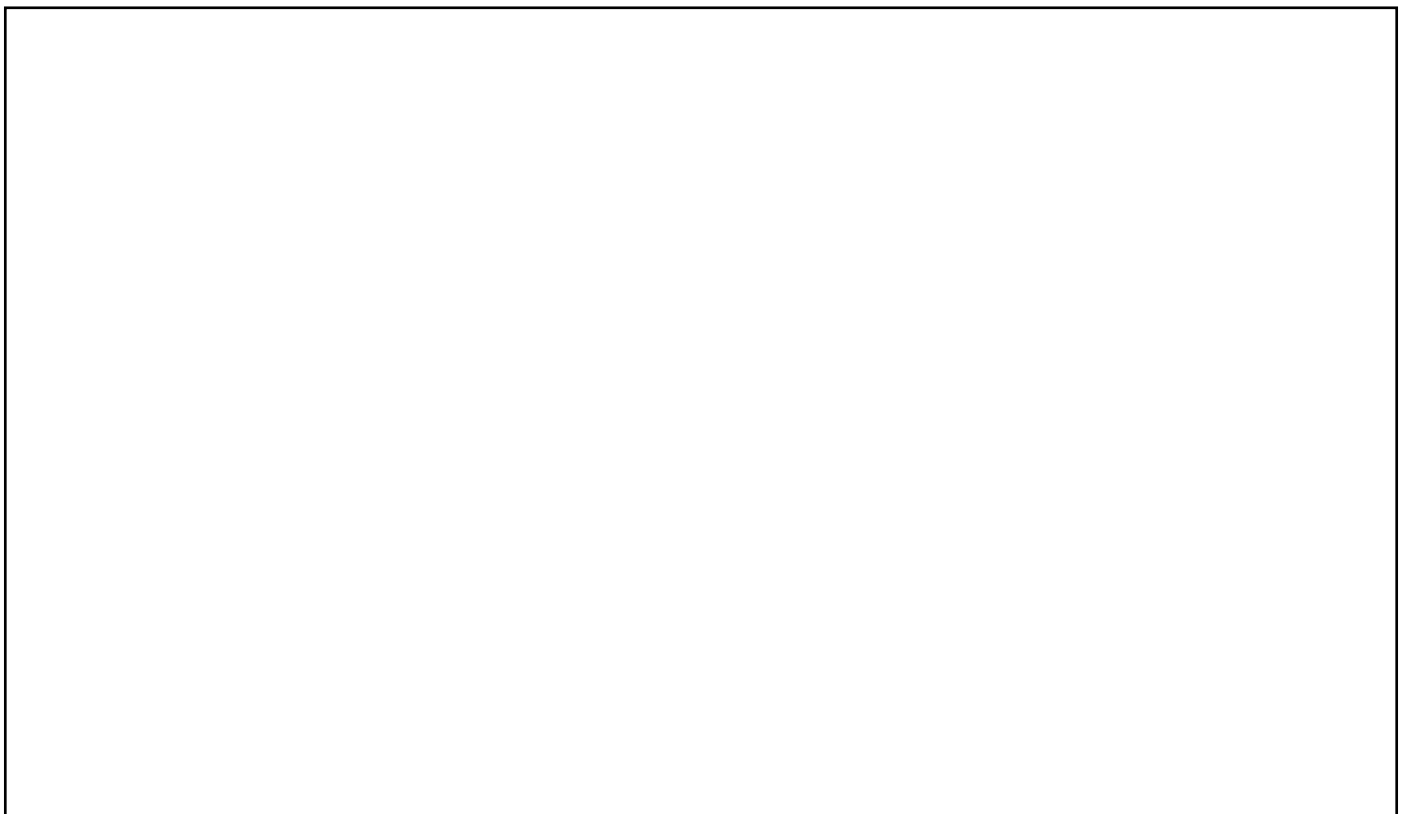
A Typical Plane Trip _____

How Things Work on a Plane

Name _____

Multiple Intelligences
Spatial

Design a special feature to make long plane trips more comfortable for passengers. Draw it below and describe what it is, how it works, and how it will improve long trips for passengers.



How Things Work on a Plane

Name _____

🔍 Code Breaker

A synonym is a word that has an identical, or similar, meaning to another word, for example big/large. An antonym is a word that means the opposite of another word, for example happy/sad.

Think of synonyms for:

fatal	_____	plane	_____
fire	_____	prepared	_____
helpful	_____	safe	_____
pilot	_____	study	_____

Think of antonyms for:

ascend	_____	fast	_____
comfortable	_____	land	_____
descend	_____	private	_____
exciting	_____	vertical	_____

Unjumble this emergency equipment from the book. Use page 19 to help you.

onephmaeg	feil stev	shlitghafl	ygenox skma
_____	_____	_____	_____

How Things Work on a Plane

Name _____

🕒 Text User

Complete the table using information from the book.

Part of the plane	What it is/How it works	Why it is needed	Special equipment
fuselage			
wing			
tail			
landing gear			
engine			
cockpit			

How Things Work on a Plane

Name _____

● Text Critic

Many people think it would be fun to be a pilot. Reread pages 13 and 14, and jot down all the things that make it hard to become a pilot.

Do you think the author is making it sound more difficult than it really is? Or is Jasper Williams just presenting the facts? Record your thoughts. Explain your answer.

When people go on planes, there are a lot of security checks to ensure that no one takes dangerous or deadly materials on board. Even nail files and moisturizers are not allowed in the cabins of some planes. Why do you think this is?

What do you think about planes with this level of security?

How Things Work on a Plane

Name _____

Explanation

You have learned a lot about how planes work from this book, and there is still more to learn. Revisit each section of the text below. Think of something else you would like to know about each of these things.

Fuselage

Wing

Landing gear

Engine

Cockpit

Write one thing that would be interesting about being a pilot.

Write one thing that would be interesting about being a flight attendant.

Write one thing that would be interesting about being a passenger.
