

These holistic assessment tasks have been created specifically for training purposes and are deliberately of varying quality.

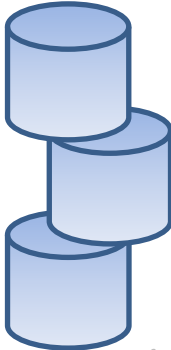
Reflect on the key features of a holistic assessment task and discuss with colleagues which of these you feel are high quality examples, which do not meet the standard of a good quality holistic assessment and those which 'could be improved'. Traffic light these accordingly, recording reasons for each response, and make suggestions for improvements for those you have labelled as 'amber'.

Numeracy Fourth Level

Experiences and outcomes	Question	Benchmarks
<p><i>Having recognised similarities between new problems and problems I have solved before, I can carry out the necessary calculations to solve problems set in unfamiliar contexts.</i> MNU 4-03a</p> <p><i>I can use the link between time, speed and distance to carry out related calculations.</i> MNU 4-10b</p>	<p>1. A plane flies at an average speed of 460 km/h. The pilot wants to fly from Mexico City to Rio de Janeiro, a total distance of 5750 km. Rio de Janeiro has a time zone two hours ahead of Mexico City. What time will he arrive at his destination if he leaves Rio de Janeiro at 11pm?</p>	<ul style="list-style-type: none"> • <i>Interprets and solves multi-step problems using the four operations</i> • <i>Carries out calculations involving speed, distance and time involving decimal and decimal fraction hours.</i> • <i>Calculates time durations across hours, days and months.</i>
<p><i>Using proportion, I can calculate the change in one quantity caused by a change in a related quantity and solve real-life problems.</i> MNU 4-08a</p> <p><i>Having recognised similarities between new problems and problems I have solved before, I can carry out the necessary calculations to solve problems set in unfamiliar contexts.</i> MNU 4-03a</p>	<p>2. A car uses 15 litres of petrol to travel 210 miles. How much would it cost to fill the car with enough petrol to complete a journey of 378 miles at the same rate of consumption, given that the cost of fuel is £1.21 per litre?</p>	<ul style="list-style-type: none"> • <i>Uses knowledge of proportion to solve problems in real-life which involve changes in related quantities.</i> • <i>Uses calculations to support comparisons, decisions and choices and justifies the method used.</i> • <i>Interprets and solves multi-step problems using the four operations.</i>

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<p>Having investigated the practical impact of inaccuracy and error, I can use my knowledge of tolerance when choosing the required degree of accuracy to make real-life calculations. MNU 4-01a</p> <p>I can apply my knowledge and understanding of measure to everyday problems and tasks and appreciate the practical importance of accuracy when making calculations. MNU 4-11a</p>	<p>3. Each cylinder of stone in this statue has a height of 1.2 metres \pm 0.05 metres. What are the maximum and minimum heights of the statue?</p> 	<ul style="list-style-type: none"> • Demonstrates the impact of inaccuracy and error, for example, the impact of rounding an answer before the final step in a multi-step calculation. • Uses a given tolerance to decide if there is an allowable amount of variation of a specified quantity, for example, dimensions of a machine part. • Uses tolerance to choose the most appropriate degree of accuracy for real-life calculations, selects and communicates processes and solutions.
<p>Using proportion, I can calculate the change in one quantity caused by a change in a related quantity and solve real-life problems. MNU 4-08a</p> <p>I can choose the most appropriate form of fractions, decimal fractions and percentages to use when making calculations mentally, in written form or using technology, then use my solutions to make comparisons, decisions and choices. MNU 4-07a</p>	<p>4. A candle with height 75mm burns for 100 minutes. What height is a similar candle which burns for 2.5 hours?</p>	<ul style="list-style-type: none"> • Chooses the most efficient form of fractions, decimal fractions or percentages when making calculations and justifies the methods used. • Uses knowledge of proportion to solve problems in real-life which involve changes in related quantities.

