



New York State Testing Program

Mathematics

Scoring Guide for Sample Test 2005

Grade 3

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Strand and Performance Indicator Map with Answer Key

Grade 3, Book 1					
Question	Type	Points	Strand	Content Performance Indicator	Answer Key
1	Multiple Choice	1	Number Sense and Operations	3.N.2	B
2	Multiple Choice	1	Number Sense and Operations	3.N.16	F
3	Multiple Choice	1	Measurement	3.M.7	A
4	Multiple Choice	1	Number Sense and Operations	3.N.25	G
5	Multiple Choice	1	Number Sense and Operations	3.N.6	D
6	Multiple Choice	1	Measurement	3.M.2	H
7	Multiple Choice	1	Algebra	3.A.2	C
8	Multiple Choice	1	Measurement	3.M.2	G
9	Multiple Choice	1	Geometry	3.G.1	D
10	Multiple Choice	1	Algebra	3.A.2	F
11	Multiple Choice	1	Number Sense and Operations	3.N.18	D
12	Multiple Choice	1	Number Sense and Operations	3.N.18	G
13	Multiple Choice	1	Number Sense and Operations	3.N.22	D
14	Multiple Choice	1	Number Sense and Operations	3.N.27	H
15	Multiple Choice	1	Number Sense and Operations	3.N.10	C
16	Multiple Choice	1	Algebra	3.A.1	F
17	Multiple Choice	1	Number Sense and Operations	3.N.3	C
18	Multiple Choice	1	Geometry	3.G.4	H
19	Multiple Choice	1	Measurement	3.M.9	A
20	Multiple Choice	1	Number Sense and Operations	3.N.4	H
21	Multiple Choice	1	Number Sense and Operations	3.N.19	C
22	Multiple Choice	1	Number Sense and Operations	3.N.13	G
23	Multiple Choice	1	Measurement	3.M.1	C
24	Multiple Choice	1	Geometry	3.G.3	J
25	Multiple Choice	1	Statistics and Probability	3.S.7	B

Strand and Performance Indicator Map with Answer Key

Grade 3, Book 2					
Question	Type	Points	Strand	Content Performance Indicator	Answer Key
26	Short Response	2	Number Sense and Operations	3.N.18	n/a
27	Short Response	2	Statistics and Probability	3.S.5	n/a
28	Extended Response	3	Number Sense and Operations	3.N.21	n/a
29	Short Response	2	Geometry	3.G.5	n/a
30	Extended Response	3	Statistics and Probability	3.S.5	n/a
31	Short Response	2	Algebra	3.A.2	n/a

2-Point Holistic Rubric

Score Points:

2 Points	<p>A two-point response is complete and correct.</p> <p>This response</p> <ul style="list-style-type: none">• demonstrates a thorough understanding of the mathematical concepts and/or procedures embodied in the task• indicates that the student has completed the task correctly, using mathematically sound procedures• contains clear, complete explanations and/or adequate work when required
1 Point	<p>A one-point response is only partially correct.</p> <p>This response</p> <ul style="list-style-type: none">• indicates that the student has demonstrated only a partial understanding of the mathematical concepts and/or procedures embodied in the task• addresses some elements of the task correctly but may be incomplete or contain some procedural or conceptual flaws• may contain an incorrect solution but applies a mathematically appropriate process• may contain a correct numerical answer but required work is not provided
0 Points	<p>A zero-point response is incorrect, irrelevant, incoherent, or contains a correct response arrived at using an obviously incorrect procedure. Although some parts may contain correct mathematical procedures, holistically they are not sufficient to demonstrate even a limited understanding of the mathematical concepts embodied in the task.</p>

Condition Code A

Condition Code A is applied whenever a student who is present for a test session leaves an entire open-ended item in that session blank (no response).

3-Point Holistic Rubric

Score Points:

3 Points	<p>A three-point response is complete and correct.</p> <p>This response</p> <ul style="list-style-type: none">• demonstrates a thorough understanding of the mathematical concepts and/or procedures embodied in the task• indicates that the student has completed the task correctly, using mathematically sound procedures• contains clear, complete explanations and/or adequate work when required
2 Points	<p>A two-point response is partially correct.</p> <p>This response</p> <ul style="list-style-type: none">• demonstrates partial understanding of the mathematical concepts and/or procedures embodied in the task• addresses most aspects of the task, using mathematically sound procedures• may contain an incorrect solution but provides complete procedures, reasoning, and/or explanations• may reflect some misunderstanding of the underlying mathematical concepts and/or procedures
1 Point	<p>A one-point response is incomplete and exhibits many flaws but is not completely incorrect.</p> <p>This response</p> <ul style="list-style-type: none">• demonstrates only a limited understanding of the mathematical concepts and/or procedures embodied in the task• may address some elements of the task correctly but reaches an inadequate solution and/or provides reasoning that is faulty or incomplete• exhibits multiple flaws related to a misunderstanding of important aspects of the task, misuse of mathematical procedures, or faulty mathematical reasoning• reflects a lack of essential understanding of the underlying mathematical concepts• may contain a correct numerical answer but required work is not provided
0 Points	<p>A zero-point response is incorrect, irrelevant, incoherent, or contains a correct response arrived at using an obviously incorrect procedure. Although some parts may contain correct mathematical procedures, holistically they are not sufficient to demonstrate even a limited understanding of the mathematical concepts embodied in the task.</p>

