Holistic Assessment Examples Designed for Training Purposes by Argyll and Bute AMFs and QAMSOs

Below you will find examples of holistic assessment tasks that have been designed by our Assessment and Moderation Facilitators/Quality Assurance and Moderation Support Officers following their training on holistic assessments. These should be used for **discussion purposes only.** It may be useful to consider whether or not you think these are effective holistic assessment tasks and why.

Early Level Numeracy

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| Curriculum Organiser | Experiences and Outcomes | Benchmarks |
| **Angle, symmetry and transformation**  | I have had fun creating a range of symmetrical pictures and patterns using a range of media. MTH 0-19a | * Identifies, describes and creates symmetrical pictures with at least one line of symmetry.
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| **Properties of 2D shapes and 3D objects**  | I enjoy investigating objects and shapes and can sort, describe and be creative with them. MTH 0-16a  | * Recognises, describes and sorts common 2D shapes and 3D objects according to various criteria, for example, straight, round, flat and curved.
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| **Number and number processes** | ***I use practical materials and can ‘count on and back’ to help me understand addition and subtraction, recording my ideas and solutions in different ways.*** ***MNU 0-03a***  | * ***Explains that zero means there is none of a particular quantity and is represented by the numeral ‘0’.***
* ***Recalls the number sequence forward and backward, from zero to at least 30, from any given number.***
* ***Uses one-to-one correspondence to count a given number of objects to at least 20.***
* ***When counting objects, understands that the number name of the last object counted is the name given to the total number of objects in the group.***
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Task:

Bob the Builder Design Challenge:

* Use a mix of squares, rectangles, circles and triangles.
* Design a symmetrical house that uses up to 20 2D shapes.
* List how many of each shape you have used.
* Talk to your friends about your design – how do you know it’s symmetrical? Why did you choose to use the shapes that you did?

First Level Numeracy

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| Curriculum Organiser | Experiences and Outcomes | Benchmarks |
| **Money**  | ***I can use money to pay for items and can work out how much change I should receive.*** ***MNU 1-09a******I have investigated how different combinations of coins and notes can be used to pay for goods or be given in change.*** ***MNU 1-09b*** | * ***Identifies and uses all coins and notes up to at least £20 and explores different ways of making the same total.***
* ***Records amounts accurately in different ways using the correct notation, for example,*** 𝟏49p = £𝟏·𝟒9 ***and*** 7p = £𝟎·𝟎7.
* ***Uses a variety of coin and note combinations, up to at least £20, to pay for items and give change.***
* ***Applies mental agility number skills to calculate the total spent in a shopping situation and is able to calculate change.***
* ***Demonstrates awareness of how goods can be paid for using cards and digital technology.***
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| **Time**  | ***I can tell the time using 12 hour clocks, realising there is a link with 24 hour notation, explain how it impacts on my daily routine and ensure that I am organised and ready for events throughout my day.*** ***MNU 1-10a******I can use a calendar to plan and be organised for key events for myself and my class throughout the year.*** ***MNU 1-10b*** | * ***Tells the time in*** 𝟓𝟓 ***minute intervals or smaller intervals using analogue and digital 12 hour clocks.***
* ***Record 12 hour times using am and pm and is able to identify 24 hour notation in real life examples.***
* ***Records the date in a variety of ways, using words and numbers.***
* ***Uses and interprets a variety of calendars and 12 hour timetables to plan key events and calculate durations.***
* ***Knows the number of seconds in a minute, minutes in an hour, hours in a day, days in each month, weeks and days in a year.***
* ***Sequences the months of the year and relates these to the appropriate seasons.***
* ***Selects and uses appropriate timers for specific purposes.***
* ***Uses relevant experiences, for example, through practical activities and real life contexts, to estimate time durations in appropriate units of seconds, minutes or hours and then compares estimate with actual measurements.***
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| **Number and number processes** | ***I can use addition, subtraction, multiplication and division when solving problems, making best use of the mental strategies and written skills I have developed.*** ***MNU 1-03a*** | * ***Uses correct mathematical vocabulary when discussing the four operations, for example, subtract, add, sum of, total, multiply, product, divide and shared.***
* ***Interprets a range of word problems, including those with more than one step, and applies the correct operations to complete the calculation.***
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Task:

Primary 4 to plan a trip from Mull to Oban to visit Waterstone’s Book Shop. They need to:

* Use a calendar to choose a suitable day and date before Easter – taking account of other events.
* Read bus and ferry timetable and make plans to match.
* Calculate ferry and bus costs.
* Calculate duration of journey, time to walk and time allowed in shop.
* Plan the return journey.

