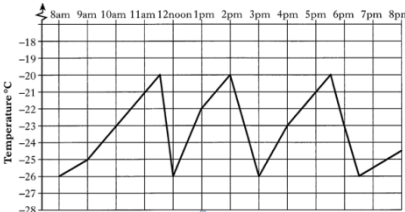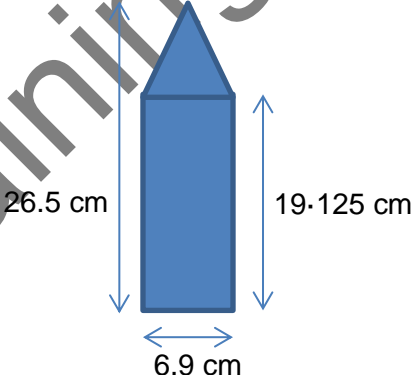**These holistic assessment tasks have been created specifically for training purposes and are deliberately of varying quality.**
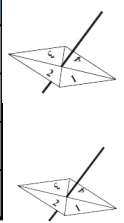
Reflect on the key features of a holistic assessment task and discuss with colleagues which of these you feel are high quality examples, which do not meet the standard of a good quality holistic assessment and those which 'could be improved'. Traffic light these accordingly, recording reasons for each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

Numeracy Third Level

Experiences and outcomes	Question	Benchmarks
I can use my understanding of numbers less than zero to solve simple problems in context. *MNU 3-04a* *I can work collaboratively, making appropriate use of technology, to source information presented in a range of ways, interpret what it conveys and discuss whether I believe the information to be robust, vague or misleading.* *MNU 3-20a*	1. The temperature taken within a butchers shop freezer is shown below: How long did it take for the temperature to rise to 20^0C and how long in total was the temperature falling during the given 12 hour time period?	• *Communicates and justifies strategies used to solve problems.* • *Solves mental problems accurately involving the four operations.* • *Interprets data sourced or given.*
I can round a number using an appropriate degree of accuracy, having taken into account the context of the problem. *MNU 3-01a* *I can use a variety of methods to solve number problems in familiar contexts, clearly communicating my processes and solutions.* *MNU 3-03a* *I can solve practical problems by applying my knowledge of measure, choosing the appropriate units and degree of accuracy for the task and using a formula to calculate area or volume when required.* *MNU 3-11a*	2. Calculate the area of the following composite shape and give your answer to 1 decimal place. 26.5 cm 19·125 cm 6.9 cm	• *Rounds numbers to at least 3 decimal places.* • *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.* • *Interprets and solves multi-step problems in familiar contexts ensuring correct order of operations.* • *Chooses appropriate units for length, area and volume when solving practical problems.* • *Converts between standard units to at least 3 decimal places and applies this when solving calculations of length, capacity, volume and area.*

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** *I can continue to recall number facts quickly and use them accurately when making calculations.* **MNU 3-03b**	3. A train left New York at 10:00 a.m. and arrived in Washington D.C. at 1:45 p.m. If the distance between the 2 cities is 225 miles. The train continues at this average speed to Jackson which is another 840 miles away. What time will it arrive at Jackson?	• *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.* • *Quickly recalls number facts including at least the 12th multiplication table and square numbers up to 144.* • *Solves mental problems accurately involving the four operations.*

I can find the probability of a simple event happening and explain why the consequences of the event, as well as its probability, should be considered when making choices. **MNU 3-22a**
 	
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**
	4. In a game, two fair spinners are spun and a score is found by adding the numbers obtained together.
	  a) Show the possible outcomes in the table below
	  b) Use your table to find the probability of getting a score of 7
	  c) Find the probability of getting a score of 4 or less and give your answer as a fraction, decimal fraction and percentage.
	
	Spinner A
	
		• *Calculates the probability of a simple event happening, for example, the probability of selecting a face card from a standard deck of cards.*
		• *Identifies all of the mutually exclusive outcomes of a single event and calculates the probability of each.*
		• *Converts any fraction, decimal fraction or percentage into an equivalent fraction, decimal fraction or percentage*

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'.

