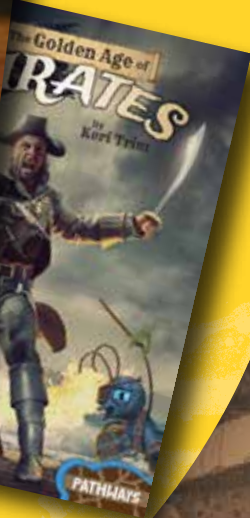
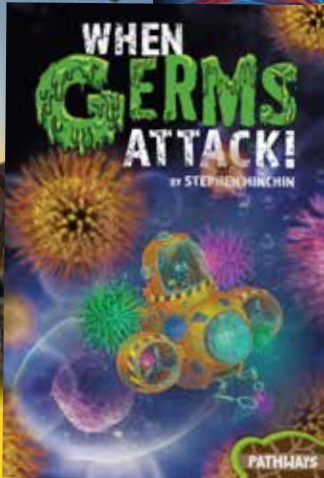


# Teacher's GUIDE



## Transitional readers:

The term “transitional readers” describes a stage when learners must be motivated and supported to comprehend text, develop fluency, master new language and text features, build on their decoding skills, build content knowledge, and write in response to texts at levels J–M.



*Pathways is designed to help you give your readers the support and encouragement they need during this important stage!*

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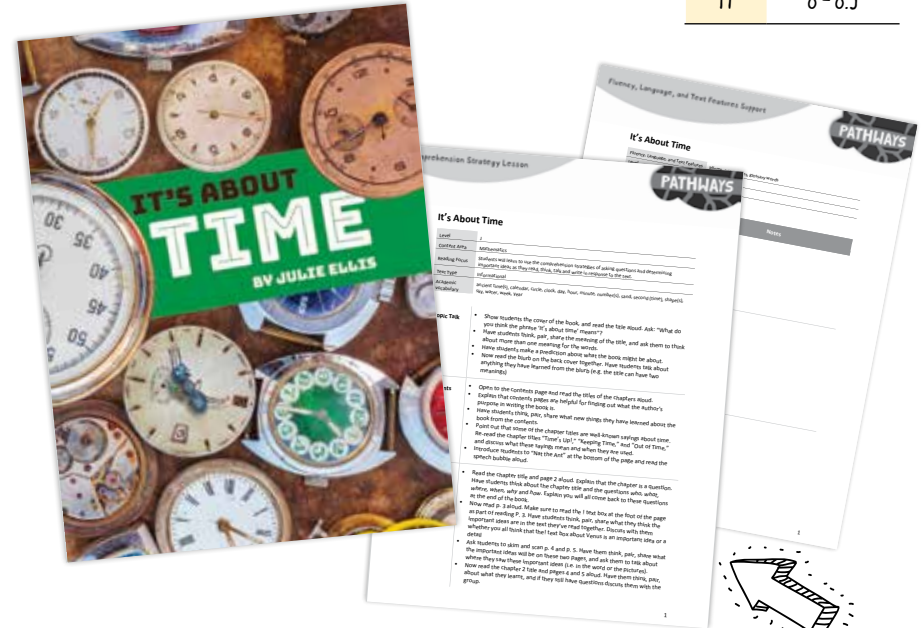
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# Welcome to Pathways



The *Pathways* books are levelled at J (24pp) and K, L, and M (32pp). They are available in both print and digital formats for interactive shared reading, guided learning, and independent reading.

Level	Reading age
J	7-7.5
K	7.5-8
L	8-8.5
M	8-8.5



Editable lesson plans!

## Informational texts to support transitional readers on the path to literacy

The *Pathways* books are engaging informational texts (that pack a fun surprise) for readers transitioning from simple informational texts to more complex, content-rich chapter books.

To prepare transitional readers, the *Pathways* books contain exciting curriculum-based science, mathematics, and social studies content. They also include essential informational text features – chapters, glossaries of academic and general language, breakouts, pictures, captions, diagrams, and maps. *Pathways* is a flexible resource suitable for explicit teaching and learning, and as a classroom library.

The *Pathways* books come with downloadable lesson plans in an editable format that you can personalise to your learners' needs.

The *Pathways* books are complex and challenging, with strong scaffolds to support transitional learners. They contain unique and fun features (see next page) to help keep readers feeling supported and on track to fluency in reading.

“Students move from reading picture books and early chapter books to reading more complex texts across content areas. This stage of literacy is critical as students build on their early experiences to become more sophisticated readers.”

Sibberson and Bass



# Meet Nat the Ant!

## The student guide and mentor

“Ants work hard, they build pathways, they are stronger than they look, and they work as a team to achieve their goals - just like transitional readers!”

Throughout each *Pathways* book, Nat the Ant asks the reader questions about the text to encourage critical thinking and academic conversations.

When someone touches something that has germs on it, they can get sick. A lot of scientists think that viruses aren't really alive. If that's true, viruses can't die. They can sit around for years and years, waiting for someone to pick them up.

Imagine if everyone could see germs in the air, or on desks, chairs, door handles, and people's hands ...

**?** How differently do you think people would act?

12

...and people who live in Kazakhstan, as well as the rest of the world. People can meet there to talk about stopping wars and being nicer to each other.

**!** There are lots of famous pyramids in the world. In Slovakia, the Slovak Radio Building is a little different. It's built upside down!

It is hoped that this peaceful pyramid will be a good place for people to talk about being nicer to each other.

**?** Do you think this will work? Why, or why not?

17

Find out more about Nat and the Ant tunnel on page 18!

Halfway through each book is an illustrated fold-out Ant tunnel. Nat appears in the Ant tunnel, to summarise the text so far and motivate, encourage, and focus the readers' thinking for the second half of the book.

# Exploring Pathways

<p><b>Print and digital books</b></p> <p>The 20 digital books are ideal for shared reading, which is an essential part of a transitional reading program. Find out more on page 15.</p>	<ul style="list-style-type: none"> <li>• 5 x titles at level J (24pp) and 15 x titles across levels K, L, M (32pp)</li> <li>• Fold-out/scrollable Ant tunnel for motivation and reading support</li> <li>• Glossary for academic and general language</li> <li>• Questions throughout for critical thinking</li> <li>• Essential informational text features for transitional readers</li> </ul>
<p><b>Fluency, language, and text features support</b></p>	<ul style="list-style-type: none"> <li>• 20 x teacher support documents with a focus on fluency support, text features, and language and reading skills</li> </ul>
<p><b>Comprehension strategies lesson plans</b></p>	<ul style="list-style-type: none"> <li>• 20 x downloadable, editable guided-lesson plans focused on comprehension strategies and building content knowledge for the first few chapters of each book, followed by collaborative work for students</li> <li>• Teacher and student support for using digital texts for explicit teaching and learning using the shared reading approach</li> </ul>
<p><b>Mini-lessons</b></p>	<ul style="list-style-type: none"> <li>• Teacher-led and student-led mini-lessons with a focus on fluency support, text features, and language and reading skills</li> </ul>
<p><b>Writing</b></p>	<ul style="list-style-type: none"> <li>• 5 x “writing in response to text” activities for each book, available online</li> </ul>

## Transitional readers

The term “transitional readers” describes a stage (not an *age*) when learners must be motivated and supported to comprehend text, develop fluency, master new language and text features, build on their decoding skills, build content knowledge, and write in response to texts, at levels J through M.

You may have transitional readers in any of the following settings:

1. General Education classrooms, from years 3–6+
2. Targeted teaching groups in classrooms, from years 3–9+
3. Bilingual learners from years 3–9+

Note that for English language development, the term “transitional readers” often applies to those readers who are transitioning from their first language into English.

The *Pathways* books are designed to support ALL learners who are moving from the early reader stage to more complex texts around level J–M. This *includes* English language learners.

## Why transitional readers need support

Transitional readers and writers need support when they meet new and challenging texts that might disrupt their progress on their pathway to literacy.

