

How to . . .

Teach Instruction and Explanation Text

in KS3 Science and Design Technology



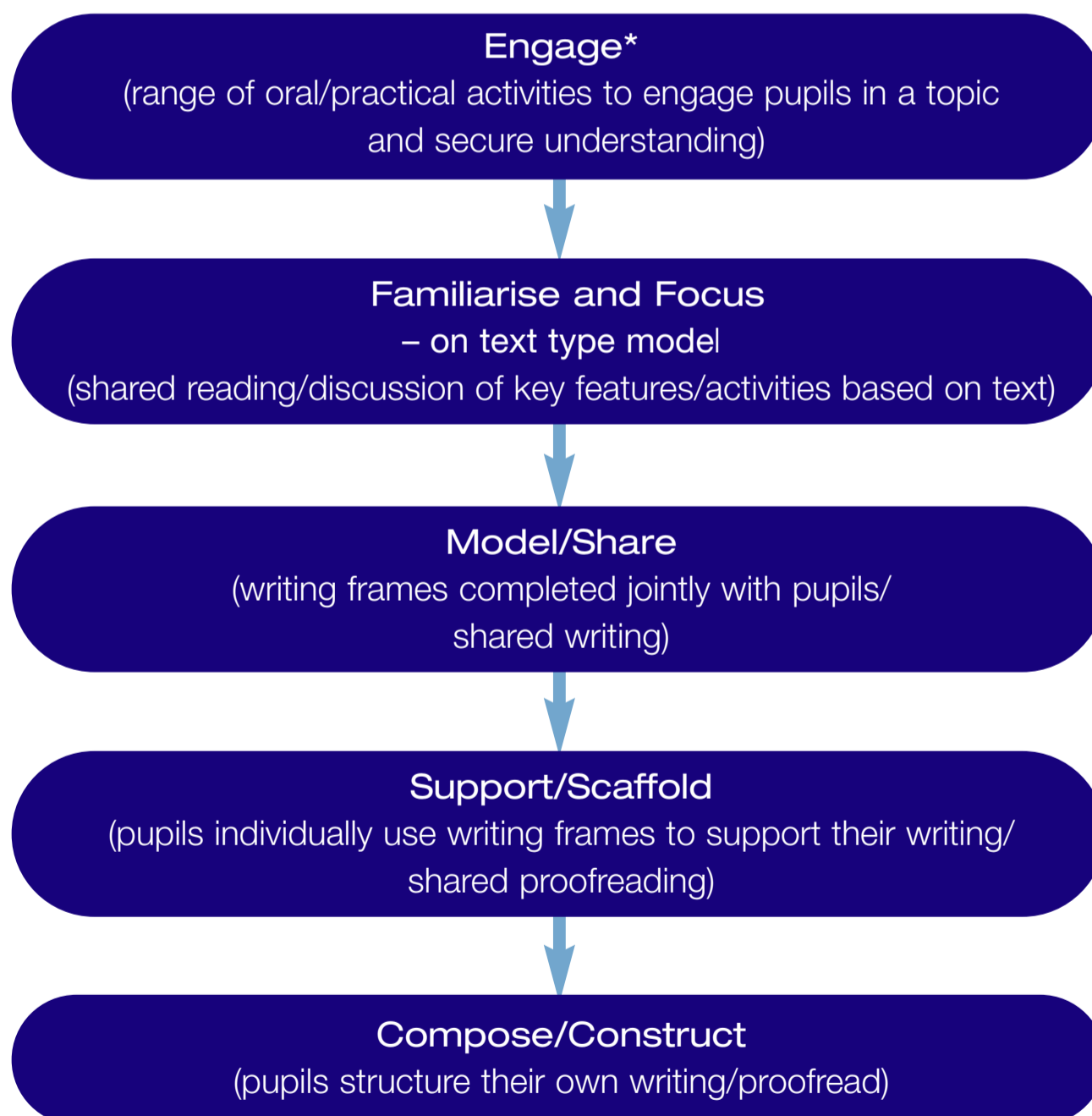
Pupils are introduced to text types in KS1/2 and so many will start KS3 secure in their handling of some of the main text type features and conventions. A significant number of pupils, however, will not be so secure and will need intensive support from subject teachers to develop the writing skills required by KS3 programmes of study. The leaflets in this series are designed to help teachers provide that support.

