

Sc

KEY STAGE

3

LEVELS

3-7

2004

# Science tests

## Notes for teachers

This booklet is provided for teachers who will be supervising the administration of the science tests.

2004



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# Introduction

These notes are for teachers who will be supervising the administration of the science tests. They apply to papers 1 and 2 in both tiers.

Section 1 provides general and subject-specific information on supervising the tests and giving guidance to pupils. Section 2 deals with special arrangements, and therefore needs to be read, in addition to section 1, only by teachers who will be providing support of this kind.

## Section 1

### Supervising the tests

#### ***Teachers should:***

- maintain appropriate test conditions by ensuring that pupils are able to work individually, undisturbed and without access to any unauthorised material;
- ensure that pupils have been given the correct test paper, for the correct tier;
- ensure that pupils have a pen, pencil, ruler, rubber, protractor and calculator;
- ensure that pupils write their name and school in the spaces provided on the front cover of their test paper. If the school has decided to issue pupil numbers, pupils should write these in the space provided;
- draw pupils' attention to the 'remember' section on the front cover of the test paper;
- draw pupils' attention to the number of marks allocated to each part of a question, and remind pupils that two or three marks for a particular part indicates that two or three distinct points are required for a full answer. The number of marks available for each question is given below the mark boxes in the margin. Pupils should not write in this margin;
- help pupils who need assistance during the tests, according to the guidance given in this document;
- give appropriate time reminders, for example halfway through the test and again ten minutes before the end;
- collect completed test papers from pupils at the end of the test;
- refer to the *School's guide* booklet, sent by the external marking agency, for detailed guidance on completing marksheets and dispatching scripts for external marking.

Any pupil given mixed tier papers for papers 1 and 2 will not be awarded a level.

## Helping pupils during the tests

Teachers should ensure that pupils are clear about what they have to do, but must not provide help with the science being tested.

Teachers may answer pupils' questions regarding the requirements within the test papers by clarifying information or instructions within the paper or a particular question. For example, teachers may answer questions such as '*Am I supposed to write it here?*' or '*Do I have to do all of the questions?*'. The general principle which must be followed is that this should not provide help with the substance of the question, ie the assessment of pupils' knowledge and understanding of the science involved within the question.

The following is a list of words and formulae, used in the 2004 tests, which **must not** be simplified or explained to pupils, since they form part of the scientific knowledge or understanding tested by the question.

### Paper 1

3-6	5-7		3-6	5-7	
1.		cells; all the cells and the systems in the list	15.	6.	boiled; change state; physical state; conduction; convection; evaporation; radiation; boil(s)
2.		bar chart	16.	7.	kinetic energy; gravitational potential energy; force; chemical; light; sound; thermal
3.		all the organs in the diagram; red blood cell	17.	8.	circuit; series and parallel circuits
4.		metal	18.	9.	ray of light; reflected; refracted
6.		explanations; results; conclusions; plans		10.	food chain; pyramid of numbers
7.		switch; series circuit; circuit		12.	atoms; element(s); mixture; compound(s); formula
8.		compass; North and South poles		13.	calcium carbonate; CaCO <sub>3</sub> ; calcium oxide; carbon dioxide; sulphuric acid
9.		Earth; Sun; Moon; satellite		14.	control; fair test
12.	3.	absorbs; photosynthesis; carbohydrate; energy; immunity; minerals		15.	turning moment; balanced; electromagnet; iron core; switch
13.	4.	acidity; acid rain; neutral; universal indicator; alkali			
14.	5.	insoluble; compound; element; mixture			

