



Overview

This article may look like a story at first glance, but the dramatic illustration helps to introduce an informative report on the sandfly – and the reason it is such a nuisance to humans. The report gives some facts about how humans in Aotearoa New Zealand managed problems with sandflies in earlier times. It then explains where sandflies are found, why they bite, their life cycle, the reason why their bites are itchy, and how to prevent bites.

The text provides opportunities to explore the sometimes competing survival needs of living things. Some students may be

able to share experiences from other countries where an insect bite can be far more serious. This text connects with the story (pakiwaitara) “Namu and Waeroa” on page 18 of the same *School Journal*.

There is an audio version of the text on the 2012 *School Journal and School Journal Story Library Audio CD* as well as on an MP3 file at www.schooljournal.tki.org.nz

Texts related by theme

“Namu and Waeroa” SJ L2 May 2012 | “Ants on the March” SJ 2.4.10 | “Unwanted Visitors” SJ 2.3.08

Text characteristics from the year 4 reading standard

some compound and complex sentences, which may consist of two or three clauses

some abstract ideas that are clearly supported by concrete examples in the text or easily linked to the students’ prior knowledge

Captain Cook was the first person to use the word “sandfly” when he came across the insects at Dusky Sound in May 1773. In other countries, they are known as “blackflies”.

Some of the methods used by early Pākehā for keeping sandflies away must have been pretty smelly. Whalers mixed raw linseed oil, turpentine, and pine tar and rubbed it on their skin. In the 1860s West Coast goldminers used rancid bacon. One early European settler smeared beef fat on his chimney and trapped thousands of sandflies. With fat on their wings, they could no longer fly, and they became a meal for weka.

Where are sandflies found?

Sandflies are found throughout New Zealand, wherever there is flowing water and bush. They are often found at beaches and at the edges of lakes or swamps. There are no sandflies above the bushline.

The east coast of the South Island has the fewest sandflies, and the west coast of the South Island has the most. This map shows where sandflies are most commonly found in New Zealand.

Miner's hut

some words and phrases that are ambiguous or unfamiliar to the students, the meaning of which is supported by the context or clarified by photographs, illustrations, diagrams, and/or written explanations

some places where information and ideas are implicit and where students need to make inferences based on information that is easy to find because it is nearby in the text and there is little or no competing information

other visual language features that support the ideas and information, for example, text boxes or maps

Possible curriculum contexts

SCIENCE (Living World)

Life processes: Recognise that all living things have certain requirements so they can stay alive.

ENGLISH (Reading)

Level 2 – Purposes and audiences: Show some understanding of how texts are shaped for different purposes and audiences.

ENGLISH (Writing)

Level 2 – Purposes and audiences: Show some understanding of how to shape texts for different purposes and audiences.

Possible reading purposes

- To learn more about sandflies
- To find out why sandflies are a nuisance and how we can avoid or treat their bites
- To understand the sandfly's life cycle and its requirements for life.

Possible writing purposes

- To describe another nuisance insect
- To compare another insect with the sandfly
- To make a poster that explains how to avoid and treat sandfly bites.

See [Instructional focus – Reading](#) for illustrations of some of these reading purposes.

See [Instructional focus – Writing](#) for illustrations of some of these writing purposes.

Text and language challenges

VOCABULARY:

- Possible unfamiliar words and phrases, including “sandfly”, “slapping”, “itching”, “nuisance”, “(bracken fern) fronds”, “came across”, “methods”, “pretty smelly”, “Whalers”, “goldminers”, “smeared”, “chimney”, “throughout”, “wherever”, “produce”, “victims”, “trail”, “fast-flowing”, “hatch”, “particles”, “itchy”, “slashes”, “dribbles”, “saliva”, “wound”, “chemicals”, “digest”, “reacting”, “avoid”, “especially”, “baby oil”, “tend”, “moving targets”
- The specialist vocabulary, including “linseed oil”, “turpentine”, “pine tar”, “species”, “carbon dioxide”, “life cycle”
- Plural formations, including “sandfly”/“sandflies”, “larvae”/“larva”, “pupae”/“pupa”
- The comparative terms “fewest” and “most”.

Possible supporting strategies

Provide opportunities for your students to encounter key low-frequency words such as “sandfly”, “slapping”, and “itchy” before and after reading.

Identify the specialist vocabulary that is not already familiar to them from other science studies. For example, if students have not encountered words associated with the insect life cycle, make opportunities to teach and practise them before, during, and after reading. Take the opportunity to discuss the singular and plural forms of the Latin words “larva” and “pupa”. Some students may need support to understand the specific meanings of other unfamiliar words, such as “smeared”, “slashes”, “dribbles”, and “tend”.

Use your knowledge of your students to guide them in building personal vocabulary lists of new words and phrases. Help them to make notes about these words and phrases, for example, definitions, translations (if appropriate), example sentences, word families, or words that go together (collocations). *The English Language Learning Progressions: Introduction*, pages 39–46, has useful information about learning vocabulary.