Transitional readers must acquire explicit strategies, skills, and knowledge to read, write, and interpret new forms of information.

*Pathways* is designed to support and guide you and your students through this otherwise tricky transition. We are committed to supporting your readers to make meaning from their reading, enjoy and find motivation from informational texts, and make strong progress in literacy.

More complex texts require greater effort and knowledge for comprehension, language development, and writing in response. Further, fluency development can drop off, as it is much harder to develop fluency with informative texts as opposed to narrative texts.

Elements that can confuse, challenge, and overwhelm students include:

Academic language	Non-linear breakouts	Sequences/procedures
Diagrams and maps	Headings/ subheadings	Punctuation
Captions	Unfamiliar concepts	Language features

With *Pathways* books, and with your support, students learn to handle these features.

*Understanding non-fiction requires a different set of strategies for young readers... because young readers often have little experience with non-fiction text, we find that much of our explicit teaching is concerned with ways to make sense of it.*

*Szymusiak and Sibberson*



## Pathways books and levelling

The *Pathways* books have been professionally levelled to provide curriculum-rich informational texts that are complex, yet accessible to students progressing through reading levels J–M.

The books at level J have 24 pages, and 32 pages at levels K, L, and M, to provide a progression in challenge and support, and to build stamina for reading informational texts.

The books’ topics have been derived from the curriculum content at the transitional reading stage to be academically relevant, yet also to appeal to the interests and background knowledge of students.

With *Pathways*, all transitional readers, including English language learners, can take part in group discussions and hands-on activities, and they are supported to build skills, strategies, and experience, and fuse them together into effective literacy practise.

“Students’ background knowledge is essential to reading comprehension. Curricula should help students build content knowledge ... in order to empower reading success.”

Myracle, Kingsley, McClellan

“Making connections across instructional areas is essential to develop both language and literacy”

Uribe and Nathenson-Mejia



### “A level is a teacher’s tool, not a child’s label”

It is widely accepted that young learners pass through four stages of development in order to become successful readers and writers. These stages of development have come to be aligned with reading levels.

Emergent	Early	<b>Transitional</b>	Fluent
Levels A-C	Levels D-I	<b>Levels J-M</b>	Levels N-Z

It’s important to remember that students with strong knowledge of a topic may read *well above* an assigned reading level. Because of this, reading levels shouldn’t be used to restrict students to certain books, but rather help to guide them toward books that are a good fit.

Irene Fountas and Gay-Su Pinnell, Fountas and Pinnell blog

# Pathways levels

## Level J – 24 pages

## Reading age 7–7.5



**Building Shapes**  
Stephen Minchin  
Maths – Geometry



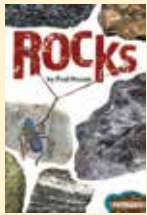
**It's About Time**  
Julie Ellis  
Maths – Time



**The Shape of the Land**  
Jane Kelley  
Science – Geology



**The Golden Age of Pirates**  
Stephen Minchin  
Social Studies – History



**Rocks**  
Paul Mason  
Science – Geology

## Level K – 32 pages

## Reading age 7.5–8



**Going, Going, Gone!**  
Stephen Minchin  
Science – Geology



**Killer Plants**  
Emily Falloon  
Science – Living World



**On the Move**  
Emily Falloon  
Science – Living World



**The Rabbit in the Moon**  
Claire Gibb  
English Language Arts – Myths and Legends



**Vikings**  
Keri Trim  
Social Studies – World History

## Level L – 32 pages

## Reading age 8–8.5



**Dragons**  
Emily Falloon  
Myths and Legends



**Flying Through Time**  
Neale Pitches  
Social Studies – World History



**Money, Money, Money!**  
Jane Kelley  
Maths – Currency



**Wild Cities**  
Stephen Minchin  
Science – Living World

## Level M – 32 pages

## Reading age 8–8.5



**Awesome Organs**  
Stephen Minchin  
Science – Human Body



**Catapults**  
David Chadwick  
Social Studies – World History



**Healthy and Delicious**  
Stephen Minchin  
Science – Human Body



**Signs of Life**  
Stephen Minchin  
Science – Space



**Weather Monsters**  
Matt Comeskey  
Science – Weather



**When Germs Attack!**  
Stephen Minchin  
Science – Human Body

# Pathways lesson support

The instruction for each *Pathways* book includes downloadable, editable lesson plans and mini-lessons on comprehension, fluency support, language, and text features.

## Book-specific

<b>Comprehension strategy lesson plans</b>	These lesson plans introduce each topic with a focus on comprehension strategies, and give explicit lesson ideas for the first few chapters of each book. See pages 38–39 for more detail.
<b>Fluency, language, and text features support</b>	These support documents outline specific fluency, language, and text features in each book. See pages 40–41 for more detail.

## For use on any book

<b>Teacher mini-lessons</b>	These are fast, discussion-based lessons that focus on a particular language skill, reading skill, or text feature for the chapter. Find these on the <i>Pathways</i> website ( <a href="http://www.pathwaystheseries.com">www.pathwaystheseries.com</a> ).
<b>Student activities</b>	These are student-friendly activities to help students learn independently or with learning partners. Find these on the <i>Pathways</i> website.

The *Pathways* website ([www.pathwaystheseries.com](http://www.pathwaystheseries.com)) is home to resources that you can download and use alongside the print resources.

- Lesson plans and support documents
- Writing activities



To be successful, each student needs to experience explicit support through shared and guided instruction and experience hands-on opportunities to read, think, talk, and write in response to the texts. The *Pathways* teacher support is based on the “gradual release” approach, which is supported by peer-reviewed research.





## Options for using Pathways in different settings

*Pathways* is a flexible resource that can suit a range of teaching and learning approaches.

<b>Shared reading instruction</b>	The <i>Pathways</i> books are provided on a unique digital interface for 21 <sup>st</sup> Century explicit, interactive teaching and learning, or shared reading. See pages 21–23 for more details on using the digital tools with a small or larger group.
<b>Small group guided learning</b>	Lesson plans and support documents for explicit literacy instruction (comprehension strategies, fluency support, language and reading skills, and text features) are provided for each of the <i>Pathways</i> books. See p. 40–43. These are available from the <i>Pathways</i> website. As a result of classroom trialling, we have also included some topics ideas for writing in response to each of the books.
<b>Reading workshop model</b>	Free online mini-lessons are provided on the website for needs-based direct instruction.
<b>Intervention (pull-out or push-in)</b>	Research indicates that a core component of intervention is reading material that is highly engaging and curriculum-linked. <i>Pathways</i> is lovingly designed to meet these two criteria.

Be aware that using low-to-high levelled reading groups may affect students' learning motivation and self-perception of ability, and limit the mutual benefits of peer-discussion in mixed-ability groups.