The main text-types used in KS3 are:

- **Information**
- **Recount**
- **Persuasion**
- **Discussion**
- **Explanation**
- **Instructions**

This leaflet focuses specifically on Explanation and Instruction Text-types but will begin with a general model common to all and one which you will find with minor variations in many publications on literacy:

An approach to teaching writing



* Increasing pupils' **access** to subject content (e.g. by engaging pupils in practical activities; by using visual and verbal stimuli as alternatives to reading; by using differentiated worksheets) is very important but it is vital that the strategies outlined in the rest of the model are also used in order to **develop** pupils' literacy skills and enable them to progress and become independent learners.

Instruction Text

Instructions are probably the easiest text-type to teach. They are found in recipes, leaflets, manuals, text-books

- tells us how to do things
- starts with the goal or purpose
- gives a list of things needed
- sets out steps in time order
- uses bullet points or numbers
- often uses one sentence for each step
- often starts each step with a verb: (*Place - Add - Pour*)
- uses adverbs to make things clearer: (*tightly - carefully*)
- sometimes uses diagrams or pictures

Examples

Recipe

How to make a banana smoothie

You need:

- 1 banana
- 2–3 handfuls of your favourite fruit
- 1 pint glass of ice
- 285 ml single cream
- A liquidiser
- 2 cocktail glasses



- Place the fruit into a liquidiser
- Whizz for 30 seconds
- Add ice and cream
- Place lid back tightly
- Pulse the liquidiser a couple of times on and off, to break up the ice
- Whizz until the liquid is semi-slushy, like a milkshake
- Pour carefully into the two glasses

E-mails

- Deleting items

To delete an open item **first** click on the file. If you want to delete more than one item in a list, click on the first one, hold down the shift key and press the down arrow. **Then** either press the **delete** key or right click on the list and select 'delete' from the drop down menu...

There are words and phrases for beginning and connecting sentences which are characteristic of this text-type:

Useful connectives in instructive writing:

(Time/Sequence)

- first;
- then;
- before;
- next;
- gradually;
- meanwhile;
- once;
- after
- when;
- while;
- finally

(Add)

- and;
- as well as;
- also;
- too;
- however;
- despite this;
- again;
- in addition

Teaching and learning Strategies

Here are some suggestions for how activities could be sequenced to help pupils learn the skill of Instruction writing:

<i>What to do . . .</i>	<i>Why do it . . . ?</i>	<i>Some teaching and learning strategies</i>
Engage pupils in oral/practical activities e.g. – simple instruction giving	Introduces importance of clarity and sequence	<ul style="list-style-type: none"> Teacher demonstrates simple process and asks pupils to provide instructions; teacher follows instructions making ‘mistakes’ when they are unclear/in wrong order; refinement of instructions focusing on clarity and sequence Groups of 3: A observes B performing actions from written instructions, then gives oral instructions to C to repeat sequence – review differences in performance, focus on clarity and sequence
Model/Share: constructing Flow charts	Further emphasises sequence	<ul style="list-style-type: none"> Shared construction of flowchart of above process
Focus on different types of instruction	Useful in determining pupils’ familiarity with the features of instructions in general before focusing on examples specific to Science/Technology	<ul style="list-style-type: none"> Class brainstorming – where/when we use instructions, different types (oral/diagrammatic/written) Post it stickers from groups/pairs
Focus on range of subject specific examples (e.g. recipes; operating instructions on packaging and labels/in manuals; signs and notices; instructions to carry out experiments; safety notices)	Helps pupils to identify the key features (including language features) of instruction writing as well as why there can be differences – purpose, audience	<ul style="list-style-type: none"> Pairs/groups look at two examples, compile list of similarities and differences and report to whole class Look at an example together and convert into a flow chart Shared consideration of organisational and presentational features – where are there changes in font and why? <ul style="list-style-type: none"> – why is this in capitals? – are more diagrams needed? Shared/pair highlight connectives and compile a list of additional ones Shared focusing on adverbs and compiling of a list of adverbs needed to produce instructions for a particular investigation/process e.g. carefully, gradually, vigorously Shared/pair ‘translating’ an account of investigation/process into instructions

