

# Explanation Texts

## Structure and features of explanation texts

### PURPOSE

An explanation is written to explain how and why something in the world happens. It is about actions rather than about things. Explanations play a valuable role in building and storing our knowledge. Technical and scientific writing are often expressed in this form.

### TYPES OF EXPLANATION

When writing explanations we establish that the phenomenon exists and then explain why or how this came about. The writer should acquire a great deal of content knowledge before beginning the explanation.

There are different types of explanation. One type explains an occurrence or how something works. It may be mechanical explaining how a lawn motor works, technological describing how a computer works or natural when describing how avalanches occur. A second type explains why things happen, for example why objects expand and contract and why bathroom mirrors mist up when we shower. Yet another type may explain the similarities and differences between objects and a final type would explain how to approach a problem that has to be resolved.

This text type links with Science and Technology topics where explanations of natural or non-natural phenomena are explored, for example how a television works, why earthquakes occur, how tornadoes are formed and how sound moves through a variety of materials. It also has links with Human Society and Environment where explanations

are written for how cotton is processed to become articles of clothing, why we should exercise and eat a healthy diet and how cheese is processed from milk.

Explanations are written by members of a number of professions to explain processes. Medical researchers write explanations for doctors, nurses and health workers about how medical problems develop. Weather forecasters explain weather patterns and changes for farmers, students and scientists. A biologist will describe how butterflies develop from cocoons for students and conservationists.

Students should be writing detailed and accurate sequences of events and at this stage should be writing explanations showing causal relationships as well as sequential ones. Causal relationships explain natural happenings such as tornadoes, earthquakes or a lunar eclipse.

Technical terms play an important role in explanation texts. A glossary of terms may be included at the back of the book or writers may write a definition of terms within the text.

It is important that students understand that explanations can be part of a larger text. It is quite usual to find explanations within a report to explain some aspects of the information. They are frequently found as an integral part of a procedural text, the procedure explaining to the reader how to do something and the explanation detailing how it works.

### STRUCTURE OF EXPLANATION TEXTS

Explanations have the following structure:

- title
- general statement introducing or identifying the phenomenon
- series of sequenced paragraphs
- concluding paragraph
- labelled diagrams and flow charts.

#### Title

Explanations have a title that prepares and leads the reader to the text. This can appear in a variety of forms from a heading that names the

action to a how and why question or a problem that is to be answered by the explanation.

### General statement

The first paragraph has a general statement that introduces or identifies the scientific or technical phenomenon. It gives the audience a brief introduction to the event or thing and an understanding of the type of text that is to follow.

### Sequenced statements

At this stage students' explanations are developing causal relationships as well as sequential ones. The logically sequenced paragraphs explain why or how something happens rather than focusing on an object. The explanation sequence should consist of a series of happenings, actions, causes or processes that are the focus of the text type. This chain of actions, causes or events results in the phenomenon about which the explanation is written. Events may be related according to time or cause or through both and should be detailed and accurate, ensuring that all elements have been included. Sequences often develop by explaining how the events happen over a period of time: first this happens and then this is followed by the next event. It is important that in addition to researching the facts, students understand the reasons behind them. Attention should be focused on writing these reasons in their explanations.

It is important that students realise that they will need to make thoughtful decisions about what to write and the order in which the information should be presented. Generally there is no human involved in the process of events.

### Concluding statement

An optional concluding statement can tie up the explanation.

### Labelled diagrams

Labelled diagrams and flow charts can be used to clarify information or to add additional information not included in the explanation. Particularly in scientific texts accurate diagrams

and illustrations are important as they support the text.

Students will need to research the topic, making notes, drawing diagrams and making drawings. They can make use of the scaffolds and outlines to assist with the development of these skills.

## LANGUAGE FEATURES OF EXPLANATION TEXTS

- Use of present tense.
- Use of complex noun groups to build detailed descriptions, e.g. The enormous expanse of arid land; The rampaging, threatening river.
- Use of abstract nouns, e.g. heat, earthquakes.
- Use of pronouns for words already introduced in the text.
- Usually the subject is not human, e.g. mountains, rain, video.
- Use of sentences that have a clear subject and verb agreement.
- Use of action verbs to explain cause, e.g. from, started from.
- Use of adverbial phrases of time and place to tell where and when actions occurred, e.g. It is to be found in North America.
- Use of connectives to link time sequences in a cause and effect sequence, e.g. first, then, after, finally, so, as a consequence.
- Use of passive voice and nominalisation to link the events through cause and effect.
- Use of time conjunctions, e.g. when, as, to sequence and link events and to keep the text flowing. Placing of these conjunctions first in the sentence in order to focus the reader's attention, e.g. *When* he reached the summit of the mountain, he felt exhilarated.
- Use of technical terms or word chains about a subject, e.g. a spider falls into the family of arachnids.