## Pathways and shared reading

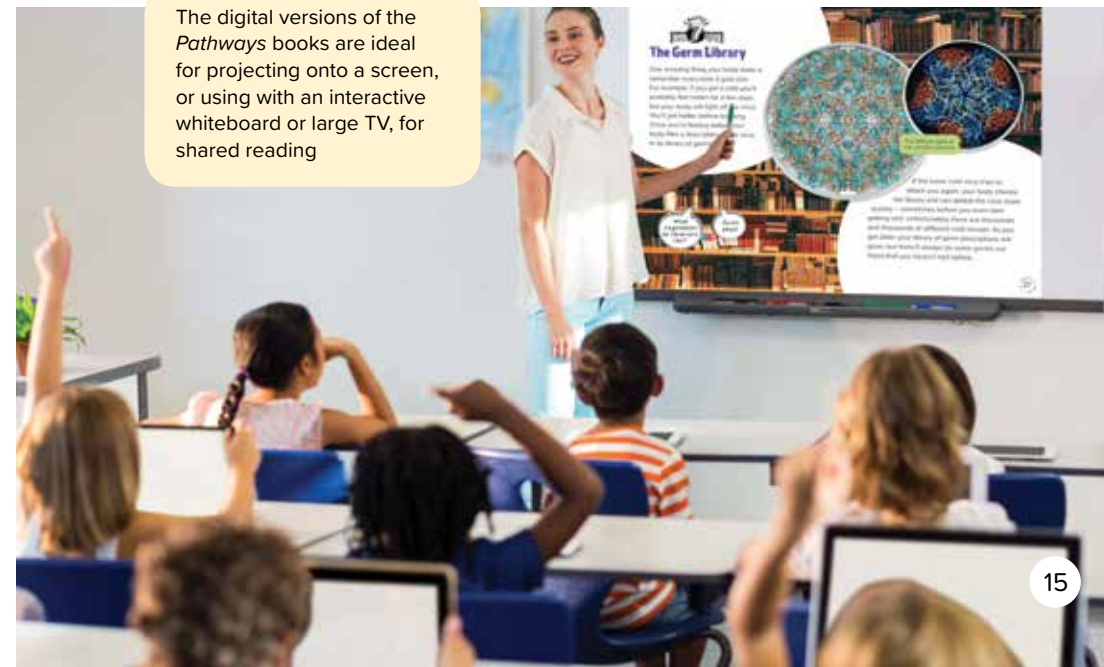
*Pathways* is a flexible resource that supports multiple approaches to classroom teaching and learning.

It's widely accepted that shared reading is an essential, explicit instructional approach.

The following are the key concepts of an effective shared reading lesson:

- An enlarged text chosen for features that suit your purpose
- A grouping of students, perhaps the whole class or a smaller needs-based group
- A commitment to:
  - reading to and with the students
  - modelling and explicit teaching
  - creating a learning community where students feel at ease, able to articulate their ideas, and listen to the ideas of others.

The digital versions of the *Pathways* books are ideal for projecting onto a screen, or using with an interactive whiteboard or large TV, for shared reading



## Pathways and humour

In each *Pathways* book, there are speech bubbles with jokes, puns, and humour alongside the images in the text. Humour promotes engagement – an essential component of learning.

To understand how and why (and *if!*) something is funny, students must bring together their background knowledge and their comprehension of the text so far. From there, the joke may be linked to a play on words, syntax, rhyme, or an inversion of the norm.



The jokes are an incentive to understand the text. To “get” the joke will encourage students to focus more intently on their reading, re-read for comprehension, or discuss their questions with their peers.

Humour:

- encourages students to engage more with the text
- boosts motivation to persevere to the end of the book
- increases overall enjoyment of reading
- encourages discussion, collaboration, and oral language
- relaxes and puts students at ease during challenging texts
- promotes language knowledge and learning.

Understanding the humour of a different culture can be very challenging for students learning another language. Jokes hinge on a shared cultural context and background knowledge, or a thorough grasp of linguistics and wordplay. Participating in a joke and using humour is crucial for forming and maintaining relationships with peers and interacting with others in a variety of social settings.

Consider having English language learners read with a buddy who is a native English speaker. If a joke is confusing, encourage students to discuss it together using their native language or English, or check their understanding with you. This not only encourages collaborative reading and problem-solving, but will help bilingual learners develop social academic language and confidence with understanding and using humour.





## Digging deeper with Nat the Ant

Each *Pathways* book includes an ant character named Nat, who guides the reader through the book and asks thought-provoking questions about what they have just read.

In the middle of each book is a fun, four-page, fold-out “Ant tunnel.”

The tunnel allows students to think through what they’ve read and learned in each chapter. It provides questions about what they’ve read, which encourages students to check their comprehension and reread the text, if necessary. Finally, it serves to activate background knowledge for the second half of the book, using questions that hint at what students will be reading next.

If students are reading in pairs, encourage them to pause at the Ant tunnel, and take turns to read each part aloud.

The Ant tunnels are not featured in the lesson plans, but can also be used for small-group discussion during reading.

You might group students together when they reach the Ant tunnel for a discussion, such as:

1. Together, read aloud each of the “what you’ve learned so far” parts and see how students respond to the questions. If needed, flip back through the text to check responses, and to discuss the text.
2. Ask students to read aloud the questions about the upcoming chapters.
3. Have students predict what they think the chapters will be about and why. Ask: “What part of the text helped you to predict?”
4. Ask students to discuss their understanding of the book so far, especially any difficult parts. Talk about useful skills and strategies they could use to make better sense of the text (see comprehension strategies, pages 26–30). This will help students to enjoy and understand the second half of the book.

Keep a record of what things students find confusing. You can use the teacher mini-lessons or the student activities (online) to personalise their learning and target the areas they have less confidence in.





## Nat the Ant and Asking Questions

Throughout each book, Nat's questions help students to connect with the text on a deeper level, and to consider and express their own opinions and ideas. The questions give students the opportunity to engage in critical thinking and to learn more about language function and forms. Some are funny to encourage student engagement and enjoyment.

<b>Shared reading:</b>	You may wish to digitally display Nat's questions, or part of the Ant tunnel and work collaboratively with the students to discuss and answer the questions and make predictions and determine important ideas.
<b>Guided learning:</b>	Nat's questions are built into the <i>Pathways</i> lesson plans and can be discussed in small groups with students. You may wish to go around the group and have each student contribute, or have students work in pairs and report back with their ideas.
<b>Partner reading:</b>	If students are reading with learning partners, you might ask them to pause at each of Nat's questions and talk about it together before moving on.
<b>Independent reading:</b>	If students are reading independently, encourage them to pause at the questions and think about how they would answer. You might also have them write down their answers to Nat's questions to discuss later, or check in with them midway and discuss their responses.

## Pathways digital support

The *Pathways* digital books are ideal for interactive shared reading, with all or part of a page projected onto a screen, or offered to students via an interactive whiteboard or a device.

Before using these in your classroom, it's recommended that you familiarise yourself with the digital books and tools.

The table below shows how to use the tools, and how they are useful for teaching and learning.

Tool	How-to	Teaching and learning during shared reading
<i>Mask</i>	<ol style="list-style-type: none"><li>1. Click on the "mask" icon.</li><li>2. Use the arrows around the mask to size and position it.</li><li>3. Click on the magnifying glass icon to zoom in.</li><li>4. To close the mask, click on the mask icon again.</li><li>5. Click on the "reset" icon to return the page to its original position.</li></ol>	<p>Use the mask to isolate and magnify important text elements during modelling and discussion. For example, isolate and magnify titles and blurbs, headings, photos, captions, tables, and graphs.</p> <p>Also use the mask to isolate individual paragraphs, such as those that contain important ideas and content.</p> <p>Cover the text while predicting from the chapter title.</p>

<i>Glossary</i>	<ol style="list-style-type: none"> <li>1. Click on any bold word to show a pop-up definition.</li> <li>2. Click on the red “X” in the top right-hand corner of the popup box to close a definition.</li> </ol>	<p>Ask students to “solve” the word in context, and then click on the definition.</p> <p>This is good for developing academic, domain-specific, and general vocabulary/ language.</p>
<i>Drawing tools</i>	<ol style="list-style-type: none"> <li>1. Click on the “pencil” or “highlighter” icon.</li> <li>2. Click on the “drawing width” icon, and choose your width.</li> <li>3. Click on the “colour palette” icon, and choose a colour.</li> <li>4. Write or draw on the page.</li> </ol>	<p>Use the drawing tools to focus the students’ attention on a particular text feature.</p> <p>Highlight and identify how you use comprehension strategies and text features.</p> <p>Underline or highlight important ideas. Show where and how you are using a comprehension strategy, or language or text feature.</p>
<i>Digital sticky notes</i>	<ol style="list-style-type: none"> <li>1. Click on the “note” icon.</li> <li>2. Click on the page where you want your note to appear.</li> <li>3. Drag out the red square to the size you want.</li> <li>4. Type into the note using your keyboard.</li> <li>5. Click anywhere outside of the note to continue.</li> </ol>	<p>Use the sticky note for a reading or writing activity. Perhaps model how to annotate the text to record how you are using comprehension strategies, or use it to summarise then synthesise information.</p>

<i>Eraser</i>	<ol style="list-style-type: none"> <li>1. Click on the “eraser” icon.</li> <li>2. Click on the object you want to erase.</li> </ol>	Erase any individual drawing you have added to the page.
<i>Trash</i>	Click on the “trash” icon.	Erase ALL the objects you have added to the page.
<i>Save/ Load</i>	<p>Click on the “save” icon to save annotations on a page. Create a file name, and click “save” again.</p> <p>Please note, you need to save each annotated page to keep the annotations.</p> <p>To load previously saved annotations of a page, go to that text and click on the “load” icon. Locate the desired file name and click “load” again. Please note, saved files are housed on your local hard drive. This means if you open the same text on a different computer, you will not have access to your previous annotations.</p>	
<i>Print</i>	To print a page, click on the “printer” icon. This will connect to your local printer and open a print confirmation window.	

