JAMAICA

SAMPLE

PEP

Mathematics

Performance Task

GRADE 5

Practice Papers

hachette LEARNING

Contents

How to use this book

Think about successful athletes. Athletes learn about their sport, and they practise and train hard to become excellent performers.

You can be a maths-athlete who performs well in tasks by learning how to do them and then training yourself to answer different types of questions.

You are going to work through **Practice paper 1** with your teacher. This will help you to:

- Read questions carefully and work out what type of answer to give.
- Understand why it is important to show how you work out your answer.
- Learn how you can get good results even if your answer is not completely correct.
- Understand what the different ratings mean and see how you can improve your rating.
- Reflect on your own work to help you see what you did well and what you can improve in the next task.

Each task in this book has three supporting features.

Before you start …

This section helps you think carefully about questions and what it is you are being asked to do. There are different activities for each task.

Hints

These are given in the task itself to help you think about the questions and how you should answer them. As you progress, there will be fewer hints in the tasks.

Reflection

This section encourages you to think about your own learning and how you can improve on it.

Practice paper 1 also has a section called **How do you know how well you did?**

In this section you will see possible answers to the questions and what rating they were given. The aim of this section is to show you what you need to do to get the best possible results.

Practice paper 1

Always check that you have everything you need before you start.

This task has 3 parts:

- Part 1 has questions 1 and 2.
- Part 2 has questions 3 and 4.
- Part 3 has question 5.

You will need a calculator, a pencil and an eraser.

Answer all the questions in each part in the spaces provided.

Remember to always show your working out.

When you do a performance task, it is helpful to read through all the questions before you start so you can think about what you need to do and plan your time.

➜ Before you start …

The instruction words in each question are very important. Here are some of the instruction words you might find in a performance task.

Find	Determine	Decide	Write	Draw
Show	Complete	Suggest	Choose	Explain
Describe	Calculate	Work out	Give reasons	Match

Start by **reading** all the questions. **Circle** or highlight all the **instruction words**.

Now, **tick (✓)** questions that look like they have only one short answer.

Next **find the underlined instructions** in the task.

What do you have to do when you answer these questions? **Share your ideas** with your partner.

Setting up an art club

A community organisation plans to set up an art club at the community centre. They will offer classes for children and adults, and they will have an exhibition at the end of each term.

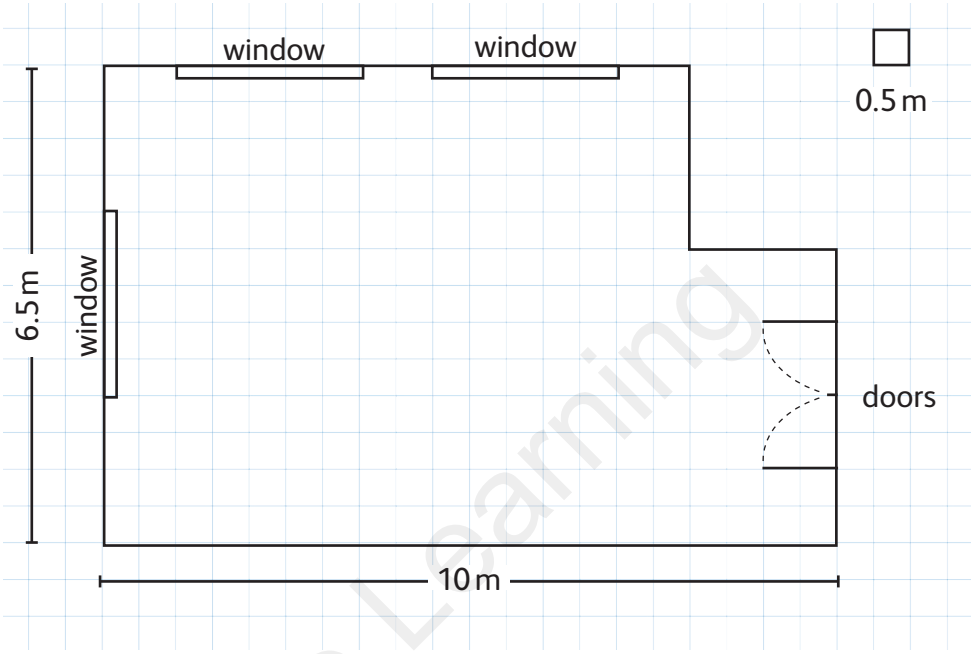
The art club committee has divided into teams. Each team will handle different aspects: Team A organizes the room, Team B plans activities, and Team C analyses the exhibition data. You will help with tasks from all three teams.