# Sample Annotated Text

TEXT ORGANISATION



LANGUAGE FEATURES



## HOW DO WE breathe?

General statement introducing phenomenon

The nose, trachea and lungs **are** *the* main organs which make up the respiratory system. This system allows the exchange of gases which are needed for us to live.

Series of sequenced paragraphs

Breathing happens when the brain **sends** a message through the nerves to the intercostal muscles which lie between the ribs and diaphragm. **When** the instruction is received, the muscles **pull** the ribs **outwards** and the diaphragm relaxes so that the space in the chest gets **bigger**. **Because** the pressure in the chest gets lower, air rushes in to fill the lungs.

This air is first taken in through the nose or mouth. **It** then travels into the throat (the pharynx) and on through the voice box (the larynx). The opening to the voice box has a cover over it called the **epiglottis**.

This cover opens when a breath is taken. **In this way**, the air is able to flow down the **trachea** but food is kept out.

**After** passing down the trachea the air travels into the lung down either the right or left bronchus, through the bronchioles and at last into tiny air sacs called alveoli. These are covered with **small blood vessels** called capillaries. From here, oxygen is finally taken into the blood stream and carbon dioxide is passed back to the lungs.

The intercostal **muscles** then **push** the rib cage back inwards. **As a result**, the space in the chest gets smaller and the pressure rises, thus pushing the carbon dioxide back out of the lungs.

Concluding sentence/paragraph

And it all happens in the space of a single **breath!**

Title

Use of present tense, e.g. are, allows

Use of action verbs, e.g. sends, pull

Use of conjunctions of time, e.g. when, because

Use of adverbial phrases of place, e.g. outwards, bigger

Use of pronouns for words already introduced, e.g. It

Use of technical words, e.g. epiglottis, trachea

Use of time connectives to link time sequences, e.g. after, as a result

Use of noun groups, e.g. small blood vessels, the main organs

Use of clear subject and verb agreement, e.g. muscles, push

Use of abstract noun, e.g. breath

# Outcomes Checklist Explanation Texts

At the end of the units on explanation texts, students will have worked towards achieving the following National Level 4 (NSW Stage 3) outcomes.

<b>SPEAKING AND LISTENING</b>	<b>BLM</b>	<b>DATE &amp; COMMENTS</b>
NA 4.1 NSW 3.1 Communicates and interacts confidently for a range of purposes and a variety of audiences to express well developed, well organised ideas dealing with more challenging topics.	51, 54, 56	
NA 4.3 NSW 3.4 Controls and evaluates structures and features of spoken language. Interprets meaning and develops and presents ideas and information in familiar surroundings.	51, 56	
NA 4.4 NSW 3.2 Interacts in different sized groups using effective communication skills and strategies and listening attentively	54, 56	
<b>READING AND VIEWING</b>		
NA 4.5 NSW 3.5 Reads an extensive range of texts with fairly complex structures and features, justifying own interpretation of ideas, information and events in the response to themes and issues.	58, 59, 64	
NA 4.7 NSW 3.8 Identifies the structures of different texts and with assistance discusses the grammatical structures and features that shape readers' and listeners' understanding of texts.	58	
NA 4.8a NSW 3.6 Selects a range of strategies appropriate for the texts being read.	49, 50, 55, 60, 64	
NA 4.8b Working with peers, is able to find information and resources for specific purposes.	50, 55, 60, 64	
<b>WRITING</b>		
NA 4.9 NSW 3.9 Writes well structured literary and factual texts using challenging topics, ideas and issues for a variety of purposes and audiences.	51, 55, 59, 61, 65, 66	
NA 4.10 NSW 3.13 Evaluates writing in terms of effectiveness of presentation of subject matter and adjusts to focus on context, purpose and audience.	50, 51, 65, 66	
NA 4.11 NSW 3.14 Discusses and evaluates how texts have been constructed to achieve their purpose and shape readers' and viewers' understandings using grammatical features and structures.	49, 54, 55, 58, 59, 61, 65	
NA 4.12a NSW 3.10 Uses a range of strategies to plan, edit and proofread own writing.	50, 55, 60, 61, 65	
NA 4.12b NSW 3.11 Uses a range of strategies to spell unfamiliar words.	54, 56, 58, 60, 61, 64	

# Background Lessons

## Session 1 Becoming familiar with the text type

Model the construction of an explanation. Ensure that students understand that each section has features and functions and is not merely a description. Students should be given the opportunity to identify the phenomenon, the sequenced explanation and underline the concluding statement.

Follow this with an activity when students reconstruct a model text that has been cut into sections. They will need to select the sentence identifying the phenomenon to introduce the text and follow this with logically sequenced events.

Take opportunities to work with students on poorly constructed texts, modelling how to improve the structure and flow of the language.

## Session 2 Oral explanations

When trying to find out information, oral language is used to inquire, to answer questions, to offer information, to explain to peers, to tell peers to do things and to exclaim.

Model an oral explanation and ask students to assist you to build up the stages so they can increase their confidence and desire to construct their own texts. Students working in pairs should research topics for oral explanations. They should produce clearly labelled visual texts such as flow charts, timelines or diagrams to represent causal and sequential explanations.

