



Overview

While primarily a procedural account of planting, growing, and preparing popcorn, this article also includes clear explanations of pollination and fertilisation. There are a significant number of unfamiliar concepts and related vocabulary, but these are explained simply and clearly and are supported with photographs and labelled illustrations.

Students who have set up their own inquiries by asking a question and researching the answer will identify with the students in the

article. The text lends itself well to supporting students as they generate questions while reading and as they look for answers.

There are obvious links to the curriculum areas of science and health. Students could also use the text as a springboard to explore the history and uses of corn (linking with the social sciences).

Texts related by theme

“Seeds for the Birds” SJ 2.4.07 | “Vanilla Ice Cream, Please!” SJ 2.1.03 | “Breadfruit Chips” SJ 3.2.03

Text characteristics from the year 5 reading standard

abstract ideas, in greater numbers than in texts at earlier levels, accompanied by concrete examples in the text that help support the students' understanding

sentences that vary in length and structure (for example, sentences that begin in different ways and different kinds of complex sentences with a number of subordinate clauses)

a significant amount of vocabulary that is unfamiliar to the students (including academic and content-specific words and phrases), which is generally explained in the text by words or illustrations

Picking the corn

We let the corn grow until the tassels were bare and the silks had turned brown. The leaves and stalks dried up, and the husks turned pale and papery.

We pressed our fingernails into the kernels to see if they were ready. They were so hard our nails couldn't make a dent in them. Our popcorn was ready to harvest.

Picking the corn was fun. The ears snapped off the stalks easily. We peeled back the husks and tied them together in pairs. Then we hung them under a carport to finish drying out for four weeks.

Everyone wanted to help shell the popcorn. We rubbed and twisted the cobs and picked the kernels off. To make sure the kernels were thoroughly dry, we left the trays in a sunny place for two more weeks.

The big test

Would our popcorn pop? We could hardly wait to find out. We put a handful of kernels into a brown paper bag, folded it shut, and put it in the microwave for sixty seconds.

The paper bag jumped and jiggled, and the kernels popped and crackled. Our hard little orange kernels had burst into fluffy white puffs of corn. We were so proud!

We were allowed to eat our “healthy snack” during class time. The popcorn was small, but it was crisp and crunchy. We popped as much as we could eat, and we took the rest of the kernels home to share with our families.

Some of us are going to save the plumpest kernels to plant in our gardens next spring.

What makes popcorn pop?

The kernels of popcorn are harder than those of ordinary sweet corn. Inside the hard shell is a moist, pulpy substance. When the kernels are heated, the moisture expands and turns into steam. Finally, the shell bursts, and the kernel turns itself inside out.

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some ideas and information that are conveyed indirectly and require students to infer by drawing on several related pieces of information in the text

figurative language, such as metaphors, similes, or personification

mixed text types (for example, a complex explanation may be included as part of a report)

Possible curriculum contexts

SCIENCE (Living World)

LEVEL 3 – Life processes: Recognise that there are life processes common to all living things and that these occur in different ways.

ENGLISH (Reading)

LEVEL 3 – Ideas: Show a developing understanding of ideas within, across, and beyond texts.

ENGLISH (Writing)

LEVEL 3 – Structure: Organise texts, using a range of appropriate structures.

Possible reading purposes

- To find out about growing and making popcorn
- To find out how corn plants reproduce
- To follow an inquiry carried out by a group of children, who asked a question and worked out the answer themselves.

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

Possible writing purposes

- To describe how another kind of plant grows
- To compare two or more plants and how they grow
- To report on a project.

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

Text and language challenges

VOCABULARY:

- A significant number of unfamiliar concepts and content-specific vocabulary, including “checked on the Internet”, “grains”, “sprouting”, “seedlings”, “transplanted”, “stalks”, “pollination”, “feathery tassels emerged”, “male flowers”, “pollen”, “silks”, “the ear of the corn”, “female flower”, “ovule”, “fertile”, “kernel”, “fertilisation”, “husks”, “moist, pulpy substance”, “moisture expands”, “the shell bursts”
- Possible unfamiliar vocabulary, including “peered”, “plumpest”, “squiggly”, “poked”, “pale and papery”, “dent”, “harvest”, “snapped”, “carport”, “thoroughly”, “microwave”, “jumped and jiggled”, “crackled”, “puffs”
- Colloquial expression: “We could hardly wait”
- Collocations: “a sunny spot”, “straight and tall”
- Alliteration: “pale and papery”, “crisp and crunchy”.

Possible supporting strategies

Create opportunities to review and learn vocabulary relating to plants. For example, give groups of students plants (not corn) and ask them to prepare and then share a diagram of their plant, labelling as many parts as possible and describing their functions. If appropriate, provide bilingual dictionaries for students to use in preparing their diagrams. From this discussion, create a chart that you can add to during and after reading. Help students to identify priorities for their vocabulary learning from this chart.