Part 1

Organising the art room

Question 1

The art club has been given a room in the community centre. The plan of the room is shown here.



Use the scale on the grid to help you work out the missing measurements on the plan.

a Fill in the missing number in each sentence.

- There are _____ windows in the room.
- There are _____ doors.
- The room is _____ m long.
- Each door is _____ m wide.
- The wall with two windows on it is _____ m long.

You can draw on the plan. You can also divide it into shapes you know.

b Calculate the floor area of the room. Show all the working you do.

Start by thinking about where you will put the different items. Use the information above to help you decide.

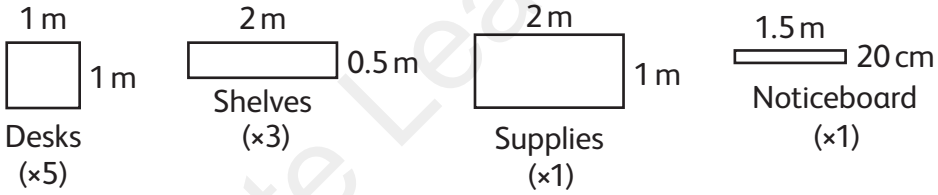
Remember to use the correct scale for each item.

Think about what you decided and try to explain clearly why you put the items in different places.

c The committee has to decide where to put the tables and stools, the shelves, the supply cupboard and the noticeboard. They agree on the following conditions:

- The students should have good natural light when they are working.
- The stools will fit under the tables, but there should be space around each table so the teacher can move around each group as they work.
- The shelves will be used to store finished artwork.
- The supply cupboard should be easy to get to.
- The noticeboard should be where everyone coming into the art room can see it easily.

How would you arrange the room to fit in these pieces of furniture?



i Draw your arrangement on the plan.

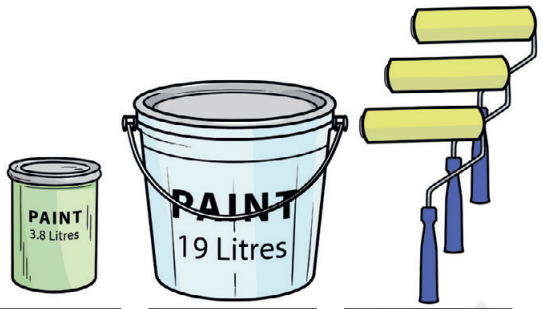
ii Complete these sentences.

- I put the chairs and tables there because _____.
- I think this is a good place for the shelves because _____.
- I put the noticeboard in that position because _____.
- I put the supply cupboard there so that _____.

Question 2

Highlight the prices on the images.

The students in the art club plan to paint the room. They estimate that they will need 40 litres of paint and 6 paint rollers to do the job. They find these prices online:



$4 994.80 | $20 877.92 | $2 667.88

Your answer must include the number and size of the tins as well as the total cost.

a How much will it cost to buy 6 rollers?

b What is the cheapest combination of tins of paint that the committee can buy to make sure they have 40 litres? Explain your decision.

When you get a discount, the store takes off that amount of money from your total.

c The final amount at the hardware store comes to $52 086.32. The store gives the committee a 15% discount because this is a community project. How much will they pay?

Part 2

Planning activities

Question 3

Ms Campbell is in charge of arranging and scheduling different activities. She arranges these activities for September.