To assist students to think through causal explanations such as ‘How do we breathe?’, suggest they create a grid that will force them to focus on what is doing the action and the

Section	Time conjunction	Action	Effect
Muscles	When	Pull	The diaphragm relaxes

effect that this will have. Ask students to design a clearly labelled machine that will clear rubbish from shopping aisles. Encourage them to deliver a detailed oral explanation of how the machine will work for a specific audience, using palm cards, gesture and expression. Students need to concentrate on using clear vocabulary when describing the sections or parts to provide clarity for the audience.

## Session 3 Correct language usage

Discuss the aspects of language needed when writing an explanation text.

Model for students how to use a glossary or dictionary to find the meaning of technical words.

- Because so many technical words are used, it is important that students develop their ability to define these terms. The definition should include an explanation of the meaning, followed by a description of the features or structure. Students could develop their own glossary on a subject by linking technical words and their explanations.

Take, for example, a **bobby pin**. The **meaning** is an object that holds the hair in place. Its **structure** can be explained as a metal hairpin with two slender prongs that clamp together. Give students the opportunity to define terms such as geography, pizza, cosmonaut, sunset, tripod.

- Develop students’ ability to create noun groups by giving them a number of general nouns and asking them to develop noun groups adding adjectives or adjectival phrases, e.g. beach—hot parched gritty sandy beach.
- Conjunctions are used to link clauses, sentences and paragraphs. They change a list

of relevant facts to a reasoned explanation by smoothly linking and helping the flow of one part of the text to another in a way that builds the logic and sense. Give students a number of simple sentences and ask them to use conjunctions to create more complex sentences.

- Frequently objects, sentences or ideas are compared or contrasted in explanations. Students may be asked to compare two novels by the same or different authors or compare and contrast life styles and culture in different countries or even events taking place in different areas, e.g. comparing and contrasting the benefits of reading and watching television. Ask students to search for similarities and differences as they develop paragraphs where they are contrasting these or other ideas.
- Ask students to list connectives that link the cause and effect sentences, for example because, so, so that, if, before, after, therefore, due to, consequently, as a result of. These words could be used to make word banks (see example on page 56).
- Follow this with an activity where cause and effect sentences are cut up and ask students to link them, ensuring that the cause comes before the effect. After this a suitable activity would be to give students a series of causes and ask them to write the effect, for example:

*It has been raining for one week now so...*  
*The girl slipped in the puddle and...*

- Alternatively students can be given the effect and can add a cause, for example:  
*The father was late for work because...*  
*Jamie had no clean clothes for school as...*
- Ask students to collect newspaper articles which they should summarise under these headings: firstly what it is referring to, then its cause or the effect it has and finally the solution that is offered.



## Session 4

# Joint construction

Revise the structure of an explanation by writing a text with the students. The teacher and students need to establish knowledge of the topic, the audience and purpose of the text before starting. Students should read explanations from a variety of sources, e.g. books, videos, CD-ROMS, the Internet.

This is a suggested outline for the joint construction:

- Write a how or why question for the topic.
- Brainstorm current knowledge on the topic and jointly construct a sequenced flow chart, fishbone design or timeline to represent sequenced events.
- Model a note making activity for students, focusing on key words.
- Plan an explanation by deciding how to begin and by listing and ordering key points. Decide how to combine notes from different resources that discuss the same point, and how to deal with conflicting information.
- Elaborate on points and link ideas using conjunctions and connectives. Focus on words that indicate sequence in time, e.g. then, next; those that link cause and effect such as because, due to, consequently; and action verbs such as force, cause. The aim is to work towards complex and detailed well structured explanations.
- When editing drafts, focus on the use of commonsense definitions for technical words, diagrams that illustrate technical points and explanations that flow logically.
- Visual texts should clearly show sequential or causal relationships and should be referred to in the text.

It is important for students to strive to become critical writers who understand why one way of expressing something is better than another. They will need to focus on use of appropriate vocabulary for the purpose and audience, graphics that add to the understanding of the text, structure, and well organised use of only the necessary information.

## WORD BANK

WORD BANK		
<b>Conjunctions</b>	<b>Words linking cause and effect</b>	<b>Comparative/ contrasting conjunctions</b>
alternatively after while then previously because if although so and like or whereas however indeed therefore subsequently	because consequently so therefore because caused this led to due to so created culminated in encouraged grew out of influenced by inspired as a result of shaped by a source of stemmed from brought about	but similarly that is whereas for example alternatively in fact while also instead in other words on the other hand however
<b>Action verbs</b>		<b>Technical topic words</b>
Words will vary depending on topic, for example: pull push sends		Words will vary depending on topic, for example: epiglottis trachea pharynx larynx

## Session 5 Independent constructions

Invite a guest speaker or view a video about a phenomenon so that students have some knowledge of technical language as a base.

