

Explicitly Teaching Inferences

1. Based on the facts on page ____, what conclusion can you make?
2. Why is it important that _____?
- 3 After looking at the picture on page ____, what can you know about a _____?

Explicitly Teaching Critical Literacy

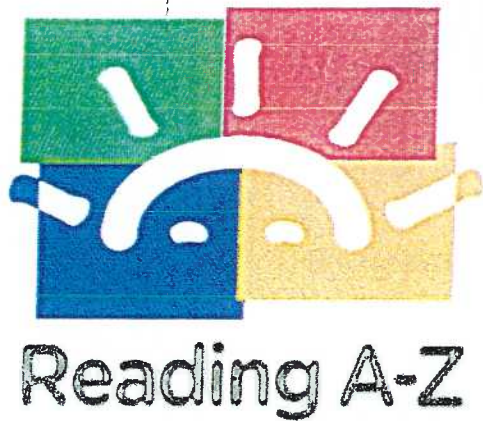
1. What was the author's purpose in writing this story?
2. Where can you find the author's purpose? (It is always the main idea in the first paragraph on the first page)
3. Why is writing about this topic important?
4. Was the story difficult to understand? Why or why not?

Explicitly Teaching Creative Literacy

1. Can you tell me about a time when _____?
2. Can you tell me about a _____ you have seen?
3. If you were going to write this story how would you chose to end it?
Why would you chose that ending?
4. What other information could the author have given the audience? Why would that information be important to know?

Teaching Visual Literacy Skills

Visual literacy is the ability to evaluate, apply, or create conceptual visual representations. Skills include the evaluation of advantages and disadvantages of visual representations, to improve shortcomings, to use them to create and communicate knowledge, or to devise new ways of representing insights.



FLUENCY STANDARDS TABLE

Recommended reading rates, or words read per minute, for grades one through six were examined from three separate research studies. The findings of these studies were used by Reading A-Z to establish an average early and end reading rate per grade level. Your student's reading rates can be compared to these average rates as a way to determine whether they are making progress in their ability to recognize words automatically. The comparison can also be used to determine whether a student's reading rate is near the grade level standard. For example, a beginning third grade student with a reading rate of 110 WPM can be considered on level. However, a third grade student with a reading rate of 60 WPM is recognizing words at a rate similar to a first grader and will likely need additional instructional support to increase his or her reading rate.

READING A-Z RECOMMENDATIONS WORDS PER MINUTE (WPM)

GRADE	BEGINNING RATE	MID-YEAR RATE	END RATE
1	50	60	70
2	70	80	100
3	100	120	130
4	130	135	140
5	140	150	160
6	160	165	170

Grade 4 Narrative

Definition of Narrative

Narratives relate ideas, observations, or recollections about a memorable event or experience. They provide a context for the reader to imagine the world of the event or experience and, whether fiction or real, provide insight into the reasons why the event or experience is memorable. Well-written narratives use sensory details and create characters whose appearance, speech, thoughts, emotions and actions enable readers to accept them as believable within the context of the story.

This guide will focus on **autobiographical incident**, a type of narrative commonly taught and assessed in this grade.

Importance

Narratives that focus on autobiographical incidents allow students to make close observations of people and places. They involve students in the discovery of the most important details which support the re-creation of personal experiences.

Prior Instruction for Writing Narratives

The prior instruction necessary for students to meet the grade level standards in writing requires the implementation of a balanced writing program. This includes daily whole-class demonstrations and instruction (writing aloud, shared writing, interactive writing), frequent individual instruction (guided writing), and daily opportunities to write independently.

Below are suggestions for classroom activities designed to prepare students to meet writing standards, especially those related to writing narratives and, in particular, autobiographical incidents:

Analyze Narrative Writing

Students will better understand the requirements of this assignment if they are first given the opportunity to study the elements of a well-written narrative. Using a sample (easily found in literary anthologies, core literature selections, etc.), point out the following to the students:

Strategies often used to develop character:

- Showing the character in action
- Using dialogue to reveal character traits
- Revealing the character's inner thoughts
- Reporting what other characters say about, and their reactions to, the character
- Revealing the character's relationships with others

It is also important to note the ways in which writers frame stories—through effective use of time and place and by establishing a point of view from which the story is told. They maintain a balance between narrative summaries, dramatized incidents, and descriptions. Writers pace their stories so there is movement in the development of conflict and resolution.

Strategies for pacing include:

- Sequencing (chronological order)
- Foreshadowing
- Flashback
- Withholding information to establish suspense

Write in Past Tense to Relate Memories

Use the following books to teach first person point of view and the use of the past tense:

Picture Books

Linnea in Monet's Garden by Christina Bjork

The Mixed-Up Chameleon by Eric Carle

Thundercake by Patricia Polacco

The True Story of the Three Little Pigs by A. Wolf as told to Jon Scieszka

Chapter Books

By the Great Horn Spoon by Sid Fleischman

Patty Reed's Doll by Rachel K. Laugaard

Identify the Differences Between Tenses

Using examples from narratives, identify the difference between present, past, and future tenses. Students identify these forms in their readings.

Identify Irregular Verb Forms

Using examples from anonymous student papers, identify irregular verb forms (e.g. go, went, will go). Instruct students to identify those forms in their own papers.

Identify Verb Agreement

Photocopy one page from one of the above books. Students use the page to find and highlight the first person pronouns and the past tense verbs.

Improve Verbal Fluency

Introduce graphic organizers as ways to improve fluency. Students brainstorm, list, or cluster ideas for stories, actions of characters, and details of setting.

Improve Textual Cohesiveness

Make transparencies of several anonymous student drafts. Model how to edit the drafts by rearranging text to minimize wordiness and improve the progression and flow of the writing. Students then work with partners or in small groups to rearrange text in the same manner.

Improve Narrative Structure

Students learn to improve narrative quality by identifying and analyzing elements such as setting, characterization, conflict and resolution. Use the picture or chapter books listed above and the Story Frame below (blackline master included in Grade 4 Appendix) to discuss these narrative elements, modeling on an overhead transparency or chart paper, which may be used for future reference.

STORY FRAME for _____

Main Character(s):	Time:
Additional Character(s):	Place:
Conflict:	Resolution of Problem:

Increase Use of Sensory Details

Students improve their skills in writing vivid description by generating sensory details in which they describe the sight, smell, taste, feel, and sound of common objects found in the classroom or in everyday life.

Increase Descriptive Vocabulary

Students brainstorm a list of descriptive, specific synonyms for a commonly used word (e.g. SAID: whispered, screamed, stuttered, etc.). This is also an opportunity for students to practice using a thesaurus.

Expand Range of Action Verbs

Write the word CRAWL and SPRINT on two ends of a continuum, as shown below. Students generate words that describe movements. Students discuss the point at which each word belongs on the continuum in relation to others presented.

CRAWL

WALK

SPRINT

Directions for the Writing Assessment**“An Incident With an Animal”****To the Teacher**

You are encouraged to treat this prompt as a series of class lessons, even though the student work produced may be used to determine if the student has met state standards. These directions provide guidelines, but please use your discretion in walking students through the prompt. If you plan to use the student writing to determine whether the student has met, in part, the grade level standards in writing, then you should conduct the following as consistently as possible throughout your school.

In this assessment document, students are asked to tell about an incident which they have experienced with an animal. They need to describe when and where the incident happened, who was involved and what specifically happened. They should include specific description, sensory details, and explain why this event was memorable.

Once prior instruction has taken place, the three-session assessment process begins, which includes prewriting, writing, and editing. The number of class days involved will vary according to individual teaching situations and preferences.

General Guidelines for Assessing Students

In order to maintain consistency, the following guidelines may be useful:

- Use the same prewriting activities for each trial.
- Follow the directions at each step.
- Do not provide answers to student questions that would directly meet the standards.
- Students may use spelling resources which are regularly available in the classroom (e.g. wall charts, word lists, dictionaries, thesaurus). Students may not use computers or electronic spelling aids.
- Do not allow peer or teacher assistance during the actual writing process.
- Do not allow papers to be taken home during the assessment process.

The following may be adjusted to meet student needs:

- Rephrase the directions for better student understanding.
- Allow students access to their primary language if that will assist in understanding the task.

Materials

Materials included:

- Teacher Instructions
- Prewriting Graphic Organizers
- Student Writing Prompt
- Student Checklist
- Teacher Scoring Guide

To be provided by the teacher and/or student:

- Writing paper
- Writing utensils
- Dictionaries, thesaurus, and other resources regularly used in the classroom

Time Limits

Three sessions are required for the assessment portion of this lesson. These sessions may take place over three days or less, depending on site and teaching considerations. Parts I and II should last no more than 60 minutes each. Part III should last no more than 120 minutes.

Introducing the Assessment

Part I: Prewriting (60 minutes)

The purpose of the prewriting activity is to connect the activities included in the prior instruction component to the actual writing students will do. This portion of the assessment allows students the opportunity to organize their ideas into appropriate form before-writing the actual essay.

Model:

- Using the Prewriting Graphic Organizer below (blackline master included in Grade 4 Appendix), introduce the prompt, discussing as needed for understanding and generating ideas.
- List topic ideas on the board or chart paper.
- Explain the purpose of using the graphic organizer and model the appropriate steps involved in completing the chart.
- Use an example that is unlikely to be used by students (e.g. an encounter with a monkey or tarantula).

Practice:

Once students have seen how to complete the organizer, pass out clean individual copies. Working individually or collaboratively, each student completes his/her own organizer and checks with a partner for clarity, sequencing, and accuracy of ideas.

Apply:

Students revise their graphic organizers as needed to begin transferring that information to the first draft of their narrative autobiographical piece.

Collect all student papers at the end of Part I.