September in the studio

Activity	Class dates and times	
Design your own fabric	Saturday 2nd	9 a.m. to 5 p.m.
Learn pencil sketching	Wednesday 6th Friday 8th	6:30 p.m. to 8:30 p.m. 8 a.m. to 10 a.m.
Cartooning on computer	Friday 8th Saturday 9th	3 p.m. to 6 p.m. 10 a.m. to 12 noon
Oil painting	Saturday 16th / 23rd	11 a.m. to 3 p.m.
Pastels and watercolours	Every Thursday	5 p.m. to 7 p.m.
Meet and draw a live parrot	Saturday 30th	3 p.m. to 5 p.m.

Some activities are offered on more than one day.

a How many different activities are offered?

b Malia can only do classes in the evening. What activities could she take?

Think about how we write time to show it is in the evening.

c On which dates could you learn to draw cartoons using a computer?

Remember, this is all happening in September.

Find the information on the poster.

d Marc wants to meet a parrot and learn to draw it. When can he do that?

e How long does the fabric design class take?

Will a number line help you work this out?

Question 4

a Seventeen people sign up for the fabric design class. Each person will receive 0.6 m of white fabric to work on. If the roll of fabric is 12 m long, how much will be left after giving each student their piece of fabric?

Draw and label a sketch or number line to show the problem.

What does fewer mean?

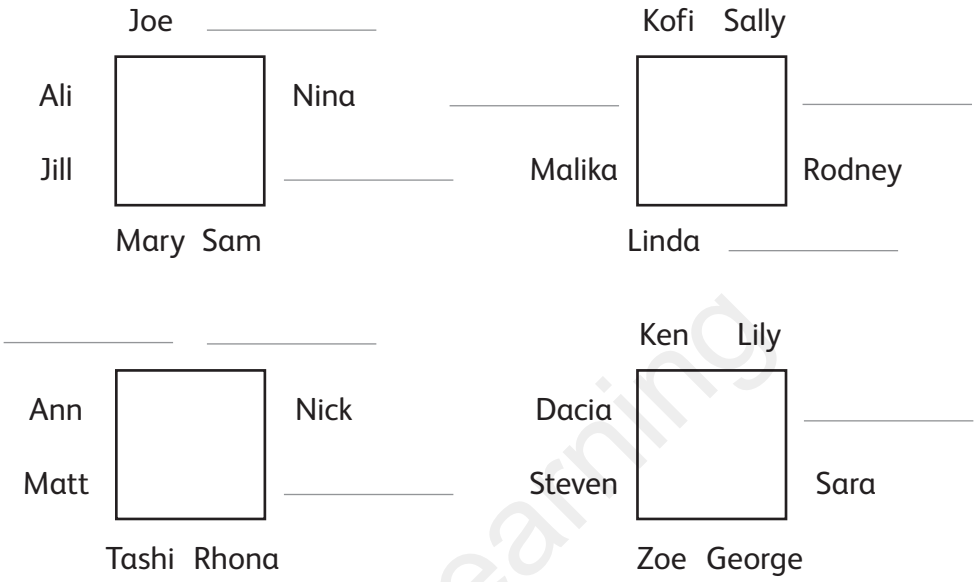
b 49 people sign up for the pencil sketching classes. The Wednesday class has five fewer people than the Friday class. How many people are in each class?

You need to use your answers from part b to work this out.

c The teacher wants to arrange the pencil boxes on the supply shelf. She has boxes of HB, 3B, and 5B pencils. Draw two different ways she could arrange them so they're easy to find.

Remember, the people sit facing the table. This will help you work out left and right.

d Maria is teaching the class on 30 September. She organises the tables and puts a name label on each place to show people where to sit. This is her seating plan with some of the names filled in.



Use this information to fill in the missing names on the plan.

- Tom is on Rodney's left.
- Lydia is to the right of Sara.
- Mike is on Rhona's right, at the same table.
- Ciara is opposite Sam.
- Monica is behind Sam.
- Julie is next to Nina and Sam.
- Ruth is next to Mary, but at another table.
- Tay is between Kofi and Malika.