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<p><i>I can use the link between time, speed and distance to carry out related calculations.</i> <i>MNU 4-10b</i></p> <p><i>Having investigated the practical impact of inaccuracy and error, I can use my knowledge of tolerance when choosing the required degree of accuracy to make real-life calculations.</i> <i>MNU 4-01a</i></p>	<p>5. Police Scotland have installed average speed cameras on the A90 between Perth and Dundee. The average speed limit on this section of road is 50mph. A driver travels along this road, a total distance of 22.7 miles, it takes him 23 minutes. A driver can be prosecuted if they travel at a speed greater than the total of (the given speed limit +10% + 2mph). Would this driver be prosecuted? What is the minimum time it should take this driver to drive this section of road without being prosecuted?</p>	<ul style="list-style-type: none"> • <i>Demonstrates the impact of inaccuracy and error, for example, the impact of rounding an answer before the final step in a multi-step calculation.</i> • <i>Carries out calculations involving speed, distance and time involving decimal and decimal fraction hours.</i>
<p><i>By applying my understanding of probability, I can determine how many times I expect an event to occur, and use this information to make predictions, risk assessment, informed choices and decisions.</i> <i>MNU 4-22a</i></p> <p><i>I can choose the most appropriate form of fractions, decimal fractions and percentages to use when making calculations mentally, in written form or using technology, then use my solutions to make comparisons, decisions and choices.</i> <i>MNU 4-07a</i></p>	<p>6. Four boys and two girls decide to arrange a badminton tournament. Each person writes their name on a slip of paper and puts it in a bag. The first slip of paper drawn has a girl's name on it. It is not returned to the bag. What is the probability that the next token drawn from the bag has a boy's name on it? Give your answer as decimal fraction, fraction and percentage.</p>	<ul style="list-style-type: none"> • <i>Determines the expected occurrences of an event.</i> • <i>Applies knowledge and skills in calculating probability to make predictions.</i> • <i>Assesses risk and makes informed decisions in real-life contexts.</i> • <i>Chooses the most efficient form of fractions, decimal fractions or percentages when making calculations and justifies the methods used.</i>

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<p><i>I can research, compare and contrast a range of personal finance products and, after making calculations, explain my preferred choices.</i> <i>MNU 4-09c</i></p> <p><i>I can choose the most appropriate form of fractions, decimal fractions and percentages to use when making calculations mentally, in written form or using technology, then use my solutions to make comparisons, decisions and choices.</i> <i>MNU 4-07a</i></p>	<p>7. Gather information from at least 6 sources which offer a savings account for children. Compare these accounts and make a recommendation in the form of a short report for a seven year old child who saves £3 per week showing his/her total savings after two years.</p>	<ul style="list-style-type: none"> • <i>Compares a range of personal finance products.</i> • <i>Communicates the impact of financial decisions.</i> • <i>Uses calculations to support comparisons, decisions and choices and justifies the method used.</i>
<p><i>Using proportion, I can calculate the change in one quantity caused by a change in a related quantity and solve real-life problems.</i> <i>MNU 4-08a</i></p> <p><i>Having recognised similarities between new problems and problems I have solved before, I can carry out the necessary calculations to solve problems set in unfamiliar contexts.</i> <i>MNU 4-03a</i></p> <p><i>I can choose the most appropriate form of fractions, decimal fractions and percentages to use when making calculations mentally, in written form or using technology, then use my solutions to make comparisons, decisions and choices.</i> <i>MNU 4-07a</i></p> <p><i>I can use the link between time, speed and distance to carry out related calculations.</i> <i>MNU 4-10b</i></p>	<p>8. It takes 25 minutes for Francis to swim 850 metres in her local pool. The pool is 50 metres long. She must rest every length for 30 seconds to catch her breath. After swimming consistently for one month she no longer needs to take breaks and will swim at the same speed. How long will it now take her to swim 1000 metres?</p>	<ul style="list-style-type: none"> • <i>Uses knowledge of proportion to solve problems in real-life which involve changes in related quantities.</i> • <i>Communicates and justifies use of the most effective strategy for the given task.</i> • <i>Chooses the most efficient form of fractions, decimal fractions or percentages when making calculations and justifies the methods used.</i> • <i>Carries out calculations involving speed, distance and time involving decimal and decimal fraction hours.</i>