For best results, it is recommended that you open the *Pathways* digital books using the latest Chrome or Safari browser. An internet connection is needed at all times.

If you did not receive a login to access the digital resources with your purchase, please email [info@csi-literacy.com](mailto:info@csi-literacy.com).

# Pathways pronunciation support

The table below is a helpful guide to pronouncing some of the complex vocabulary in *Pathways*. Be aware that accents might mean that words are pronounced slightly differently in some areas.

Level J		
<b>Building Shapes</b>	Guangzhou Kazakhstan Zollverein	GOOAHNG-DJO <b>KAH-ZAHK-STAHN</b> <b>TSOL-VAIR-INE</b>
<b>The Shape of the Land</b>	tectonic Pangea Appalachian	TEK- <b>TON</b> -IK <b>PAN</b> -JEE-AH AH-PAH- <b>LAH</b> -CHYIN
<b>Rocks</b>	igneous sedimentary metamorphic pumice gneiss	<b>IG</b> -NEE-US SEH-DI- <b>MEHN</b> -TEH-REE MEH-TI- <b>MOR</b> -FIK PUH-MIS NICE
Level K		
<b>On the Move</b>	wildebeest Tuareg Bedouin	<b>WILL</b> -DEH-BEEST <b>TWAH</b> -REG <b>BEH</b> -DOO-IN
<b>The Rabbit in the Moon</b>	elixir Tsukimi pareidolia mare	<b>EH</b> -LIK-SIR TSOO-KEE-MEE PAH-RAY- <b>DOH</b> -LEE-AH <b>MAH</b> -RAY
<b>Vikings</b>	Bjørn	BYORN

Level L		
<b>Flying Through Time</b>	Lilienthal	LI-LEEN-TAL
<b>Wild Cities</b>	macaque langur	<b>MAH-KAK</b> <b>LAN-GOR</b>
Level M		
<b>Awesome Organs</b>	stapedius	STA- <b>PEE</b> -DEE-US
<b>Catapults</b>	siege mangonel trebuchet	SEEDJ <b>MAN</b> -GOH-NEL <b>TREH</b> -BYOO-SHAY
<b>Weather Monsters</b>	Hyacinthe	<b>HI</b> -AH-SINTH
<b>When Germs Attack</b>	<i>Pseudomonas aeruginosa</i> <i>Acinetobacter baumannii</i> Salmonella <i>Escherichia coli</i> van Leeuwenhoek Hepatitis prion fungi protozoa giardia	SOO-DOH- <b>MOH</b> -NAS AY-ROO-GEE- <b>NOH</b> -SAH AY-SIN- <b>EE</b> -TOH-BAK-TER BOW- <b>MA</b> -NEE-I SELL-MOH- <b>NEL</b> -LAH ESH-ER- <b>EH</b> -KEE-AH <b>KOH</b> -LI VAN <b>LAY</b> -VEN-HOHK HEH-PAH- <b>TI</b> -TIS <b>PRI</b> -ON <b>FUHN</b> -DJI PROH-TOH- <b>ZOH</b> -AH DJEE- <b>AR</b> -DEE-AH

The pronunciations above are derived from Figure 3.1 “Guide to Pronunciation of English Sounds” in *Research-based Methods of Reading Instruction Grades K–3* by Sharon Vaughn and Sylvia Linan-Thompson (2004).

# Pathways: Reading comprehension strategies

Transitional readers are meeting new challenges that require them to use their decoding skills, develop their fluency and vocabulary, and comprehend new types of texts – particularly informational texts – across the curriculum. Below are the comprehension strategies to support your students.

## **Making Connections**

Making connections to and within the text they are reading is essential if a reader is to comprehend that text. Being able to decode and recognise the words is essential, but not enough. To make meaning, the reader needs to be able to bring their knowledge (often called background or world knowledge) to the text. Reading and learning become more meaningful to readers when they are able to connect their learning to their own lives, experiences, and background knowledge.

Researchers Stephanie Harvey and Anne Goudvis have identified three types of connections:

- Text-to-self – connections to the reader’s own experience and knowledge
- Text-to-text – connections to and within texts they have experienced (books, comics, magazines) or media (TV, movies, or digital games)
- Text-to-world – connections to what the reader already knows of the wider world, including the subjects that they have read about and studied at school.

Students who learn to actively seek connections as they read understand more. Teachers have many options for explicitly teaching students how to make connections including one-on-one, shared reading to a group, and guided learning with a small group.

## **Asking Questions**

Asking questions promotes engagement with a text, invites prediction, creates reasons to read, and fosters comprehension.

Harvey and Goudvis write that proficient readers “question the content, the author, the events, the issues, and the ideas in a text.”

Questions also foster discussion and interaction between readers, and between students and the teacher. As Nell K. Duke and P. David Pearson found “students exposed to questioning techniques that deepened their reading experiences are more able to generate high quality talk.”

Anne P. Sweet and Catherine Snow concluded that “Effective teachers asked high level questions requiring students to make inferences and think beyond the text.”

Students who learn to ask such questions are broadening their knowledge, deepening their comprehension of the text and learning about language form and function.

## **Visualising**

Visualising refers to the mind’s capacity to imagine what is being suggested by words or symbols on a page or screen, or in a text that is being heard.

Visualising is a strategy that can help students picture the text vividly in their mind using all their senses. Students who create strong mental pictures as they read have better recall, make more connections, ask more questions, and have deeper comprehension of the text.

You may find it helpful to have students discuss and point out which words helped them to visualise the most, and to discuss why students might find different words more helpful because of their different background knowledge.

Encourage students to use strong visualising words and adjectives in their writing to help create a mental picture for their reader.

### **Drawing Inferences**

Drawing inferences is the process of drawing meaning from a text that is not explicitly stated. Sometimes the reader notices clues in the text and uses these to make meaning. Sometimes a reader will draw an inference that the author is surprised by. Susan Zimmerman and Chryse Hutchins say “meaning is created in the mind of the reader.”

It’s important to note that inferences can be drawn in both fiction and non-fiction texts. In the *Pathways* book *Going, Going, Gone!* the dramatic cover picture speaks for itself, or does it? A body of water is encroaching on the land and washing away a road. But what inference does the reader draw? That the book is about sea-level rise? Or is it about a big one-off storm? Readers are encouraged to link their inferences to evidence in the text, make predictions, and to read on, as they draw and check their inferences.

Readers who draw inferences are more engaged with the text and have deeper comprehension.

Predictions are a type of inference, based on evidence. It’s helpful to ask students “What was it in the text that caused you to predict that?”

### **Determining Important Ideas**

“Thoughtful readers grasp essential ideas and important information when reading” – Harvey and Goudvis

Determining important ideas is sometimes referred to as finding the main ideas and supporting detail in a text. It is closely related to the skill of summarising, and is strongly related to the author’s purpose for writing.