Look at the arrangement of people and think about a sensible place for the parrot. Remember to mark it clearly.

e How many people are booked to attend the class?

_____

f Where would you put the parrot so that everyone can see it and draw it? Mark the position on the seating plan diagram with an X.

Part 3

Ticket sales and attendance

Question 5

At the end of each term, the art club has an exhibition of student work. The members sell tickets to raise money for art supplies and equipment.

Ticket prices are:

Adults	$350
12–18 years	$140
Under 12	Free

Suresh sells tickets to the exhibition. The first ticket on the roll is number 4 732.

The ticket numbers increase as he sells them.

a Suresh sold 320 tickets in the first week. What was the last ticket number he sold?

To find the size of each face, multiply the length by the width, the length by the height or the width by the height.

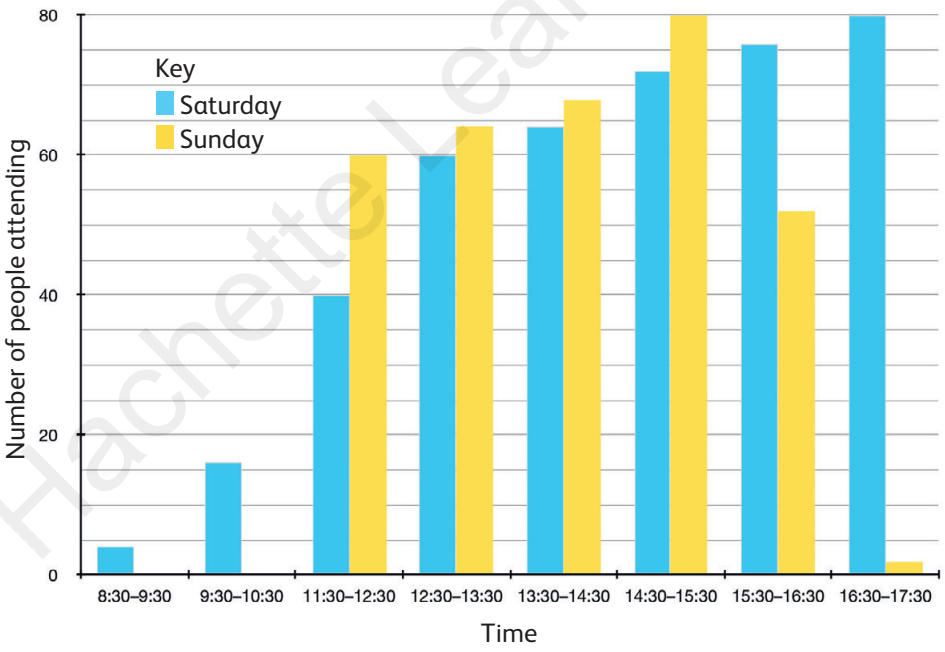
b A ticket roll is kept in a rectangular box with a length of 20 cm, a width of 10 cm and a height of 6 cm. Which face is the biggest: top, front or side? Show your working.

You need to do more than one step here. Show all your working.

c In total, $\frac{3}{5}$ of the tickets were adult tickets. How much money did Suresh take in ticket sales?

Read the key and the labels on the graph carefully.

d The exhibition was open from 8:30 a.m. till 5:30 p.m. on Saturday and Sunday. The graph shows the numbers of people attending the exhibition at different times on Saturday and Sunday.



Think about the busy and not so busy times.

Analyse the graph and write suggestions to help the committee decide what opening hours they should have for the next term's exhibition. Give reasons for your suggestions.

Reflection

Go back through your own answers to the questions in this task.

- Tick the boxes for skills you used successfully in this task:

  - ☐ Solving problems with multiple steps
  - ☐ Explaining my reasoning clearly
  - ☐ Showing my working step-by-step
  - ☐ Other _____

- Which ones did you struggle with? What made them difficult for you?