I can round a number using an appropriate degree of accuracy, having taken into account the context of the problem. *MNU 3-01a* *I can solve practical problems by applying my knowledge of measure, choosing the appropriate units and degree of accuracy for the task and using a formula to calculate area or volume when required.* *MNU 3-11*	5. Brenda runs a business creating deluxe wax candles. The candles she produces are in the shape of a cuboid. The base of the candle is a square of side 7 cm, the height of each candle is 0.1 m. Brenda buys her wax in 20 litre tubs at a cost of £40. She sells each candle for £1·99. Brenda must make a profit of £300 per week to make her business viable. What is the minimum number of candles she must sell in a week.	• *Rounds in a way which is appropriate for the context when solving problems and determines the reasonableness of the solution.* • *Chooses appropriate units for length, area and volume when solving practical problems.* • *Converts between standard units to at least 3 decimal places and applies this when solving calculations of length, capacity, volume and area.*
I can round a number using an appropriate degree of accuracy, having taken into account the context of the problem. *MNU 3-01a* *I can show how quantities that are related can be increased or decreased proportionally and apply this to solve problems in everyday contexts.* *MNU 3-08a* *I can solve practical problems by applying my knowledge of measure, choosing the appropriate units and degree of accuracy for the task and using a formula to calculate area or volume when required.* *MNU 3-11a* *I can find the probability of a simple event happening and explain why the consequences of the event, as well as its probability, should be considered when making choices.* *MNU 3-22a*	6. A small café use 550 grams of flour to bake 2 Victoria sponges. In one month the café sells 127 sponges. How many 2·5 kg bags of flour would they need to buy to meet the demand? Three customers Barry, Harry and Larry met for tea in the cafe, taking off their hats as they arrived. When they left, they each put on one of the hats at random. What is the probability that none of them left wearing the same hat as when they arrived? Explain how you came to your answer.	• *Solves problems in which related quantities are increased or decreased proportionally.* • *Chooses appropriate units for length, area and volume when solving practical problems.* • *Converts between standard units to at least 3 decimal places and applies this when solving calculations of length, capacity, volume and area.* • *Rounds in a way which is appropriate for the context when solving problems and determines the reasonableness of the solution.* • *Calculates the probability of a simple event happening, for example, the probability of selecting a face card from a standard deck of cards.* • *Identifies all of the mutually exclusive outcomes of a single event and calculates the probability of each.*

I can find the probability of a simple event happening and explain why the consequences of the event, as well as its probability, should be considered when making choices. **MNU 3-22a** *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**	7. Tom likes to eat Jelly babies, he wants to know the probability of choosing a watermelon one as it is his favourite. The bag of jelly babies he buys at the newsagent contains 45 sweets. There are 11 lemon, 25 strawberry and 9 watermelon. What is the probability of Tom choosing a watermelon jelly bean from the bag? Give your answer as a fraction, decimal fraction and percentage. Later on in the day Tom realises that in his pocket there are 8 watermelon jelly babies, 4 strawberry jelly babies and 4 lemon jelly babies. What is the smallest number of jelly babies he must take out of his pocket to be certain that he takes at least one of each flavour?	• *Uses the probability scale of 0 to 1 showing probability as a fraction, decimal fraction or percentage.* • *Calculates the probability of a simple event happening, for example, the probability of selecting a face card from a standard deck of cards.* • *Investigates real-life situations which involve making decisions on the likelihood of events occurring and the consequences involved.* • *Converts any fraction, decimal fraction or percentage into an equivalent fraction, decimal fraction or percentage.*
I can budget effectively, making use of technology and other methods, to manage money and plan for future expenses. **MNU 3-09b** *I can show how quantities that are related can be increased or decreased proportionally and apply this to solve problems in everyday contexts.* **MNU 3-08a**	8. A room in the Hotel Royale in Paris costs 130 euros per night. The exchange rate is 1.58 euros to the pound. Mr and Mrs McQueen are going to Paris. Their return flights cost £59 each. They could also book a flight/hotel deal at the same hotel with an online company for 940 euros for 6 nights. Mr and Mrs McQueen have £600 to spend. Calculate which deal they should take to have the longest holiday. Explain which deal you would recommend for Mr and Mrs McQueen. What other costs should they take into account?	• *Solves problems in which related quantities are increased or decreased proportionally.* • *Budgets effectively, using technology, showing development of increased financial capability.*

I can show how quantities that are related can be increased or decreased proportionally and apply this to solve problems in everyday contexts.
MNU 3-08a

I can continue to recall number facts quickly and use them accurately when making calculations. MNU 3-03b

I can use a variety of methods to solve number problems in familiar contexts, clearly communicating my processes and solutions. MNU 3-03a

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

9. Your school is hosting a charity coffee morning, you will need to make enough of each of these cakes for 24 people.
How much of each ingredient will you need to buy? Investigate the cost of purchasing these ingredients at a local supermarket and share your findings with others. Decide as a group from which supermarket you will purchase and provide a list of costs.

Rudolph Cupcakes (makes 12)

200g softened butter
200g plain chocolate
200g light brown sugar
2 large eggs
1tsp vanilla
250g self-raising flour

Victoria Sponge (8 Slices)

200g caster sugar
200g softened butter
4 eggs, beaten
200g self-raising flour
1 tsp baking powder
2 tbsp milk

Key Lime Pie (16 Slices)

300g Hob Nobs
150g butter, melted
1 x 397g tin condensed milk
3 medium egg yolks
finely grated zest and juice of 4 limes
300ml double cream
1 tbsp icing sugar

- *Solves problems in which related quantities are increased or decreased proportionally.*
- *Communicates and justifies strategies used to solve problems.*
- *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.*
- *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.*

I can budget effectively, making use of technology and other methods, to manage money and plan for future expenses. *MNU 3-09b*

I can use a variety of methods to solve number problems in familiar contexts, clearly communicating my processes and solutions. *MNU 3-03a*

I can continue to recall number facts quickly and use them accurately when making calculations. *MNU 3-03b*

10. Best friends Paul and Dean want to go on a school skiing holiday in France. Their parents are happy for them to go but insist that they must pay for it themselves. The total cost of the holiday is £550 and they have 28 weeks to save.
Use the following information to decide if either boy will be able to save enough money to go on the skiing trip. What other factors should they take into account when planning a holiday?