There are some final consonant clusters that may be tricky for students whose first languages don't have them, for example, silks, husk, stalk. Provide opportunities for these students to hear and practise these words (without drilling them, especially in front of others).

The English Language Learning Progressions: Introduction, pages 39–46, has useful information about learning vocabulary.

SPECIFIC KNOWLEDGE REQUIRED:

- The experience of making and/or eating popcorn
- Familiarity with regular sweetcorn
- Knowledge of what growing corn looks like
- Experience of planting a seed and watching it grow into a plant
- Experience of a group project that starts with a question.

Possible supporting strategies

Ask students to share their experiences of eating corn of any kind and to discuss where it came from and what they know about how it is grown.

If required, bring fresh, canned, or frozen corn to discuss along with some popping corn for making popcorn.

TEXT FEATURES AND STRUCTURE:

- Mixed text types: a procedural recount that includes explanations with diagrams.
- The use of a question to set the scene for the investigation
- The use of headings to indicate topics within the article
- Features typical of a procedural recount: the use of the past tense; events taking place over a period of time; words that indicate time sequence
- The use of past verb forms to describe what the students did and present forms to explain things that are always true
- Features typical of explanations: description of a process; explanation of parts of the process; labelled diagrams that illustrate the processes described
- The variety of sentence structures, including complex, compound, and simple sentences.

Possible supporting strategies

Discuss with the students the strategies they have used to find out how something happens or works. Identify the ideas that many projects start with a question, and that the answer can be found in different ways.

Review the features of one or more of the text types used (for example, a recount) and list them for reference.

For students who are challenged by the multiple time frames, you could work through the section titled Pollination together to identify what the students did and the facts about corn (that are always true). Create a graphic organiser with columns for main verbs, past, always, students, corn. Model filling in the table for the first two sentences. Then ask the students to work in pairs to look either for actions that happened in the past or for facts about corn that are always true. Share the information and complete the graphic organiser together.

Instructional focus – Reading

Science (Living World, level 3 – Life processes: Recognise that there are life processes common to all living things and that these occur in different ways.)

English (Level 3 – Ideas: Show a developing understanding of ideas within, across, and beyond texts.)

Text excerpts from “Popcorn”

Students (what they might do)

Teacher (possible deliberate acts of teaching)

“Will they grow if we plant them?” she asked.

No one, including the teacher, knew the answer to that question, so Temoana checked on the Internet and found instructions for growing popcorn.

After another ten days or so, we noticed leafy seedlings pushing up through the soil.

We transplanted the seedlings into a sunny spot in the garden. We watered the plants and watched them grow.

Then we noticed bunches of long pink threads sprouting from each stalk. We discovered that these are called silks. The silks catch the pollen that drops from the tassels.

The pollen travels down the silks into the ear of the corn. The ear is the female flower, and this process is called pollination.

We were allowed to eat our “healthy snack” during class time. The popcorn was small, but it was crisp and crunchy. We popped as much as we could eat, and we took the rest of the kernels home to share with our families.

Some of us are going to save the plumppest kernels to plant in our gardens next spring.

*The students **ask and try to answer** the question themselves and **evaluate** Temoana’s response. They **make connections** between the text and their own Internet experience to **visualise** the process Temoana used.*

*The students **make connections** between the text and other procedures they have read to identify the sequence of events. For example, they identify the adverbial phrase starting with “After”, and the past simple verbs following each other in sequence, as time markers. They **make connections** with what they know about growing seeds to help them to **visualise** the seedlings growing.*

*The students **ask and answer** questions to hypothesise how the children “discovered” that the threads are called silks. They integrate information gained from the text (including the diagram) and their own observation and experience to help them understand the concept of pollination.*

*Students identify the use of quotation marks and locate the earlier use of the term. They **make connections** between its use here and the context on page 22 in which the children first asked their questions about popping corn.*

ASK QUESTIONS to clarify their purpose for reading.

- What do you think you’ll learn in this article?
- What do you already know about popcorn?
- What else might you learn about popcorn?
- What do you think the students in the article will do with the information they find?

PROMPT students to notice familiar features of a procedural recount.

- What familiar features do you notice?
- How does the author’s use of these features help you to keep track of what’s happening?

TELL the students to circle all the time markers that they notice in the text.

- Discuss how they are used (paying attention to both meaning and sentence structure).
- After reading the text, revise the use of time markers. List the markers and have the students (in pairs or groups) use them as prompts for retelling the procedure.

TELL the students that readers often draw on several related sources of information to understand and infer ideas or concepts.

ASK QUESTIONS to support the students’ understanding of the technical explanations.

- What information of your own is helping you to follow this explanation of pollination?
- What can you infer about the size of the pollen and the silk?
- Does this explanation help to answer the students’ questions at the start of the article? Why do you think the author has included it here?

