Digital tests from GL Assessment

Verbal Reasoning Digital (VR Digital) is part of a range of standardised tests available in both paper and digital editions from GL Assessment. The development of digital editions of Verbal and Non-Verbal Reasoning, as well as major series such as Progress Test in Maths and New Group Reading Test (NGRT), is a response to the need for schools to test large numbers of pupils at regular intervals and to make that process as efficient as possible, by automating the scoring, analysis and reporting. At the same time, by developing digital editions of established tests, teachers and pupils can be assured of the robustness of these tests. Companion digital tests for Non-Verbal Reasoning are also available from GL Assessment, enabling you to gain a more detailed overview of pupils’ reasoning ability and their visual strengths and weaknesses.

VR Digital is an important test and one on which decisions about, for example, setting, giftedness or interventions may be made, in conjunction with teacher assessment and an evaluation of pupil performance throughout the year.

VR Digital must be administered in a formal test environment in which pupils are made aware that they are taking a test and that the usual expectations of behaviour and constraints of a test session will be in place. Pupils’ experience of working at a computer may lead to the impression that taking a test using a computer is not as important as the more familiar test session in the school hall or rearranged classroom. They may expect to spend time in the computer suite on less formal activities, engaging in learning that is presented in a highly visual or even game-like way. While GL Assessment digital tests do engage pupils, they are tests and must be approached in the same way as the more familiar paper test process.
Introduction to VR Digital

The digital editions of Verbal Reasoning comprise the same tests as the paper edition. They have identical questions, but pupils click on their answers on screen, using a mouse, rather than filling in a pupil booklet. Some questions also require text entry responses.

See below for a detailed description of the test content.

Use of VR Digital

VR Digital is available at three levels of difficulty, aimed at pupils of the approximate ages indicated in the table below.

<table>
<thead>
<tr>
<th>Level</th>
<th>Age Group</th>
<th>England &amp; Wales</th>
<th>Scotland</th>
<th>Northern Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>VR 8&amp;9</td>
<td>7:03 to 10:03</td>
<td>Year 3–4</td>
<td>Primary 4–5</td>
<td>Year 4–5 (P4–P5)</td>
</tr>
<tr>
<td>VR 10&amp;11</td>
<td>9:03 to 12:03</td>
<td>Year 5–6</td>
<td>Primary 6–7</td>
<td>Year 6–7 (P6–P7)</td>
</tr>
<tr>
<td>VR 12&amp;13</td>
<td>VR: 11:03 to 15:03</td>
<td>Year 7–8</td>
<td>Secondary 1</td>
<td>Year 8–9 (F1–F2)</td>
</tr>
</tbody>
</table>

Table 1.1 – Level of difficulty

There is a slight age overlap between the different VR tests. In general, the tests are most suited to pupils of the age indicated in the test title, but as there is a slight overlap with the test above and below (in the case of the upper two tests), in some instances you may have a choice of two tests for any one pupil. If in doubt, pupils of borderline age who are expected to be low scoring should take the test for the younger age range, whereas able pupils should take the test for the older age range.

Timing

The VR Digital tests are timed. They should be preceded by the separate Familiarisation Test for each level that is designed to help the pupils understand all the different types of questions that appear in the main test and familiarise themselves with the approach of the digital test. The Familiarisation Test should be carried out one or more sessions earlier in the day or on the day before the main test. You should use this in the way you think best, but it is important to ensure that, as far as possible, pupils understand the instructional rubrics and examples before they attempt the questions.

The test timing is controlled by the computer and a countdown clock is displayed throughout each test. If pupils finish the test before the allotted time is up, they are invited to check the answers given.

The test timings are as follows:

<table>
<thead>
<tr>
<th>Test</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>VR 8&amp;9</td>
<td>40 minutes</td>
</tr>
<tr>
<td>VR 10&amp;11</td>
<td>45 minutes</td>
</tr>
<tr>
<td>VR 12&amp;13</td>
<td>50 minutes</td>
</tr>
<tr>
<td>VR 8&amp;9 Familiarisation Test</td>
<td>allow c. 30 minutes, but not timed</td>
</tr>
<tr>
<td>VR 10&amp;11 Familiarisation Test</td>
<td></td>
</tr>
<tr>
<td>VR 12&amp;13 Familiarisation Test</td>
<td></td>
</tr>
</tbody>
</table>

Table 1.2 – Test timings
Administration

For information on Sittings go to:

https://help.testingforschools.com/display/HOH/Sittings

When the test is accessed, the title screen will then appear. This can be used as a holding screen.