Paul			
Income Weekly		Expenditure Weekly	
Pocket Money	£15·00	Football ticket	£2·70
Paper round	£18·00	Bus Fare	£3·00
		Gym Membership	£6·00

Dean			
Income Weekly		Expenditure Weekly	
Pocket Money	£12·50	Sweets	£4·50
Supermarket Shelf stacker	£22·50	Scouts	£2·00
		New Clothes	£10·00

- *Budgets effectively, using technology, showing development of increased financial capability.*

- *Quickly recalls number facts including at least the 12th multiplication table and square*

- *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 mental problems accurately involving the four operations.*

- *Interprets and solves multi-step problems in familiar contexts ensuring correct order of operations. Solves written multiplication and division problems accurately working with whole numbers and decimal fractions with up to at least 3 decimal places.*

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

I can budget effectively, making use of technology and other methods, to manage money and plan for future expenses. MNU 3-09b

I can use a variety of methods to solve number problems in familiar contexts, clearly communicating my processes and solutions. MNU 3-03a

I can continue to recall number facts quickly and use them accurately when making calculations. MNU 3-03b

Contract A	Contract B
No upfront cost	Pay £150 upfront
Pay monthly £25	Pay monthly £35
12 months contract	24 months contract
What's included	**What's included**
400 minutes	Unlimited minutes
500 texts	Unlimited texts
1GB data	1GB data
Phone specifications	**Phone specifications**
3G	4G
2 GB memory	5 GB memory
6 megapixels front and back camera	8 megapixels front and back camera

Contract C	Contract D
No upfront cost	£80 mobile phone
Pay monthly £8.50	Pay as you go
24 months contract	£20 monthly bundles
What's included	**What's included**
250 minutes	500 minutes
5000 texts	Unlimited texts
500MB data	2GB data
Phone specifications	**Phone specifications**
3G	4G
15GB memory	8 GB memory
4 megapixels back camera	8 megapixels front and back camera
Compatible with micro SD card	Compatible with micro SD card

11. Using the data above compare and rate the mobile phone contracts detailing pros and cons of each and selecting which contract would best suit your needs making reference to the total cost involved and the phone specifications over the next 24 months.

- *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.*
- *Budgets effectively, using technology, showing development of increased financial capability.*
- *Quickly recalls number facts including at least the 12th multiplication table and square numbers up to 144.*
- *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 mental problems accurately involving the four operations.*

I can round a number using an

- *Rounds in a way which is appropriate for the*

appropriate degree of accuracy, having taken into account the context of the problem. MNU 3-01a

I can solve practical problems by applying my knowledge of measure, choosing the appropriate units and degree of accuracy for the task and using a formula to calculate area or volume when required. MNU 3-11a

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

I can use a variety of methods to solve number problems in familiar contexts, clearly communicating my processes and solutions. MNU 3-03a

Box 1

23 mm

0.156 m

24 cm

Box 2

2.35 cm

360 mm
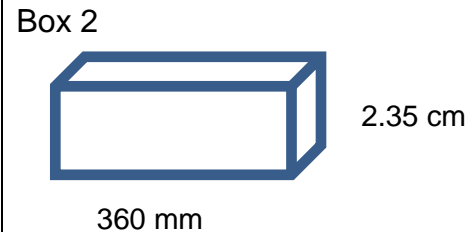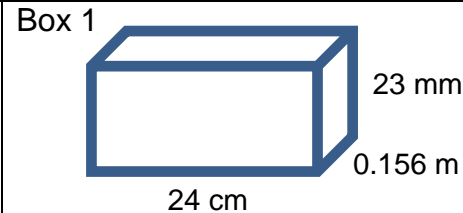
12. You are the financial director of DeluxChox Ltd. Your design team has created two designs, with the requirement that all box designs have the same volume, for your new range of handmade chocolates as shown above. The chocolates cost 12 p each to make and will be sold for £17.99 per box, the company expects to sell 5000 boxes per year. The company expects total costs of 36% of their gross earnings.

Using the designs above, the information shown in the table below, taking into account the best deal for the customer and the cost of production for the company, recommend which design the company should choose justifying your answer.

context when solving problems and determines the reasonableness of the solution
- *Chooses appropriate units for length, area and volume when solving practical problems.*
- *Converts between standard units to at least 3 decimal places and applies this when solving calculations of length, capacity, volume and area.*
- *Solves written multiplication and division problems accurately working with whole numbers and decimal fractions with up to at least 3 decimal places.*
- *Interprets and solves multi-step problems in familiar contexts ensuring correct order of operations*
- *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.*

Box	1	2
Cost per cm^2 of sides and base of box	0·2 p	0·2 p
Cost per cm^2 of lid	0·5 p	0·5 p
Chocolates per box	36	38

For training purposes only