

# Assessment Report

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### Part A: Commentary

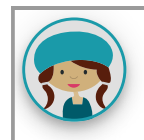
The Level 1 Digital Technologies Common Assessment Tasks continue to validly assess the ability of candidates to understand and apply their knowledge of Human Computer Interaction and Compression. Each paper has one question each in a number of parts. Resources are supplied where needed.

In 2021, as in previous years, candidates were not permitted to bring in information from other sources or access the internet or their notes during the assessment.

### Part B: Report on standards

91886: Demonstrate understanding of human computer interaction

Examination



The assessment comprised four parts, and candidates were required to respond to all four. Part (a) required candidates to describe the role of their chosen interface. In part (b) candidates were given four heuristics and had to describe each with an example of how these could be seen in the interface. Part (c) asked about three other heuristics, and here candidates had to go beyond description to evaluate how successfully each was demonstrated in the interface. Part (d) required the candidates to compare two interfaces (one of which could be an interface they had studied in class) and to suggest possible improvements to one of these.

Further information about the assessment was available in the 2021 assessment specifications published in December 2020. Teachers are reminded to check these each year.

## Observations

Overall, candidates' performance improved this year, with a high percentage of candidates attempting all parts of the task. A large number of candidates presented reports showing considerable insight and passion.

A shorthand list of the heuristics is provided as an aide-memoire for candidates, who are meant to understand the implications of these. Candidates who had not prepared adequately for the assessment struggled to use the literal meaning of the listed heuristics to try and answer the questions.

Some candidates showed a weak or partial understanding of a number of heuristics (user control and freedom, flexibility and efficiency of use, and the two error-based heuristics) which meant they were limited their ability to demonstrate evidence at a higher grade.

Some candidates who attempted part (c) did not make an evaluation. A response that was merely adding further evidence of the type already supplied in the description tasks in parts (a) and (b) meant that the response was not at merit or excellence level.

In part (d), the task requiring a discussion of improvements, some candidates failed to mention the heuristics that they were talking about. Some candidates spoke about heuristics without supporting evidence, which made it difficult to determine their level of understanding.

# Grade awarding

Candidates who were awarded **Achievement** commonly:

- described the role of their chosen interface
- selected one or more suitable examples of the four heuristics and accurately described how these were exemplified in the interface
- supported their descriptions with appropriate screenshots from the screen capture video
- were awarded Achievement if one of the four heuristics was weak but there was sufficient evidence elsewhere in the report.

Candidates whose work was assessed as **Not Achieved** commonly:

- identified fewer than four heuristics
- identified four heuristics, but described them incorrectly
- provided inaccurate descriptions developed from the literal shorthand headings of the heuristics
- provided screenshots but without accompanying descriptions
- provided screenshots with descriptions that demonstrated no understanding of the heuristic
- provided several partial descriptions (usually one line each) that demonstrated insufficient evidence of understanding
- confused two or more heuristics, in some cases using similar heuristics interchangeably (e.g. mixing up “Error Prevention and Help” with “Users Recognise, Diagnose, and Recover from Errors”, or “Flexibility and Efficiency of Use” and “User Control and Freedom”).

Candidates who were awarded **Achievement with Merit** commonly:

- demonstrated an in-depth understanding by evaluating the success of at least three out of the four heuristics in the chosen interface
- went beyond an abstract description of a heuristic to comment on the effect of the heuristic on the user in the context of the chosen interface (e.g. “...by doing this, it keeps the user informed of their actions”).

- provided evidence to support the evaluation, using screenshots from the chosen screen-capture video and linking them to the evaluation
- presented the evaluation in terms of either a binary selection of “successful” or “not successful” or on a scale of one to ten, along with justifications and screenshots
- evaluated multiple aspects of a heuristic rather than focusing solely on a single aspect
- gave more than one example of a heuristic being followed, and showed good and bad examples from the same interface
- used adjectives in stating their own opinions
- attempted all parts of the task – some candidates with partial evidence of evaluation in part (c) went on to demonstrate sufficiency in their response to part (d).