Pupils should then click on ‘next’. The onscreen and audio instructions will then start. These explain the nature of the test and how to answer the questions, including how to change an answer if a pupil has second thoughts.
When pupils have finished the test, they should go back and check their answers if they have time. The test will end automatically when the time has run out.
Pupils with special assessment needs

No pupil should be automatically excluded from taking **VR Digital** since it is designed to measure pupils’ reasoning ability. However, pupils with reading difficulties, or those who are not fully fluent in the English language, will obviously be at a disadvantage in any verbal reasoning test. Such pupils would be expected to get low scores in **Verbal Reasoning**. Therefore, the test should be used with discretion and any standardised score for such pupils considered with great caution. In this case, using GL Assessment parallel **Non-Verbal Reasoning** tests, which do not require any reading skills, may give a much more accurate indication of a pupil’s underlying reasoning ability.

The test environment

Each pupil will need a computer, headphones (for the introductory screens) and a mouse, plus rough paper for working out. All equipment needs to be in working order. Please collect the rough paper at the end of the test.

Pupils should be told that they are going to take a test and the purpose of it should be explained: ‘to find out what you can do or where you may need help’ or ‘to let your teacher next year know what you can do’. Pupils should be told that they must work in silence, and that if they have a query they should raise their hand and wait for the teacher to approach them. Answer any questions at this stage and explain that you cannot help with any of the test questions, but that they should try to do their best and at the end go back to check their work.

While pupils are taking the test, the teacher should walk around the room to check they are progressing appropriately, that they are not having difficulty with the methods of answering questions and, importantly with digital tests, that they have not rushed through the test without attempting to answer questions.

Unexpected incidents during a test session

As with the paper tests, should anything unexpected occur during the test session, the incident should be recorded and appended to the group report for the specific group of pupils. This will allow the incident to be taken into account when scores are being compiled.

If there is a failure in your computer system while pupils are taking the test, it will not be possible to re-enter the test at the point at which the failure occurred. In this instance, pupils will need to re-take the complete test.

If pupils complete the test and the system then fails, it may be possible to retrieve results, and therefore reports, from the GL Assessment back-up server.

**VR Digital** Testwise reports

A number of different reports are available on Testwise as soon as the pupils complete the tests:

1. **VR Familiarisation Tests Results**
2. Standard **VR Reports**
3. Export CSV Results
4. **Key Stage 2 Indicators**
5. Key Stage 3 Indicators
6. VR and NVR Combined Report
7. VR Cluster Report (available for LAs or school clusters)
8. VR and NVR Combined Cluster Report (available for LAs or school clusters)

Each report is described briefly in turn.

**VR Familiarisation Tests Results**
An electronic report providing a listing of pupils’ overall scores and question-by-question scores.

**Standard VR Report**
This report includes:

- Comparison of mean raw and standard age scores by group, e.g., gender
- Comparison of group and national standard age score distributions
- Pupil listing reporting raw score, standard age score, stanine, national percentile rank and group rank. Listing can be sorted by pupil name or by standard age score.

**Export CSV Results**
Pupils’ scores are exported to a Comma Separated Variable (CSV) file, which you can view in Excel.

**Key Stage 2 Indicators**
Report showing the likely distribution of Key Stage 2 levels in English, maths and science across the whole group and for individual pupils (available from 2010).

**Key Stage 3 Indicators**
Similar information is provided to that described for Key Stage 2 above (available from 2010).

**VR and NVR Combined Report**
A combined standard report for those who have taken both tests. It includes a listing of pupil standardised scores and a visual/verbal profile, highlighting at-a-glance relative strengths and weaknesses in the two forms of reasoning across the group.

**VR Cluster Report**
A standard report for LAs or school clusters providing a school-by-school comparison for results of all schools that have taken VR.