  - ☐ I didn't understand what to do
  - ☐ The calculations were too hard
  - ☐ There were too many steps
  - ☐ I couldn't find the information I needed
  - ☐ I ran out of time
  - ☐ Other _____

- Based on this task, I will:

  Practice more with:

  _____

  Next time I will remember to:

  _____

  One thing I did really well was:

  _____

Practice paper 1 Self-evaluation

How do you know how well you did?

Now that you have worked through the task, you are going to look at the answers that some students gave to see how they were rated. Pay attention to what students did well and think about why some answers are better than others.

Once you have read all the answers, you can try to rate your own answers from 1 to 4 using this scale.

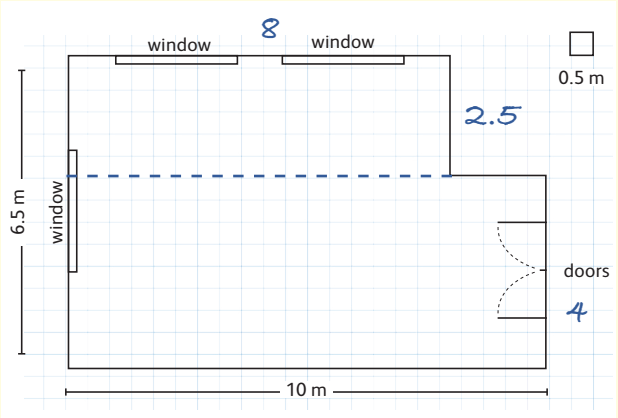
1 Beginning	2 Developing	3 Proficient	4 Highly proficient
Your answers tell the teacher that you do not understand the work and that you need further support.	Your answers show that you understand some of the work but that you need help in certain topics.	Your answers show that you understand most of the work.	Your answers show that you understand all of the work very well.

Question 1

a Fill in the missing number in each sentence.

• There are 3 windows in the room. ✓ • There are 2 doors. ✓ • The room is 6.5 m long. ✗ • Each door is $\frac{1}{2}$ m wide. ✗ • The wall with two windows on it is 10 m long. ✗	• There are 3 windows in the room. ✓ • There are 2 doors. ✓ • The room is 10 m long. ✓ • Each door is 2 m wide. ✗ • The wall with two windows on it is 8 m long. ✓
2 Developing *The student does not read the plan well and is not able to work with the scale. Also, the student does not know the difference between length and width.*	3 Proficient *The student has answered 4 out of the 5 questions correctly. Answers show they can read the plan and use the scale.*

b Calculate the floor area of the room. Show all the working you do.

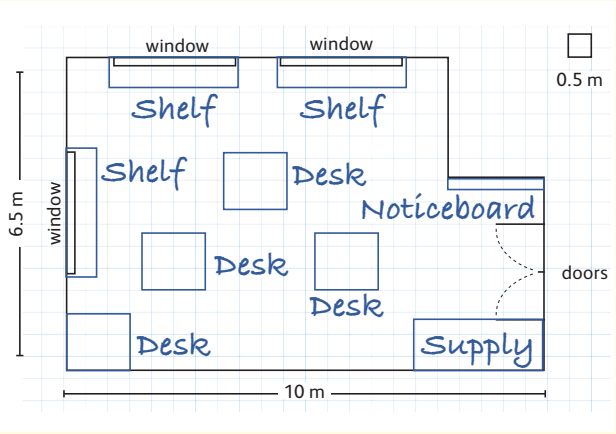
$6.5 \times 10 = 65$	 $8 \times 2.5\ m = 20\ m^2$ $4 \times 10\ m = 40\ m^2$ $20\ m^2 + 40\ m^2 = 60\ m^2$
1 Beginning *The student's answer is incorrect and has no units.* *Their working shows they do not understand how to find the area of a compound shape.*	4 Highly proficient *The student has shown clearly how they divided the shape into two rectangles, and has worked out the area of each correctly and added them to find the total area.*

c How would you arrange the room to fit in these pieces of furniture?