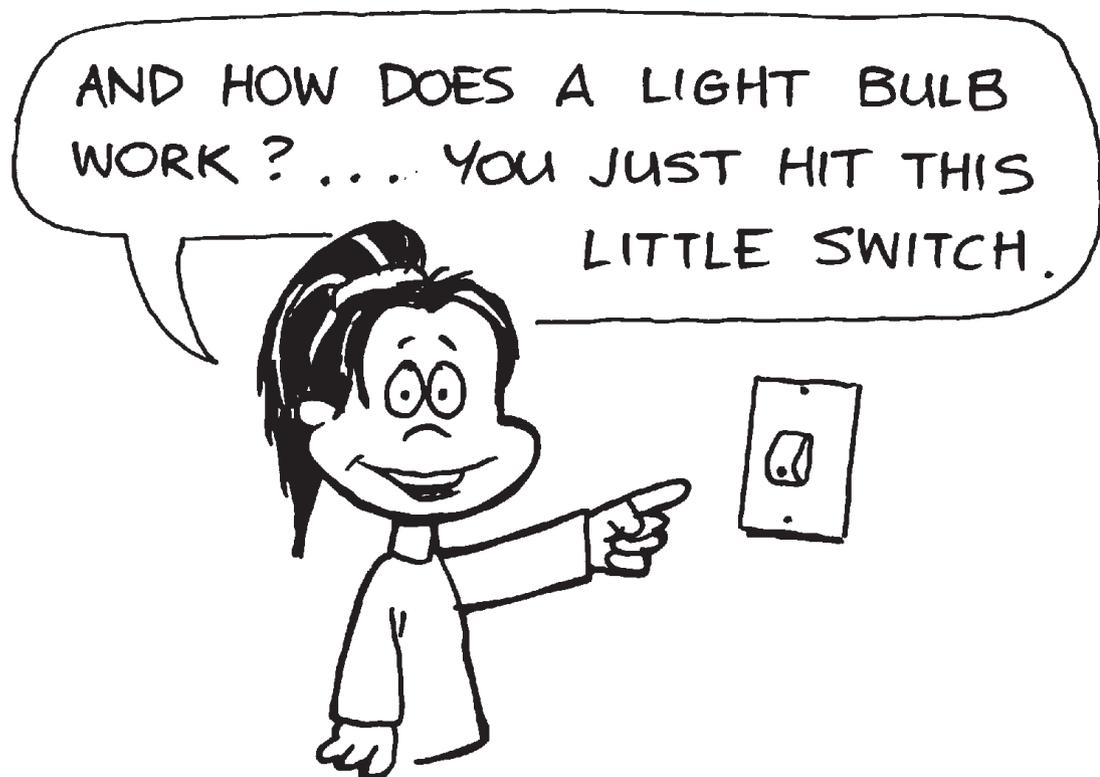
Encourage the class to brainstorm a list of specific how and why research questions to help them focus on their research topic. Ideas should develop from Key Learning Areas but possible topics to include are: How you move; How cells release energy; How your heart works; Why we exercise. Encourage students to select a question that is fairly focused and that they would like to research.

This should be followed by the exploration of relevant resources. Remind students to read visual texts, for example life cycles, timelines and flow charts, by interrupting the reading of a written text in order to refer to concepts that will assist comprehension.