**VR and NVR Combined Cluster Report**
A combined standard report for LAs or school clusters providing a school-by-school comparison for results of all schools that have taken both tests.

What do the **VR Digital** tests comprise?

*Verbal Reasoning* tests yield very useful information about pupils’ abilities that may not be evident from their usual classroom work. The ability to understand and assimilate new and possibly unfamiliar information is very important, as it will influence profoundly a pupil’s future intellectual development. A verbal reasoning test can indicate the likely ease with which a pupil will be able to acquire new concepts and understand new ideas across a range of school subjects.

**Types of questions**
The tests feature a variety of question types. These can be divided into five broad overlapping categories according to the types of operation required in the question.
• **Vocabulary items**
  This category is concerned with the assessment of vocabulary through the production of words and understanding of their meanings.

**VR 8&9**

The letters of the words in CAPITALS can be changed round to make a new word that is something to do with the first two words. Type the new word in the empty box.

**Example**

| book | pages | DEAR | READ |

**VR 10&11 and VR 12&13**

In each sentence below, a word of four letters is hidden at the end of one word and the beginning of the next word. Type the hidden word in the boxes, one letter in each box. The order of the letters must not be changed.

**Examples**

Cease at once.  

| s e a t |

The film ended happily.  

| m e n d |

• **Relationships**
  This is concerned with the relationships between words.

**VR 8&9**

In each question below, select one word in the right-hand box that will complete the sentence in the best way.

**Example**

| Big is to | small as | wide is to | apple | red | narrow | large | tiny |

**VR 10&11 and VR 12&13**

In each question below, select the two words, one from each set, that are closest in meaning.

**Example**

| office | shop | start | work | begin | end |

• **Sentences**
  These questions relate to the use of words within sentences and hence the understanding of the structures of language.

**VR 8&9**

The sentences below do not make sense. They can be made sensible by changing one word. Select the word.

**Example**

The **plane** was anchored in the harbour.

**VR 10&11**

In the sentences below, one word is in CAPITALS and has its letters in the wrong order. Rearrange the letters to make a correctly spelt word that will fit into the sentence. Type the correctly spelt word in the spaces provided.

**Example**

He tried his best to catch the **LABL**.
• Reasoning
VR 8&9
These questions are expressed in some kind of verbal context and their solution requires a logical argument to be followed.
VR 8&9 Familiarisation Test
A piece of string was longer than a tape measure, but shorter than a length of rope.
Which was the shortest?

VR 10&11
These questions are expressed in some kind of verbal context and may have the form of a logical syllogism. Alternatively, the logical structure may be more informal. Here’s an example of the latter:
VR 10&11 Familiarisation Test
The codes for ALL, LIT and TEA are 234, 451 and 122, but not in that order. Answer the questions.
What does 234 mean?

• Symbol manipulation
These questions involve the manipulation of letters and numbers regarded as symbols. Although the production of a word may be required, these can be viewed simply as collections of letters that form the more important elements of the question. Other items are concerned solely with the manipulation of numbers or letters without requiring the production of words.
VR 8&9 and VR 10&11
Example
If the code for TEAR is Q34M, what is the code for ATE?

VR 12&13

Example
If the code for FOOT is ENNS, what is the code for TOE?
Using VR scores in schools

You can use the test results to enhance your knowledge of the pupils in your class and to inform your teaching strategies. For example, although pupils are unlikely to score exactly the same mark in a reasoning test as in a curriculum test, it may be that pupils with verbal reasoning scores that are much higher than scores in a subject-based test would be able to raise their curriculum performance after targeted teaching. Conversely, it may be that a school whose pupils score lower on verbal reasoning than their curriculum attainment is particularly effective in its teaching. The same Verbal Reasoning tests could also be used to monitor successive year groups of pupils to determine differences in ability that are largely unaffected by teaching.

The main uses of VR scores are:

• to identify an individual pupil’s cognitive strengths and weaknesses in order to inform teaching and learning
• to compare the performance of groups of pupils, in order to identify needs and to target resources better
• to identify pupils, or groups of pupils, who may be underachieving.