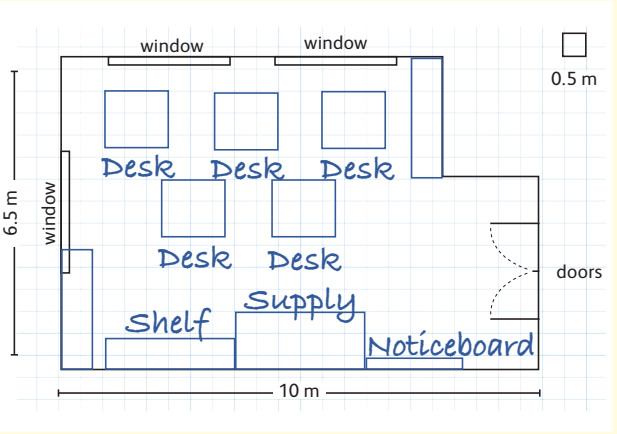
i Draw your arrangement on the plan.

ii Complete these sentences.

- I put the chairs and tables there because …
- I think this is a good place for the shelves because …
- I put the noticeboard in that position because …
- I put the supply cupboard there so that …



- I put the chairs and tables there because they fit the space.
- I think this is a good place for the shelves because it is out of the way.
- I put the noticeboard in that position because it's near where people come in.
- I put the supply cupboard there so that the teacher can get stuff when she comes in.



- I put the chairs and tables there because they are near the windows and not in the way of the door.
- I think this is a good place for the shelves because they are not in the way.
- I put the noticeboard in that position because when people walk into the room they will have to walk past it.
- I put the supply cupboard there so that there's nothing in front of it.

2 Developing

The student has shown the items on the plan and labelled them, but some choices are not sensible (noticeboard is behind the open door, shelves under the windows mean less light for the work desks).

The supply cupboard is behind the door so it's hard to get to.

Only four desks are shown and one is in the corner.

Reasons are given, but not all are sensible.

3 Proficient

The student has included all the items on the plan in sensible positions, but has not labelled them all.

They have given sensible reasons for their choices.

Question 2

a How much will it cost to buy 6 rollers?

b What is the cheapest combination of tins of paint that the committee can buy to make sure they have 40 litres? Explain your decision.

c The final amount at the hardware store comes to $52 086.32. The store gives the committee a 15% discount because this is a community project. How much will they pay?

a 2 × $2667.88 = $5335.76 b Cheapest is 2 × $2087.92 + $4994.80 = $46 750.64 c 15% of $52 086.32 = $7812.948 and $52 086.32 − $7812.948 = $44 273.372 The cost is $44 273.73	a There are three rollers in a pack, so they need two packs. 2 × $2667.88 = $5335.76 b The cheapest combination is two 19-litre tins (which gives 38 litres) and an additional 3.8-litre tin to get the 40 they need. The cost for this is 2 × $2087.92 + $4994.80 = $46 750.64 c 85% of the total is 0.85 $52 086.32 × 0.85 = $44 273.34 (rounded to 2dp)
3 Proficient *This student has written number sentences and shown the steps in their working.* *In part (b), they worked out the right amount but have not fully answered the question because they have not said how many tins of each size they need.* *In part (c), they have made a careless error (writing 73 instead of 37) when they wrote the answer.*	4 Highly proficient *This student has laid out all their working very clearly and they have checked their answers to make sure they are all correct.* *In part (b), they have explained that they need to buy slightly more paint than needed because of the size of the tins.*

Question 3

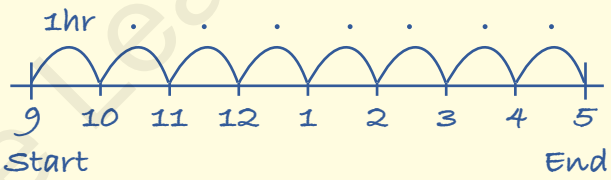
a How many different activities are offered?

b Malia can only do classes in the evening. What activities could she take?

c On which dates could you learn to draw cartoons using a computer?

d Marc wants to meet a parrot and learn to draw it. When can he do that?

e How long does the fabric design class take?