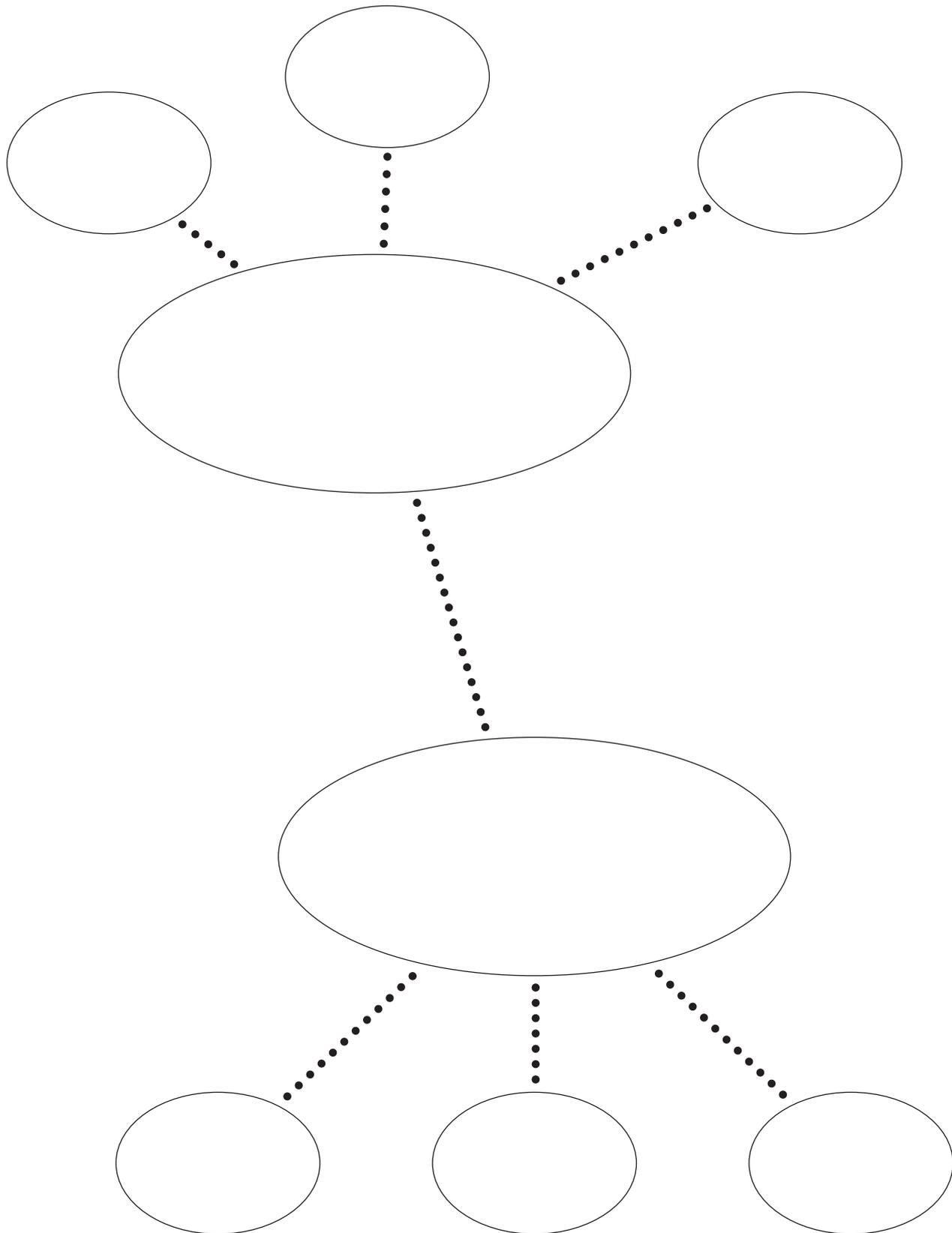
Ask students to scan when researching using the

knowledge they have gained about the stages of an explanation. Notes should be written in point form and only take in key information. Students should number the points beginning each one on a different line. The focus should be on headings, subheadings and topic sentences. In oral texts students should listen for words that will signal important information is coming, for example *The main reasons why...*

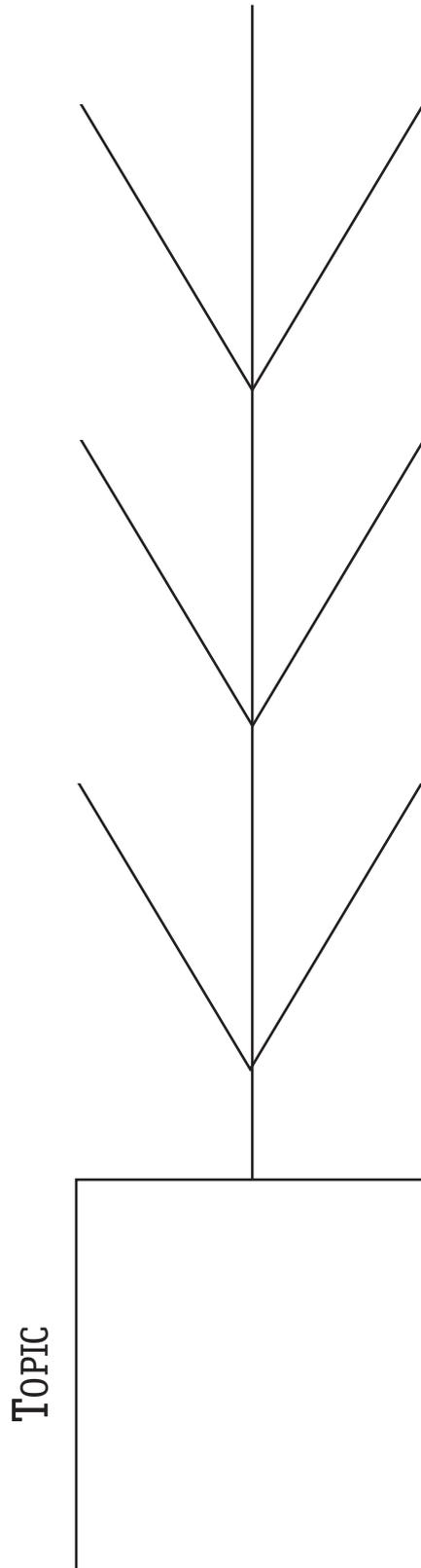
Students should create clearly labelled diagrams or a flow chart that can summarise information and sequence the events. Separate paragraphs can be written for each section and diagrams for each stage to clarify points. Have students talk through illustrations, diagrams or flow charts and ask them to predict phenomenon identification, and how they will sequence a logical series of steps. It is important that students realise the importance of writing notes in their own words and not simply copying passages from a book.