Scoring Policies for Mathematics

1. If the question does **not** specifically direct students to show their work, teachers may **not** score any work that the student shows.
2. If the student does the work in other than a designated “Show your work” area, that work may still be scored.
3. If the question requires students to show their work, and the student shows appropriate work and clearly identifies a correct answer but fails to write that answer in the answer blank, the student should still receive full credit.
4. If the question requires students to show their work, and a student shows appropriate work and arrives at the correct answer but writes an incorrect answer in the answer blank, the student may **not** receive full credit.
5. If the student provides one legible response (and one response only), teachers should score the response, even if it has been crossed out.
6. If the student has written more than one response but has crossed some out, teachers should score only the response that has not been crossed out.
7. For questions in which students use a trial-and-error (guess-and-check) process, evidence of three rounds of trial-and-error must be present for the student to receive credit for the process. Trial-and-error items are **not** subject to Scoring Policy #6, since crossing out is part of the trial-and-error process.
8. If a response shows repeated occurrences of the same conceptual error within a question, the student should not be penalized more than once.
9. In questions that provide ruled lines for the students to write an explanation of their work, mathematical work shown elsewhere on the page may be considered and scored if, and only if, the student explicitly points to the work as part of the answer.
10. Responses containing a conceptual error may **not** receive more than fifty percent of the maximum score.
11. In all questions that provide a response space for one numerical answer and require work to be shown, if the correct numerical answer is provided but no work is shown, the score is 1.
12. In all questions that provide response spaces for two numerical answers and require work to be shown for both parts, if one correct numerical answer is provided but no work is shown in either part, the score is 0. If two correct numerical answers are provided but no work is shown in either part, the score is 1.
13. In all 3-point questions that provide response spaces for two numerical answers and require work to be shown in one part, if two correct numerical answers are provided but no work is shown, the score is 2.

Content-Specific Scoring Clarifications for Mathematics Tests

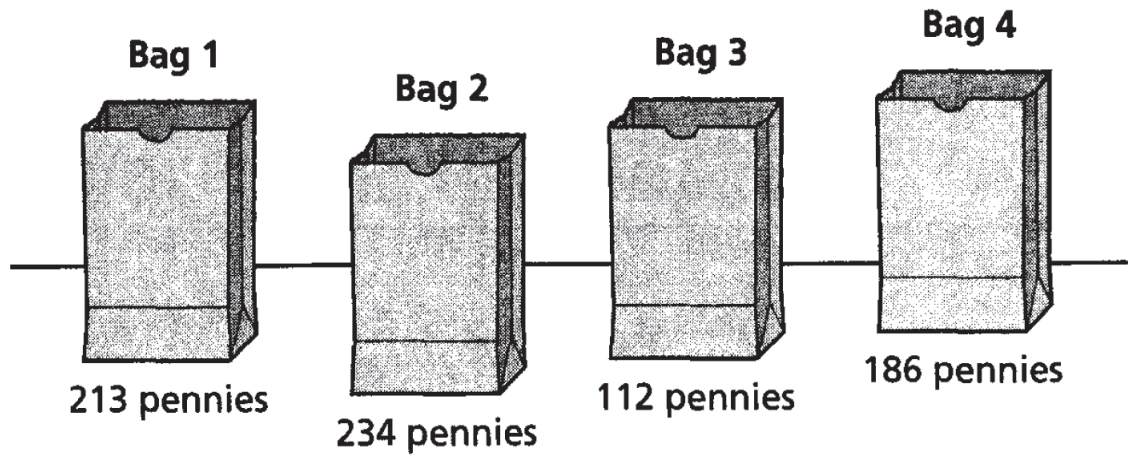
1. All necessary signs of operation should be present for work to be considered mathematically complete and correct. If signs of operation in the work shown are missing and it is absolutely clear and apparent in the student's work which operation is being used, and all other work required is correct, the student should receive full credit.
2. In questions that require students to provide bar graphs, touching bars are acceptable only at Grades 3 and 4.
3. If the question asks the student to provide an expression and the student provides an equation, this is an acceptable response at Grades 3 and 4 only.

For additional clarification, see the web site <http://www.emsc.nysed.gov/ciai/mst/instructrec.htm>.

26

Megan saved the four bags of pennies shown below.

MEGAN'S PENNIES



What is the total number of pennies Megan saved?

Show your work.

Answer _____ pennies

QUESTION 26

STRAND 1: NUMBER SENSE AND OPERATIONS

Complete and Correct Response:

- $213 + 234 + 112 + 186 = 745$

OR other valid response

AND

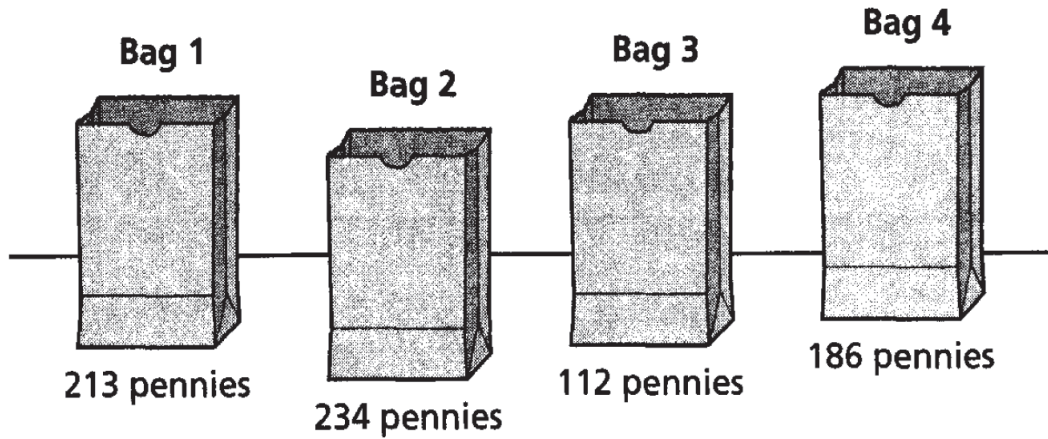
- 745 (pennies)

Score Points:

Apply 2-point holistic rubric.