a six **b** 2 classes **c** on the 8th and 9th **d** on Saturday from 3 p.m. to 5 p.m. **e** seven hours	**a** six classes **b** pencil sketching or pastels and watercolours **c** 8th and 9th **d** at 3 p.m on 30 Saturday **e** it takes eight hours 
2 Developing *The student has tried to answer all the questions and seems to have read the poster correctly, but they have not written the names of the classes in full in part (b) or shown how they worked to find the time in part (e). If they had shown their working, they would get credit even though the answer was not completely correct.*	3 Proficient *The student has answered all the questions correctly. This shows they have read and understood the poster.* *In part (c), they should give the month and day as well as the date.* *In part (e), the number line shows they understand how to work out how long something takes.*

Question 4

a Seventeen people sign up for the fabric design class. Each person will receive 0.6 m of white fabric to work on. If the roll of fabric is 12 m long, how much will be left after giving each student their piece of fabric?

b 49 people sign up for the pencil sketching classes. The Wednesday class has five fewer people than the Friday class. How many people are in each class?

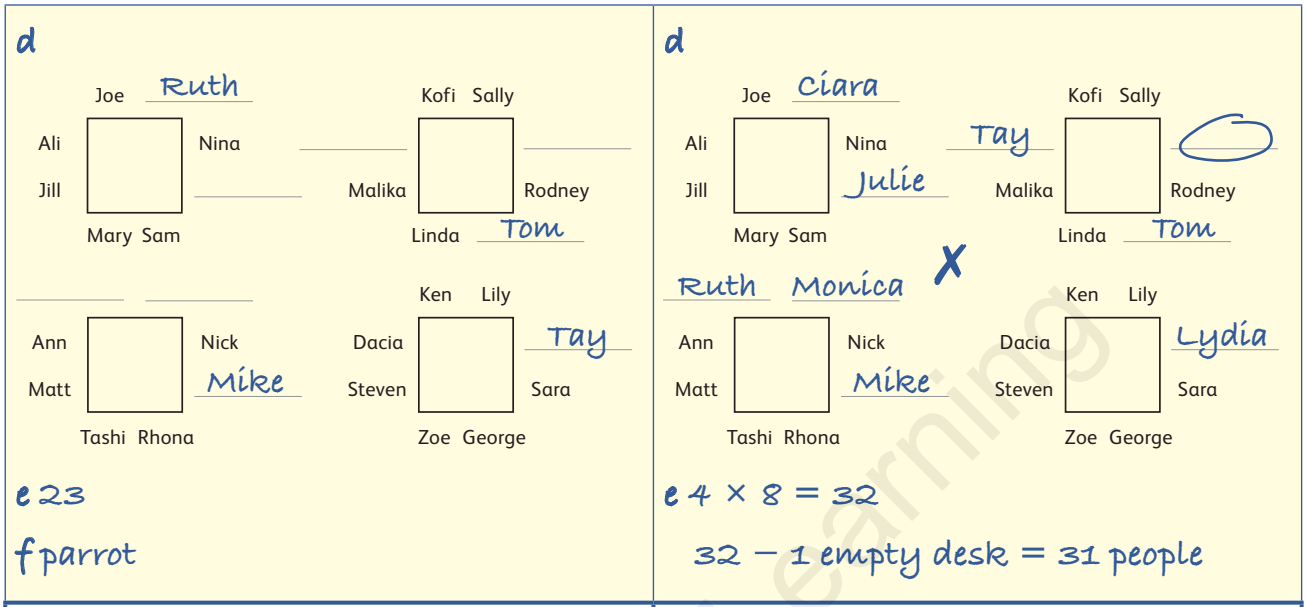
c Each person who signed up for the pencil sketching class is given three different pencils (HB, 3B and 5B). The pencils come in boxes of 12. How many boxes of pencils will the teacher need altogether?