Schools may also find the scores useful in describing the overall calibre of groups of pupils: whole intakes to a school; classes within a school; ethnic groups of pupils; girls and boys. It may happen, for instance, that one year’s intake has a much higher average VR score than previous years’. This would lead to higher expectations of the group’s GCSE performances.

The progress of groups of pupils – teaching groups, ethnic groups, boys and girls – can similarly be monitored against the stable baseline of their reasoning ability, as shown by their VR scores.

The combined use of the Verbal and Non-Verbal Reasoning tests is recommended as a means of identifying pupils whose abilities using the medium of language differ substantially from their abilities using visual media. In this way, their potential is more likely to be recognised and can be exploited in personalising their learning experiences to ‘play to their strengths’.

Interpreting unexpectedly low scores

Caution needs to be exercised when interpreting unexpectedly low scores. High scores present few interpretative problems and provide unequivocal evidence – unless the pupils have copied from a neighbour, or guessed with unusual luck. Interpreting unexpectedly low scores is far more complex.

Work systematically through possible explanations for the poor performance:

1. Review the test session. Did pupils fully understand what had to be done? Did they complete the Familiarisation Test correctly? Are there any reasons why they might have been distracted, worried or insufficiently motivated?
2. Consider pupils’ overall experience of timed, formal testing. Was this a new and stressful experience for them? Did they understand the need to work quickly? The pattern of answer choices may yield some clues about how a pupil worked. For example, of two pupils scoring 10, one may have randomly guessed every question and scored 10 by chance, whereas the other could have gained full marks on the only ten questions attempted.
3. Look at pupils’ scores in relation to other test scores and attainment in different subjects. A pupil who does much better on a non-verbal test than on this verbal test may simply have a strong bias to non-verbal thinking and
be therefore more likely to succeed in the less language-based subjects (e.g. science and technology). In contrast, if a pupil has uniformly low scores, it may be advisable to consider the pupil’s home environment, or whether his or her schooling has been seriously interrupted. It may be possible to improve test scores and other measures of intellectual development with appropriate intervention. Controversy surrounds the question of how far reasoning ability can be improved by specific training, but the educationally more optimistic view is that people from deprived backgrounds, especially the young, can substantially increase their reasoning ability if given appropriate help.

Understanding the VR scores

Raw score
The raw score is simply the total number of correct answers obtained by the pupil. These scores can be converted to three types of normative scores called standard age scores (SAS), stanines and percentiles. These are described below.

Standard age score (SAS)
One way to make a raw score more readily understandable would be to convert it to a percentage: for example, ‘33 out of 50’ becomes 66 per cent. However, the percentage on its own does not tell us the average score of all the pupils or how spread out the scores are, whereas standard age scores do relate to these statistics.

In order to provide a standard age (or standard score) scale, some tests are standardised so that the average standard age score for any age group is always 100. This makes it easy to tell whether a pupil is above or below the national average. The spread of scores (the ‘standard deviation’) is also set to plus or minus 15 points, so that for any age group about two-thirds of the pupils in the national sample will have a standardised score of between 85 and 115. VR and NVR were standardised in 1992 using a national sample of maintained and independent schools in England and Wales.

<table>
<thead>
<tr>
<th>Number of schools the tests were standardised with:</th>
</tr>
</thead>
<tbody>
<tr>
<td>VR 8&amp;9</td>
</tr>
<tr>
<td>VR 10&amp;11</td>
</tr>
<tr>
<td>VR 12&amp;13</td>
</tr>
</tbody>
</table>

Raw scores are converted to standard age scores that allow you to compare the level of cognitive development of an individual with the levels of other pupils in the same age group. The properties of standard age scores mean that approximately two-thirds of pupils in the age group score between 85 and 115, approximately 95 per cent score between 70 and 130 and over 99 per cent score between 60 and 140. Figure 1.1 shows the frequency distribution, known as the normal distribution, for standard age scores, stanines and percentiles.
Standard age scores have three particular benefits, as described below.

- **They place a pupil’s performance on a readily understandable scale.** As we have seen above, standard age scores allow a pupil’s performance to be readily interpreted. It is immediately deducible from the score itself that a verbal reasoning score of 95 indicates a level of performance just below the national average, but well within the average range.