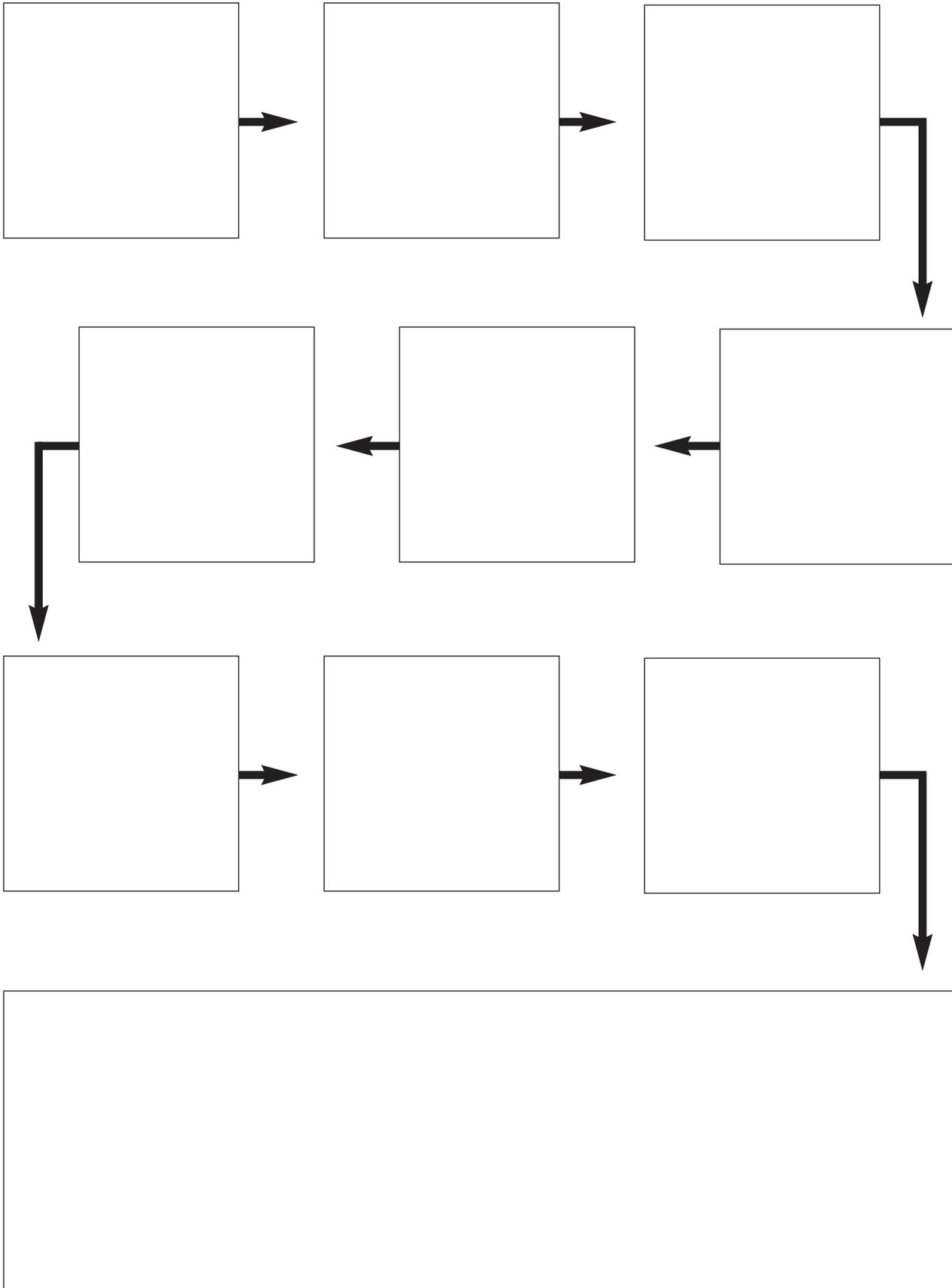
# Causal Wheel



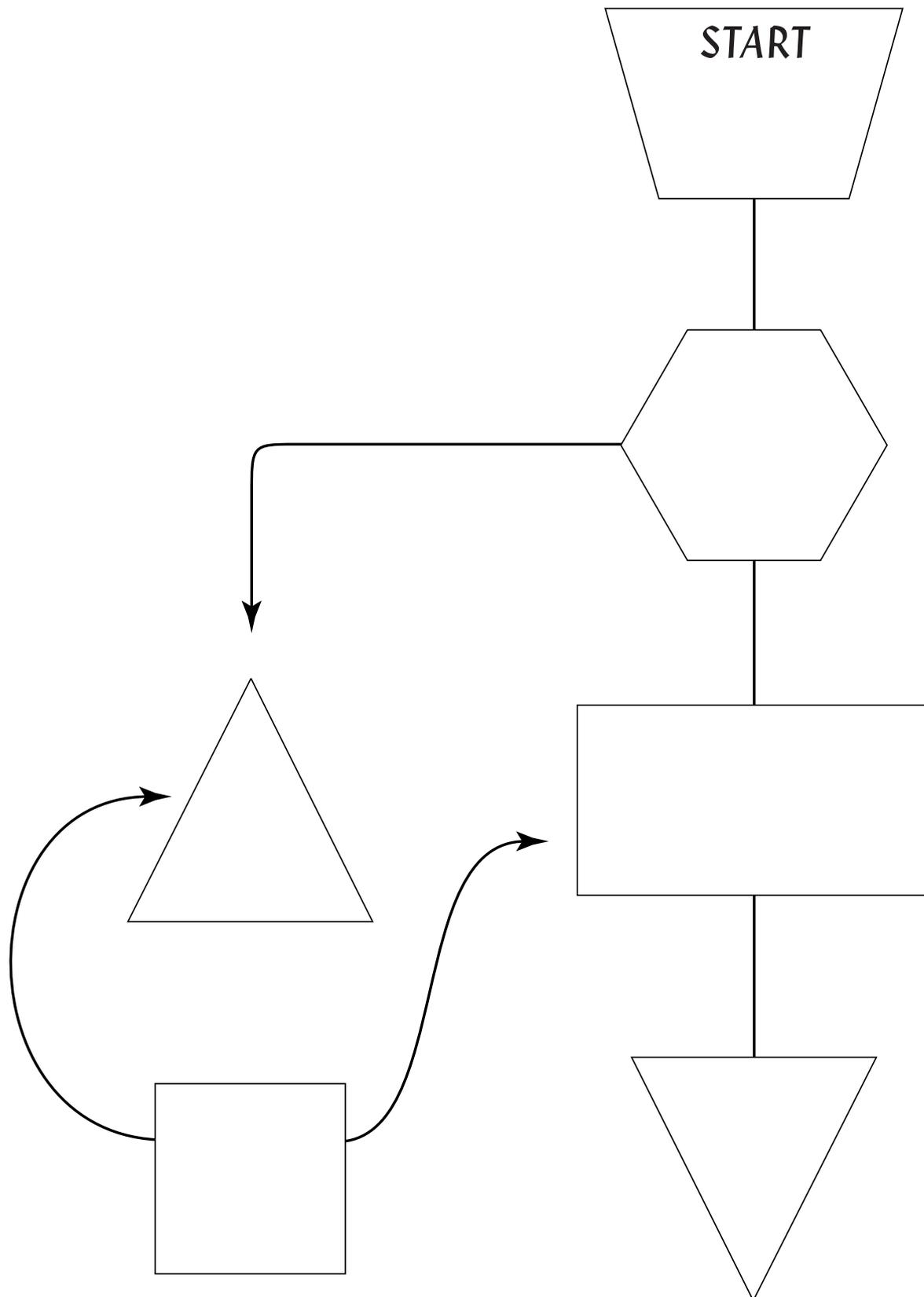
# Fishbone Diagram (Causes of Given Effects)



# A Chain Sequence



# Flow chart



# Explanation Outline

## Title

Is this a how or why question?

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## Introduction

Do you know your target audience? Have you described what you are going to explain?

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## Explain the events in the order that they occur.

Have you used connectives and conjunctions like *when, then, next, firstly, secondly, another reason, finally, previously, afterwards, a third point, meanwhile*? Have you used action verbs? Have you used adverbial phrases of time, e.g. *at this time*? Have you used adverbial phrases telling how something happens, e.g. *by osmosis*? Have you used technical words? Are your paragraphs clearly organised?

*First* \_\_\_\_\_

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*Then* \_\_\_\_\_

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## Concluding statement (optional)

Does this statement finish off the explanation?

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## Illustration, diagram or flow chart

Is it carefully labelled? Does it add additional information to the explanation?

## Resources

Have you listed the sources you used for this research?

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# Comparing and Contrasting Explanations

Title

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Introduction

(This is a comparison of the countries.../food types.../political systems...)

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The ways in which they are similar...

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The ways in which they differ...