26

Megan saved the four bags of pennies shown below.

MEGAN'S PENNIES

What is the total number of pennies Megan saved?

Show your work.

$$\begin{array}{r} 213 \\ 234 \\ 112 \\ +186 \\ \hline 745 \text{ pennies} \end{array}$$

Answer 745 pennies

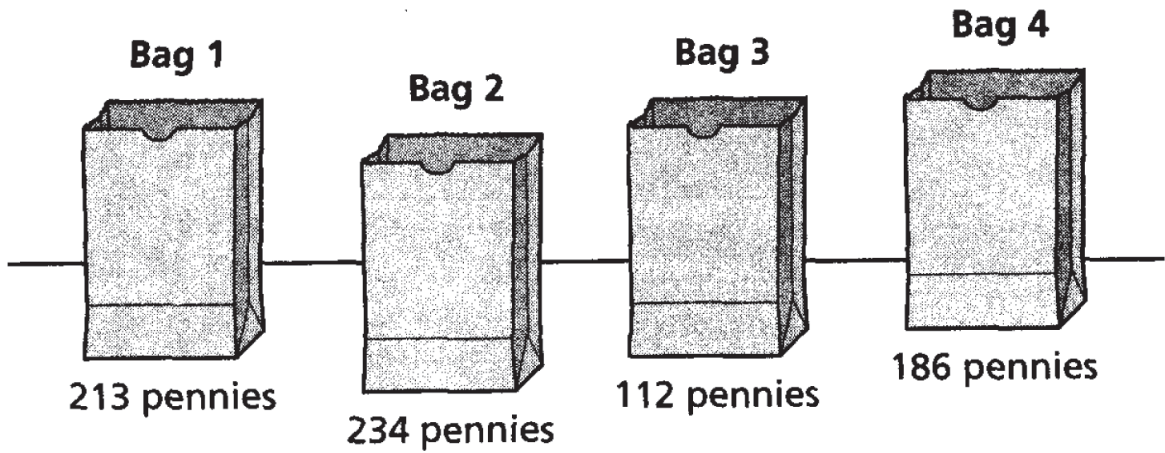
This response is complete and correct.

Score Point - 2

26

Megan saved the four bags of pennies shown below.

MEGAN'S PENNIES



What is the total number of pennies Megan saved?

755

Show your work.

$$\begin{array}{r} 112 \\ 186 \\ 213 \\ + 234 \\ \hline 755 \end{array}$$

Answer 755 pennies

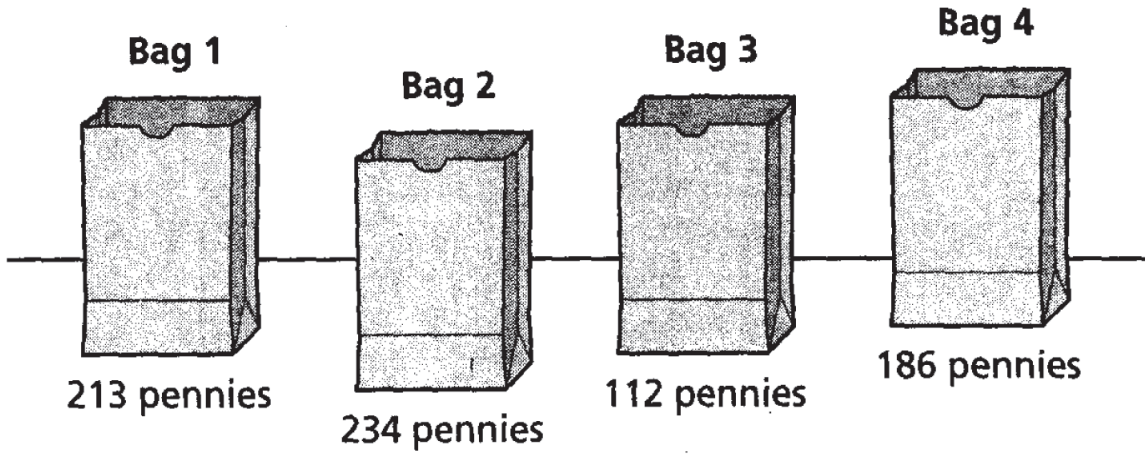
This response is only partially correct.

Score Point - 1

26

Megan saved the four bags of pennies shown below.

MEGAN'S PENNIES



What is the total number of pennies Megan saved?

Show your work.

Answer 749 pennies

This response is completely incorrect. No work is provided and the answer is incorrect.

Score Point - 0

27

Four students made paper airplanes for a class project. The table below shows the number of paper airplanes each student made.