SPECIFIC KNOWLEDGE REQUIRED:

- Experience of being bitten by sandflies or other insects
- Familiarity with various methods of avoiding or treating insect bites
- The concept that insects have distinct life cycles and specific requirements for continuing the cycles
- Knowledge of the history of settlement in Aotearoa New Zealand
- Knowledge of the geography of Aotearoa New Zealand.

Possible supporting strategies

Identify areas in your neighbourhood where sandflies or mosquitoes are often found, such as near water. A day or two before reading, have a group discussion to share experiences and knowledge about sandflies and other insects that can be a nuisance. Prompt your students to share what they know about the insects, including their habitats, their life cycles, and the effect they have on humans. Discuss ways people try to deal with the problems, such as using insect repellents or insecticides. If students have limited knowledge or experience, you could provide pictures of insects that cause problems and move on to the concept of “nuisance” compared with serious health risks. (For example, in some countries, insects that bite carry serious and possibly fatal diseases.)

For students who are likely to find this text challenging, you could spend some time previewing the content (and the language). Give pairs or individual students copies of the illustrations and/or the headings and ask them to make notes under each one, predicting the content, sharing their knowledge, or simply labelling the illustrations (according to their abilities).

TEXT FEATURES AND STRUCTURE:

- Factual report that uses historical and scientific information
- The use of headings
- Many compound and complex sentences
- Several sentences that include adverbial phrases and clauses, such as “to stop the bites itching”
- Visual features, including illustrations, photos, historical images (paintings and photos), a map with compass, a life cycle diagram, and close-up or magnified photos
- Mostly present verb forms to describe things that are always true and some past verb forms to describe events in the past
- The glossary.

Possible supporting strategies

Support the students to identify the text as a non-fiction article (the first illustration may mislead some students). Then skim the text with them, prompting them to identify the text features.

During and after reading, check the students’ understanding of the explanations. They may need prompting to identify the main idea of an explanation and the details that support it.

If needed, break down the complex and compound sentences for students to understand the wide variety of relationships between ideas, including time, sequence, consequence, and cause and effect.

If necessary, help the students to understand long complicated sentences by breaking them into separate phrases and clauses and identifying the idea of each clause or phrase and how they are connected.

The students can reread the article as they listen to the audio version on the *2012 School Journal and School Journal Story Library Audio* CD or MP3 file. Audio versions also provide English language learners with good models of pronunciation, intonation, and expression.

Instructional focus – Reading

Science (Living World, level 2 – Life processes: Recognise that all living things have certain requirements so they can stay alive.)

English (Level 2 – Purposes and audiences: Show some understanding of how texts are shaped for different purposes and audiences.)

Text excerpts from “Te Namu – the Nuisance Fly”

Students (what they might do)

Teacher (possible deliberate acts of teaching)

Sandflies have been a nuisance ever since people first came to Aotearoa. Māori painted themselves with kōkōwai (red ochre) to keep them away. To stop the itching, they rubbed themselves with the juice from crushed ngaio leaves or rarauhe (bracken fern) fronds.

Sandflies are found throughout New Zealand, wherever there is flowing water and bush. They are often found at beaches and at the edges of lakes or swamps. There are no sandflies above the bushline.

The east coast of the South Island has the fewest sandflies, and the west coast of the South Island has the most.

*The students use information from the title, the introductory page, and the images to **predict** that the article will explain why sandflies make you itch and how you can avoid or treat bites. They **make connections** between their own experiences of sandflies and the text to compare ways of avoiding bites.*

*With support, students **integrate** this information with their prior knowledge of encounters with sandflies, information on the previous page, and the information on the map to understand the preferred habitats of sandflies. They **ask questions** about the reasons some areas have more sandflies than others and **form hypotheses** about the conditions sandflies need for survival.*

The hunt for blood

There are eighteen different species of sandfly in New Zealand, but only three species bite.

It's only the female sandflies that bite. They need blood to produce eggs. As well as humans, female sandflies attack birds, bats, seals, and domestic animals such as dogs and cats.

*Students **locate** and **evaluate** information that may confirm their **hypotheses** and/ or answer their questions. As they **locate** information about what female sandflies eat, they **ask further questions** about what male sandflies eat and how blood helps female sandflies to produce eggs.*

*Students **make connections** with prior knowledge of the places other animals live to **infer** that the bush is a good place for sandflies to find sources of blood. Students continue to search for information that will answer their questions and prove or disprove their **hypotheses**.*

METACOGNITION

- Tell me about the features of this text that helped you to understand it. For example, how did the headings help you?
- What questions did you have in your head while you were reading? How did they help you to understand the text better? Is this a strategy you use often?
- What helped you to work out the word “particles”? How did your knowledge of word families help you?

PROMPT the students to identify information that will support their predictions.

- The title of this article is “Te Namu – the Nuisance Fly”. What information do you think you will find here?
- What do you already know about sandflies and why they are a nuisance?
- If you've been in a place with lots of sandflies, what did you do to avoid being bitten? Did it work?

ASK QUESTIONS to help the students bring information together.

- Using what you know about New Zealand's climate, why do you think the west coast of the South Island has more sandflies than other places?
- What clues or prior knowledge helped you?

MODEL the questions a reader might ask to help them form hypotheses and search for information.