Second Level Numeracy

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| Curriculum Organiser | Experiences and Outcomes | Benchmarks |
| **Measurement**  | ***I can use the common units of measure, convert between related units of the metric system and carry out calculations when solving problems.*** ***MNU 2-11b*** ***I can explain how different methods can be used to find the perimeter and area of a simple 2D shape or volume of a simple 3D object.*** ***MNU 2-11c***  | * ***Calculates the perimeter of simple 2D shapes in millimetres (mm), centimetres (cm) and metres (m) and explains the choice of method used.***
* ***Calculates the area of 2D shapes in square millimetres (mm2), square centimetres (cm2) and square metres (m2) and explains the choice of method used.***
* ***Calculates the volume of simple 3D objects in cubic centimetres (cm3) and cubic metres (m3) and explains the choice of method used.***
* ***Converts between common units of measurement using decimal notation, for example,*** 𝟓𝟓0***cm*** = 𝟓·𝟓***m***; 𝟑·𝟎𝟎9***kg*** = 𝟑𝒌 𝟗𝒈 ***and applies this knowledge when solving problems.***
* ***Chooses the most appropriate measuring device for a given task, reading scales accurately, carrying out the required calculation and recording results in the correct unit.***
* ***Draws shapes accurately with a given perimeter or area.***
* ***Demonstrates understanding of the conservation of measurement.***
* ***Shows awareness of imperial units used in everyday life, for example, miles or stones.***
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| **Money**  | ***I can manage money, compare costs from different retailers, and determine what I can afford to buy.*** ***MNU 2-09a*** | * ***Carries out money calculations involving the four operations.***
* ***Compares costs and determines affordability within a given budget.***
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| **Number and number processes** | ***Having determined which calculations are needed, I can solve problems involving whole numbers using a range of methods, sharing my approaches and solutions with others.*** ***MNU 2-03a***  | * ***Uses knowledge of inverse operations in problem solving.***
* ***Adds and subtracts 10, 100 and 1000 mentally to and from whole numbers and decimal fractions with at least 3 decimal places.***
* ***Adds and subtracts multiples of 10 to and from whole numbers and decimal fractions with at least 3 decimal places.***
* ***Multiplies and divides whole numbers and decimal fractions with at least 3 decimal places by multiples of 10.***
* ***Recognises where decimal fractions are used in everyday life and applies this knowledge to record and convert amounts in money and measure accurately, for example,*** 𝟓01p = £𝟓·𝟎1, 01.𝟗cm = 𝟎·𝟎9m, 𝟕g = 𝟎·𝟎𝟎7kg.
* ***Interprets and solves multi-step problems by selecting and carrying out appropriate mental and written calculations, and sharing chosen approach with others.***
* ***Provides the answer as a decimal fraction when dividing a whole number by a single digit, for example,*** 𝟒3 ÷ 𝟓 = 𝟖·𝟔.
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Task:

The gym hall needs new flooring. The parent council would like you to research 3 flooring options: lino, carpet and wooden flooring.

* How much would it cost to purchase the correct amount of each of these three types of flooring?
* Which of these would you recommend and why?
* What is the difference in price between each?
* The parent council have a budget of £\_\_\_\_\_\_\_. Is this enough for your recommendation? This must cover delivery costs too.