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<p><i>I can research, compare and contrast a range of personal finance products and, after making calculations, explain my preferred choices.</i> MNU 4-09c</p> <p><i>Having recognised similarities between new problems and problems I have solved before, I can carry out the necessary calculations to solve problems set in unfamiliar contexts.</i> MNU 4-03a</p> <p><i>I can choose the most appropriate form of fractions, decimal fractions and percentages to use when making calculations mentally, in written form or using technology, then use my solutions to make comparisons, decisions and choices.</i> MNU 4-07a</p>	<p>9. A house loses heat through its roof, doors and windows. 23% of its heat loss is through its roof. The total house heat loss costs its owners £650 per year. It will cost the owners £750 to insulate the loft which will reduce their roof heat loss by two thirds. How long will it take them to recover the money they spent on insulation? What percentage of heat is now lost through the roof?</p>	<ul style="list-style-type: none"> • <i>Communicates the impact of financial decisions.</i> • <i>Interprets and solves multi-step problems using the four operations.</i> • <i>Chooses the most efficient form of fractions, decimal fractions or percentages when making calculations and justifies the methods used.</i> • <i>Uses calculations to support comparisons, decisions and choices and justifies the method used.</i>
<p><i>I can evaluate and interpret raw and graphical data using a variety of methods, comment on relationships I observe within the data and communicate my findings to others.</i> MNU 4-20</p> <p><i>I can choose the most appropriate form of fractions, decimal fractions and percentages to use when making calculations mentally, in written form or using technology, then use my solutions to make comparisons, decisions and choices.</i> MNU 4-07a</p>	<p>10. Make use of the census data on www.scotlandscensus.gov.uk to analyse the number of single person households within a 5 mile radius of your school. Compare your results with the results of the City of Edinburgh and communicate your findings in a short report.</p>	<ul style="list-style-type: none"> • <i>Interprets raw and graphical data.</i> • <i>Uses statistical language, for example, correlations to describe identified relationships.</i> • <i>Uses calculations to support comparisons, decisions and choices and justifies the method used.</i>

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I can research, compare and contrast aspects of time and time management as they impact on me.

MNU 4-10a

I can choose the most appropriate form of fractions, decimal fractions and percentages to use when making calculations mentally, in written form or using technology, then use my solutions to make comparisons, decisions and choices.