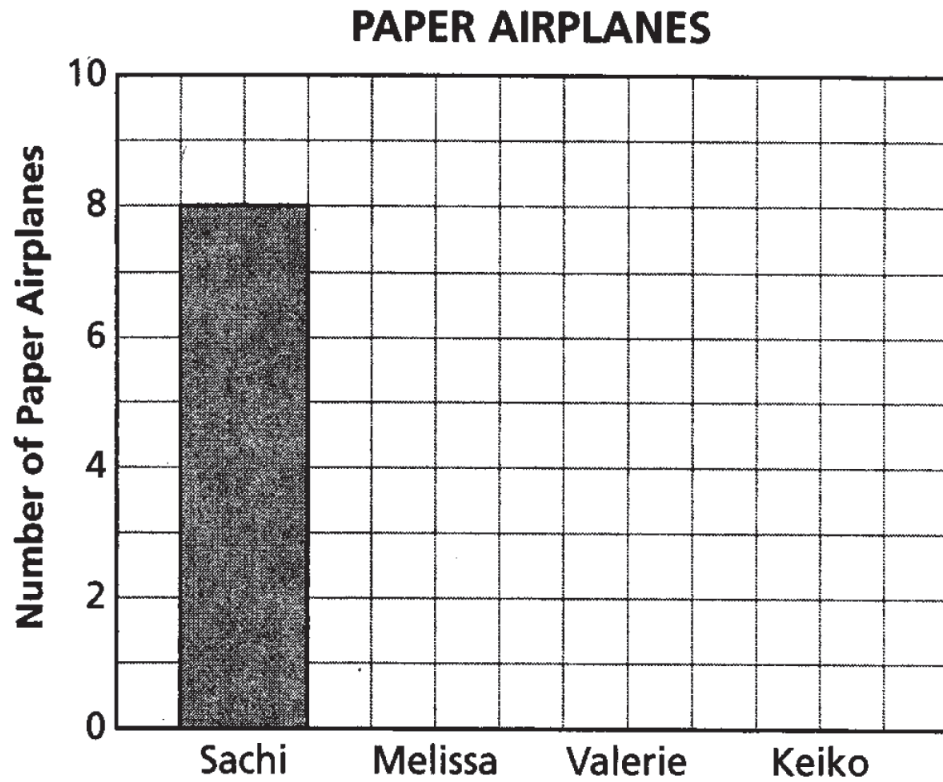
PAPER AIRPLANES

Student	Number of Paper Airplanes
Sachi	8
Melissa	6
Valerie	5
Keiko	7

Complete the bar graph below to show the number of paper airplanes each student made. Sachi's bar has already been drawn for you.

Be sure to

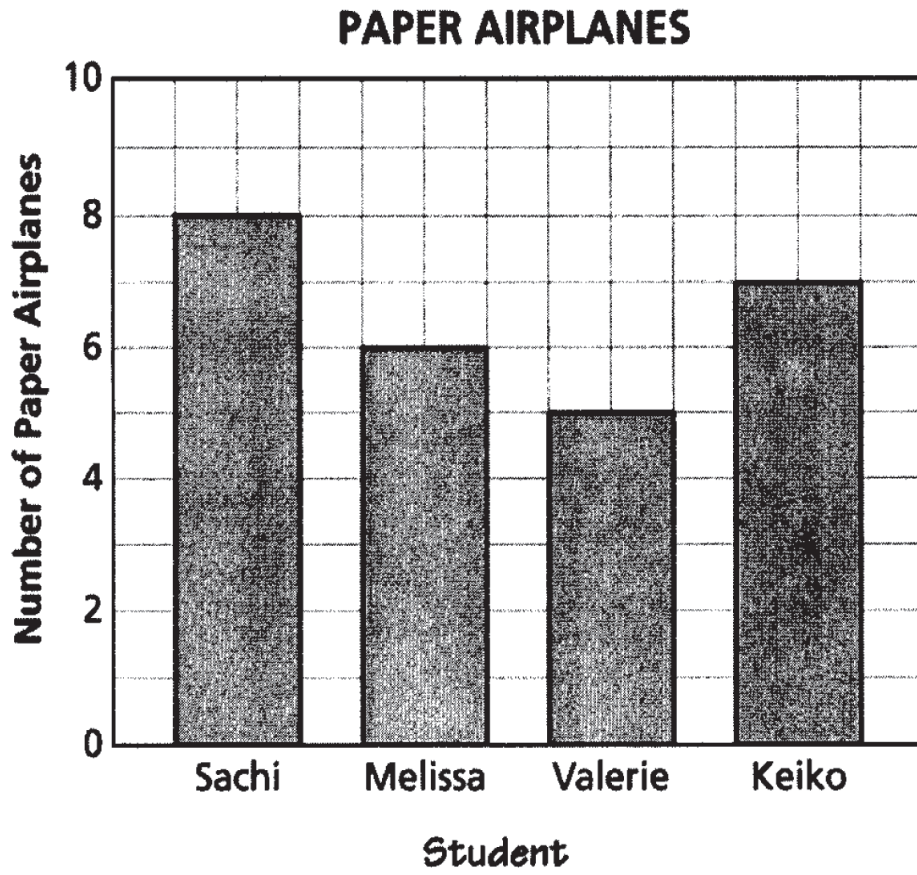
- label the blank axis
- graph all the data



QUESTION 27

STRAND 5: STATISTICS AND PROBABILITY

Complete and Correct Response:



OR other valid response

Score Points:

Apply 2-point holistic rubric.

27

Four students made paper airplanes for a class project. The table below shows the number of paper airplanes each student made.