<i>What to do . . .</i>	<i>Why do it . . . ?</i>	<i>Some teaching and learning strategies</i>
	2. Further focus on sequencing	<ul style="list-style-type: none"> • Shared and/or Pair/group re-ordering of cut out and jumbled up steps from set of instructions
Use flowcharts/ writing frames	To provide support and scaffolding	<ul style="list-style-type: none"> • Pupils use flow charts and writing frames to write their own instructions • Pupils try to follow each other's instructions • Group design and make a simple artefact having first created a flowchart of steps to be taken; flowchart amended as changes made; results shared • Shared/group/individual writing of more complex instructions for a filmed experiment/process
Compose/ Construct	As pupils become more skilled they can make judgements about instruction writing	<ul style="list-style-type: none"> • Using IT as much as possible, pupils write their own instructions for a range of purposes, using a range of organisational and presentational devices and act as 'critical friends' for each other's results

Explanation Texts

Explanation texts are more complex than **Instructions**. Usually they are used to explain processes or sequences of activity. One of the main things that makes them different from Instructions is the focus on *Cause and Effect*, and many pupils find that difficult. It is one thing to *describe* what you see when you watch a scientific process or experiment, but another thing to make links and to speculate about how one thing has led to another.

Explanations are found in text-books, guides and manuals, history books

- tells us how or why something happens or happened
- uses paragraphs to give different reasons or different steps in the process
- uses steps in time order
- uses the present tense: *is, are* (except for events in history)
- uses an impersonal style
- uses passives
- focuses on cause and effect
- uses technical words
- sometimes has diagrams

Examples

The blood returning to the heart from the body is low in oxygen because muscles and other organs use oxygen taken from the blood. So it needs to pick up some more oxygen before being pumped round the body again. The blood from the body goes to the right side of the heart, and is pumped from the right ventricle through the pulmonary artery to the lungs where it picks up oxygen.

A lever is a bar that pivots, or turns, against a point known as the fulcrum to lift a load. Levers help make work easier not by decreasing the amount of work but by reducing the effort or force needed to move a load.

There are again words and phrases for beginning and connecting sentences which are characteristic of this text type:

Useful connectives:

(Time/sequence)

- first;
- next;
- meanwhile;
- after;
- while;
- then;
- gradually;
- once;
- when;
- finally

(Cause)

- because;
- as a result of;
- consequently
- therefore;
- so;

(Compare)

- on the other hand;
- however;
- unlike
- although;
- compared with;

(Add)

- and;
- also;
- what is more
- as well as;
- in addition;

Teaching and learning Strategies

Here are some suggestions for how activities could be sequenced to help pupils learn the skill of Instruction writing

