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Appendix A: Illustration of the cognitive domain for reading

Content validation study: 2016 key stage 2 reading and mathematics tests



Introduction

- The following slides formed part of the training materials for our reading experts.
- For each strand, the first two slides present a definition/description taken from the *test framework* document; the third slide provides an example of a question that seems worthy of a low rating and an example of a question that seems worthy of a high rating.
- These questions were selected to be as uncontroversial as possible, in terms of their 'high' or 'low' rating, as agreed with STA test development officials.

ACCESSIBILITY OF THE TARGET INFORMATION

Accessibility of the target information (as defined by STA)

- This means:
 - the number and proximity of features that need to be located in the text
 - the extent to which the location of the information within the text is identified in the question
 - the extent to which competing information in the text and / or distractors may mistakenly be selected
- It can be thought of as, 'Where can the information be found?'

Accessibility of the Target Information

Low Level of (ATI) Demand

- The information that needs to be located is **basic**, highly **prominent** and **limited** to one or two pieces.
- It is clearly **located** by question wording and limited to a short section of the text.
- **Competing information** is limited.

High Level of (ATI) Demand

- The target information is not strongly **located** by the question.
- It is not **prominent** within the text, and not **limited** to one or two pieces.
- There is significant **competing information**, either within the text or in the form of functional distractors.

Accessibility of the Target Information

Low Level of (ATI) Demand

High Level of (ATI) Demand

21 Explain **two** things that the words *emerald scrap* suggest about the frog.

2 marks

34 Using information from the text, tick one box in each row to show whether each statement is **true** or **false**.

	True	False
Lord John saw the dinosaur tracks first.	<input type="checkbox"/>	<input type="checkbox"/>
Professor Summerlee has faked the evidence.	<input type="checkbox"/>	<input type="checkbox"/>
Professor Challenger worries that people won't believe them.	<input type="checkbox"/>	<input type="checkbox"/>
They are all frightened of the iguanodons.	<input type="checkbox"/>	<input type="checkbox"/>

1 mark

COMPLEXITY OF THE TARGET INFORMATION

Complexity of the Target Information (as defined by STA)

- This means:
 - the lexico-grammatical density of the stimulus
 - the level of concreteness / abstractness of the target information
 - the level of familiarity of the information needed to answer the question
- It can be thought of as, ‘What is the language of the text like?’

Complexity of the Target Information

Low Level of (CTI) Demand

- Target information has a low level of **abstractness** and lexico-grammatical **density**, is largely **familiar** to pupils and is easily **cued** by the wording of the task.

High Level of (CTI) Demand

- Target information has a high level of **abstractness** and lexico-grammatical **density** and a low level of **familiarity**.
- There is a low level of **semantic match** between task wording and relevant information in the text.

Complexity of the Target Information

Low Level of (CTI) Demand

26 How far into the forest did the stream become a *considerable bog*?

1 mark

We slowly and cautiously set forth into the unknown. After a few hundred yards of thick forest, we entered a region where the stream widened out and formed a considerable bog. High reeds grew thickly before us, with tree-ferns scattered amongst them, all of them swaying in a brisk wind. Suddenly Lord John, who was walking first, halted.

High Level of (CTI) Demand

29 The iguanodons are described as *inoffensive brutes*...

Look at the paragraph beginning: *I do not know how long...* (page 8).

Explain how the descriptions of the iguanodons in this paragraph support the idea that they were both *inoffensive* and *brutes*.

Use evidence from the text to support your answer.

I do not know how long we stayed gazing at this marvellous spectacle. From time to time the little ones played round their parents in unwieldy gambols, bounding into the air and falling with dull thuds upon the earth. The strength of the parents seemed to be limitless, for one of them, having some difficulty in reaching a bunch of foliage, put his forelegs round the trunk of the tree and tore it down as if it had been a sapling. Then it slowly lurched off through the wood, followed by its mate and its three enormous infants. We saw the glistening grey gleam of their skins between the tree-trunks, and their heads high above the brushwood. Then they vanished from our sight.

TASK-SPECIFIC COMPLEXITY

Task-Specific Complexity (as defined by STA)

- This means:
 - the degree of cognitive complexity involved in answering the question, from retrieval through to inference and higher-level skills.
- It can be thought of as, ‘How much work is needed to answer the question?’

Task-Specific Complexity

Low Level of (TSC) Demand

- Requires only simple **retrieval**, with little or no **inference** and has concrete **task requirements**.

High Level of (TSC) Demand

- There are complex **inference** and abstract **task requirements**.

Task-Specific Complexity

Low Level of (TSC) Demand

10 Match the events below to the year in which they happened.

Anousheh Ansari went to space.

1969

The first man stepped on the Moon.

1998

Dennis Tito went to space.

2001

The International Space Station was built.

2006

1 mark

High Level of (TSC) Demand

18 *Gentle, and small, and frail*

How do these words make the reader feel about the snail?

1 mark

RESPONSE STRATEGY

Response Strategy (as defined by STA)

- This means:
 - the complexity of the written response required
 - the extent to which pupils need to organise / structure their response
- It can be thought of as, ‘How easy is it to organise and present the answer?’

Response Strategy

Low Level of (RS) Demand

- Answers will be limited to a few **words** and will require little **organisation**.
- The **structure** of response required will be clearly indicated in the question or answer booklet.

High Level of (RS) Demand

- Answers are **extended**, and require pupils to fully **structure** and **organise** their own responses.

Response Strategy

Low Level of (RS) Demand

24 What is the main message of the poem?

People can learn a lot from holding small creatures.

People should think about how their actions affect others.

People are much bigger than frogs and snails.

People should overcome their fear of nature.

Tick **one**.

1 mark

High Level of (RS) Demand

29 The iguanodons are described as *inoffensive brutes*...

Look at the paragraph beginning: *I do not know how long...* (page 8).

Explain how the descriptions of the iguanodons in this paragraph support the idea that they were both *inoffensive* and *brutes*.

Use evidence from the text to support your answer.

3 marks

TECHNICAL KNOWLEDGE REQUIRED

Technical Knowledge Required (as defined by STA)

- This means:
 - the extent of knowledge of vocabulary required by the question & the text
 - the subject-specific technical language, and knowledge required that is not given in text
- It can be thought of as, ‘How complex is the language of the question and / or the knowledge needed to answer it?’

Technical Knowledge Required

Low Level of (TKR) Demand

- No complex **word meanings** or subject-specific **technical language** is required.

High Level of (TKR) Demand

- Knowledge of complex **word meanings** and subject-specific **technical language** is required.

Technical Knowledge Required

Low Level of (TKR) Demand

26 How far into the forest did the stream become a *considerable bog*?

_____ 1 mark

We slowly and cautiously set forth into the unknown. After a few hundred yards of thick forest, we entered a region where the stream widened out and formed a considerable bog. High reeds grew thickly before us, with tree-ferns scattered amongst them, all of them swaying in a brisk wind. Suddenly Lord John, who was walking first, halted.

High Level of (TKR) Demand

36 Based on what you have read, what does the last paragraph suggest might happen to the explorers next?

Use evidence from this paragraph to support your prediction.

I had the same feeling of mystery and danger around us. In the gloom of the trees there seemed a constant menace and as we looked up into their **shady foliage,** **vague terrors** crept into one's heart. The iguanodons we had seen were lumbering, inoffensive brutes which were unlikely to hurt anyone, but what other creatures might there not be – ready to pounce upon us from their lair among the rocks **or brushwood?**