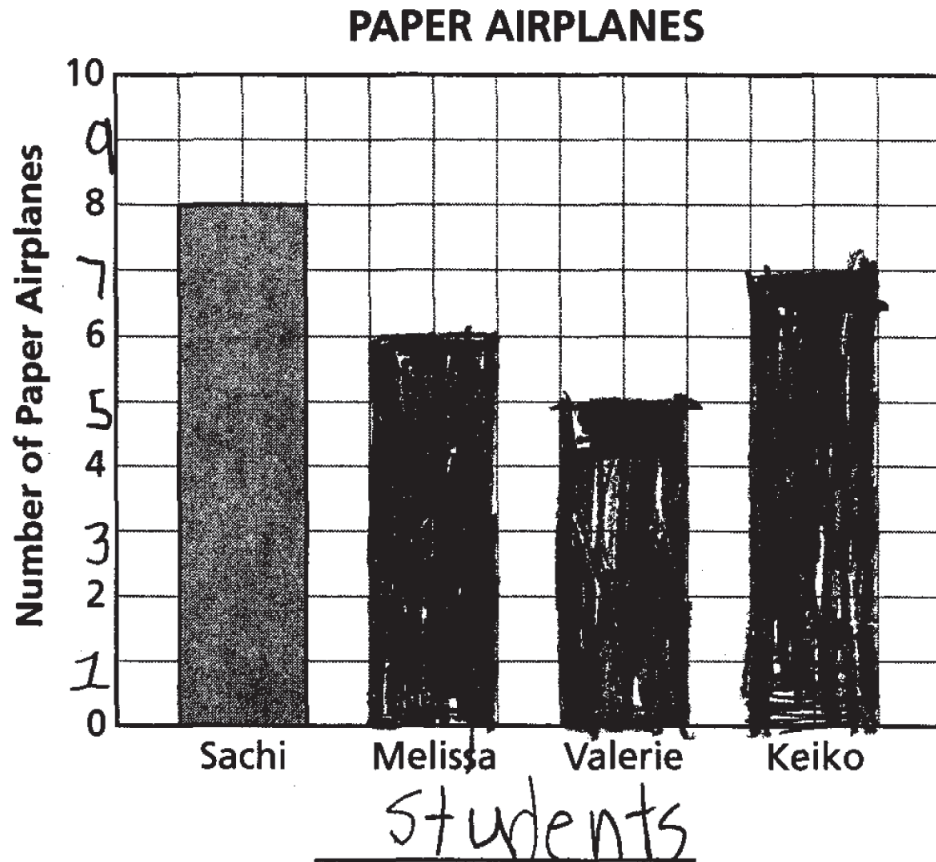
PAPER AIRPLANES

Student	Number of Paper Airplanes
Sachi	8
Melissa	6
Valerie	5
Keiko	7

Complete the bar graph below to show the number of paper airplanes each student made. Sachi's bar has already been drawn for you.

Be sure to

- label the blank axis
- graph all the data



This response is complete and correct.

Score Point - 2

27

Four students made paper airplanes for a class project. The table below shows the number of paper airplanes each student made.

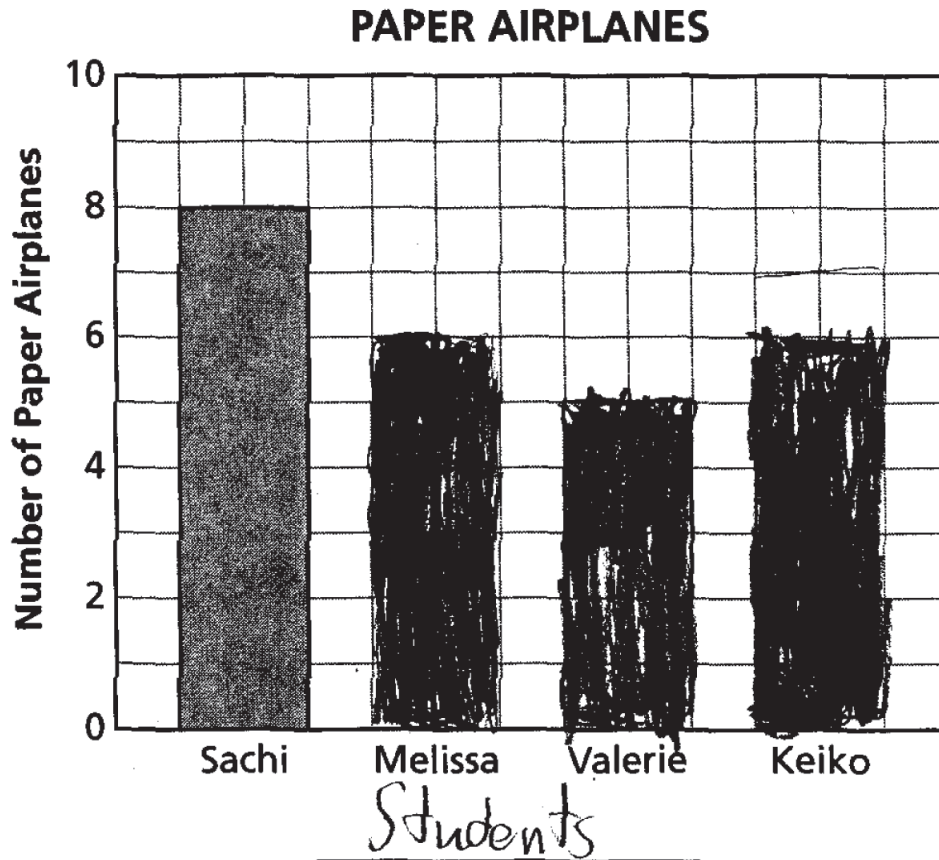
PAPER AIRPLANES

Student	Number of Paper Airplanes
Sachi	8
Melissa	6
Valerie	5
Keiko	7

Complete the bar graph below to show the number of paper airplanes each student made. Sachi's bar has already been drawn for you.

Be sure to

- label the blank axis
- graph all the data



This response addresses most aspects of the task. However, one of the bars is graphed incorrectly.

Score Point - 1

27

Four students made paper airplanes for a class project. The table below shows the number of paper airplanes each student made.