- **An allowance can be made for the different ages of the pupils.** In a typical class the oldest pupils are very nearly 12 months older than the youngest. Almost invariably, older pupils achieve slightly higher raw scores in tests and examinations than younger pupils. However, standard age scores are derived in such a way that the ages of the pupils are taken into account by comparing a pupil only with others of the same age. An older pupil may in fact gain a higher raw score than a younger pupil, but have a lower standardised score. This is because the older pupil is being compared with other older pupils in the norm group. Pupils of different ages who gain the same standard age score have done equally well, with each being judged in relation to their standing among pupils of their own age.

- **Scores from different tests can be meaningfully added or compared.** Standardised scores for most tests cover the same range, from 60- to 140+. Hence a pupil’s standing, in say mathematics and English, can be compared directly using standardised scores. It is not meaningful to add together raw scores from tests of different length or difficulty. However, should you wish to add standardised scores from more than one test – for example, in order to obtain a single overall measure of attainment – they can be meaningfully combined.

**Stanines**

Standard scores run from 60- to 140+ and give differentiated, finely graded information on the performance of each pupil. However, sometimes a shorthand summary is more useful. Stanines, short for ‘standard nines’, are just nine summary score bands calculated directly from the standard scores, as shown in Table 1.3. Based on the national standardisation, we can say what proportion of pupils are expected within each stanine, and these are also given in the table. The broad nature of stanines minimises over-interpretation of small, insignificant differences among test scores. Stanines are therefore particularly useful in reporting test information to pupils and to parents, as they are relatively easy to understand and interpret.
Table 1.3: Stanines score bands for VR

National percentile rank (NPR)
This indicates the percentage of pupils in the national sample who obtain a standard age score at or below a particular score. For example, a pupil with a standard age score of 108 has a national percentile rank (NPR) of 70: he or she has performed as well as, or better than, 70 per cent of pupils of his or her age group. An NPR of 50 is average for an age group.

Confidence bands
Pupils’ standard scores are also shown as a vertical line with a horizontal line showing the 90 per cent confidence band. It is recognised that any test score represents a performance on a particular day, and the score should therefore be placed within such a confidence band. If the test were taken again, nine times out of ten one would expect the score to fall within this range.

<table>
<thead>
<tr>
<th>Description</th>
<th>Stanine</th>
<th>Percentage of pupils</th>
<th>Corresponding percentiles (NPR)</th>
<th>Corresponding SAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very high</td>
<td>9</td>
<td>4</td>
<td>97 and above</td>
<td>127 and above</td>
</tr>
<tr>
<td>Above average</td>
<td>8</td>
<td>7</td>
<td>90–96</td>
<td>119–126</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>12</td>
<td>78–89</td>
<td>112–118</td>
</tr>
<tr>
<td>Average</td>
<td>6</td>
<td>17</td>
<td>59–77</td>
<td>104–111</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>20</td>
<td>41–58</td>
<td>97–103</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>17</td>
<td>23–40</td>
<td>89–96</td>
</tr>
<tr>
<td>Below average</td>
<td>3</td>
<td>12</td>
<td>12–22</td>
<td>82–88</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>7</td>
<td>5–11</td>
<td>71–81</td>
</tr>
<tr>
<td>Very low</td>
<td>1</td>
<td>4</td>
<td>4 and below</td>
<td>73 and below</td>
</tr>
</tbody>
</table>
Checklist for teachers

**Before the test session**
- Allocate sufficient time in the computer suite for each test.
- All machines should have sound and headphones. (Please note, headphones are needed for the introductory screens only.)
- Pupils need to use a mouse to click on the answers.
- Use a whiteboard to guide your pupils through the instruction screens (optional).
- Inform pupils which test they are taking during the session.
- Provide pupils with their access code to take them directly to the test.
- A pencil and paper for working out. These should be collected in afterwards.
- Stop pupils clicking on ‘Take Test’ until everyone is clear about what they are doing.

**Testwise Technical Support Team**

If you have any problems using Testwise, email the Testwise Technical Support Team at support@gl-assessment.co.uk.

You can view our full Testwise Support Services on our website:

https://www.gl-assessment.co.uk/support/online-testing-support/