Grade 4 Prewriting Graphic Organizer

Introductory Paragraph
Paragraph 2 <ul style="list-style-type: none"> • Detail • Detail • Detail
Paragraph 3 <ul style="list-style-type: none"> • Detail • Detail • Detail
Paragraph 4 <ul style="list-style-type: none"> • Detail • Detail • Detail
Summary Paragraph

Part II: Writing (60 minutes)

When students are ready to begin their first drafts of the writing prompt, the following steps should be followed:

- Pass out collected papers from Session I.
- Review prewriting ideas as necessary and/or desired.
- Review the writing prompt (included below and in Grade 4 Appendix).
- Explain and clarify the Student Checklist below (blackline master included in Grade 4 Appendix).
- Students write first drafts individually—no outside help is allowed at this point.
- If time allows, students may begin editing and revising their own drafts using dictionaries, thesaurus, other regular classroom resources, and the checklist as guides.

Collect all student papers at the end of Part II.

Grade 4 Student Prompt
“An Incident With an Animal”

Writing Situation

We have all had an experience with an animal at some point in our lives. Some experiences have been interesting, like watching animals at the zoo or seeing them in the wild. Others have been fun, like getting a new puppy. Some have been scary, like being chased by an animal.

Writing Directions

Describe one experience you have had with an animal. Be sure to include:

- when the incident occurred
- where the incident occurred
- who was there during this incident
- what happened

Include all of the sights and sounds that you remember. Also be sure to explain why you remember this event so clearly.

Part III: Editing/Revision and Final Draft (120 minutes)

This final portion of the assessment allows students the time and opportunity to improve their drafts before writing the final pieces. Final drafts will be assessed according to the content standards criteria presented on the **Scoring Guide** attached in this unit (blackline master included in Grade 4 Appendix). This same criteria is outlined on the **Student Checklist** which will be used during this session to focus attention on areas in need of improvement. The steps for completing this portion are:

- Pass out collected papers from Session II.
- Students edit and revise their first drafts using allowable classroom resources and checklist.
- If desired, peer response sessions may also be conducted using this checklist. In that case, clean copies will need to be supplied for each student.
- Students write final drafts legibly in cursive using dark ink.
- When final drafts are complete, students assemble all materials used in the three-session process, stapling final drafts on top, and submit to the teacher.

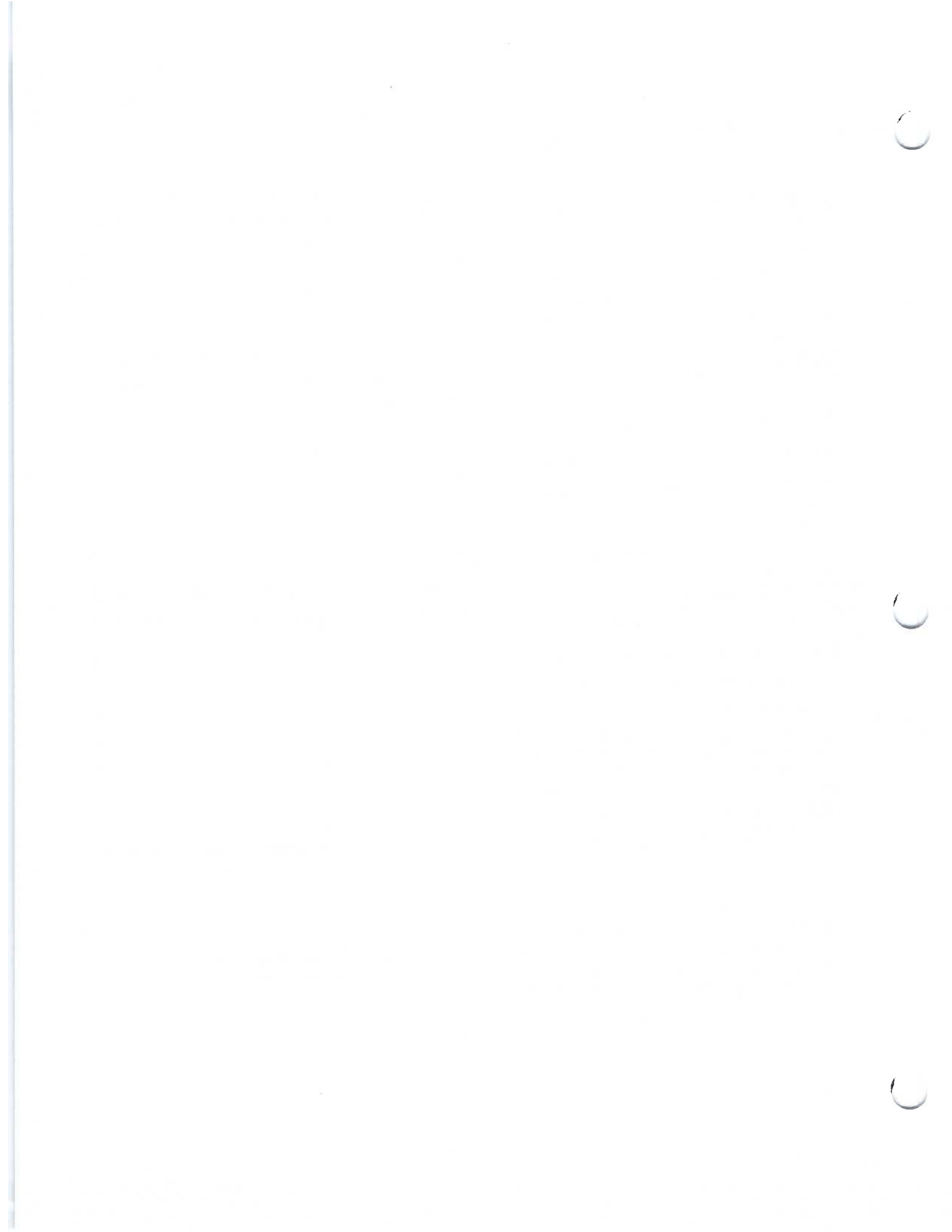
Grade 4 Student Checklist

Blackline master is included in Grade 4 Appendix

Writing Application	Yes	No	Comments
<ul style="list-style-type: none"> • I wrote about just one incident or event. • I described the setting and characters so that the reader can imagine the experience. • I told why it was a memorable event. I used sensory details of things I saw, touched, smelled, and felt. 			
Writing Strategies			
<ul style="list-style-type: none"> • I wrote from my point of view. • I included a beginning, middle, and end. • My introductory paragraph is interesting. • My supporting paragraphs state the facts clearly, give vivid details, and explain exactly what I mean to say. • The paragraphs are linked together with connecting sentences. 			
Writing Conventions			
<ul style="list-style-type: none"> • I wrote in my neatest cursive writing. • I included a variety of sentence structures. • I have correctly worded, complete sentences. • I used correct spelling. • I used correct capitalization, including the first letter of every sentence, proper nouns, and the first word in a quote. • I used correct punctuation including commas, apostrophes, and quotation marks. • I indented each paragraph. 			

Scoring Student Writing

Using the attached four-point scoring guide (blackline master included in Grade 4 Appendix), teachers holistically score student papers in each of three standards-based areas: Writing Applications, Writing Strategies, and Writing Conventions.





LIGHTING THE PATHWAYS TO LEARNING

6+1 Trait[®] Writing

Grades 3-8

Writing Assessment Portal Program

T₁ T₂ T₃



Osteola Adventist Christian School

Name _____

Date _____

Organization	Support
Fluency	Word Choice
Mechanics	Presentation
Overall Development	Mode of Cumulative Record

WRAP Score	OACS Score	Organization	Support	Sentence Fluency	Word Choice	Mechanics	Presentation	Overall Development
6	4	Plan is developed and well followed including the topic, audience, and purpose and an appropriate plan-type. Carefully but subtly organized from beginning to end. Logical order (well sequenced*); Elegant flow of ideas; Provides closure	Supporting details are rich, interesting, and informative throughout; fully developed; Details are relevant and appropriate for the focus	Sentence structures enhance style and effect; Virtually no errors in structure or usage; Successfully uses more sophisticated, varied sentence patterns	Rich, effective vocabulary throughout; Vivid language; May use figurative language and imagery	Very few or no mechanical errors relative to length or complexity	Presentation shows a pride in the quality of work, all letters are neatly on the line and formed correctly with even spacing, correct slant, and the written presentation is attractive and helps readers understand and remember the information.	Fluent, richly developed; Clear awareness of audience and purpose; Distinctive, engaging voice; Original, insightful, or imaginative
5	3	Organized from beginning to end including a plan that is developed with topic, audience, purpose, and plan-type; Logical order (sequenced*); Subtle transitions; Provides closure	Details are strong and varied throughout; Details are relevant and appropriate for the focus	Sentence structures are appropriate to style and effect; Few errors in structure or usage; Moderately successful in using more sophisticated sentence patterns	Effective vocabulary; Generally successful in using rich language	Few mechanical errors relative to length or complexity	Presentation shows basic neatness with no more than two letters formed and spaced in correctly, and overall design of the written presentation helps readers understand the information.	Fluent, fully developed; Clear awareness of audience and purpose; Evidence of voice, compositional risks attempted; Cohesive
4	3	Topic, audience, purpose and plan-type is developed by may not be followed causing minor lapses in order or structure (some breaks in sequencing*); Meaning is subordinate to organizational devices; Contrived transitions; Provides closure	Details are adequate to support the focus; Details are generally relevant to the focus	Some sentence variety; Generally correct structure and usage; Attempts to use more sophisticated sentence patterns	Acceptable vocabulary; Attempts to use rich language; Misuse of bigger grade-level appropriate vocabulary words	Some mechanical errors that do not interfere with communication; Limited text, but mechanically correct	Presentation is readable and basically neat. There are no more than four words spaced incorrectly per line, or four letters per line written incorrectly.	Moderately fluent, adequately developed; Awareness of audience and purpose; Ideas developed but somewhat limited in depth