As we model this strategy it can help to annotate the text, and to show students that the important ideas in an informational text are often found in the first or last sentence. The supporting details add useful, often interesting, but not essential, information.

A reader’s perspective and experiences can influence which ideas are considered important. Through discussion, students can appreciate that sometimes there are different views about what is important in a text depending on the reader’s background, values, and knowledge.

In informational texts such as *Pathways* there are special challenges, as students must consider features such as diagrams, maps, tables, graphs, illustrations, photographs and captions, as well as italics, bold (glossed) words, special fonts, bullet points, and tables of contents. All of these features can convey especially important ideas.

### **Monitoring Comprehension and Repairing Understanding**

Monitoring the meaning they are making while reading is the strategy of strategies, often called metacognition.

To be able to monitor their understanding, Harvey and Goudvis argue that our students need to stop if and when meaning breaks down and “use a variety of strategies to ‘fix up’ [their] comprehension.”



In a welcome development for us as teachers, researchers Tom Trabusso and Edward Bouchard concluded that “comprehension monitoring ... can be taught through teacher modelling and practise by children during reading”.

Further, Michael Pressley says that metacognition “...develops most completely when students practise using comprehension strategies as they read.”

We support you in the lesson plans to model by thinking aloud how to monitor comprehension, and to guide students as they apply their knowledge of strategies to the text, to make meaning, and fix up their comprehension when needed.

## Summarising, Retelling and Using Evidence

We may think of summarising as related to university-level study, however there is strong evidence to support summarising and retelling for transitional students as a comprehension activity.

When students recall important ideas and retell a shortened version of what they have read, they must be mindful of the sequence, and will reveal how thoroughly they understood what they were reading.

Encourage students to use sequence words such as “first, next, then, finally” to structure their retelling.

Using evidence is when students respond to a text verbally, or in writing, by mentioning specific parts of the text to inform their response.

It requires students to integrate their knowledge of the text with their purpose for responding, and select evidence that will support their ideas.

Support students to connect their ideas to the text by asking, “What quote or detail from the text made you think that?”

## Intonation

Pitch and intonation are used while reading to convey meaning.

- Model the reading, then group the students and read a sentence over and over with different moods (emotions): grumpy, surprised, scared, excited, confused.
- Discuss how authors can show their purpose and create tone by using exclamation and question marks. Show how the voice goes up and down, and gets louder and softer when reading.
- Demonstrate how saying a sentence loudly or in a soft whisper gives the sentence a different expression. For example, model this sentence in several different volumes: “I have something to tell you.”

## Emphasis

Emphasis and volume given to words to reflect the reader’s interpretation of the text.

- Stressed or emphasised words often point to an important idea, opinion, or differing perspective.
- Explain the idea of emphasis by using examples. Show that emphasising different words in a sentence changes the meaning each time: “You gave me the cup,” “You gave me the cup,” or “You gave me the cup.”
- Say a sentence without any emphasis at all. Then, for comparison, exaggerate how you use volume and speed to give the emphasised word more weight.
- Discuss how authors sometimes show emphasis by using italics, boldface, underlining, ALL CAPITALS, or “quote marks.”

## Pathways: Visual features and language supports

Below are the visual features and language supports from the *Pathways* books that are typical of informational texts. Your students are likely to need support to explore, understand, and learn about the use of these visual features and language supports, and the *Pathways* lessons and mini-lessons will support you to teach these.

### Visual Features

<b>Images</b>	<p>Help students to connect the photographs and illustrations to the words.</p> <p>Ask students what information the images give them that adds to what is written in the text.</p>
<b>Diagrams and maps</b>	<p>Help students to “read” the information in these visual features, just as they read words.</p> <p>Ask students: “Why do you think a map/diagram was used to show this information? How does it help our understanding?”</p>
<b>Sequences and procedures</b>	<p>Help students to follow the steps of the process in order.</p> <p>Connect the sequence format to their background knowledge of other sequences, e.g., recipes, routines, and instructions.</p>
<b>Captions</b>	<p>Explain that captions sit alongside images to give extra information.</p> <p>Ask students to discuss what type of information the caption gives.</p>
<b>Glossary</b>	<p>Point out the bolded words in the text and remind students that this signals a glossary entry.</p> <p>Model flipping to the back of the book, locating the word alphabetically, reading the definition, and then flipping back to the page you were reading.</p>

<b>Pacing</b> Consistency of an appropriate speed during reading.	<p>Model for students how reading a sentence aloud really fast (or very slowly) isn't easy to understand. Model a measured, even pace.</p> <p>Have the students practise pace with a tongue twister, e.g., “She sells seashells by the seashore.” First, try it very fast. Next try it agonisingly slowly. Finally, try it at a conversational “ideal” pace.</p> <p>Point out that reading steadily at a slower pace is helpful when there are lots of difficult words, rather than speeding up and slowing down just for the hard parts.</p>
<b>Punctuation</b> (Pausing and phrasing)  Smoothness of reading, and phrasing as cued by punctuation.	<p>When reading texts aloud, practise obvious pausing at full stops and commas.</p> <p>To show how important pausing is, read a few sentences with no pausing (without losing your breath!) and show how it is much easier to follow along when there is pausing, guided by punctuation, to separate sentences and clauses.</p> <p>Exaggerate the difference between pauses at commas (short), and pauses at full stops or exclamation points (longer).</p> <p>Mention that sometimes there isn't punctuation to signal a pause, but the phrase might need a pause anyway. These can happen between units of sentences. For example, in the sentence “The cat sat on the mat in the garden” there can be a pause between the two prepositional phrases “on the mat” and “in the garden” for clarity.</p>

## Language Supports

<b>Adjectives</b>	<p>Help students to recognise adjectives as describing words – words that add detail and more depth and meaning to the text.</p> <p>Use an item from the classroom, and have students brainstorm as many describing words as they can about it. (For example, a globe: colourful, useful, round, detailed, interesting, informative, etc.)</p>
<b>Adverbs</b>	<p>Help students to recognise words that describe how something is done. Adverbs are adjectives for verbs.</p> <p>Have students walk slowly in a circle around a desk. Read aloud sentences with adverbs in them, and have students copy the actions, (e.g., “The students walked slowly,” “The students walked nervously,” “The students stomped loudly,” etc.).</p>
<b>Nouns</b>	<p>Help students to recognise nouns as words that name people, places, or objects.</p> <p>Play a “noun game” using a list of different words with a range of nouns (objects, animals, students’ names, place names) mixed in. With students sitting down, read the words out (getting faster), and tell students to put their hands on their head when they hear a noun.</p>
<b>Prepositions*</b>	<p>Help students to recognise prepositions, and understand that they show where something is in relation to other things.</p> <p>To introduce prepositions, have students stand up and have them follow “preposition directions” you give, like Simon Says (e.g., “The students are <i>under</i> the doorframe,” “The students are <i>on</i> the chairs,” “The students are <i>in</i> the hallway”).</p>
<b>Sayings</b>	<p>Discuss with students what “sayings” are, and give an example of one that they are familiar with.</p> <p>Help students understand the meaning of the saying.</p> <p>Point out that every culture, and sometimes people in different areas, have different sayings that they use. Ask if any students want to share a saying they know from their area or from their culture.</p>

<b>Synonyms and antonyms</b>	<p>Discuss that synonyms are when a group of words have a similar meaning, and antonyms are a group of words with an opposite meaning.</p> <p>Help students to practise thinking of synonyms and antonyms using easier words at first, and then move onto more advanced examples.</p>
<b>Compound words</b>	<p>Discuss that some words are made up by joining two words together e.g., “whiteboard,” “bookcase,” and “Pathways.”</p> <p>Explain that the compound word’s meaning is often linked to the words it is made from.</p> <p>Have students practise by sharing compound words they know or can find, and what the words mean.</p>
<b>Silent letters</b>	<p>Help students to pronounce words with different silent letters in them, e.g., the “b” in “climb,” the “k” in “knife,” and the “g” in “light.”</p> <p>Brainstorm similar sounding words (e.g., knight, sight), or research others with silent letters and have students practise identifying and pronouncing them together.</p>
<b>Homographs</b>	<p>Help students to recognise that homographs are words that are spelled the same, but have different meanings, e.g., bat (baseball) and bat (flying mammal).</p> <p>Have students brainstorm or research other words that are homographs, and their different meanings.</p>
<b>Contractions*</b>	<p>Explain that the apostrophe usually replaces the missing letters. Practise expanding and contracting words when your students find them in the text.</p>
<b>Capitals</b>	<p>Discuss what kinds of words take capital letters and why.</p> <p>Support your students to use capital letters correctly in their writing, and give feedback on whether they’ve used them appropriately, and why, or why not.</p>

\*These are often the most difficult language components for bilingual learners.