ASK QUESTIONS to support students in evaluating and integrating information and ideas from the text.

- What started the children growing popcorn?
- What has been the result for them?
- What did they have to do to answer their questions?
- What other questions about food do you have? How could you find answers to your questions?

GIVE FEEDBACK

- I noticed you went back over some pages and reread them to help you understand some of the ideas. That’s a good strategy to use when you want to make connections within a text.
- You’ve asked lots of useful questions since you read this article. How will you decide which ones to follow up?

METACOGNITION

ASK QUESTIONS to make the students’ strategies explicit for them as they read and respond to the text.

- Asking questions can help you find information. How can it help you with reading?
- What helped you most to understand the explanation of pollination – the words or the illustrations?
- Have you had any experience of growing plants? Can you explain the process to me in your own words?

Reading standard: by the end of year 5

The Literacy Learning Progressions

Assessment Resource Banks

Instructional focus – Writing

Science (Living World, level 3 – Life processes: Recognise that there are life processes common to all living things and that these occur in different ways.)

English (Level 3 – Structure: Organise texts, using a range of appropriate structures.)

Text excerpts from “Popcorn”

First, we chose the biggest, plumpest grains of popping corn from the packet.

We laid them between wet paper towels in a plastic bag with the end left open.

Inside the ear, each silk leads to an egg (or ovule). When the pollen touches it, the ovule becomes fertile, and it then develops into a kernel (or seed). This process is called fertilisation.

We let the corn grow until the tassels were bare and the silks had turned brown. The leaves and stalks dried up, and the husks turned pale and papery.

We pressed our fingernails into the kernels to see if they were ready. They were so hard our nails couldn't make a dent in them. Our popcorn was ready to harvest.

Examples of text characteristics

TEXT STRUCTURE

The use of familiar features of a particular text type gives support to the reader, in this case signalling that the text will be a procedural recount and that the events will be described in chronological order.

SENTENCE STRUCTURE

Adding phrases and clauses to a main clause gives the reader more information in a compact way. The use of prepositions (“between”, “in”, and “with”) makes the relationships within the sentence clear.

CLEAR EXPLANATIONS

Making a technical explanation clear to the reader often requires planning, drafting, editing, and rewriting. The use of brackets to supply an alternative word allows the writer to give both technical and everyday language at the same time.

ADDING DETAILS

By using a series of descriptive details, a writer builds up a picture in the reader's mind. This helps the reader to visualise and understand actions, processes, and explanations.

METACOGNITION

ASK QUESTIONS to encourage the students to think more deeply about their writing.

- Which single change made the biggest difference to your writing when you revised it?
- How important is using a writing buddy for you? What kind of feedback is most useful for you?
- Which part was hardest to get right? What was your process for working on that piece? What have you learned from it?

Teacher

(possible deliberate acts of teaching)

ASK QUESTIONS to help students form their intentions for writing. How could you describe something that can't be seen or heard?

- What is your purpose for writing? What information do you want your readers to understand?
- How will you support your readers to follow what you're describing?
- Will you use one familiar text type or a mixture? Why?

For students who need support with time markers, provide opportunities to practise them. Have students order sentences in a procedure, using the time markers to guide them. Give the students a text with the time markers (not the verbs) missing and a list of time markers to put into the correct place. Return students' writing to them with indications of where they could insert time markers to make their meaning clearer.

EXPLAIN that writers use particular strategies to support their readers.

- These often take time to get just right: you need to keep your audience in mind and think about how you can help them understand the tricky parts.

MODEL ways of clarifying technical information.

- In this passage, the writer has used an everyday word, “egg”, and then given its technical name in brackets.
- Later, she does it the other way around, giving the technical name “kernel” first, then the everyday word in brackets. Using an everyday word along with a technical word is a good way to help your readers understand new words.
- The writer describes the process and then tells us what it is called. She summarises it using the technical name.

PROMPT students to examine sections of their writing carefully to ensure they are giving readers support where it may be needed.

PROMPT students as they revise their writing.

- Look for places where you've been light on detail. Have you given your readers enough detail to build a good picture of what you're saying?
- What kinds of details will be effective for your purposes? Consider details that appeal to the readers' senses: remember you can use smell, touch, taste, and sound as well as sight.
- Read a section of your text aloud to a partner and then ask them to describe what you've written. Would more details help?

GIVE FEEDBACK feedback to affirm the students' writing decisions and guide their learning.

- The way you've mixed recount with explanation works well because it mixes two different types of information for the reader. Using those fact boxes helped me to understand what was happening in your experiment.
- Your audience will appreciate the way you've helped them to understand the technical words.
- Your use of adjectival clauses and your careful description really helped me to imagine what the lavender looked, smelled, and felt like when you harvested it. I'd love a lavender bag for my drawer!

 Writing standard: by the end of year 5

 The Literacy Learning Progressions