LIGHTING THE PATHWAYS
TO LEARNING

6+1 Trait[®]
Writing
Grades 3-8

Name _____

Date _____

T₁ T₂ T₃



Oscadia Adventist Christian School



Writing Assessment
Portal Program

WRAP Score OACS Score	Organization	Support	Sentence Fluency	Word Choice	Mechanics	Presentation	Overall Development
3 Paper 2	Lack of planning evident; Poor transitions; andom sequencing*; Attempts closure; Shift in focus	Details lack elaboration; Insufficient relevant details; Important details are omitted	Little sentence variety; Errors in structure or usage interfere with meaning; Over-reliance on simple or repetitive constructions; Chaining; Noticeable errors in usage	Simplistic vocabulary with acceptable but limited word choice; Some errors in word choice	Some mechanical errors that do interfere with communication; Errors are disproportionate to the length or complexity of the piece (errors cause major problems for readers)	60-75% of words, letters, slant, or formation are correct. Presentation is readable, but not particularly neat or of good quality.	Somewhat developed; Some awareness of audience and purpose; Repetitive or too general
2 Paper 1	Lack of planning evident; Thought patterns are difficult to follow; Ideas are not clear or sequenced*; Resembles free-writing, rambling; Continual shifts in focus	Supporting details are listed; Repetitious details; Too few details	No sentence variety; Serious errors in structure or usage; Too brief to demonstrate variety	Simplistic vocabulary with inappropriate and/or incorrect word choice	Noticeable mechanical errors that interfere with communication; Errors are disproportionate to the length or complexity of the piece (errors cause major problems for readers)	About half of the presentation has distracting errors in letter formation, slant, or spacing. The quality of the presentation detracts significantly from readability.	Poorly developed; Poor awareness of audience; or purpose; Ideas and details are not clear
1 Paper 1	Little or no planning; So short or muddled that it lacks organization or focus	Virtually no details; Irrelevant details	Lack of sentence sense; Riddled with errors at the sentence level; Riddled with errors in usage; Too brief to evaluate	Extremely limited vocabulary; Riddled with errors in word choice; Too brief to evaluate	Mechanical errors that seriously interfere with communication; Too brief to evaluate	Letter formation, spacing, slant is imbalanced, cluttered, and shows a lack of pride in the quality of work. The presentation quality interferes with readability.	Not developed; Restates topic; No awareness of audience or purpose; Inappropriate response; Too brief to show development

Assessment for Common Core Mathematics Standards Grade 4

Summary Sheet

Name _____

T₁ T₂ T₃

School _____

Year _____

Teacher _____

0 1 2 3 4 _____ % Number Sense

0 1 2 3 4 _____ % Algebraic Functions & Operations

0 1 2 3 4 _____ % Measurement & Geometry

0 1 2 3 4 _____ % Data, Statistics and Probability

Assessment for Common Core Mathematics Standards Grade 4

Introduction: Summary of Goals

GRADE FOUR

By the end of grade four, students understand large numbers and addition, subtraction, multiplication, and division of whole numbers. They describe and compare simple fractions and decimals. They understand the properties of, and the relationships between, plane geometric figures. They collect, represent, and analyze data to answer questions.

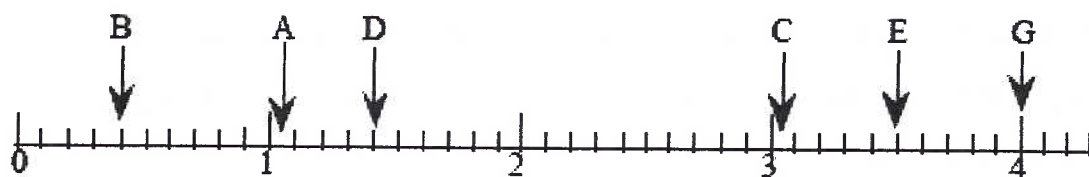
Assessment for Common Core Mathematics Standards Grade 4

Number Sense

NS 1.1 Write as numbers:

- three million two hundred fifty-five thousand _____
- seventy million _____
- eight million two hundred thousand _____
- four million eight hundred sixty-two thousand three hundred ten _____

2 Write the letter that corresponds to each number that represents the quantity on the number line:



- | | | | |
|----------|------|----------|------|
| 1. _____ | 1.04 | 4. _____ | 0.40 |
| 2. _____ | 3.05 | 5. _____ | 3.50 |
| 3. _____ | 4.0 | 6. _____ | 1.4 |

Assessment for Common Core Mathematics Standards Grade 4

NS 1.3

- a. Round off 5,185,924 to the nearest hundred: _____
- b. Round off 5,185,924 to the nearest hundred thousand: _____
- c. Round off 5,185,924 to the nearest thousand: _____

NS 1.4

Buses need to be rented for 27 children going on a field trip. Each bus can take 12 children in addition to the driver. How many buses must be rented?

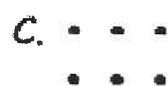
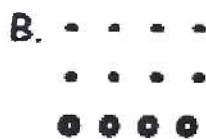
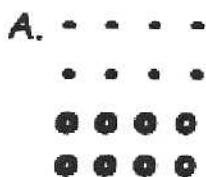
Assessment for Common Core Mathematics Standards Grade 4

NS 1.5

a. Circle the picture below that shows $\frac{3}{4}$ shaded.



b. Circle the picture below in which $\frac{2}{3}$ of the dots are small.



c. Circle True or False

1. $\frac{1}{3} > 2.5$ True False

2. $\frac{5}{2} < 2.7$ True False

3. $\frac{8}{12} = \frac{2}{3}$ True False

4. $\frac{3}{7} < \frac{10}{21}$ True False

Assessment for Common Core Mathematics Standards Grade 4

NS 1.6

Write each fraction or mixed number as a decimal.

a. $\frac{1}{2} =$ _____

d. $\frac{1}{4} =$ _____

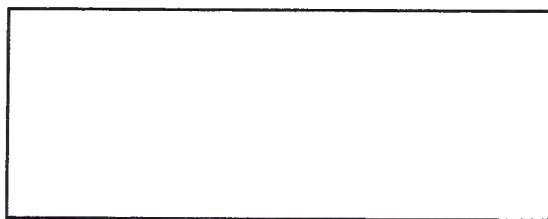
b. $\frac{3}{10} =$ _____

e. $1\frac{25}{100} =$ _____

c. $11\frac{2}{100} =$ _____

NS 1.7

a. Represent the fraction $\frac{3}{5}$ using the figure below.



b. Write the letter that shows where each number goes on the number line:



$1\frac{3}{10}$ _____

0.3 _____

3.0 _____

$3\frac{2}{10}$ _____

NS 1.8

Draw a number line and show -2 on it.

Assessment for Common Core Mathematics Standards Grade 4

NS 1.9 Write the letter that represents where each number would go on the number line:

a. $1\frac{1}{4}$ _____

b. 2.50 _____

c. $\frac{3}{4}$ _____



NS 1.1 a. $14 - 3.21 =$ _____

b. $7.4 + 0.34 + 51 =$ _____

NS 2.2 a. Round 3.19 to the nearest tenth. _____

b. Round 3.19 to the nearest whole number. _____

Assessment for Common Core Mathematics Standards Grade 4

NS 3.1

a. $60,000 - 241 =$ _____

b. $4,863 - 376 =$ _____

NS 3.2

a. $37 \times 302 =$ _____

b. $4 \overline{) 2,416} =$ _____

NS 3.3

There are bags of sand on a truck. Each bag of sand weighs 124 pounds. How many pounds do 38 bags weigh? _____ pounds.

Assessment for Common Core Mathematics Standards Grade 4

NS 3.4

There are 5,064 marbles that need to be packed in boxes. There are 6 boxes. We want to put the same number of marbles in each box. How many marbles will fit into each box? _____

NS 4.1

You know that $1 \times 30 = 30$. List three *other* ways that you can write 30 as the product of two or more numbers:

_____ = 30 _____ = 30 _____ = 30

NS 4.2

List all the prime numbers between 2 and 14:

Assessment for Common Core Mathematics Standards Grade 4

Algebra and Functions

AF 1.1

Tanya has read the first 78 pages of a 130 page book. Write an expression to show the number of pages Tanya must read in order to finish the book. Use a variable in your expression.

AF 1.2

If $x = (a - b) - c$ and a is 10, b is 3 and C is 4, what is the value of x ?

AF 1.3

$28 \times (10 - 8) =$ _____

Assessment for Common Core Mathematics Standards Grade 4

AF 1.4

Area = length \times width.

- a. The length of a rectangle is 10 meters. The width is 4 meters.
What is the area? _____
- b. The area of a rectangle is 200 square meters. The width is 10
meters. What is the length? _____

AF 1.5

Find y if $y = 3x + 5$ and $x = 4$.

$y =$ _____

Assessment for Common Core Mathematics Standards Grade 4

AF 2.1

Circle the statement that is true:

A. $5 + \frac{4}{4} = 5 + (7 - 6)$

B. $5 + \frac{5}{4} = 5 + (5 - 4)$

C. $5 + \frac{4}{4} = 5 + (4 + 4)$

2.2

Circle the statement that is true:

A. $5(3 - 1) = 5 \times 3 - 1$

B. $5(3 - 1) = 5(1 + 1)$

C. $5(3 - 1) = 5 + 3 + 1$

Assessment for Common Core Mathematics Standards Grade 4

Measurement and Geometry

- MG 1.1** Find the area of a rectangle that is 45 cm wide and 55 cm long:
Area _____

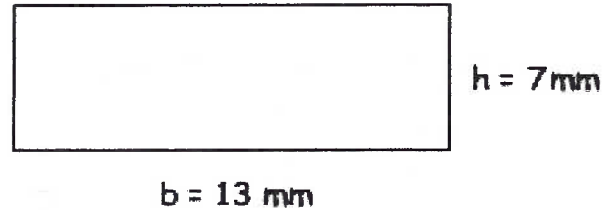
- MG 1.2** Do two rectangles with the same area necessarily have the same perimeter? Give an example to support your answer.

- MG 1.3** Do two different rectangles with the same perimeter necessarily have the same area?

