Tons of Tomatoes
by Georgina Barnes

Overview
"Tons of Tomatoes" shows readers inside a hydroponics glasshouse, where Johnny’s Uncle Reupena grows tomatoes. Along with Johnny, readers learn about hydroponics. Students will be able to make connections and comparisons with what they already know about growing plants. The article is well illustrated with photographs and is supported by an interview with Uncle Reupena.

This article:
- includes factual information about what plants need to grow
- provides opportunities to make connections with prior knowledge
- provides opportunities to make and justify inferences and to think critically about a person’s choices.

Texts related by theme
“Gardens with Edge” Connected 2 2010 | “Picking Peas” SJ 1.4.10

Text characteristics from the year 4 reading standard

- some abstract ideas that are clearly supported by concrete examples in the text or easily linked to the students’ prior knowledge
- a straightforward text structure, such as a structure that follows a recognisable and clear text form
- some compound and complex sentences, which may consist of two or three clauses

Inside the glasshouse, there are rows and rows of tomato plants. Uncle Reupena tells Johnny that there are 3800 of them! The plants are in bags—two plants share each bag. In the bags, Johnny can see something brown like soil, but it looks hairy like bark.

“I thought you grew without soil. What’s that?” asks Johnny.

“That’s coconut fibre,” Uncle Reupena replies. “It helps to hold the plants in place. It’s good to use because it’s totally free of disease— unlike soil. But coconut fibre doesn’t have any minerals.”

Johnny knows that plants need minerals to grow. His plants at home get their minerals from the soil.

“I have to buy minerals by the bagful,” Uncle Reupena says. The minerals he buys are powders or crystals.

By the end of year 4, students are expected to:
- read and understand a straightforward text structure, such as a structure that follows a recognisable and clear text form
- make connections and comparisons with what they already know about growing plants
- use their prior knowledge to identify some abstract ideas that are clearly supported by concrete examples in the text
- use some compound and complex sentences, which may consist of two or three clauses
- make and justify inferences and think critically about a person’s choices
To find out what a boy discovers on a visit to his uncle’s tomato farm

**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.

**TEXT FEATURES AND STRUCTURE**
- Factual article, told in the third person, followed by an interview
- Explanation of the hydroponic growing process
- The relaxed, informal tone
- Use of headings, photographs, a glossary, and an interview
- The similes: “as big as twenty classrooms”, “as long as three buses”, “flying around the glasshouse like a bee”
- The metaphor: “black pipes snaking”
- The opportunities to compare different ways of growing tomatoes
- The use of an interview to provide biographical information
- The values of family, service, and caring for the needs of others that are implied in the interview.

**SPECIFIC KNOWLEDGE REQUIRED**
- Familiarity with the life cycle of plants and what they need to grow
- Familiarity with seeing, eating, and possibly growing or picking tomatoes
- Some scientific knowledge of solutions (for example, experience of dissolving crystals)
- Ability to infer meaning, in particular, to make comparisons between traditional and hydroponic gardening that are implied though the text.

**VOCABULARY**
- The Samoan names and places that may be unfamiliar: Reupena, Magiagi, Leulumoenga.

**Possible supporting strategies**
- Some of these suggestions may be more useful before reading, but they can be used at any time in response to students’ needs.
- Remind the students to use strategies they know, for example, word families, to work out the meaning of unfamiliar words and phrases.
- List and review the technical vocabulary, using the context (and other familiar contexts, such as salt or sugar in food or hot drinks) to support students to understand meanings. For English language learners, provide visual, audio, and/or graphic supports; examples in context; and opportunities for repetition.
- The students may need support to pronounce words, both Samoan names and technical words. Check your own pronunciation first, then show the students how to use familiar chunks to sound out words.
- For students who may find the vocabulary difficult, select key vocabulary items and preview them before reading. See ESOL Online, Vocabulary, for strategies to support students with vocabulary.

**Possible supporting strategies**
- Use a chart or simple graphic organiser to record the life cycle of the tomato. As the students read, prompt them to relate what is being described in the text to the stages of the life cycle.
- Brainstorm what the students know about growing plants. Refer to the brainstorm during reading, prompting them to identify how Uncle Reupena makes sure the tomatoes receive what they need. Use these discussions to introduce or reinforce key vocabulary. You could start a class dictionary on the topic of horticulture. (Class-created dictionaries can sometimes be more specific, accessible, and useful to students than general dictionaries.)
- Discuss the parts of the life cycle that Johnny sees on his two visits. Check that the students can infer the stages that are not actually seen by Johnny, for example, seed germination, flowering, and fruiting.

**Possible writing purposes**
- To chart and describe the similarities and differences between two different growing methods
- To describe the work of a family member or friend
- To research and describe another way in which technology is used in food production.

**Possible reading purposes**
- To find out what a boy discovers on a visit to his uncle’s tomato farm
- To learn how tomatoes can be grown hydroponically
- To compare hydroponics with regular growing methods.

**Possible curriculum contexts**
- Level 2 – Life processes: Recognise that all living things have certain requirements so they can stay alive.
- Level 2 – Purposes and audiences: Show some understanding of how texts are shaped for different purposes and audiences.
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First reading

- Support the students to activate prior knowledge about where our food comes from. Focus their thinking on the way vegetables are grown and what plants need to be able to grow.
- Draw their attention to the format of the text, including the title and subheadings, the use of photographs, the glossary, and the interview. Remind them to use these features as they read.
- Encourage the students to find information and make inferences by using words in the text, their own knowledge, and their ideas about what’s implied, for example: What are the pros and cons of using coconut fibre? When you read about the bees, what did you infer about why Uncle Reupena replaces them every three weeks? How did you do that?
- Ask questions to help the students make connections and comparisons with what they already knew about growing plants, for example: Which pieces of information were new for you? What did you already know that was similar? What’s the same and what is different from what you knew about growing plants?