<i>What to do . . .</i>	<i>Why do it . . . ?</i>	<i>Some teaching and learning strategies</i>
Engage pupils in oral/practical activities: develop thinking skills – cause and effect	Explanations are difficult to write so pupils will need to have a really clear understanding of topic before they begin	<ul style="list-style-type: none"> • While engaging pupils with a wide range of visual and active learning resources encourage them to give explanations for their ideas
Sequencing	Flowcharts can also be quite difficult to construct but engaging in the process will help pupils' understanding	<ul style="list-style-type: none"> • Teacher modelling the construction of a variety of flowcharts, concept maps, etc • Display flowcharts and diagrams • Pair work – sequence simple explanations on cards, joined by arrows; produce concept maps related to simple explanations; encourage drafting and redrafting • Shared and/or Pair/group re-ordering of jumbled up flowcharts/simple written explanations
Focus on examples of Science/ Technology explanation texts	Teaching pupils to identify key features	<ul style="list-style-type: none"> • Use shared reading to illustrate a variety of explanation formats, such as text only, text and diagram, text with headings • Teacher models turning a flowchart into written texts, shared listing of elements added • Pairs/groups look at two examples, and try to identify a common feature – pupils may struggle to get beyond differences in subject content and need a lot of support
Focus on paragraph organisation, connectives and use of illustrations	Teaching pupils to understand how paragraphs tend to be constructed – general statement, separate stages, definition of key terms, paragraph breaks marking significant stages, links within and between paragraphs	<ul style="list-style-type: none"> • In shared reading, discuss use and form of paragraphs – identify general statement, definition of key terms, separate stages • Shared highlighting/ text marking to identify common linking words/ phrases.

<i>What to do . . .</i>	<i>Why do it . . . ?</i>	<i>Some teaching and learning strategies</i>
		<ul style="list-style-type: none"> • Focus on impersonal style – pupils explain parts of process in own words and compare with written version, class discuss reasons for differences (text needs to be clear, concise and more formal), practice turning actives into passives – ‘I heated the liquid’ / ‘The liquid was heated’ • Discuss illustrations, their purpose and appropriateness during shared reading • Further teacher modelling and shared writing of explanation text
Use writing frames	To support and scaffold	<ul style="list-style-type: none"> • Using writing frames pupils write explanations based on class resources/demonstrations/practical activity; and proofread/comment on the results • Use writing frames to highlight effects and their causes, in a variety of contexts • Supply pupils with/help them generate appropriate vocabulary
Compose/ Construct	With continued support as necessary pupils will becoming increasingly confident in their use of explanation text	<ul style="list-style-type: none"> • Encourage pupils to produce their own flowcharts to use alongside their own writing • Ask pupils to state the purposes of their own explanation writing (e.g. ‘I’m writing to explain how/why’) • Ask pupils to ‘headline’ their explanations with a pithy statement of purpose • Ask pupils to write explanations from class resources/demonstrations/engagement in practical activity • Allow pupils access to differentiated selection of resources to research specific topics and encourage presentation in appropriate forms including paragraphing, subheadings etc and use of illustrations, captions, etc). • Arrange for pupils to write explanations for specific PURPOSES and AUDIENCES, e.g. explain earth food to a Martian

Progression

Here is an outline of progression in information writing. It should help to pinpoint the skills particular pupils need to develop:

- Make notes through the use of simple formats, e.g. flow diagrams.
- Use an appropriate writing frame.
- Recognise that there are a variety of explanation formats, e.g. text only, text and diagram, text with headings.
- Begin to explain cause and effect, e.g. because...
- Know and be able to use more appropriate vocabulary, e.g. crater, lava, erupt

- Organise work in simple paragraphs and be able to use more linking words.
- Begin to recognise and use impersonal styles – use of present tense and passive voice.
- Use illustrations to support text.
- Identify the purpose of an explanation.
- Use information from a variety of sources to construct an explanation, e.g. wall chart, diagram.
- Sometimes include information in a logical sequence.
- Link cause and effect in explanations, using linking words, e.g. if, then, when, because.

- Plan, compose, edit and refine short explanatory texts using reading of a variety of sources, focusing on clarity, conciseness and impersonal style.
- Use some technical language and terms.
- Use labelled diagrams to support writing.
- Use simple present tense appropriately and consistently.
- Usually include information in a logical sequence.
- Use appropriate passive forms in the majority of cases.
- Alter aspects of an explanation for particular audiences (self, peer, teacher).

- Select appropriate style and form to suit a specific purpose and audience.
- Select and elaborate appropriate information.
- Link information logically, to express cause and effect relationships.
- Begin explanations with a clear statement of fact.
- Express explanation in a logical sequence.
- Include evaluations where appropriate.
- Give explanations that are concise, full, logical and appropriate.

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