Assessment for Common Core Mathematics Standards Grade 4

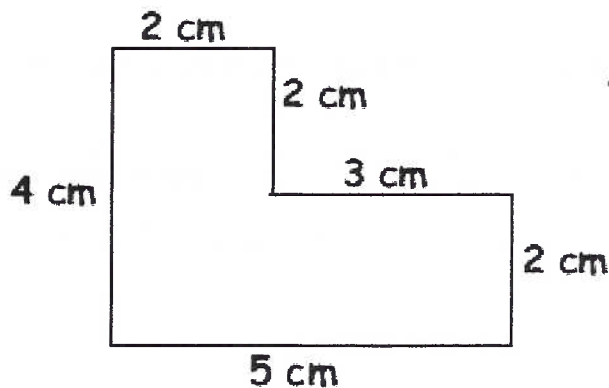
4.NF.1.4

a. Use a formula to find the area of this rectangle.



Area = _____

b. Find the area of the figure below. All angles are right angles.

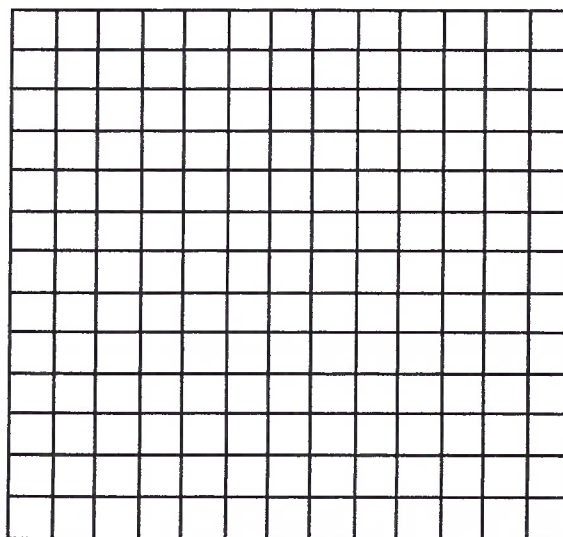


Area = _____

Assessment for Common Core Mathematics Standards Grade 4

MG 2.1

On the graph, draw the first three points for the equation $y = 3x$ using 2, 3 and 4 as the values of x . Connect the points using a straight line.



Assessment for Common Core Mathematics Standards Grade 4

MG 2.9

What is the length of the line segment joining the points $(121, 3)$ to $(121, 17)$? _____

MG 3.1

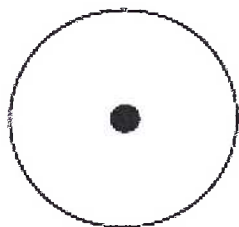
Write the word *parallel* under the lines that are parallel.

Write the word *perpendicular* under the lines that are perpendicular.

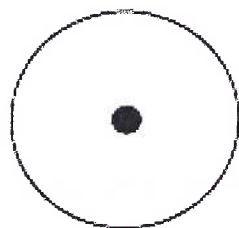


Assessment for Common Core Mathematics Standards Grade 4

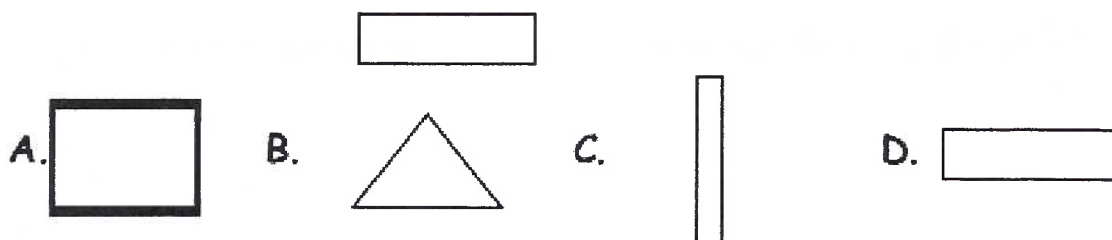
MG 3.2 a. In the circle below, draw a radius:



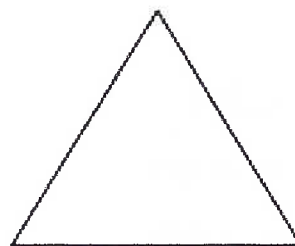
b. In the circle below, draw a diameter:



MG 3.3 Write the letter of the figure that is congruent with this figure:



MG 3.4 Draw two lines of symmetry through the equilateral triangle.



Assessment for Common Core Mathematics Standards Grade 4

MG 3.5

a. An angle of less than 90 degrees is:

- a right angle.
- an acute angle.
- an obtuse angle.

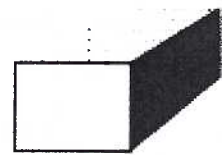
b. An angle of $\frac{1}{4}$ turn is:

- 90°
- 180°
- 270°
- 360°

MG 3.6

a.

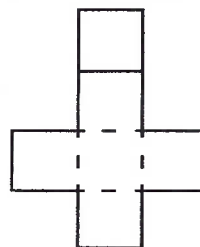
1. How many edges does a rectangular prism have? _____
2. How many vertices does a rectangular prism have? _____



b.

When this flat figure is folded to make a three dimensional figure, the shape will be a:

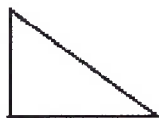
- cube
- pyramid
- cylinder



Assessment for Common Core Mathematics Standards Grade 4

MG 3.7

A.



B.



C.



Match the name with the triangle

Scalene _____

Isosceles _____

Right _____

MG 3.8

Mark each statement as true or false. Explain your answer:

a. All squares are rectangles: ___ T ___ F

b. All rectangles are squares: ___ T ___ F

c. All parallelograms are rectangles: ___ T ___ F

d. Every rhombus is a parallelogram: ___ T ___ F

e. All parallelograms are squares: ___ T ___ F

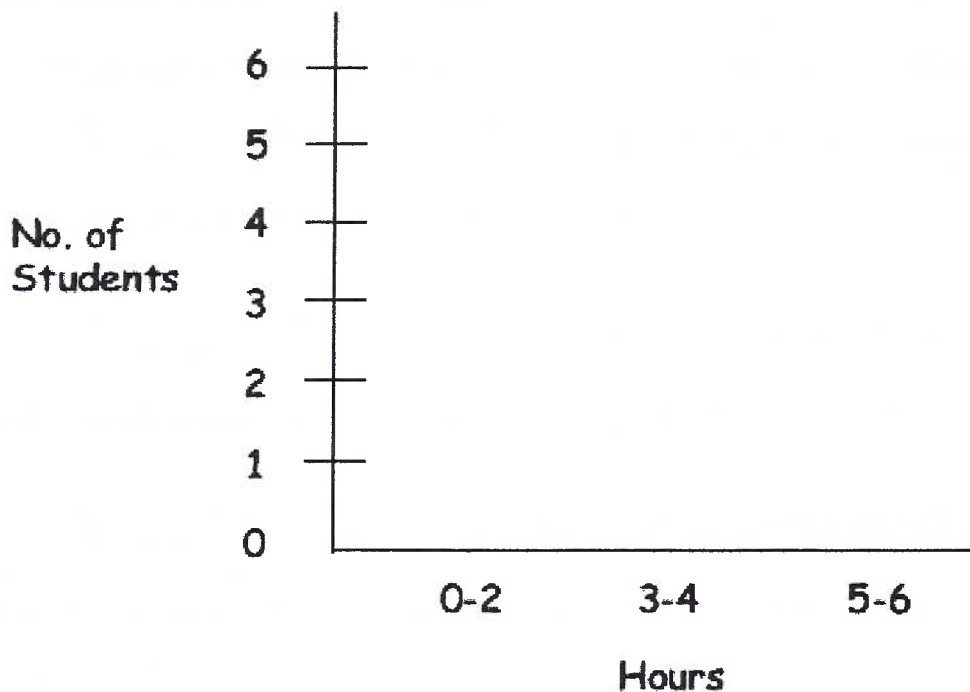
Assessment for Common Core Mathematics Standards Grade 4

Statistics

S 1.1

These are the number of hours students did homework over the weekend. Draw a bar graph to summarize the information.

<u>student</u>	<u>AR</u>	<u>JC</u>	<u>MT</u>	<u>FR</u>	<u>GS</u>	<u>TB</u>	<u>LM</u>	<u>SG</u>	<u>RT</u>	<u>AL</u>	<u>JS</u>	<u>DC</u>	<u>GN</u>	<u>CL</u>	<u>JN</u>
hours	4	5	4	5	4	2	1	4	0	2	5	4	3	2	1



Assessment for Common Core Mathematics Standards Grade 4

S 1.2

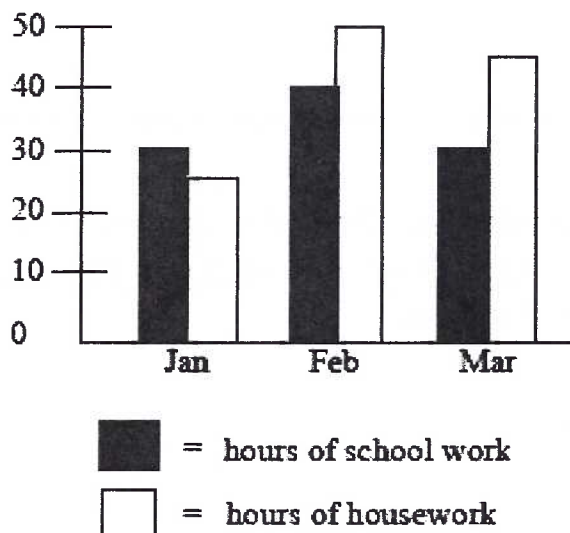
Here are Jason's scores on tests this term:

82 78 77 82 81

- a. What is the median score? _____
- b. What is the mode score? _____

S 1.3

Bill's Work in School and at Home



- a. How many hours of school work did Bill do in February?

- b. In which month did Bill do more school work than housework?

Assessment for Common Core Mathematics Standards Grade 4

S 2.1

Bill flips a coin and tosses a die. List all the possible outcomes.

S 2.2

Jason tossed a coin repeatedly. Heads resulted from 32 of the tosses. Tails resulted from 37 of the tosses. Write a fraction for the ratio of heads to coin tosses.