PAPER AIRPLANES

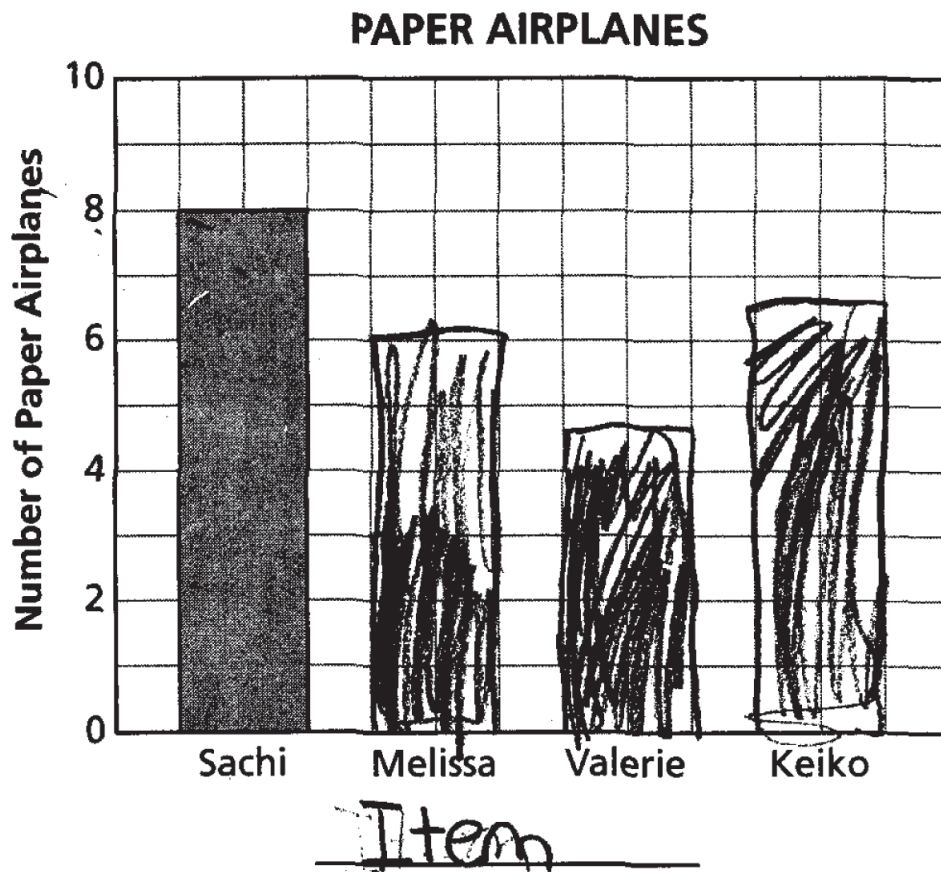
Student	Number of Paper Airplanes
Sachi	8
Melissa	6
Valerie	5
Keiko	7

Sachi 8
Melissa 6
Valerie 5
Keiko 7

Complete the bar graph below to show the number of paper airplanes each student made. Sachi's bar has already been drawn for you.

Be sure to

- label the blank axis
- graph all the data



This response is incorrect.

Score Point - 0

28

Luis counts the total number of ducks swimming on a pond each day. On Monday, he counts 1 duck. On Tuesday, he counts 2 ducks. On Wednesday, he counts 4 ducks. On Thursday, he counts 8 ducks.

Part A

If the pattern continues, how many ducks will Luis count on Saturday?

Show your work.

Answer _____ ducks

Part B

On the lines below, describe the pattern you used to find your answer.

QUESTION 28

STRAND 1: NUMBER SENSE AND OPERATIONS

Complete and Correct Response:

Part A

- $8 + 8 = 16$
 $16 + 16 = 32$

OR other valid response

AND

- 32 (ducks)

AND

Part B

- Each day there are twice as many ducks as the day before.
OR other valid response

Score Points:

Apply 3-point holistic rubric.

28

Luis counts the total number of ducks swimming on a pond each day. On Monday, he counts 1 duck. On Tuesday, he counts 2 ducks. On Wednesday, he counts 4 ducks. On Thursday, he counts 8 ducks.

Part A

If the pattern continues, how many ducks will Luis count on Saturday?

Show your work.

Answer 32 ducks

8 Thursday
+ 8
16 Friday
+ 16
32 Saturday

Part B

On the lines below, describe the pattern you used to find your answer.

The next day is just the number from yesterday doubled.

This response is complete and correct.

Score Point - 3

28

Luis counts the total number of ducks swimming on a pond each day. On Monday, he counts 1 duck. On Tuesday, he counts 2 ducks. On Wednesday, he counts 4 ducks. On Thursday, he counts 8 ducks.

Part A

✓ If the pattern continues, how many ducks will Luis count on Saturday?

Show your work.

M	T	W	T	F	S
$1x$	$2x$	$4x$	$8x$	$16x$	$42x$
$\frac{2}{2}$	$\frac{2}{4}$	$\frac{3}{8}$	$\frac{2}{16}$	$\frac{2}{42}$	$\frac{2}{84}$

Answer 84 ducks

Part B

✓ On the lines below, describe the pattern you used to find your answer.

The number of ducks each day
is multiplied by 2.

This response addresses most aspects of the task correctly. The work shown in Part A demonstrates the mathematically sound procedure of multiplying the number of ducks counted each day by two. However, there is a procedural flaw in that when Monday's one duck was multiplied by two, the two was used as the total for Monday instead of as the total for Tuesday. There is also a minor calculation error for Friday. The explanation in Part B is correct.

Score Point - 2

28

Luis counts the total number of ducks swimming on a pond each day. On Monday, he counts 1 duck. On Tuesday, he counts 2 ducks. On Wednesday, he counts 4 ducks. On Thursday, he counts 8 ducks.

Part A

If the pattern continues, how many ducks will Luis count on Saturday?

Show your work.

$$\begin{array}{r} 16 \\ +16 \\ \hline 32 \end{array}$$

Answer 32 ducks

Part B

On the lines below, describe the pattern you used to find your answer.

I just kept on adding
the number of ducks
He counted every day.

This response is incomplete and exhibits flaws but is not completely incorrect. The correct answer is given in Part A. However, the source of the number 16 is not shown in the work. The explanation in Part B is incorrect.

Score Point - 1

28

Luis counts the total number of ducks swimming on a pond each day. On Monday, he counts 1 duck. On Tuesday, he counts 2 ducks. On Wednesday, he counts 4 ducks. On Thursday, he counts 8 ducks.

Part A

If the pattern continues, how many ducks will Luis count on Saturday?

Show your work.