Candidates who were awarded **Achievement with Excellence** commonly:

- chose two or more heuristics identified from the videos or an interface they had studied
- compared similarities and contrasted differences in terms of the heuristics, showing insightful and comprehensive understandings of the heuristics
- supported their answers with appropriate screenshots from the videos
- made a convincing judgement in regard to which interface best followed the heuristics
- recommended at least two practical, specific and suitable improvements to one interface, showing clear connections to the heuristics considered.

## 91887: Demonstrate understanding of compression coding for a chosen media type

### Examination

A large proportion of candidates demonstrated an understanding of the differences between lossy and lossless compression and were able to justify decisions about when each type would be appropriate. Some demonstrated very

little technical understanding of how lossless or lossy work and struggled to explain how the choice of digital media could be represented using bits.

Many candidates made reference to RGB colour but were unable to explain how this worked using bits.

While the standard doesn't specifically require candidates to explain the technical steps behind a lossy compression algorithm such as JPEG, not having some basic knowledge and understanding of these steps makes it difficult for them to explain in any real depth how it will impact on human perception of the medium.

Candidates should be encouraged to compare and contrast compression algorithms for specific outputs. Many could explain why their selection was appropriate but missed out on higher grades because they did not identify limitations of the other approaches.

Candidates should be discouraged from rote-learning prepared answers. Some candidates didn't read the questions and instead wrote down what they had memorised without actually answering the questions. It is difficult to judge a candidate's genuine level of understanding in this case.

## Observations

The change in structure and style of questioning resulted in candidates producing more succinct answers.

Having specific questions relating to lossy or lossless compression ensured that only those candidates who could demonstrate they fully understood the difference between the two compression types were awarded higher grades.

## Grade awarding

Candidates who were awarded **Achievement** commonly:

- could explain how RGB colour works, but did not mention bits in their explanations and used only denary (e.g. "255,0,0" for red)
- had only a general understanding of how lossless compression works, and were unable to explain a specific method such as RLE or Huffman encoding
- stated which tasks each compression method was most appropriate for, but didn't demonstrate an understanding of how they worked, and were light on evidence when justifying their recommendations

- appeared, in some cases, not to have read and understood the requirements of the task, and instead gave what were evidently pre-prepared answers – this prevented them from demonstrating genuine understanding.

Candidates whose work was assessed as **Not Achieved** commonly:

- confused compression types, mixing up lossy and lossless
- confused the nature of file types (e.g. described RAW as lossless, PNG as lossy, etc )
- made incorrect decisions about the appropriate use of compression types (e.g. recommended uploading uncompressed RAW files to Facebook)
- didn't count commas in the cost of a RLE-compressed image
- wrote explanations that were too short and which didn't give evidence they understood how compression works.

Candidates who were awarded **Achievement with Merit** commonly:

- demonstrated understanding, but weren't necessarily able to communicate it clearly
- created their own Huffman trees to demonstrate how these worked
- didn't discuss the limitations of other options when justifying the selection of a particular output for each compression option (e.g. after recommending lossy compression for Facebook images, did not explain why lossless and uncompressed would be inappropriate).

Candidates who were awarded **Achievement with Excellence** commonly:

- were able to relate technical explanations to real-world situations (e.g. explained the technical reasons that lossy compression can result in artifacts or colour banding)
- contrasted different compression approaches for outputs, demonstrating clear understanding of the benefits and costs of each compression technique
- referred to the chosen scenario in their explanations
- used real-world examples when explaining why compression is necessary
- created their own examples for colours being represented by bits

- created their own examples of RLE or Huffman trees to illustrate lossless compression.

## [Digital Technologies subject page](#)

### Previous years' reports

[2020 \(PDF, 154KB\)](#)

[2019 \(PDF, 116KB\)](#)

[2018 \(PDF, 87KB\)](#)