**Paper 2**

3-6	5-7		3-6	5-7	
1.		force(s); gravity	14.	5.	cartilage; biceps; triceps; muscles
2.		circuit; parallel; series; short; light rays; root hairs; pollination; minerals	15.	6.	reliable; controlled; observation; data; pattern
3.		conclusions; observations; methods; predictions	16.	7.	all the cells in the diagrams; plant cell; chloroplasts; ciliated cell; genetic information
4.		iron; limestone; hydrochloric acid; limewater; gas; carbon dioxide	17.	8.	practical tests; observed; opinion; data
5.		copper; gold; helium; mercury; conductor; react; liquid; metal		9.	average; speed; forward force; backward force; constant speed; streamlined
6.		fizz(y); gas; alkali; solute; dissolved; indicator; solvent		10.	solar panel; energy output; mid-summer; mid-winter
7.		measuring cylinder; fair; accurate; prediction		11.	smooth curve
8.		mammals		12.	magnesium; tin; copper; zinc; aluminium; nickel; reactivity; metals; reactive
9.		food web; insect; predator; prey; producers; photosynthesis		13.	average energy; food reserves
10.	1.	reflects; vibrates; reflected; pitch		14.	controlled; factors; measurable outcome; interpretation; results
11.	2.	magnet(s); repelled; forces; aluminium; mass(es); iron			
12.	3.	evidence			
13.	4.	hydrochloric acid; acid; universal indicator; pH; fizzed; reaction; all the chemicals in the word equation; fizzing; reacts; compound; element; metal; mixture; a salt; solvent; neutralised; stomach			

## Section 2

### Special arrangements

This section provides further specific guidance for teachers and support staff who will be supervising the tests for science with pupils who have special educational needs.

Permission for early opening of a test paper is required for all pupils, regardless of their stage on the SEN Code of Practice, in order to make special arrangements.

The tests have been designed to be accessible to the majority of pupils at the end of the key stage. Braille, modified large print and enlarged versions of the tests have been made available. Additional guidance notes for teachers administering braille and modified tests will have been sent to schools who have ordered braille or modified papers.

Guidance on special arrangements for the tests was given in the 2004 key stage 3 *Assessment and reporting arrangements* booklet, sent to schools in autumn 2003. The section ‘Special arrangements for the tests’ (pages 45–63) gives details about the use of readers, communicators, signers, amanuenses, school-based adaptations to the tests, and other special arrangements such as allowing additional time. It also provides guidance on the administration of the science tests for pupils for whom English is an additional language.

### School-based adaptations to the tests

School-based adaptations to the tests may include taping, photocopying onto coloured paper or use of coloured overlays, or limited changes to the presentation of diagrams or to the size of the text, but must not involve re-wording of questions.

Teachers should refer to pages 45–63 of this year’s *Assessment and reporting arrangements* booklet for further details of specific arrangements and to pages 46–47 and 76–79 for information about early opening arrangements.

### The language of the tests

Schools may provide translations of words or phrases in the test papers which are likely to prove difficult for pupils for whom English is an additional language and also for some pupils who use British Sign Language or other sign-supported communication, if this is usual for the pupil. In general, care should be taken not to change the nature of the question, and not to either advantage or disadvantage the pupil.

### General guidance for signers

- When supporting pupils’ understanding of the requirements of the test, care must be taken to ensure that the signed question does not give an indication of the correct answer (see specific guidance below on pages 6 and 7). In general, the words noted on pages 3 and 4 should not be signed, as to do so may impart additional clues to the meaning of the word. These words may be finger-spelled.
- Some subject-specific words do not have a clear or meaningful sign. Teachers often develop their own signs for these words. All staff supporting pupils should be aware of these signs and use them with the pupils during the tests (see specific guidance on pages 6 and 7). Again, care should be taken that the use of sign does not convey the meaning of any of the scientific terms listed on pages 3 and 4.

- Pupils may be confused by unfamiliar proper nouns. If a name is likely to confuse a pupil, it may be clarified by a general sign, such as ‘a girl’, ‘a boy’, ‘a man’, ‘a woman’, ‘a place’.
- Some questions refer to past or future events, or to words or diagrams used earlier in the questions. Pupils may be given reminders, including the repetition of parts of a question.
- Real objects may be used as prompts. These may be shown to pupils, but they must not be allowed to experiment with them.
- Pupils may sign their responses to teachers or support staff who should note these as precisely as possible on the test paper, without inferring any meaning that was not clear in the signed responses. A note that this has occurred should be written on the front of the test paper.
- Pupils must not be in a position to see other pupils’ signed responses.
- In many questions, words which indicate a scientific group or class, such as ‘mammal’ or ‘protein’, may be signed using specific examples such as ‘cat and dog’, or ‘fish and meat’. However, this may not be done if an example is expected as part of the answer to the question.