Mon 1
Tues 2
Wed. 4
Thurs. 8
Friday 9
Saturday. 13

Answer 13 ducks

Part B

On the lines below, describe the pattern you used to find your answer.

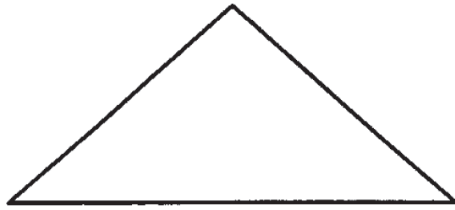
I found the pattern by the days
in the week Mon. 1 Tues 2 Wed 4
Thurs 8 Friday 9 Sat. 13

This response is incorrect and is not sufficient to demonstrate even a limited understanding of the mathematical concepts embodied in this task.

Score Point - 0

29

Jeb drew the two shapes below. One shape has only 1 line of symmetry, and the other shape has 2 lines of symmetry.



Part A

Draw the line of symmetry on the shape that has only 1 line of symmetry.

Part B

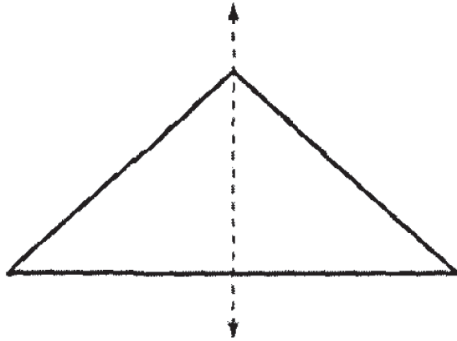
Draw the 2 lines of symmetry on the shape that has 2 lines of symmetry.

QUESTION 29

STRAND 3: GEOMETRY

Complete and Correct Response:

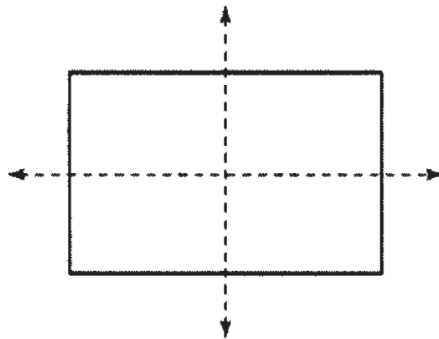
Part A



OR other valid response

AND

Part B



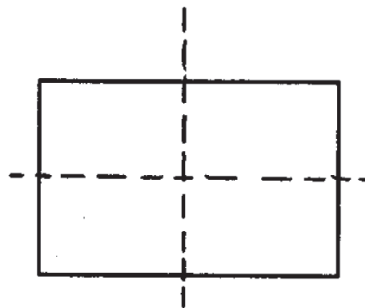
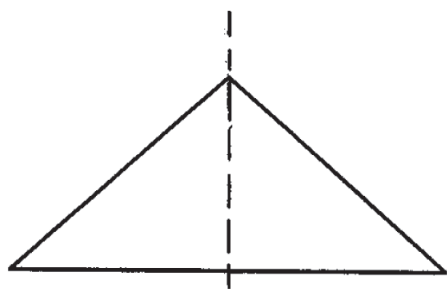
OR other valid response

Score Points:

Apply 2-point holistic rubric.

29

Jeb drew the two shapes below. One shape has only 1 line of symmetry, and the other shape has 2 lines of symmetry.



Part A

Draw the line of symmetry on the shape that has only 1 line of symmetry.

Part B

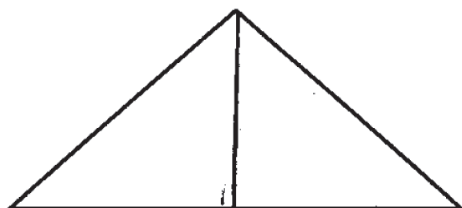
Draw the 2 lines of symmetry on the shape that has 2 lines of symmetry.

This response is complete and correct.

Score Point - 2

29

Jeb drew the two shapes below. One shape has only 1 line of symmetry, and the other shape has 2 lines of symmetry.



Part A

Draw the line of symmetry on the shape that has only 1 line of symmetry.

Part B

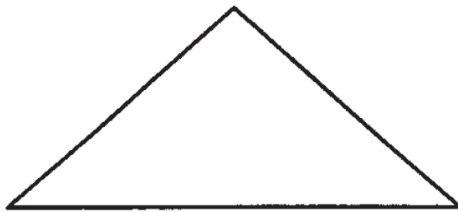
Draw the 2 lines of symmetry on the shape that has 2 lines of symmetry.

This response is only partially correct. Part A is correct. However, Part B is incomplete.

Score Point - 1

29

Jeb drew the two shapes below. One shape has only 1 line of symmetry, and the other shape has 2 lines of symmetry.

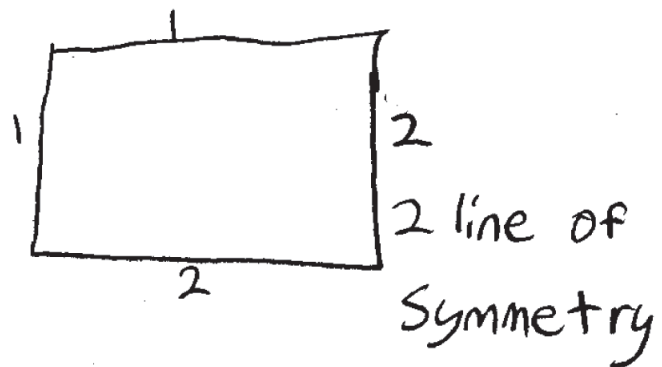
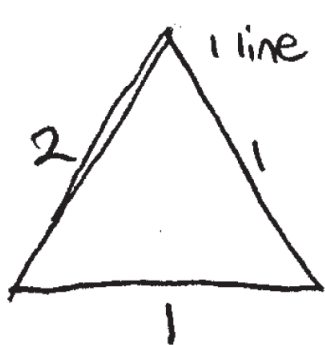


Part A

Draw the line of symmetry on the shape that has only 1 line of symmetry.