## Writing activities for responding to the text

Each *Pathways* book has five short writing activities provided for your students to choose from, with your guidance, as a written response to their reading. They are available as activity sheets for download at [www.pathwaystheseries.com](http://www.pathwaystheseries.com)

By completing a writing connection after reading, students have the opportunity to show their comprehension, use new vocabulary in context, practise using evidence from the text, and reflect on the ideas they have been introduced to in the book and during group discussion.

The writing activities provided for each book cover five writing types:

**Narrative**   **Informational**   **Letter writing**   **Opinion**   **Research**

These allow you to personalise your students' learning and to choose which writing type will be of most benefit to them.

Writing activities are good for monitoring progress, making instructional decisions, and formative assessment. You can collect feedback on students' understanding of a text and their ability to respond to the content and language of the text. You can also use the writing activities during teacher-student conferencing to discuss their progress, comprehension, and next steps for learning.



### Tech tip!

*If students are using the digital books, have them use the digital sticky note tool to write any questions throughout the book.*

## Support for the writing activities

To get started, you may choose to:

- Display the chosen writing prompt digitally
- Download and print copies of the writing activities sheet
- Have students complete the short writing activities using pen or pencils and paper, or download the file(s), and save in a shared folder for students to access. Have students “save as” with their name, and they can then write digitally from their devices
- Support students to write about the topic using the basic writing conventions of the genre, (e.g., beginning a letter with “Dear ...”).

As you teach students the steps of the writing process, you might consider using the remaining writing activities for students to develop their writing skills also.

## Digitally-based activities


- Have students create an advertisement (a “book-o-mmerical”) where they record/video themselves answering these questions about the book:
  - What is the name of the book, and what is it about?
  - Why would you recommend it to a friend?
  - What did you find interesting?
  - Why do you think the author wrote the book?
  - What would you like to find out next?
- Have students create a presentation answering the questions above, using images, and quotes from the book. Next, have students show their presentations in pairs, and compare/contrast their answers.

# Lessons: Reading comprehension strategies

Each *Pathways* book has a guided lesson focused on reading comprehension strategies.

Lessons are provided as editable documents online, giving you the ability to adapt, save, and print lessons to suit your students' needs.

Comprehension Strategy Lesson



SAMPLE LESSON

## It's About Time

Level	J
Content Area	Mathematics
Reading Focus	Students will learn to use the comprehension strategies of Asking Questions and Determining Important Ideas as they read, think, talk and write in response to the text.
Text Type	Informational
Academic Vocabulary	ancient time, calendar, circle, clock, day, hour, minute, number, sand, second, shape, sky, water, week, year

**Topic Talk**

- Show students the cover of the book, and read the title aloud. Ask: "What do you think the phrase 'It's about time' means?"
- Have students think, pair, share the meaning of the title, and ask them to think about more than one meaning for the words.
- Have students make a prediction about what the book might be about.
- Now read the blurb on the back cover together. Have students talk about anything they have learned from the blurb (e.g. that the title can have two meanings).

**Contents**

- Open to the contents page and read the titles of the chapters aloud.
- Explain that contents pages are helpful for finding out what the author's purpose in writing the book is.
- Have students think, pair, share what new things they have learned about the book from the contents.
- Point out that some of the chapter titles are well-known sayings about time. Re-read the chapter titles "Time's Up!", "Keeping Time," and "Out of Time," and discuss what these sayings mean and when they are used.
- Introduce students to "Nat the Ant" at the bottom of the page and read the speech bubble aloud.

**Opening Chapters**

- Read the chapter title and page 2 aloud. Explain that the chapter is a question. Have students think about the chapter title and the questions *who*, *what*, *where*, *when*, *why* and *how*. Explain that you will come back to these questions at the end of the book.
- Read page 3 aloud. Make sure to read the breakout at the foot of the page as part of reading page 3. Have students think, pair, share what they think the important ideas are in the text they've read together. Discuss with them whether you all think that the "I" text box about Venus is an important idea or a detail
- Ask students to skim and scan pages 4 and 5. Have them think, pair, share what the important ideas will be on these two pages, and ask them to talk about where they saw these important ideas (i.e., in the word or the pictures).

- partner a time they followed instructions to make something. Have some students share with the whole group.
- Have students think, pair, share what would happen if you didn't follow the questions in order (also known as a sequence). Explain that instructions don't always have numbers, but sometimes use words like "next," "then," and "finally" to give you the right order.
- Read pages 7 and 8 together.
- Have students think, pair, share about whether or not these pages added to their knowledge about time.
- Ask students to share whether they have seen or heard about a sundial before. If they have, where was it?
- Set a purpose for reading from chapter 3 to the end of the book:
  - Try to ask questions about what you are reading as you go.
  - Try to find the main idea in parts of the text as you read, and look for parts that are supporting details of the main idea.
  - Pause at the ant questions to answer them, and read the Ant Tunnel carefully.

As students read on independently, you can check in with them to discuss the ant questions, or personalize learning by using the *Mini-Lessons* and *Fluency, Language and Text Features* to scaffold parts of the book that might be unfamiliar or challenging.

Bring students together again for reflection using the "After Reading" prompts.

<b>After Reading</b>		<ol style="list-style-type: none"> <li>Have students think, pair, share about important ideas they wrote down and questions they haven't been able to answer.</li> <li>Have students retell the journey of invention from the sundial to the digital clock using "first," "next," and "finally."</li> <li>Ask: "Were there any parts where you were stuck with your understanding, and how did you become unstuck?"</li> <li>Discuss how important it is to measure time and to know what the time is.</li> </ol>
<b>Writing Prompts</b>	<i>Fiction</i>	Write a story making up a problem you had when you were late for an important event.
	<i>Informational</i>	Write instructions to explain to someone how to set a digital clock to the correct time. Swap your instructions with a friend, and check the instructions make sense.
	<i>Letter Writing</i>	Write a letter to your school principal convincing him or her to build a sundial, a water clock, or a giant hourglass for the school. Explain why the school should have one.
	<i>Opinion</i>	Do you think it's important to always be on time, or not? Write an article explaining your opinion.
	<i>Research</i>	Research the invention of the digital clock, using the questions <i>who</i> , <i>what</i> , <i>where</i> , <i>when</i> , <i>why</i> and <i>how</i> .

EDITABLE

DOWNLOADABLE



# Teacher support: Fluency, language, and text features

Each *Pathways* book has support for fluency, language and text features important for transitional readers.

There are 20 documents covering a wide range of fluency, language and text features that transitional readers will encounter in *Pathways*, including:

- intonation
- emphasis
- pacing
- images
- diagrams and maps
- sequences and procedures
- captions
- glossary
- adjectives
- adverbs
- nouns
- prepositions
- sayings
- synonyms and antonyms
- compound words
- silent letters
- homographs
- contractions
- capitals.