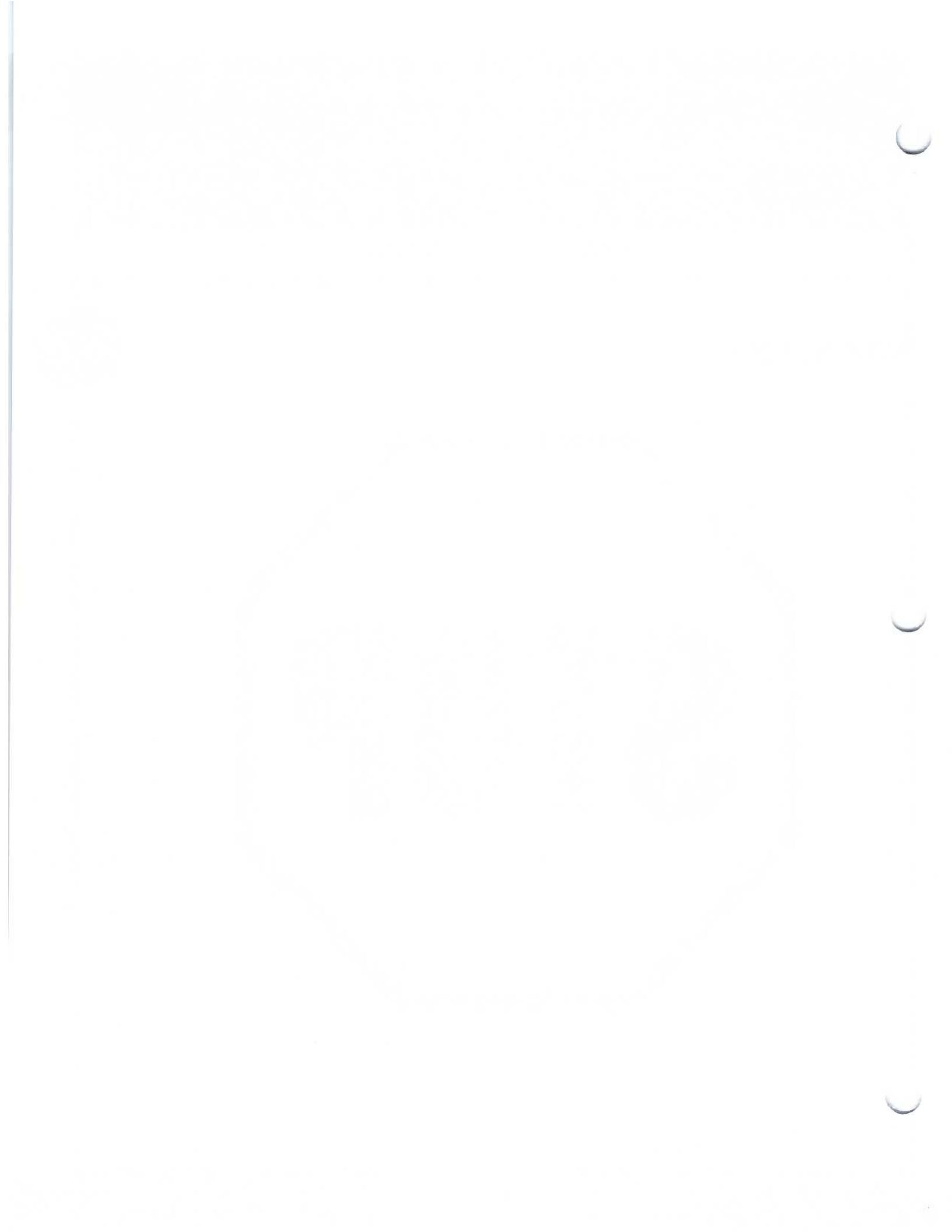
Assessment for Common Core Mathematics Standards Grade 4

End of Assessment

GRADE FOUR

S1.2





Answer Key For The California Mathematics Standards Grade 4

Introduction: Summary of Goals

GRADE FOUR

By the end of grade four, students understand large numbers and addition, subtraction, multiplication, and division of whole numbers. They describe and compare simple fractions and decimals. They understand the properties of, and the relationships between, plane geometric figures. They collect, represent, and analyze data to answer questions.

Answer Key For The California Mathematics Standards

Grade 4

Number Sense 1.0: Students understand the place of whole numbers and decimals to two decimal places and how whole numbers and decimals relate to simple fractions. Students use the concepts of negative numbers.

NS 1.1: Students read and write whole numbers in the millions.

Write as numbers:

a. three million two hundred fifty-five thousand

3,255,000

b. seventy million

70,000,000

c. eight million two hundred thousand

8,200,000

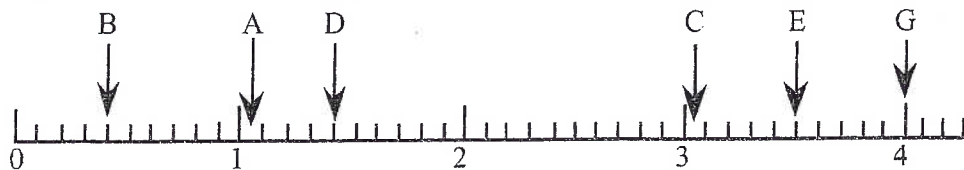
d. four million eight hundred sixty-two thousand three hundred ten

4,862,310

Number Sense 1.0: Students understand the place of whole numbers and decimals to two decimal places and how whole numbers and decimals relate to simple fractions. Students use the concepts of negative numbers.

NS 1.2: Students order and compare whole numbers and decimals to two decimal places.

Write the letter that corresponds to each number that represents the quantity on the number line:



- | | | | | | |
|----|----------|------|----|----------|------|
| 1. | A | 1.04 | 4. | B | 0.40 |
| 2. | C | 3.05 | 5. | E | 3.50 |
| 3. | G | 4.0 | 6. | D | 1.4 |

Answer Key For The California Mathematics Standards

Grade 4

Number Sense 1.0: Students understand the place of whole numbers and decimals to two decimal places and how whole numbers and decimals relate to simple fractions. Students use the concepts of negative numbers.

NS 1.3: Students round whole numbers through the millions to the nearest ten, hundred, thousand, ten thousand, or hundred thousand.

a. Round off 5,185,924 to the nearest hundred:

5,185,900

b. Round off 5,185,924 to the nearest hundred thousand:

5,200,000

c. Round off 5,185,924 to the nearest thousand:

5,186,000

Number Sense 1.0: Students understand the place of whole numbers and decimals to two decimal places and how whole numbers and decimals relate to simple fractions. Students use the concepts of negative numbers.

NS 1.4: Students decide when a rounded solution is called for and explain why such a solution may be appropriate.

Buses need to be rented for 27 children going on a field trip. Each bus can take 12 children in addition to the driver. How many buses must be rented?

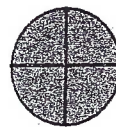
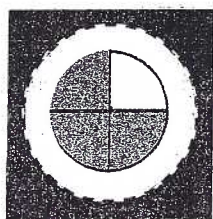
3 buses: Two buses will take only 24 children. One more bus must be rented to take the 3 remaining children.

Answer Key For The California Mathematics Standards Grade 4

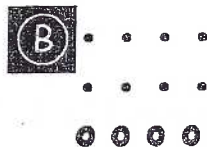
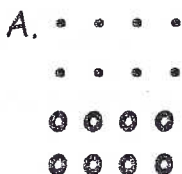
Number Sense 1.0: Students understand the place of whole numbers and decimals to two decimal places and how whole numbers and decimals relate to simple fractions. Students use the concepts of negative numbers.

NS 1.5: Students explain different interpretations of fractions: for example, parts of a whole, parts of a set, and division of whole numbers by whole numbers; explain equivalents of fractions (see Standard 4.0).

- a. Circle the picture below that shows $\frac{3}{4}$ shaded



- b. Circle the picture below in which $\frac{2}{3}$ of the dots are small.



Answer Key For The California Mathematics Standards Grade 4

Number Sense 1.0: Students understand the place of whole numbers and decimals to two decimal places and how whole numbers and decimals relate to simple fractions. Students use the concepts of negative numbers.

NS 1.5: Students explain different interpretations of fractions: for example, parts of a whole, parts of a set, and division of whole numbers by whole numbers; explain equivalents of fractions (see Standard 4.0).

[CONTINUED]

c. Circle True or False

1. $\frac{1}{3} > 2.5$

True

False

$\frac{1}{3} < 2.5$

2. $\frac{5}{2} < 2.7$

True

False

$2.5 < 2.7$

3. $\frac{8}{12} = \frac{2}{3}$

True

False

$\frac{2}{3} \times \frac{4}{4} = \frac{8}{12}$

4. $\frac{3}{7} < \frac{10}{21}$

True

False

$\frac{3}{7} \times \frac{3}{3} = \frac{9}{21} < \frac{10}{21}$

Answer Key For The California Mathematics Standards Grade 4

Number Sense 1.0: Students understand the place of whole numbers and decimals to two decimal places and how whole numbers and decimals relate to simple fractions. Students use the concepts of negative numbers.

NS 1.6: Students write tenths and hundredths in decimal and fraction notations and know the fraction and decimal equivalents for halves and fourths (e.g., $\frac{1}{2} = 0.5$ or $.50$; $\frac{7}{4} = 1\frac{3}{4} = 1.75$).

Write each fraction or mixed number as a decimal.

a. $\frac{1}{2} =$

5

d. $\frac{1}{4} =$

25

b. $\frac{3}{10} =$

3

e. $1\frac{25}{100} =$

1.25

c. $11\frac{2}{100} =$

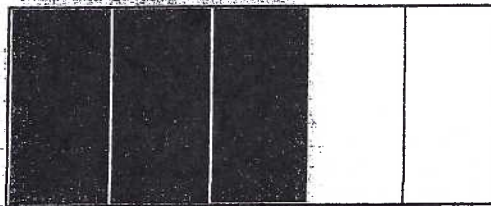
11.02

Answer Key For The California Mathematics Standards Grade 4

Number Sense 1.0: Students understand the place of whole numbers and decimals to two decimal places and how whole numbers and decimals relate to simple fractions. Students use the concepts of negative numbers.