Part B

Draw the 2 lines of symmetry on the shape that has 2 lines of symmetry.



This response is incorrect. No lines of symmetry have been drawn on either shape.

Score Point - 0

30

The table below shows the number of seashells four students found at the beach.

SEASHELLS FOUND

Name	Number of Seashells
José	10
Ivan	8
Gillian	12
Marta	6


Part A

Use the information in the table to complete the pictograph below.

SEASHELLS FOUND

Name	Number of Seashells
José	
Ivan	
Gillian	
Marta	

KEY

Each  = 2 seashells

Part B

What is the total number of seashells the four students found?

Answer _____ seashells





QUESTION 30


STRAND 5: STATISTICS AND PROBABILITY

Complete and Correct Response:

Part A

SEASHELLS FOUND

Name	Number of Seashells
José	
Ivan	
Gillian	
Marta	

KEY
Each  = 2 seashells

OR other valid response

AND

Part B

- 36 (seashells)

Score Points:

Apply 3-point holistic rubric.

30

The table below shows the number of seashells four students found at the beach.





SEASHELLS FOUND

Name	Number of Seashells
José	10
Ivan	8
Gillian	12
Marta	6


Part A

Use the information in the table to complete the pictograph below.

SEASHELLS FOUND

Name	Number of Seashells
José	
Ivan	
Gillian	
Marta	

KEY

Each  = 2 seashells

Part B

What is the total number of seashells the four students found?

Answer 36 seashells

This response is complete and correct.

Score Point - 3

30

The table below shows the number of seashells four students found at the beach.





SEASHELLS FOUND

Name	Number of Seashells
José	10
Ivan	8
Gillian	12
Marta	6


Part A

Use the information in the table to complete the pictograph below.

SEASHELLS FOUND

Name	Number of Seashells
José	
Ivan	
Gillian	
Marta	

KEY

Each  = 2 seashells

Part B

What is the total number of seashells the four students found?

Answer 34 seashells

This response addresses most aspects of the task using mathematically sound procedures. However, one of the amounts in the pictograph is incorrect, resulting in an incorrect answer in Part B.

Score Point - 2

30

The table below shows the number of seashells four students found at the beach.





SEASHELLS FOUND

Name	Number of Seashells
José	10
Ivan	8
Gillian	12
Marta	6


Part A

Use the information in the table to complete the pictograph below.

SEASHELLS FOUND

Name	Number of Seashells
José	
Ivan	
Gillian	
Marta	

KEY

Each  = 2 seashells

Part B

What is the total number of seashells the four students found?

Answer 36 seashells

This response is incomplete and exhibits many flaws but is not completely incorrect. Although the answer given in Part B is correct, the response in Part A reflects a lack of essential understanding of the underlying mathematical concepts embodied in the task.

Score Point - 1

30

The table below shows the number of seashells four students found at the beach.

SEASHELLS FOUND

Name	Number of Seashells
José	10
Ivan	8
Gillian	12
Marta	6

Part A

Use the information in the table to complete the pictograph below.

SEASHELLS FOUND

Name	Number of Seashells
José	15
Ivan	4
Gillian	6
Marta	3

KEY

Each ○ = 2 seashells

Part B

What is the total number of seashells the four students found?

Answer 18 seashells

$$\begin{array}{r} 6 \\ + 4 \\ \hline 4 \\ 3 \\ \hline 18 \end{array}$$

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts embodied in the task. Numbers are used instead of pictures on the pictograph in Part A and an incorrect answer is given in Part B.

Score Point - 0

31

A toy store uses the pattern below on a banner.



Part A

In the space above, draw shapes to continue the pattern until there are a total of 4 triangles.

Part B

If the pattern continues until there are a total of 6 triangles, how many squares will be in the pattern?

Show your work.

Answer _____ squares

QUESTION 31

STRAND 2: ALGEBRA

Complete and Correct Response:

Part A



AND

Part B

• $6 \times 2 = 12$

OR

• $8 + 4 = 12$

OR other valid response

AND

• 12 (squares)

OR other valid response

Score Points:

Apply 2-point holistic rubric.

31

A toy store uses the pattern below on a banner.



Part A

In the space above, draw shapes to continue the pattern until there are a total of 4 triangles.

Part B

If the pattern continues until there are a total of 6 triangles, how many squares will be in the pattern?

Show your work.



Answer 12 squares

This response is complete and correct.

Score Point - 2

31

A toy store uses the pattern below on a banner.



Part A

In the space above, draw shapes to continue the pattern until there are a total of 4 triangles.

Part B

If the pattern continues until there are a total of 6 triangles, how many squares will be in the pattern?

Show your work.



Answer 14 squares

This response is only partially correct. Part A shows an accurate continuation of the pattern up to and including a fourth triangle. However, in Part B, the pattern was continued to seven triangles instead of six and no mathematical procedure is shown for counting up the squares. An incorrect answer is also given.

Score Point - 1

31

A toy store uses the pattern below on a banner.

**Part A**

In the space above, draw shapes to continue the pattern until there are a total of 4 triangles.

Part B

If the pattern continues until there are a total of 6 triangles, how many squares will be in the pattern?

Show your work.



Answer eight squares

This response is completely incorrect. No work is provided for Part A. The collection of shapes drawn in Part B, along with an incorrect answer, are not sufficient to demonstrate even a limited understanding of the mathematical concepts embodied in the task.

Score Point - 0



Grade 3
Mathematics
Scoring Guide
Sample Test 2005

The McGraw-Hill Companies