- As I read this, I'm wondering why sandflies prefer flowing water and bush. I'm thinking there must be something they need in those habitats. I know that many insects live in water at some stage of their life cycle. My hypothesis is that sandflies need to be near water for that reason. But why do they need to be near the bush? I wonder if it has something to do with food? As I read on, I'll be checking my hypothesis about water and looking for an answer to my question about what sandflies eat. These reading strategies help me understand a lot more as I read.

ASK QUESTIONS to support the students as they search for answers.

- What have you found out? Share your questions and answers with a partner.
- Were your hypotheses correct?
- What further questions do you have?
- Where could you find answers?

MODEL making an inference.

- The text doesn't tell me exactly why sandflies live in places where there is bush, but I can make an inference here. The text says they drink the blood of birds and other animals. I know lots of birds live in the bush. I can infer that sandflies live in the bush because it's a good place to find animals they can bite for blood.
- What other inferences did you make as you read this article?

GIVE FEEDBACK

- I noticed you rereading sections of the text to check or find information. Rereading is a good strategy for clarifying information.
- Every time you made a prediction, you checked to see if it was correct. Great! Make sure you continue to do that when you're reading independently.

Instructional focus – Writing

Science (Living World, level 2 – Life processes: Recognise that all living things have certain requirements so they can stay alive.)

English (Level 2 – Purposes and audiences: Show some understanding of how to shape texts for different purposes and audiences.)

Text excerpts from “Te Namu – the Nuisance Fly”

Examples of text characteristics

Teacher (possible deliberate acts of teaching)

Do you know the sandfly dance? It's easy. You hop from one foot to the other while waving your hands in the air and slapping your arms and legs.

AUDIENCE

Using the second person and a question is an excellent way to engage the reader. The question is an invitation to keep reading to find out more. Using humour also adds interest.

ASK QUESTIONS to help the students form intentions for writing.

- What is your purpose for writing?
- What writing features will best suit your topic?
- Who is your audience? What is the best way of engaging them and making them want to read your writing?

Some of the methods used by early Pākehā for keeping sandflies away must have been pretty smelly. Whalers mixed raw linseed oil, turpentine, and pine tar and rubbed it on their skin. In the 1860s, West Coast goldminers used rancid bacon. One early European settler smeared beef fat on his chimney and trapped thousands of sandflies. With fat on their wings, they could no longer fly, and they became a meal for a weka.

ADDING DETAILS

A main idea or piece of information is often followed by details or examples that support the main idea. Details also add interest and help readers to understand better. Examples allow readers to make connections with their own similar experiences.

PROMPT the students to review their writing for details.

- Read over the topics you've covered. Are there examples you could add to help explain a point?
- Are your examples and details interesting for your readers?
- Remember your audience: what kinds of details or examples will help them to make connections with your writing?

ADVERBIAL PHRASES AND CLAUSES

An adverbial phrase or clause adds information that tells how, why, when, or where about an action in the main part of the sentence.

EXPLAIN the way an adverbial phrase works.

- Let's reread the last sentence in this extract. There are three parts in the sentence, separated by commas. The first part is an adverbial phrase – it tells why something happens. Another way to write this could be as an adverbial clause: “Because they had fat on their wings, the sandflies could no longer fly ...”
- Think about using an adverbial clause or phrase when you want to explain how, when, why, or where something happens.

Some students will need to notice and analyse many examples, co-construct further examples, and have scaffolded opportunities to practise using adverbial phrases and clauses before they can begin to use them independently.

The life cycle of the sandfly

After a meal of blood, the female lays her eggs. She lays them just under water on rocks or plants in fast-flowing streams and rivers. After the larvae hatch, they eat tiny particles that are in the water.

The larvae turn into pupae and spend around twelve days in this form before becoming adult sandflies.

SEQUENCE

In a non-fiction text, a sequence of events can be written in the running text or by using a diagram such as a cycle or a flow chart. Sometimes, both are used. In running text, linking words such as “after” and “before” are used to show the reader the sequence of events.

PROMPT the students to clarify their writing of a sequence.

- Look for any places where several steps or events happen in a specific order. Have you put them in the right order?
- Could linking words help your readers to follow the sequence?
- Would a diagram help? If so, are you describing a cycle (such as a life cycle) or a linear flow of events (such as a timeline)? Remember to add a title and labels to your diagrams.

DIAGRAMS

When a diagram is used to show a sequence, there may be arrows to indicate the order. A sequence that continues to occur in the same way is called a cycle, and the arrows show the direction of the events or stages in the cycle.

GIVE FEEDBACK

- This new introduction is much punchier. I think your readers will be fascinated and will want to find out more.
- Reading these examples has helped me make connections I hadn't thought of before. Those connections helped me to understand the information.
- You've replaced a long explanation of what happens with a clear diagram and good labels. That's a much better way to help readers understand the sequence of events.

METACOGNITION

- How did thinking about your audience help you to make decisions for your writing?
- What does this paragraph mean? How will your readers work this out? What examples can you add to support them?
- This sentence is very well constructed. Tell me how you worked out the best order of the parts and how you made sure it sounded right.

Writing standard: by the end of year 4
The Literacy Learning Progressions