## It's About Time

Fluency, Language, and Text Features	Idioms, instructions, glossary words
Level	J
Content Area	Math
Text Type	Informational text

Teaching points	Notes
<p><b>Idioms</b> Some of the chapter titles are idioms, or well-known sayings about time. Read the chapter titles "Time's Up!", "Keeping Time," and "Out of Time." Can your students explain the different ways these idioms can be read and understood?</p>	
<p><b>Sequences &amp; procedures</b> The instructions on page 6 tell you how to do something, like bake cookies. The list of materials tell you what you will need, they are similar to an ingredients list. The numbers show what order to do things in. Instructions don't always have numbers, but sometimes use words like "next," "then," and "finally" to give you the right order.</p>	
<p><b>Glossary</b> Words are bolded throughout the book so you know that you can check the glossary for their meaning. Model how to flip to the back of the book to look up the words alphabetically.</p>	

**SAMPLE**

## Formative feedback and learning conversations

There are many studies that show how important assessment is for learning – both for teachers and students.

Learning conversations are a good way to check in with students, give feedback about their work, support them to set challenging yet achievable goals, and motivate them to continue trying to improve.

Five steps for a mutually-beneficial learning conversations:

1. Discuss the student's reading, with specific examples, and give descriptive feedback to point out what parts are successful and how other parts might be improved.
2. Ask the student how they feel they are learning and progressing using *Pathways* books, and why.
3. Compare where they think they are with their reading, to where you think they are. Explain why.
4. Give the student an opportunity to mention anything they are finding really hard, or to ask questions about their reading.
5. Discuss what the next steps for learning might be (goal setting), and what they can do to try to achieve their goals.

You can use the results of the learning conversations to personalise learning, monitor progress, and to contribute towards the bigger picture of the student's overall progress.

## Academic and domain-specific language

One of the specific goals of *Pathways* is to build comprehension across subject areas and equip learners for all kinds of reading experiences. By including a rich variety of academic and domain-specific language in cross-curricular texts, students are supported with literacy in other learning situations where the focus is on learning new content, rather than comprehension of new vocabulary.

All academic language terms are Level 1 (Years 1–3). A full list of terms can be found in *Building Academic Vocabulary – Teacher's Manual* by Robert J. Marzano and Debra J. Pickering.

Academic language for each book are listed at the start of that book's comprehension strategy lesson plan. See page 38.

# Master glossary

## Building Shapes!



**architects** – people who design buildings

**circular** – shaped like a circle

**designing** – drawing and planning

**elevator** – a machine for carrying people to the different floors of a building

**foundation** – the base that a building sits on

**globe** – a sphere, often with a map of the world on it

**mines** – tunnels under the ground, used for digging up coal, gold, or other minerals

**palace** – where a king, queen, or emperor lives

**reconciliation** – becoming friendly again after an argument or a war

**rectangular** – shaped like a rectangle

**reflected** – when an image can be seen in a mirror or in water

**ruffling** – to mess up hair or feathers so they aren't smooth

**spherical** – shaped like a sphere

**stable** – steady, not falling over

**three-dimensional** – having three dimensions: width, length, and depth

## It's About Time



**accurate** – correct and right

**ancient** – a time long ago in history

**Babylonians** – a group of people who lived in the Middle East 4,000 years ago

**digital** – showing the time using numbers (digits) in a row

**divide** – to cut up into pieces

**electronics** – things that use electricity

**emperors** – leaders who are in charge of more than one country

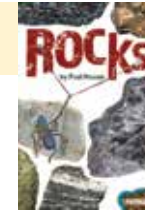
**mechanical** – using gears

**military** – the army, navy, coastguards, air force, and marines

**orbit** – the movement of one thing around another thing (like a planet moving around a star)

**tower** – a tall, narrow building

## Rocks



**erupted** – exploded, like a volcano

**extrusive** – a type of rock that is made from lava

**geologists** – people who study rocks

**igneous** – a type of rock that is made by a volcano

**intrusive** – a type of rock that is made from magma underground

**lava** – molten rock that comes out of a volcano

**magma** – molten rock that is underground

**metamorphic** – rock that is formed when other types of rock are squashed or heated enough for their inside structure to change

**molten** – melted

**pressure** – force that squashes something

**sedimentary** – a type of rock that is made from many layers compacted over time

**sedimentation** – the laying down of layers of material over time, like at the mouth of a river

**volcano** – an opening in Earth's surface through which molten lava, rock fragments, ashes, dust, and gases can erupt

**weathering** – the wearing down of rocks due to wind, rain, and other natural processes

## The Golden Age of Pirates



**captive** – taken as a prisoner or slave

**cargo** – things that a ship is taking from one place to another

**democratic** – when everyone can vote in an election

**desert** – run away from

**elections** – when people vote for their leaders

**equal** – the same

**GPS** – global positioning system

**hanged** – put to death

**hostages** – people who are taken prisoner until someone pays money

**looted** – stole

**maroon** – abandon

**myths** – stories that are passed down through generations

**navigation** – planning and following a path to take

**nickname** – another name given to a person that tells something about them

**plundered** – raided

**scale** – a line on a map to show what the distance is in real life

**sentenced** – given a punishment

**surrendered** – gave up

**weevils** – very small beetles that like to lay their eggs in food



## The Shape of the Land



- caldera** – the crater left in a volcano after it erupts
- canyons** – deep, steep-sided valleys
- continents** – the seven huge areas of land on Earth
- core** – the middle of something
- desert** – a very dry place
- forces** – things that cause a change in the movement of objects
- glaciers** – slow moving rivers of ice
- landslide** – large amounts of dirt and stones that fall down a hill
- magma** – molten rock under Earth's crust
- molten** – melted
- quadrillion** – 1,000,000,000,000,000
- volcanic activity** – when molten rock erupts out of a volcano
- volcano** – a hole in Earth's crust that lets molten rock out from inside Earth

## Going, Going, Gone!



- debris** – loose rocks, soil, and other natural material
- delta** – a triangle-shaped area of land at a river mouth

- downstream** – down a river, the way water flows
- drought** – when it doesn't rain for a very long time, so the soil becomes too dry
- fertile** – good for growing plants in
- glacier** – a huge pile of ice that slowly slides down a valley
- landscape** – what an area of land looks like
- levees** – banks built to keep rivers from overflowing
- plains** – large areas of flat land
- riverbanks** – the sides of rivers
- soil** – the loose surface material of Earth in which plants grow
- tons** – unit of weight. One ton weighs about the same as two big horses.
- torrent** – a large amount of water that moves very quickly

## Killer Plants



- carnivorous** – able to trap and eat animals
- continent** – one of seven large landmasses around the world: Europe, Asia, Africa, North America and South America, Australia, and Antarctica
- digest** – break down food for it to be absorbed and used in the body
- dissolve** – become mixed into a liquid

- equator** – the dividing line around the middle of Earth that separates north and south
- flypaper** – sticky paper that is coated in poison to catch and kill flies
- greenhouses** – glass or plastic buildings in which you can grow plants in warm, protected conditions
- husk** – the dry outer covering, in this case, of a dead insect
- nectar** – a syrup of sugar that plants use to attract insects
- pollen** – a powder that is needed to create new plants
- prey** – a living thing that is hunted or eaten by a killer plant
- shrews** – small animals that look like squirrels with long noses
- succulents** – plants that store a lot of water, like a cactus
- tentacles** – very bendy arms, like an octopus or squid has
- vacuum** – a space with no air inside it

## On the Move



- currents** – water flowing in the same direction
- free-ranging** – able to walk around a large area to find food
- graze** – eat grass
- habitat** – the place where an animal normally lives

- keystone species** – a species that is very important to its habitat and the other species in that habitat
- life cycles** – the changes that living things go through from the beginning of their lives until their deaths
- mass** – a large number or amount of something
- mate** – when animals pair up to produce babies
- obstacles** – objects that you have to go around, over, or through
- phase** – the visible shape of the moon, which changes during the month

## The Rabbit in the Moon



- astronomers** – scientists who study stars, planets, and other objects in space
- crane** – a type of bird that has a long neck and long legs, and lives near water
- lava** – melted rock from a volcano
- mortar** – a deep bowl in which things are crushed to powder using a hard tool called a pestle
- pestle** – a hard tool with a rounded end that is used for crushing things to powder in a deep bowl called a mortar
- plague** – a disease that causes death and spreads quickly to a large number of people

## Vikings



**archaeologists** – people who study human history

**bartering** – exchanging goods or services for other goods or services without using money

**chieftains** – the leaders of a group of people or a clan

**clans** – groups of interrelated families

**expedition** – a trip taken by people who want to explore, find out about something, or go to war

**heathen** – a person who is not religious

**iron** – a strong, hard metal often used in the form of steel

**longhouse** – a long, box-shaped house with a sloping thatched or turf roof. Longhouses were often built out of wood, stone, or turf.