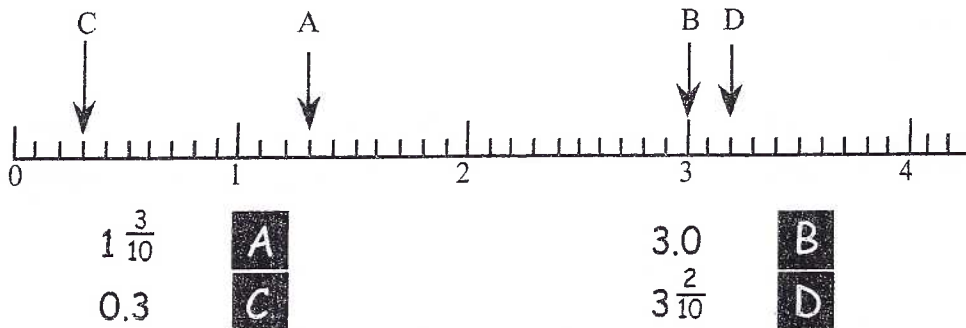
NS 1.7: Students write the fraction represented by a drawing of parts of a figure; represent a given fraction by using drawings; and relate a fraction to a simple decimal on a number line.

- a. Represent the fraction $\frac{3}{5}$ using the figure below.



This is one way of showing $\frac{3}{5}$

- b. Write the letter that shows where each number goes on the number line:



Answer Key For The California Mathematics Standards Grade 4

Number Sense 1.0: Students understand the place of whole numbers and decimals to two decimal places and how whole numbers and decimals relate to simple fractions. Students use the concepts of negative numbers.

NS 1.8: Students use concepts of negative numbers (e.g., on a number line, in counting, in temperature, in "owing").

Draw a number line and show -2 on it.

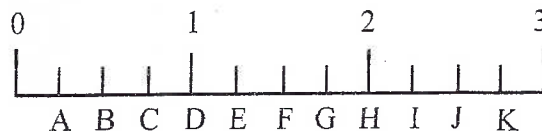


Number Sense 1.0: Students understand the place of whole numbers and decimals to two decimal places and how whole numbers and decimals relate to simple fractions. Students use the concepts of negative numbers.

NS 1.9: Students identify on a number line the relative position of positive fractions, positive mixed numbers, and positive decimals to two decimal places.

Write the letter that represents where each number would go on the number line:

a. $1\frac{1}{4}$ **E** b. 2.50 **J** c. $\frac{3}{4}$ **C**



Answer Key For The California Mathematics Standards Grade 4

Number Sense 2.0: Students extend their use and understanding of whole numbers to the addition and subtraction of simple decimals.

NS 2.1: Students estimate and compute the sum or difference of whole numbers and positive decimals to two places.

a. $14 - 3.21 = 10.79$

b. $7.4 + 0.34 + 51 = 58.74$

Number Sense 2.0: Students extend their use and understanding of whole numbers to the addition and subtraction of simple decimals.

NS 2.2: Students round two-place decimals to one decimal or the nearest whole number and judge the reasonableness of the rounded answer.

a. Round 3.19 to the nearest tenth. **3.2**

b. Round 3.19 to the nearest whole number. **3**

Answer Key For The California Mathematics Standards Grade 4

Number Sense 3.0: Students solve problems involving addition, subtraction, multiplication, and division of whole numbers and understand the relationships among the operations.

NS 3.1: Students demonstrate an understanding of, and the ability to use, standard algorithms for the addition and subtraction of multidigit numbers.

a. $60,000 - 241 = 59,759$

b. $4,863 - 376 = 4,487$

Number Sense 3.0: Students solve problems involving addition, subtraction, multiplication, and division of whole numbers and understand the relationships among the operations.

NS 3.2: Students demonstrate an understanding of, and the ability to use, standard algorithms for multiplying a multidigit number by a two-digit number and for dividing a multidigit number by a one-digit number; use relationships between them to simplify computations and to check results.

a. $37 \times 302 = 11,174$

b. $4 \overline{)2,416} = 604$

Answer Key For The California Mathematics Standards

Grade 4

Number Sense 3.0: Students solve problems involving addition, subtraction, multiplication, and division of whole numbers and understand the relationships among the operations.

NS 3.3: Students solve problems involving multiplication of multidigit numbers by two-digit numbers.

There are bags of sand on a truck. Each bag of sand weighs 124 pounds. How many pounds do 38 bags weigh? **4,712** pounds.

Multiply the weight of 1 bag times the number of bags.

$$124 \times 38 = 4,712 \text{ pounds}$$

Number Sense 3.0: Students solve problems involving addition, subtraction, multiplication, and division of whole numbers and understand the relationships among the operations.

NS 3.4: Students solve problems involving division of multidigit numbers by one-digit numbers.

There are 5,064 marbles that need to be packed in boxes. There are 6 boxes. We want to put the same number of marbles in each box. How many marbles will fit into each box? **844**

Divide the number of marbles by the number of boxes.

$$5,064 \div 6 = 844$$

Answer Key For The California Mathematics Standards Grade 4

Number Sense 4.0: Students know how to factor small whole numbers

NS 4.1: Students understand that many whole numbers break down in different ways (e.g., $12 = 4 \times 3 = 2 \times 6 = 2 \times 2 \times 3$).

You know that $1 \times 30 = 30$. List three *other* ways that you can write 30 as the product of two or more numbers:

$$5 \times 6 = 30$$

$$3 \times 10 = 30$$

$$2 \times 15 = 30$$

Number Sense 4.0: Students know how to factor small whole numbers.

NS 4.2: Students know that numbers such as 2, 3, 5, 7 and 11 do not have any factors except 1 and themselves and that such numbers are called prime numbers.

List all the prime numbers between 2 and 14:

3, 5, 7, 11, 13

Answer Key For The California Mathematics Standards

Grade 4

Algebra and Functions 1.0: Students use and interpret variables, mathematical symbols, and properties to write and simplify expressions and sentences.

AF 1.1: Students use letters, boxes or other symbols to stand for any number in simple expressions or equations (e.g., demonstrate an understanding and the use of the concept of a variable).

Tanya has read the first 78 pages of a 130 page book. Write an expression to show the number of pages Tanya must read in order to finish the book. Use a variable in your expression.

Let p be the number of pages left to read.

$$\text{Then } 78 + p = 130$$

Algebra and Functions 1.0: Students use and interpret variables, mathematical symbols, and properties to write and simplify expressions and sentences.

AF 1.2: Students interpret and evaluate mathematical expressions that now use parentheses

If $x = (a - b) - c$ and a is 10, b is 3 and C is 4, what is the value of x ?

$$x = 3$$

$$x = (10 - 3) - 4$$

$$x = 7 - 4$$

$$x = 3$$

Answer Key For The California Mathematics Standards Grade 4

Algebra and Functions 1.0: Students use and interpret variables, mathematical symbols, and properties to write and simplify expressions and sentences.

AF 1.3: Students use parentheses to indicate which operation to perform first when writing expressions containing more than two terms and different operations.

$$28 \times (10 - 8) = 56$$

$$28 \times 2 = 56$$

Algebra and Functions 1.0: Students use and interpret variables, mathematical symbols, and properties to write and simplify expressions and sentences.

AF 1.4: Students use and interpret formulas (e.g., area = length \times width or $A = lw$) to answer questions about quantities and their relationships.

Area = length \times width.

- a. The length of a rectangle is 10 meters. The width is 4 meters.

What is the area? 40 square meters

$$\begin{aligned} \text{Area} &= (10 \times 4) \text{ m}^2 \\ &= 40\text{m}^2 \end{aligned}$$

- b. The area of a rectangle is 200 square meters. The width is 10 meters. What is the length?

20 meters

$$A = L \times W$$

$$200 = L \times 10$$

$$L = (200 \div 10) \text{ meters}$$

$$L = 20 \text{ meters}$$

Answer Key For The California Mathematics Standards Grade 4

Algebra and Functions 1.0: Students use and interpret variables, mathematical symbols, and properties to write and simplify expressions and sentences.

AF 1.5: Students understand that an equation such as $y = 3x + 5$ is a prescription for determining a second number when a first is given.

Find y if $y = 3x + 5$ and $x = 4$.

$y = 17$

$$\begin{aligned}y &= 3x + 5 \\ &= 3 \cdot 4 + 5 \\ &= 12 + 5 \\ &= 17\end{aligned}$$

"3x" means 3 times x.
Write the operation symbol when the variable is replaced by a number. The order of operations states that multiplication is done before addition.

Algebra and Functions 2.0: Students know how to manipulate equations.

AF 2.1: Students know and understand that equals added to equals are equal.

Circle the statement that is true:

A. $5 + \frac{4}{4} = 5 + (7 - 6)$

B. $5 + 1 = 5 + (1)$
 $6 = 6$

C. $5 + \frac{5}{4} = 5 + (5 - 4)$

D. $5 + \frac{4}{4} = 5 + (4 + 4)$

Answer Key For The California Mathematics Standards Grade 4

Algebra and Functions 2.0: Students know how to manipulate equations.

AF 2.2: Students know and understand that equals multiplied by equals are equal.

Circle the statement that is true:

A. $5(3 - 1) = 5 \times 3 - 1$

B. $5(3 - 1) = 5(1 + 1)$

$5(2) = 5(2)$
 $10 = 10$

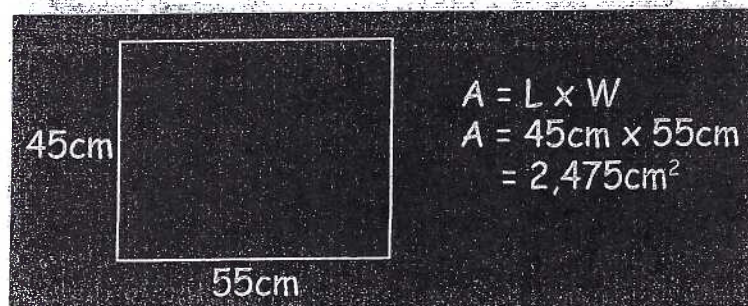
C. $5(3 - 1) = 5 + 3 + 1$

Measurement and Geometry 1.0: Students understand perimeter and area.

