

# Changes of state II

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**This task is about finding the features of a science text.**

- a) Read the text below: *Changes of State*. This text explains a scientific idea. As you read, think of the different language features used in the text.

## **Changes of State**

An important idea in science is: nothing can be created or destroyed although things can be changed. Some changes are permanent, others are temporary.

Temporary changes include "changes of state". For example, water can exist in different states. It can be in a solid state (ice), a liquid state (water), or as a gas (water vapour). When water freezes it changes state from a liquid to a solid. When ice melts it changes state from a solid to a liquid. These changes are easy to understand because the water can still be seen (even though it is in a different state or form).

A more difficult idea to understand is evaporation. Evaporation is when a liquid becomes a gas. An example of evaporation is when a puddle dries up. The water (which is a liquid) turns into water vapour (which is a gas). The water still exists but it cannot be seen any more when it is a gas. Another example of evaporation is wet clothes drying on the clothes line. The water in the clothes turns into water vapour that goes into the air and the clothes become dry. The rate of evaporation is affected by different things. For instance on very humid days (when there is already a lot of water vapour in the air) clothes dry slowly.

Condensation is when a gas becomes a liquid (the opposite of evaporation). A common example of condensation is when the windows "fog up" on a cold night. Some of the water vapour in the air changes into tiny droplets of water when it hits the cold glass.

- b) Look for examples of the following text features in 'Changes of State':

i) **Text feature: Each paragraph has an opening general statement.** What is an "opening general statement"? Usually 1-3 sentences at the beginning of the text that introduces what is being written about. The opening general statement will be followed by specific statements. In the examples below, the opening general statement is written in *italics*.

### **Examples:**

- *Friction occurs when objects rub together.* The soles of shoes are designed to create friction so that people don't slip and slide as they walk...
- *Hoar frosts occur when there is fog and the temperature stays at or below zero degrees for at least 24 hours. When this happens, everything gets covered in frost crystals.* Hoar frosts are common in Central Otago...

**Find the opening general statement in 'Changes of State':**

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- ii) **Text feature: Each paragraph has a topic sentence.** What is a topic sentence? A topic sentence tells what the paragraph is about. In the example below, the topic sentence is written in *italics*. It tells us that the paragraph is about how bacteria cause tooth decay.

**Example:** *Bacteria in a person's mouth change sugars into acids, and these acids cause tooth decay.* The mouth contains a wide variety of bacteria but only a few are believed to cause tooth decay. Bacteria collect around the teeth and gums in a sticky, creamy-coloured mass called plaque...

**Find two examples of a topic sentence in 'Changes of State':**

1. \_\_\_\_\_

2. \_\_\_\_\_

- iii) **Text Feature: Meaning is built up step by step.** How is meaning built up step by step? One piece of information is given, then more information on the same topic is added so the reader can gradually build an understanding.

**Example:** First, the writer tells us: "Estuaries are those parts of a bay or harbour where fresh water and sea water meet." The writer adds information about the fresh water by telling us: "Most of the fresh water enters through rivers and streams, and the sea water comes in with the tide."

**At the beginning of paragraph two it says, "Temporary changes include 'changes of state'". Find two examples of information that add to this:**

1. \_\_\_\_\_

2. \_\_\_\_\_

- iv) **Text feature: Language that introduces examples.** Why are examples important? Because they show us what an idea is like in real life.

**Examples: "An example of this idea is..." "For instance..." "This is illustrated by..."**

**Find two examples of language that introduces examples:**

1. \_\_\_\_\_

2. \_\_\_\_\_

v) **Text feature: Technical language.**

What is "technical" language? Technical language is used when we talk or write about particular topics. It is not used much in our everyday lives.

**Examples:** Intestine, colon, absorption (technical language to do with digestion).

**Find four examples of technical language in 'Changes of State':**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

vi) **Text Feature: Language that tells about the action.**

Which kinds of language? Language that tells us about the "doings" and the "happenings". These are not imaginative words, only ones to do with facts.

**Examples:**

- Lightning is *caused* when static electricity *builds up* in storm clouds.
- Sometimes, a massive bolt of electricity *bursts through* the cloud.

**Find two examples of language in 'Changes of State' that tell us about the action:**

1. \_\_\_\_\_
2. \_\_\_\_\_

vii) **Text Feature: Timeless language.**

What is "timeless" language? When what is written is not linked to any particular time.

**Example:** Waves bring sand from the sea and dump it on the beach (timeless).

[**Not:** Waves brought sand from the sea and dumped it on the beach (we know this happened in the past). **Not:** Waves are bringing sand from the sea and dumping it on the beach (we know this is happening right now).]

**Find one example of timeless language in 'Changes of State':**

1. \_\_\_\_\_

viii) **Text feature: Objective language.**

What does "objective" mean? Fair, impartial. Not emotional. When a writer uses objective language they don't tell us how they personally feel about the topic. They just give us the facts.

**Example:** Bloodworms kill their prey by injecting poison through their fangs.

[**Not:** Blood worms are ugly, brutal killers. **Not:** Bloodworms must be wiped off the planet!

**Not:** Who do they think they are calling bloodworms "ugly"?]

**Find one example of objective language in 'Changes of State':**

1. \_\_\_\_\_

ix) **Text Feature: Compact Language.**

What is "compact" language"? Language that uses as few words as possible.

**Examples:**

- We can use six words by writing, "Going to hospital might be necessary" or we can use four by writing, "Hospitalisation might be necessary".
- We can use seven words by writing, "How waste is transported is the topic" or we can use five by writing, "Waste transportation is the topic".

**Complete the table below:**

**We can write something by using more words**                      **...or by using fewer words**

When a liquid becomes a gas

When a gas becomes a liquid