**mead** – a strong drink made with honey

**monastery** – a building occupied by a group of monks

**Norse** – Scandinavians from ancient or medieval times

**oral** – spoken rather than written; verbal

**raids** – attacking quickly and by surprise

**sagas** – long, detailed stories

**sailors** – people who sail boats

**Scandinavia** – a cultural region that includes what is now Sweden, Norway, and Denmark

**spit** – a long metal rod pushed through meat so it can be roasted over a fire

## Dragons



**betray** – hurt someone who trusts you

**damsel** – a young, unmarried woman

**emperor** – leader

**fearsome** – very frightening

**glory** – public praise, honor, and fame

**helium** – a very light gas (like you get in balloons that float in the air)

**ignite** – set on fire

**lair** – the place where a wild animal sleeps

**landforms** – natural features of Earth's surface (such as mountains or valleys)

**mining** – digging a deep hole or tunnel to find things like coal, gold, or diamonds

**myth** – an old story, often with a mixture of truth and imagination

**quest** – a journey in search of something

**similar** – almost the same as something else

**springs** – water coming up from the ground

## Flying Through Time



**drag** – the force from the wind as it works to slow something down

**English Channel** – the body of water between England and France

**freight** – things that are moved by boats, planes, trains, or trucks

**gravity** – the force that pulls things down to the ground

**jet engine** – a powerful engine that shoots out hot gas to cause forward movement

**lift** – the force produced when air moves over a wing

**passengers** – people that are moved, for example, by boats, planes, trains, cars, or buses

**replica** – an exact copy of something

**solar-powered** – powered by energy from the sun

**spokes** – wires that go from the middle of a wheel to the outside, holding it together

**strategy** – a plan

**theory** – an idea to explain something

**witnesses** – people who saw something happen

## Money, Money, Money!



**barter** – trading one thing for another, without using money

**blanks** – something that doesn't have anything on it, like a blank piece of paper

**counterfeiting** – to make a fake copy of something

**die** – a piece of metal with a shape cut into it, used for stamping a design into something

**fertilizer** – something that is added to dirt to make it better for growing things

**printing plates** – big metal sheets that have a design cut into them, kind of like a rubber stamp

**serial number** – a number that is printed on a banknote, so that every note has a different number

**watermarks** – a faint design that is pressed into paper

## Wild Cities



**antlers** – horns

**buffet** – a meal where you can take what you like from many choices

**calves** – baby moose

**colony** – a group of animals living in one place

**escalators** – moving stairs that carry people up or down a floor in a building

**Hindu** – to do with Hinduism, the main religion of India

**Houses of Parliament** – where politicians in England work (like the House and the Senate in the US)

**predators** – animals that prey on other animals

**primate** – a group of animals that includes monkeys, apes, and humans

**skyscraper** – a very tall building

**suburbs** – areas where people live outside of a large city

## Awesome Organs



**arteries** – tubes that carry blood out from your heart and around your body

**chyme** – acidic fluid made of stomach juices and half digested food

**digesting** – breaking down the food you eat into tiny parts that can be used by your body

**enzymes** – chemicals that help to speed up a natural process

**filter** – taking something out of a liquid

**ligaments** – tough pieces of tissue in your body that hold bones together or keep an organ in place

**nutrients** – substances that plants, animals, bacteria, and fungi need to live and grow

**regenerate** – grow back after being lost, damaged, or removed

**tendons** – tough pieces of tissue in your body that connect a muscle to a bone

**tissue** – the material that forms the parts in a plant or animal

**veins** – tubes that carry blood from all over your body back to your heart

## Catapults



**aircraft carriers** – warships that have many planes on board

**ancient** – a time long ago in history

**battlements** – walls with small holes to shoot through

**castles** – large buildings with high walls and towers, built to protect against attacks

**counterweight** – a weight that balances another weight

**crossbows** – bows that are used to shoot arrows, and that are used flat instead of upright

**energy** – power that can be used to do work or make things move

**gunpowder** – a chemical mixture that can explode

**lead** – a type of metal that is heavy

**missile** – an object that is thrown, shot, or launched to try to hit something

**moats** – deep trenches around a castle, usually filled with water

**robbers** – people who steal things

**rulers** – people such as kings or queens who are in charge of a group of people

**sling** – a flexible strap used to launch stones or other missiles

## Healthy and Delicious



**barley** – a grain used for making malt, bread, stews, and other foods

**connective tissue** – a support structure joining different parts of the body together

**invincible** – too strong to be defeated

**minerals** – substances that plants and animals absorb and that we need to eat to stay healthy

**nutrients** – minerals, proteins, vitamins, and other things we need to eat to stay healthy

**nutritious** – good for you, healthy

**processed** – food that isn't fresh, such as potato chips, frozen pizza, or hotdogs

**protein** – a nutrient that is used to build muscles and other parts of your body

**remedies** – medicine or treatments for an illness

**vitamins** – substances that plants and animals make, and that we need to eat to stay healthy

## Signs of Life



**astronomers** – scientists who study the stars and outer space

**bacteria** – tiny organisms that live almost everywhere on Earth

**black holes** – collapsed stars with so much gravity that even light can't escape

**canals** – waterways made by people

**data** – information

**eroded** – worn down by natural forces, like wind and rain

**extraterrestrial** – from outside of the planet Earth

**lenses** – curved pieces of glass that focus light

**Martians** – creatures from the planet Mars

**Milky Way** – a wide band of stars across the night sky

**orbiting** – circling around a star or planet, held there by gravity

**organisms** – living things, like plants, animals, or bacteria

**poles** – the top and bottom of planets

**polished** – rubbed until it is smooth and shiny

**radio telescopes** – big radio receivers, used for listening to transmissions from space

**solar system** – a star and the planets that orbit it

**transmissions** – signals that are sent from one place and picked up somewhere else

## Weather Monsters

**brute** – a violent person or animal

**chaos** – confusion

**evaporates** – turns from a liquid into a vapor

**funnel** – a tube that's wide at the top and narrow at the bottom

**heatstroke** – a disease caused by heat, which makes you feel sick and dizzy, and can kill people

**mudslides** – when wet dirt slides off the side of a hill

**outlook** – what people think will happen in the future

**simmer** – to boil gently

**smother** – to cover something so it can't breathe

**soaker** – something that makes you very wet

**vapor** – gas



**whiteout** – when there's snow on the ground and in the air, so that all you can see is white

## When Germs Attack!



**antibodies** – proteins in your blood that help your body to destroy germs

**digest** – break down into smaller pieces

**disease** – illness that is caused by germs

**injections** – medicine that is put into your body through a needle

**mucus** – slimy fluid made by the body to protect itself from germs

**organisms** – individual living things

**outbreak** – a sudden spread of disease

**proteins** – the building blocks of our bodies

**red blood cells** – cells in the blood that carry oxygen through the body

**reproduce** – to make more versions of themselves

**white blood cells** – small blood cells with no colour that help protect the body against germs

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