MG 1.1: Students measure the area of rectangular shapes by using appropriate units, such as square centimeter (cm^2), square meter (m^2), square kilometer (km^2), square inch (in^2), square yard (yd^2), or square mile (mi^2).

Find the area of a rectangle that is 45 cm wide and 55 cm long:

Area $2,475\text{cm}^2$



Answer Key For The California Mathematics Standards Grade 4

Measurement and Geometry 1.0: Students understand perimeter and area.

MG 1.2: Students recognize that rectangles that have the same area can have different perimeters.

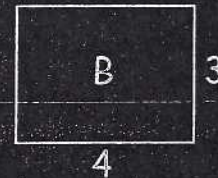
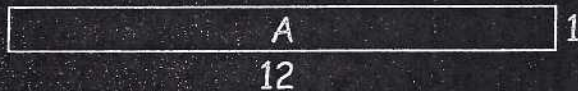
Do two rectangles with the same area necessarily have the same perimeter? Give an example to support your answer.

No. Here are two examples. There are many others.

Both rectangles have equal areas

$$\begin{aligned}\text{Area of A} &= 1 \times 12 \\ &= 12 \text{ sq. units}\end{aligned}$$

$$\begin{aligned}\text{Area of B} &= 3 \times 4 \\ &= 12 \text{ sq. units}\end{aligned}$$



$$P = 2(L + W)$$

$$\begin{aligned}\text{Perimeter of A} &= 2(12 + 1) \\ &= 2(13) \\ &= 26\end{aligned}$$

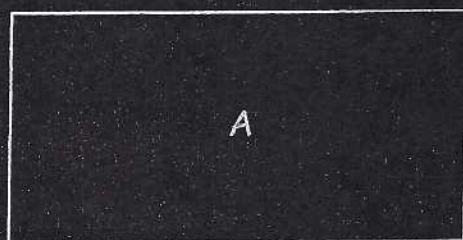
$$\begin{aligned}\text{Perimeter of B} &= 2(4 + 3) \\ &= 2(7) \\ &= 14\end{aligned}$$

Answer Key For The California Mathematics Standards Grade 4

Measurement and Geometry 1.0: Students understand perimeter and area.

MG 1.3: Students understand that rectangles that have the same perimeter can have different areas.

No. Here are two examples. There are many others.



$$\begin{aligned} &10 \\ P &= 2(5 + 10) \\ &= 2(15) \\ &= 30 \end{aligned}$$



$$\begin{aligned} &12 \\ P &= 2(3 + 12) \\ &= 2(15) \\ &= 30 \end{aligned}$$

Both rectangles have equal perimeters.

$$\begin{aligned} \text{Area of A} &= L \times W \\ &= 10 \times 5 \\ &= 50 \text{ sq. units} \end{aligned}$$

$$\begin{aligned} \text{Area of B} &= L \times W \\ &= 12 \times 3 \\ &= 36 \text{ sq. units} \end{aligned}$$

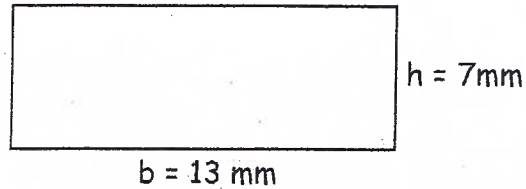
Answer Key For The California Mathematics Standards Grade 4

Measurement and Geometry 1.0: Students understand perimeter and area

MG 1.4: Students understand and use formulas to solve problems involving perimeters and areas of rectangles and squares; use those formulas to find the areas of more complex figures by dividing the figures into basic shapes.

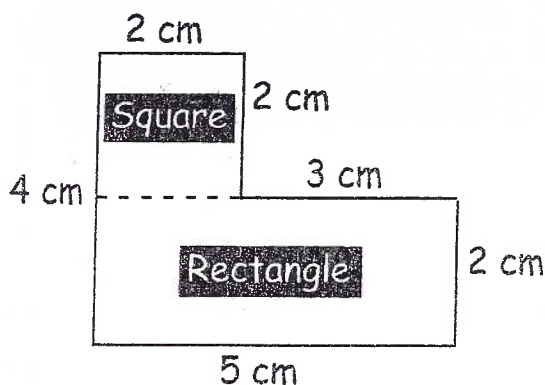
- a. Use a formula to find the area of this rectangle.

$$\text{Area} = 91 \text{ sq. mm}$$



$$\begin{aligned} A &= h \times b \\ &= 7 \times 13 \\ &= 91 \text{ mm}^2 \end{aligned}$$

- b. Find the area of the figure below. All angles are right angles.



$$\text{Area} = 14 \text{ sq. cm}$$

One way is to divide the figure into a square and a rectangle.

$$\begin{aligned} \text{Area of square} &= 2 \times 2 \\ &= 4 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} \text{Area of rectangle} &= 5 \times 2 \\ &= 10 \text{ cm}^2 \end{aligned}$$

$$\text{Total area} = 4 + 10 = 14 \text{ cm}^2$$

Answer Key For The California Mathematics Standards Grade 4

Measurement and Geometry 2.0: Students use two-dimensional coordinate grids to represent points and graph lines and simple figures.

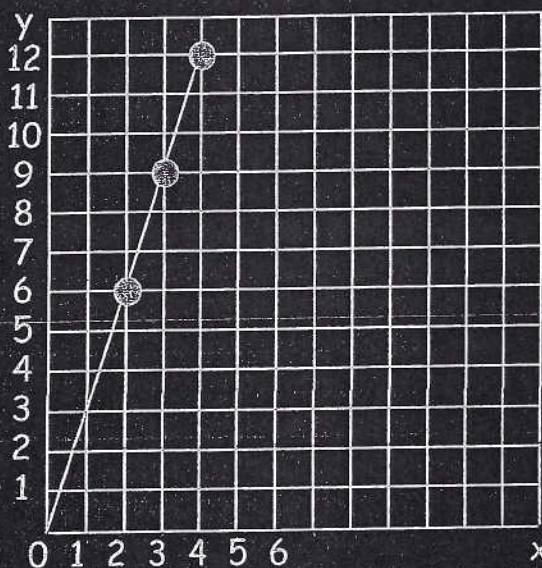
MG 2.1: Students draw the points corresponding to linear relationships on graph paper (e.g., draw 10 points on the graph of the equation $y = 3x$ and connect them by using a straight line).

On the graph, draw the first three points for the equation $y = 3x$ using 2, 3 and 4 as the values of x . Connect the points using a straight line.

Organize the information in a table.

x	$3x$	y
2	3·2	6
3	3·3	9
4	3·4	12

Then graph the points (2,6), (3,9) and (4,12). Connect with a straight line.



Answer Key For The California Mathematics Standards Grade 4

Measurement and Geometry 2.0: Students use two-dimensional coordinate grids to represent points and graph lines and simple figures.

MG 2.2: Students understand that the length of a horizontal line segment equals the difference of the x -coordinates.

What is the length of the line segment joining the points
(6, -4) and (21, -4)?

15

Since the y -coordinates are equal,
the length will be the difference in
the x -coordinates.
 $21 - 6 = 15$

Measurement and Geometry 2.0: Students use two-dimensional coordinate grids to represent points and graph lines and simple figures.

MG 2.3: Students understand that the length of a vertical line segment equals the difference of the y -coordinates.

What is the length of the line segment joining the points
(121, 3) to (121, 17)?

14

Since the x -coordinates
are equal, the length will
be the difference in the
 y -coordinates.
 $17 - 3 = 14$

Answer Key For The California Mathematics Standards Grade 4

Measurement and Geometry 3.0: Students demonstrate an understanding of plane and solid geometric objects and use this knowledge to show relationships and solve problems.

MG 3.1: Students identify lines that are parallel and perpendicular.

Write the word *parallel* under the lines that are parallel.

Write the word *perpendicular* under the lines that are perpendicular.



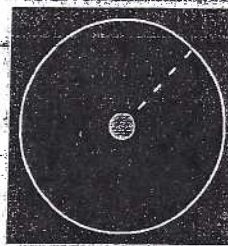
perpendicular

parallel

Measurement and Geometry 3.0: Students demonstrate an understanding of plane and solid geometric objects and use this knowledge to show relationships and solve problems.

MG 3.2: Students identify the radius and diameter of a circle.

a. In the circle below, draw a radius:



Here is one example.

b. In the circle below, draw a diameter:



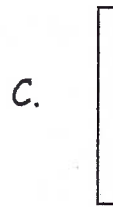
Here is one example.

Answer Key For The California Mathematics Standards Grade 4

Measurement and Geometry 3.0: Students demonstrate an understanding of plane and solid geometric objects and use this knowledge to show relationships and solve problems.

MG 3.3: Students identify congruent figures.

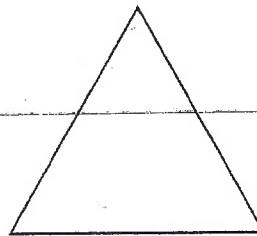
Write the letter of the figure that is congruent with this figure:



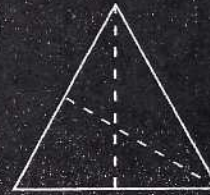
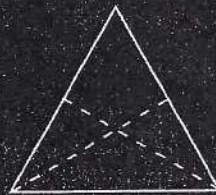
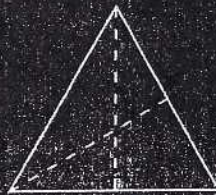
Measurement and Geometry 3.0: Students demonstrate an understanding of plane and solid geometric objects and use this knowledge to show relationships and solve problems.

MG 3.4: Students identify figures that have bilateral and rotational symmetry.

Draw two lines of symmetry through the equilateral triangle.