Third Level Numeracy

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| Curriculum Organiser | Experiences and Outcomes | Benchmarks |
| **Time**  | ***Using simple time periods, I can work out how long a journey will take, the speed travelled at or distance covered, using my knowledge of the link between time, speed and distance.*** ***MNU 3-10a***  | * ***Applies knowledge of the relationship between speed, distance and time to find each of the three variables, including working with simple fractional and decimal fractional hours, for example, ½, 0·5, ¼, 0·25, ¾, 0·75.***
* ***Calculate time durations across hours and days.***
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| **Money** | ***When considering how to spend my money, I can source, compare and contrast different contracts and services, discuss their advantages and disadvantages, and explain which offer best value to me*.** ***MNU 3-09a*** | * ***Demonstrates understanding of best value in relation to contracts and services when comparing products and chooses the best value for their personal solution and justifies choices.***
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| **Number and number processes** | ***I can use a variety of methods to solve number problems in familiar contexts, clearly communicating my processes and solutions.*** ***MNU 3-03a***  | * ***Solves written addition and subtraction problems accurately working with whole numbers and decimal fractions with up to at least 3 decimal places and selects and communicates the processes and solutions.***
* ***Solves written multiplication and division problems accurately working with whole numbers and decimal fractions with up to at least 3 decimal places.***
* ***Solves mental problems accurately involving the four operations.***
* •***Interprets and solves multi-step problems in familiar contexts ensuring correct order of operations.***
* ***Communicates and justifies strategies used to solve problems.***
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| **Fractions, decimal fractions and percentages**  | ***I can solve problems by carrying out calculations with a wide range of fractions, decimal fractions and percentages, using my answers to make comparisons and informed choices for real-life situations.*** ***MNU 3-07a***  | * ***Converts any fraction, decimal fraction or percentage into an equivalent fraction, decimal fraction or percentage.***
* Uses knowledge of fractions, decimal fractions and percentages to carry out calculations with or without a calculator.
* ***Solves problems in which related quantities are increased or decreased proportionally.***
* ***Expresses quantities as a ratio and where appropriate simplifies, for example, if there are 6 teachers and 60 children in a school find the ratio of the number of teachers to the total amount of teachers and children.***
* Selects and communicates processes and solutions.
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Task:

William and Harry go for lunch with Granny at 1pm.

William will travel by train at a cost of £12.50. The distance he is travelling is 67 miles and the journey takes 1 hour and 15mins. What is the average speed of the train?

Harry chooses to drive, his journey is also 67 miles. He travels at an average speed of 60mph. His car covers 7 miles per litre and petrol costs £1.08 per litre. Parking costs £5 per day. What time will he need to leave to arrive on time for lunch?

Who has the most cost efficient journey and why?

Fourth Level Numeracy

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| Curriculum Organiser | Experiences and Outcomes | Benchmarks |
| **Estimation and rounding** | ***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*** | * ***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.***
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| **Number and number processes** | ***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.*** ***MNU 4-03a*** | * ***Interprets and solves multi-step problems using the four operations.***
* ***Communicates and justifies use of the most effective strategy for the given task.***
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| **Time**  | ***I can use the link between time, speed and distance to carry out related calculations.*** ***MNU 4-10b*** | * ***Carries out calculations involving speed, distance and time involving decimal and decimal fraction hours.***
* ***Calculates time durations across hours, days and months.***
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| **Measurement**  | ***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*** | * ***Demonstrates the impact of inaccuracy and error, for example, the impact of rounding an answer before the final step in a multi-step calculation.***
* Using formulae, calculates the surface area of cylinders, cuboids and triangular prisms and uses it to solve problems involving efficient use of materials.
* Using formulae, calculates the volume of cuboids, triangular prisms and cylinders and uses this to make practical decisions.
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| **Properties of 2D shapes and 3D objects**  | Having investigated the relationships between the radius, diameter, circumference and area of a circle, I can apply my knowledge to solve related problems. MTH 4-16b | * Uses the formula *C = π D or C = 2π r* to calculate the circumference of a circle.
* Uses the formula *A = πr2* to calculate the area of a circle.
* Calculates diameter and radius of a circle when given the area or circumference.
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Task:

Design a racetrack.

Must include arcs of a circle (90°, 180° or others).

Given a minimum lap time at 60mph, candidates must provide a race track which includes a minimum number of corners.

Further questions on speed of cars on straights and chicanes.

Introduce a tolerance to calculations.