### Specific guidance

The following notes give guidance on how individual questions may be signed.

#### Paper 1

3–6	5–7	
1.		Finger spell <i>circulatory, digestive, reproductive, respiratory</i> .
6.		Finger spell <i>explanations, results, conclusions, plans</i> .
7.		Finger spell <i>switch contact, switch, series circuit, circuit, contacts</i> .
8.		Take care not to indicate the poles of the magnets or the poles of the compass needles.
9.		Finger spell <i>Earth, Sun, Moon, satellite</i> . When pointing to the curve, take care not to indicate direction of apparent movement of the Sun.
10.	1.	Finger spell <i>umbilical cord</i> .
11.	2.	Finger spell <i>affects</i> .
12.	3.	Finger spell <i>absorbs, photosynthesis, word equation, carbohydrate, energy, immunity</i> .
13.	4.	Finger spell <i>acidity, acid rain, neutral, alkali, word equation, universal indicator</i> . When signing <i>universal indicator</i> , take care not to indicate any specific colour or pH number.
14.	5.	Finger spell <i>insoluble, compound, element, mixture, white spirit</i> .
15.	6.	Finger spell <i>boiled, state, conduction, convection, evaporation, radiation, boil(s)</i> .
16.	7.	Finger spell <i>kinetic energy, gravitational potential energy, force, chemical, light, sound, thermal</i> .
17.	8.	Finger spell <i>circuit, series, parallel</i> .

**Paper 1 continued**

3-6	5-7	
18.	9.	Finger spell <i>reflected, refracted</i> .
	10.	Finger spell <i>food chain, pyramid of numbers</i> .
	12.	Finger spell <i>atoms, element(s), mixture, compounds, formula</i> . When signing <i>formula</i> , take care not to indicate any specific substance.
	13.	Finger spell <i>calcium carbonate, calcium oxide, carbon dioxide, symbol equation, sulphuric acid, word equation</i> .
	15.	Finger spell <i>turning moment, balanced, electromagnet</i> .

**Paper 2**

3-6	5-7	
1.		Finger spell <i>force(s), gravity</i> . When signing, take care not to indicate any particular direction.
2.		Finger spell <i>circuit, parallel, series, short, pollination, ray of light</i> . When signing <i>ray of light</i> , take care not to indicate direction.
3.		Finger spell <i>conclusions, observations, methods, predictions</i> .
4.		Finger spell <i>gas, carbon dioxide</i> .
5.		Finger spell <i>copper, gold, helium, mercury, conductor, react, liquid, metal</i> .
6.		Finger spell <i>fizzy, fizz, gas, dissolved, alkali, solute, indicator, solvent</i> .
8.		Finger spell <i>mammals</i> .
9.		Finger spell <i>insect, insecticide, predator, prey, producers</i> .
10.	1.	Finger spell <i>reflects, vibrates, reflected, pitch</i> .
11.	2.	Finger spell <i>magnet(s), repelled, aluminium, iron</i> .
13.	4.	Finger spell <i>fizzed, reaction, fizzing, reacts, compound, element, metal, mixture, salt, solvent, neutralised, universal indicator</i> . When signing <i>universal indicator</i> , take care not to indicate any specific colour or pH number.
14.	5.	Finger spell <i>cartilage, biceps, triceps, muscles</i> .
16.	7.	Finger spell <i>chloroplasts, ciliated cell</i> .
17.	8.	Finger spell <i>observed</i> .
	9.	Finger spell <i>forward force, backward force, streamlined</i> .
	10.	Finger spell <i>solar panel, mid-summer, mid-winter</i> . When signing this question, take care not to indicate any specific shape or position of the curve.
	11.	Finger spell <i>smooth curve</i> .
	12.	Finger spell <i>magnesium, tin, copper, zinc, aluminium, nickel</i> .
	13.	Finger spell <i>food reserves</i> .
	14.	Finger spell <i>controlled</i> .

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