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Conclusion

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Visual aids

# An Explanation to Solve a Problem

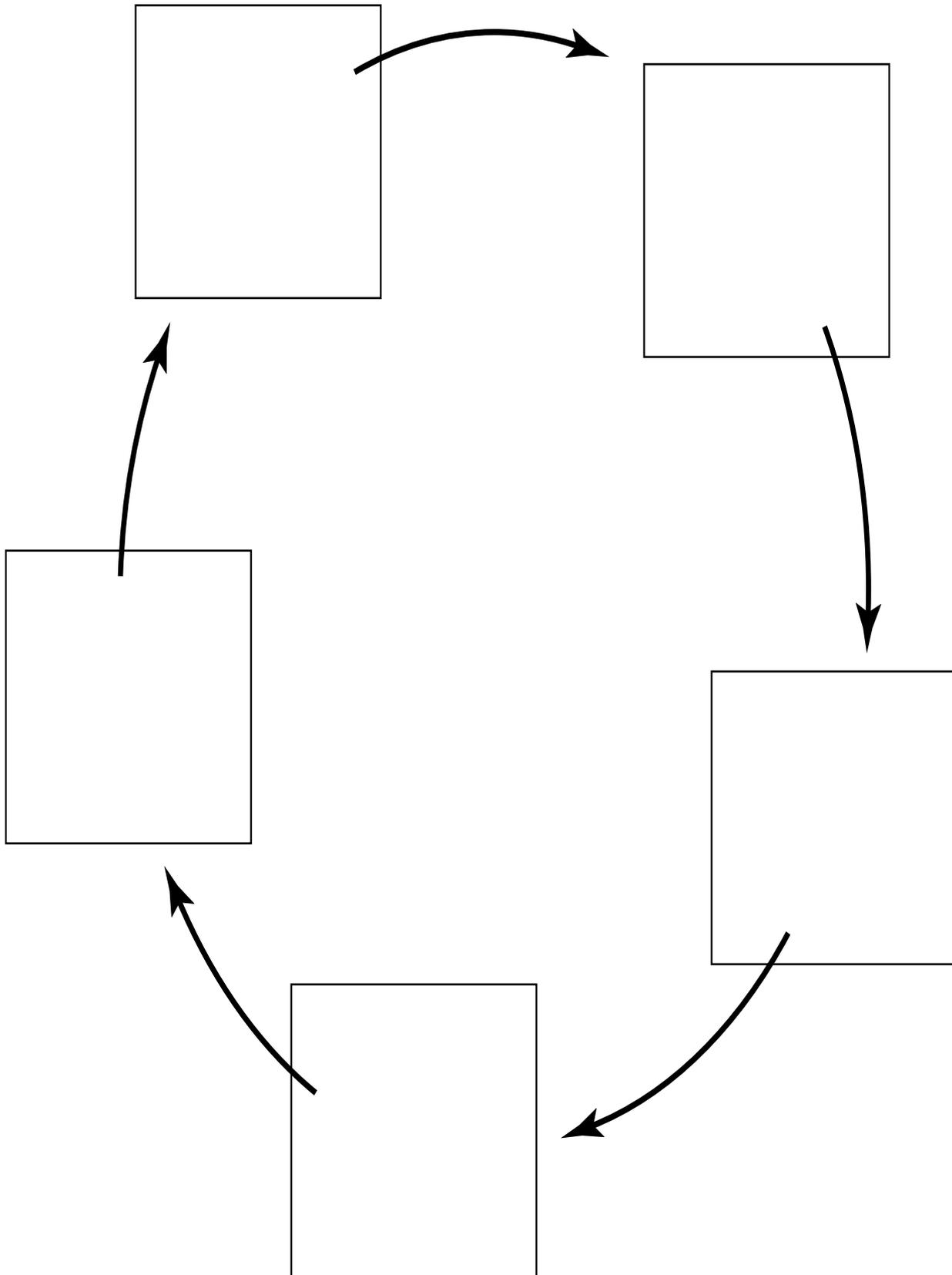
Background (summarise the problem)

A paragraph explaining the reasons why the problem exists

A paragraph explaining the consequences of the problem

A paragraph offering a solution to the problem and its benefits.

# Food Chain and Ecosystem



# Explanation Skills Checklist

<b>Name:</b>				
<b>Class:</b>	<b>Date/Level</b>	<b>Date/Level</b>	<b>Date/Level</b>	<b>Date/Level</b>
<b>PURPOSE</b>				
Can name topics suitable as content of explanations.				
Demonstrates an understanding of the purpose of an explanation.				
<b>STRUCTURE</b>				
Writes causal and sequential texts.				
Uses a how and why question as a title and focus.				
Writes a clear opening sentence.				
Writes the explanation in a logical sequence.				
Writes a concluding statement.				
Includes sufficient information to show knowledge of the field and evidence of some research.				
Recognises different types of explanations.				
<b>TEXT ORGANISATION</b>				
Plans for the writing of explanations.				
Writes general statements or definitions introducing the reader to the subject.				
Writes clearly organised paragraphs.				
Sequences all the events in the correct order.				
Shows knowledge of the field and evidence of some research.				
Uses clear visuals that contribute to the understanding of the text.				
<b>LANGUAGE FEATURES</b>				
Writes in the present tense.				
Uses complex noun groups for descriptions.				
Uses adverbial phrases of time and place.				
Uses conjunctions and connectives to link and sequence events.				
Uses passive voice and nominalisation to link cause and effect.				
Introduces and uses technical words to explain phenomena.				
Uses action verbs.				
Edits and proofreads the draft.				
<b>LEVEL CODES</b>	1 Consistently evident	2 Sometimes evident	3 Not evident	