MNU 4-07a

Timetable
Mondays to Fridays

Train dep Glasgow	0555	0624	0722	0826	0925	1025	1155	1255	1325	1425	1525	1618	1725
Train arr Gourock	0636	0711	0810	0904	1004	1104	1234	1334	1404	1504	1605	1709	1803
A													
Gourock	0641	0727	0820	0916	1016	1116	1256	1342	1428	1518	1618	1726	1813
Kilcreggan	0654	0740	0833	0929	1029	1129	1309	1355	1441	1531	1631	1738	1826
A													
Kilcreggan	0704	0750	0843	0953	1053	1139	1319	1405	1455	1555	1702	1748	1836
Gourock	0717	0803	0856	1006	1106	1152	1332	1418	1508	1608	1715	1801	1849
A													
Train dep Gourock	0728	0811	0908	1024	1124	1208	1338	1424	1524	1624	1724	1808	1908
Train arr Glasgow	0819	0850	0959	1103	1203	1259	1429	1503	1607	1706	1803	1901	1959
A													
Saturdays													
Train dep Glasgow	0706	0739	0826	0925	1025	1155	1255	1325	1425	1525	1618	1725	
Train arr Gourock	0738	0830	0904	1004	1104	1234	1334	1404	1504	1605	1709	1803	
A													
Gourock	0804	0850	0930	1022	1116	1256	1343	1429	1518	1618	1726	1813	
Kilcreggan	0817	0903	0949	1035	1129	1309	1356	1442	1531	1631	1738	1826	
A													
Kilcreggan	0827	0914	0959	1053	1139	1319	1406	1455	1555	1702	1748	1836	
Gourock	0840	0926	1012	1106	1152	1333	1419	1508	1608	1715	1801	1849	
A													
Train dep Gourock	0908	0939	1024	1124	1208	1338	1424	1524	1624	1724	1808	1908	
Train arr Glasgow	0959	1029	1103	1203	1259	1429	1503	1606	1704	1803	1901	1959	
A													
No Sunday Service													
Code A On the 1813 hours journey from Gourock, should the train be late in arriving, the ferry will wait a maximum of 12 minutes until 1825 hours.													
Passengers must present themselves at the ferry gangway at least 2 minutes before departure time. This service will not operate on 1 & 2 January and 25 & 26 December.													
Times may be subject to alteration - please check before travelling.													

11. Ben is travelling from Kilcreggan to Glasgow for a job interview in an office which will begin at 10.25. He must arrive 30 minutes prior to his interview time. It will take him 8 minutes to walk from the station to the office. He is planning to meet his friends for dinner in Glasgow and catch the last ferry home. Provide Ben with detailed travel plans providing him with any important additional information. What percentage of his day will Ben spend travelling?

- ***Demonstrates effective time management skills, for example, working with different time zones or making plans, including across midnight.***
- ***Expresses one value as a percentage of another.***

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<p><i>I can source information on earnings and deductions and use it when making calculations to determine net income.</i> MNU 4-09b</p> <p><i>I can research, compare and contrast a range of personal finance products and, after making calculations, explain my preferred choices.</i> MNU 4-09c</p> <p><i>I can discuss and illustrate the facts I need to consider when determining what I can afford, in order to manage credit and debt and lead a responsible lifestyle.</i> MNU 4-09a</p> <p><i>Having recognised similarities between new problems and problems I have solved before, I can carry out the necessary calculations to solve problems set in unfamiliar contexts.</i> MNU 4-03a</p>	<p>12. Debbie has just graduated from the University of Birmingham and has accepted a permanent job in Glasgow. She would like to live within a 1 mile radius of her work to allow her to walk to work, she would like to purchase her property. Using the information provided below and your technology skills and suggested online calculators find her two options which meet her criteria. Make a list of other expenses she would expect to pay when purchasing her own property. Can you suggest any other options open to Debbie to help her afford her own property.</p> <table border="1" data-bbox="766 742 1444 970"> <tr> <td>Work Postcode</td> <td>G1 1PP</td> </tr> <tr> <td>Minimum number of bedrooms</td> <td>2</td> </tr> <tr> <td>Maximum monthly payment</td> <td>£600</td> </tr> <tr> <td>Mortgage term</td> <td>25 years</td> </tr> </table>	Work Postcode	G1 1PP	Minimum number of bedrooms	2	Maximum monthly payment	£600	Mortgage term	25 years	<ul style="list-style-type: none"> • <i>Applies understanding of credit and debit in relation to earnings and deductions.</i> • <i>Uses budgeting skills to manage income effectively and justifies spending and saving choices.</i> • <i>Calculates net income by selecting appropriate information.</i> • <i>Compares a range of personal finance products.</i> • <i>Communicates the impact of financial decisions.</i> • <i>Interprets and solves multi-step problems using the four operations.</i> • <i>Communicates and justifies use of the most effective strategy for the given task.</i>
Work Postcode	G1 1PP									
Minimum number of bedrooms	2									
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For Training Purposes