a $17 \times 0.6\text{ m} = 10.2\text{ m}$ b Try 25 and 24 ✗ not 5 more 21 and 28 ✗ not 5 more 23 and 28 One class has 23 and the other has 28 c $49 \times 3 = 147$ pencils $147 \div 12 = 12.25$ boxes of pencils	a They need $17 \times 0.6 = 10.2\text{ m}$ They have 12 m. $12\text{ m} - 10.2\text{ m} = 1.8\text{ m}$ left b $49 - 5$ leaves 44 $\frac{1}{2}$ of $44 = 22$; so one class will have 22 and the other will have $22 + 5 = 27$ c There are three types of pencils and the teacher needs 49 of each type. $4 \times 12 = 48$ pencils. That is not enough. $5 \times 12 = 60$ pencils. This means she needs 5 boxes of each type of pencil. 15 boxes in total.
2 Developing *The student has shown their working but they have not managed to do the calculations correctly.* *In part (a), they forgot to subtract to get the amount left.* *In part (b), the answers don't add up to 49.* *In part (c), they forgot you cannot buy part of a box.*	4 Highly proficient *The student has shown all of their working and all of their answers are correct.*

d Use this information to fill in the missing names on the plan.

e How many people are booked to attend the class?

f Where would you put the parrot so that everyone can see it and draw it? Mark the position on the seating plan diagram with an X.



1 Beginning	4 Highly proficient
The student has not filled in the plan properly and all the names they have written are in the wrong place. *In part (e), they counted the names on the plan already (23).* *They did not show where the parrot should go on the plan.*	*The student has shown all the names on the plan in the correct places and has put a circle to show one place is empty.* *They have done a calculation to work out the number of people and subtracted the empty desk to get the right answer.* *They have a good position for the parrot in the middle of the room.*

Question 5

a Suresh sold 320 tickets in the first week. What was the last ticket number he sold?

b After Suresh sold all the tickets for this term, the first ticket on the roll was 5 472. How many tickets were sold altogether?

c $\frac{3}{5}$ of the tickets were adult tickets. How much money did Suresh take in ticket sales?

a 5050 b 5472 − 4732 = 742 tickets c $\frac{1}{5}$ is 740 ÷ 5 = 148 $\frac{3}{5}$ is 3 × 148 = 444 adults 444 × 350 = $155 400 $\frac{2}{5}$ is 2 × 148 = 296 children 296 × 140 = $41 440	a 4732 + 320 = 5052 b 5472 − 4732 = 740 tickets c 740 ÷ 5 = 148 = $\frac{1}{5}$ 3 × 148 = 444 adults; 444 × 350 = $155 400 2 × 148 = 296 children; 296 × 140 = $41 400 $155 400 + $41 440 = $196 400
2 Developing *The student has shown some working out but they have not managed to get all the answers correct.* *In part (a), they got close to the answer, but they didn't show their working so they cannot get full credit.* *In part (b), they miscalculated, but they get credit for showing the right calculation.* *In part (c), they forgot to add the totals together to get the answer.*	3 Proficient *The student showed all their working and they got the correct answers in parts (a) and (b).* *In part (c), they made two careless errors so they did not get the right answer, but they get credit because they worked correctly.*

d Analyse the graph and write suggestions to help the committee decide what opening hours they should have for the next term's exhibition. Give reasons for your suggestions.

I think they should have the same opening hours because there were people at all the times.	I think next year they should consider opening on Saturday from 11:30 a.m. to 18:00 p.m. and on Sunday from 11:30 a.m. to 16.30 p.m. On Saturday and Sunday, very few people attended before 11:30 a.m., so you would not lose many visitors if you opened a bit later. On Sunday, very few people attended after 16:30 p.m., so you could close earlier on a Sunday (maybe people have to get to church or prepare for Monday morning). I also suggest that you stay open a half-hour longer on Saturday as early evening was the busiest time and people can attend later on Saturdays.
2 Developing *The student has made a suggestion and given a reason but they have not taken the number of people at different times into account.*	4 Highly proficient *The student has given their suggested opening hours very clearly. Then they have given detailed reasons for each of the changes that they have suggested.*

JAMAICA

PEP Mathematics

GRADE 5

Performance Task Practice Papers

SAMPLE

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