If the students struggle with this text

- Review the article before reading, examining the photographs together and discussing the bolded words. Support the students to pronounce and understand the technical words, especially “hydroponics”, “apprenticeship”, and “horticulturist”. You could write up a word family for “pollen”, using the words in the text and discussing how knowing the base word helps to work out the other words. Refer to possible supporting strategies for vocabulary on the previous page.
- It may be useful to help the students to turn the headings into questions.
- Prompt them to read one section at a time, using the headings, glossary, and photographs to answer their questions.
- Support them to self-monitor by sharing the information they have found from each section with a partner.
- Remind them to pause and think about what they already know, for example: Why does Uncle Reupena follow a recipe? How can using what you know about recipes help you understand what he’s doing?
- Support the students to record notes on a chart to clarify the sequence of events. What does Uncle Reupena do first? Then what does he do? If necessary, support the students to infer the change of time between Johnny saying goodbye on page 23 and returning six months later. What will Johnny notice on this visit? Why do you think that?

Subsequent readings

The teacher

Use a two-column chart and ask questions to record information as the students compare traditional and hydroponic growing in the first two pages.

- What did you already know about growing plants? What does “rich soil” mean? What does it look like? Why is it important?
- What pieces of information in these two pages help you to notice the differences between regular and hydroponic growing? Record each piece of information on the chart.
- How much land might it take to grow 3800 single plants?
- How would this compare with the space Uncle Reupena uses?
- What can you infer about the benefits of hydroponic growing?
- What questions do you have about this way of growing plants?
- For students who need extra support, you could model filling in part of the chart. The latter requires more support.

The students

- connect with and share their own experiences of growing plants, identifying the ways their connections helped them to understand the article
- reread and identify information about growing tomatoes and suggest where it belongs on the chart
- ask questions and discuss how each form of growing is different, sharing their own knowledge and adding knowledge they have gained from their first reading
- use this understanding to infer that minerals make soil “rich” and that they can be supplied in a way that does not need a lot of earth and space
- integrate information (with support) in this part of the text to understand that hydroponic growing requires less land than traditional growing
- ask questions about the reasons growers choose different methods for growing tomatoes.

The teacher

Prompt the students to consider the pros and cons of traditional and hydroponic gardening, using information in the text, what they know about plants, and inferences they can make.

- How does Uncle Reupena make sure his plants get what they need? How does this compare with what happens in nature?
- Would the way tomatoes are grown make any difference to their flavour? Why do you think that?
- How do you think tomatoes at the supermarket or a farmers’ market are grown? How could you find out?

The students

- identify what Uncle Reupena does to make sure his plants grow healthy and strong and they compare this with how plants grow in nature
- ask questions about the way other fruits and vegetables are grown, for example, why some produce is sold as “organic” or “GE free”
- consider the questions Uncle Reupena asks about the taste test and make connections with their own experiences of eating tomatoes. They discuss why they do or do not like tomatoes and share the tomato qualities they think are important to customers. They could extend the discussion to the ways they eat tomatoes, for example, fresh in a salad or sandwich, in tomato sauce, fried, or cooked in a pasta sauce.

GIVE FEEDBACK

- Numi told us about her grandmother’s vegetable garden and how they grow their tomatoes. This information was really useful because it helped us to compare garden growing with glasshouse growing.
- I saw that you reread the part about checking up and discussed it with your partner. You said it was a bit like testing the swimming pool water for chlorine. That connection helped you both to understand what Uncle Reupena did and why he did it. You’ve now got a good understanding of a scientific way of doing things.

METACOGNITION

- How did imagining Uncle Reupena flying around like a bee help you understand why it was better for him to use real bees? You were able to “see”, Johnny’s visualisation to understand his actions.
- Tell me how you worked out what “his hands would be part of the picking machine” meant. I could see you were puzzled at first!

Reading standard: by the end of year 4

Assessment Resource Banks
### 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.)

<table>
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<tr>
<th>Text excerpts from “Tons of Tomatoes”</th>
<th>Examples of text characteristics</th>
<th>Teacher [possible deliberate acts of teaching]</th>
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| **Working water**
Carefully following a recipe, Uncle Reupena adds the minerals to big vats of water. The water dissolves the solid minerals, and then they are carried to the plants in the water. Growing plants this way is called hydroponics, which means “working water”.

**EXPLANATIONS**
An explanation of a process tells readers what happens. Details show what was used and what happened. It often shows a cause and its effect and the order of the actions. An explanation can also include a definition of specialist words and terms used to describe a process.

**SIMILES**
A simile says that one (less familiar) thing is like another (more familiar) thing. Similes help readers connect with something they already know, often in a way that helps them visualise.

**PLANNING AN INTERVIEW**
An interview gives readers first-hand information about a person, for example, about the work they do. It is important to plan the questions in advance and limit them to three or four that will get the most interesting information for the audience.

**GIVE FEEDBACK**
- You took notes and made sketches of the process before you wrote your explanation.
  I can see how this planning helped you find the words that your audience will understand.
- You've cut your big list of questions down to three. Every question should get the kind of information you know your audience will enjoy. You've also left it open for your interviewee to add anything extra. I look forward to seeing the results.

**METACOGNITION**
- What changes did you have to make to be sure your audience would understand your explanation?
- Was it helpful to work on similes with a partner? Tell us about the discussions you had and the way you made your final choices.
- The interview went well, and your questions got the information you wanted. What advice would you give to other students about doing an interview with an expert?