There are three lines of symmetry. Here are the possible combinations of two lines of symmetry:



Answer Key For The California Mathematics Standards Grade 4

Measurement and Geometry 3.0: Students demonstrate an understanding of plane and solid geometric objects and use this knowledge to show relationships and solve problems.

MG 3.5: Students know the definitions of a right angle, an acute angle, and an obtuse angle; understand that 90° , 180° , 270° and 360° are associated, respectively, with $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, and full turns.

a. An angle of less than 90 degrees is:

- a right angle.
 an acute angle.
 an obtuse angle.

b. An angle of $\frac{1}{4}$ turn is:

- 90°
 180°
 270°
 360°

Answer Key For The California Mathematics Standards Grade 4

Measurement and Geometry 3.0: Students demonstrate an understanding of plane and solid geometric objects and use this knowledge to show relationships and solve problems.

MG 3.6: Students visualize, describe, and make models of geometric solids (e.g., prisms, pyramids) in terms of the number and shape of faces, edges, and vertices; interpret two-dimensional representations of three-dimensional objects; and draw patterns (of faces) for a solid that, when cut and folded, will make a model of the solid.

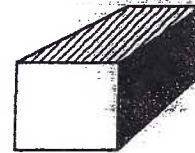
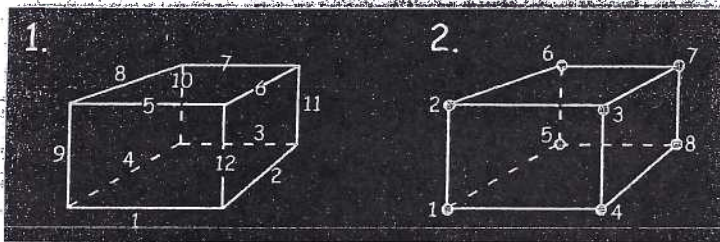
a.

1. How many edges does a rectangular prism have?

12

2. How many vertices does a rectangular prism have?

8



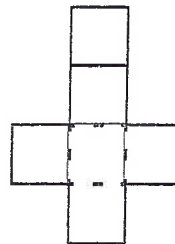
b.

When this flat figure is folded to make a three-dimensional figure, the shape will be a:

cube

pyramid

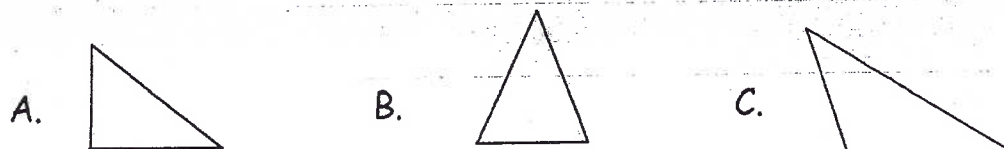
cylinder



Answer Key For The California Mathematics Standards Grade 4

Measurement and Geometry 3.0: Students demonstrate an understanding of plane and solid geometric objects and use this knowledge to show relationships and solve problems.

MG 3.7: Students know the definitions of different triangles (e.g., equilateral, isosceles, scalene) and identify their attributes.



Match the name with the triangle

Scalene

Isosceles

Right

C

B

A

Answer Key For The California Mathematics Standards Grade 4

Measurement and Geometry 3.0: Students demonstrate an understanding of plane and solid geometric objects and use this knowledge to show relationships and solve problems.

MG 3.8: Students know the definition of different quadrilaterals (e.g., rhombus, square, rectangle, parallelogram, trapezoid).

Mark each statement as true or false. Explain your answer:

- a. All squares are rectangles: T F

A square is a rectangle with all sides congruent.

- b. All rectangles are squares: T F

Not all rectangles have all sides congruent.

- c. All parallelograms are rectangles: T F

A parallelogram does not have to have all angles congruent.

- d. Every rhombus is a parallelogram: T F

A rhombus is a parallelogram with all sides congruent.

- e. All parallelograms are squares: T F

Parallelograms do not have to have all sides congruent.

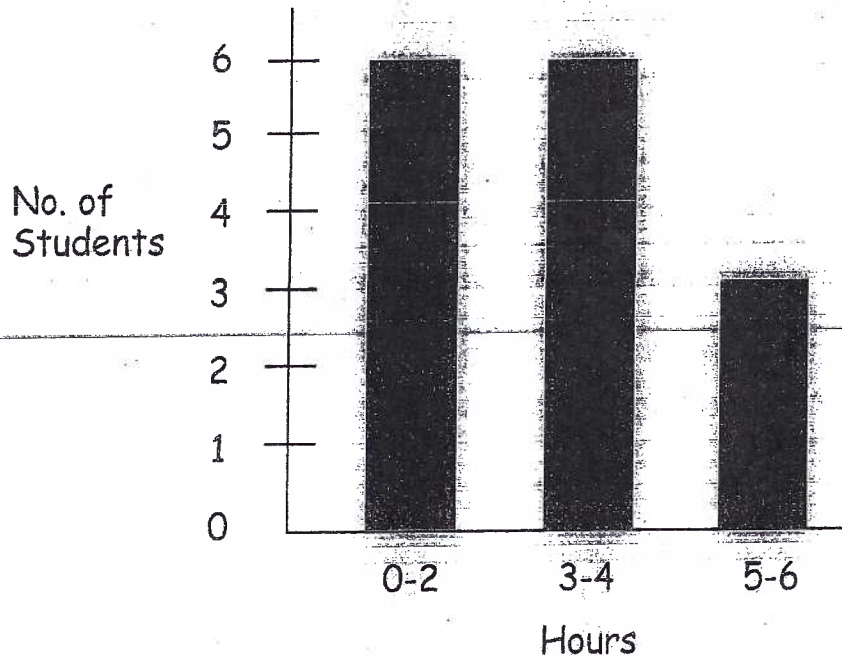
Answer Key For The California Mathematics Standards Grade 4

Statistics, Data Analysis, and Probability 1.0: Students organize, represent, and interpret numerical and categorical data and clearly communicate their findings.

S 1.1: Students formulate survey questions; systematically collect and represent data on a number line; and coordinate graphs, tables, and charts.

These are the number of hours students did homework over the weekend. Draw a bar graph to summarize the information.

student	AR	JC	MT	FR	GS	TB	LM	SG	RT	AL	JS	DC	GN	CL	JN
hours	4	5	4	5	4	2	1	4	0	2	5	4	3	2	1



0-2	3-4	5-6	Tally the hours. Then construct a bar graph.

Answer Key For The California Mathematics Standards Grade 4

Statistics, Data Analysis, and Probability 1.0: Students organize, represent, and interpret numerical and categorical data and clearly communicate their findings.

S 1.2: Students identify the mode(s) for sets of categorical data and the mode(s), median, and any apparent outliers for numerical data sets.

Here are Jason's scores on tests this term:

82 78 77 82 81

a. What is the median score?

81

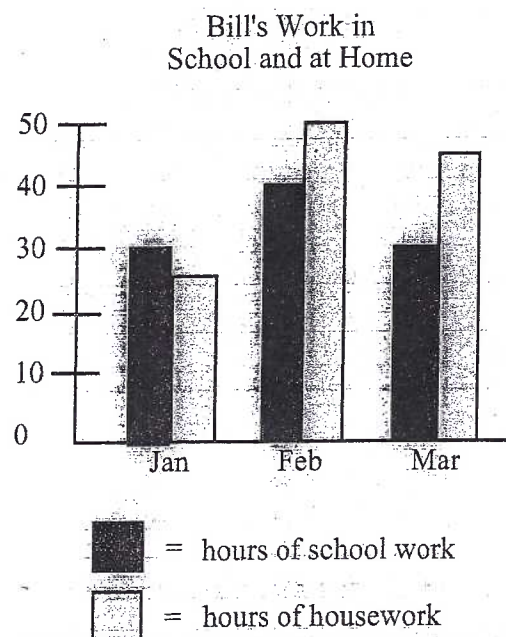
b. What is the mode score?

82

Answer Key For The California Mathematics Standards Grade 4

Statistics, Data Analysis, and Probability 1.0: Students organize, represent, and interpret numerical and categorical data and clearly communicate their findings.

S 1.3: Students interpret one- and two-variable data graphs to answer questions about a situation.



a. How many hours of school work did Bill do in February?

40

b. In which month did Bill do more school work than housework?

January

Answer Key For The California Mathematics Standards Grade 4

Statistics, Data Analysis, and Probability 2.0: Students make predictions for simple probability situations.

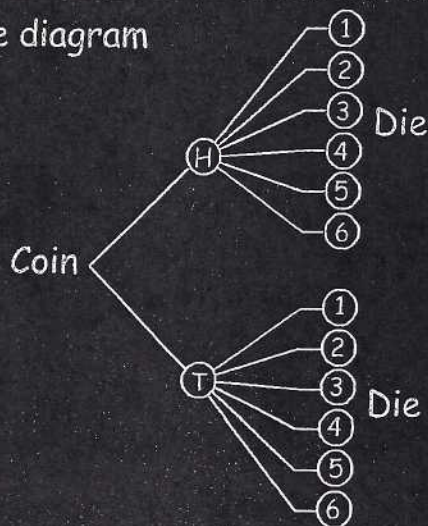
S 2.1: Students represent all possible outcomes for a simple probability situation in an organized way (e.g., tables, grids, tree diagrams).

Bill flips a coin and tosses a die. List all the possible outcomes.

Make a chart or tree diagram

Coin	Die	Coin	Die
H	1	T	1
H	2	T	2
H	3	T	3
H	4	T	4
H	5	T	5
H	6	T	6

OR



Statistics, data analysis, and probability 2.0: Students make predictions for simple probability situations.

S 2.2: Students express outcomes of experimental probability situations verbally and numerically (e.g. 3 out of 4;).

Jason tossed a coin repeatedly. Heads resulted from 32 of the tosses. Tails resulted from 37 of the tosses. Write a fraction for the ratio of heads to coin tosses.

$$\frac{\text{heads}}{\text{all tosses}} = \frac{32}{\text{heads} + \text{tails}} = \frac{32}{32 + 37} = \frac{32}{69}$$

