2011

ISAT
Sample Book

Illinois Standards Achievement Test

GRADE 3

Sample Items for Reading and Mathematics

Table of Contents

Introduction

This sample book contains sample ISAT items classified with an assessment objective from the *Illinois Assessment Frameworks*. These 2011 samples are meant to give educators and students a general sense of how items are formatted for ISAT. All 2011 ISAT test books will be printed in color. This sample book does not cover the entire content of what may be assessed. Please refer to the *Illinois Assessment Frameworks* for complete descriptions of the content to be assessed at each grade level and subject area. The *Illinois Assessment Frameworks* are available online at www.isbe.net/assessment/IAFindex.htm. The Student Assessment website contains additional information about state testing (www.isbe.net/assessment).

Illinois Standards Achievement Test
Reading Samples

Structure of the Grade 3 Reading ISAT

ISAT Reading testing in spring 2011 will consist of 30 norm-referenced items, as well as criterion-referenced items. The 30 norm-referenced items are an abbreviated form of the *Stanford 10 Reading* assessment, developed by Pearson, Inc. The criterion-referenced items are all written by Illinois educators and pilot tested with Illinois students.

Item Formats

All items are aligned to the *Illinois Reading Assessment Framework*, which defines the elements of the Illinois Learning Standards that are suitable for state testing.

Multiple-choice items require students to read and reflect, and then to select the alternative that best expresses what they believe the answer to be. A carefully constructed multiple-choice item can assess any of the levels of complexity, from simple procedures to sophisticated concepts.

Extended-response items require students to demonstrate an understanding of a passage by explaining key ideas using textual evidence and by using this information to draw conclusions or make connections to other situations. The extended-response items are scored with a holistic rubric and count as 10% of the scale score of the test.

Reading Sessions

All standard time administration test sessions are a minimum of 45 minutes in length. Any student who is still actively engaged in testing when the 45 minutes have elapsed will be allowed up to an additional 10 minutes to complete that test session. More details about how to administer this extra time will appear in the *ISAT Test Administration Manual*. This policy does not affect students who already receive extended time as determined by their IEP.

Reading ISAT Grade 3	
Session 1 **45 minutes**	6 shorter passages—30 multiple-choice items total
Session 2 **45 minutes**	Two longer passages consisting of: 1 expository passage with 10 multiple-choice items 1 literary passage with 10 multiple-choice items 1 extended-response item
Session 3 **45 minutes**	Consists of 2 or 3 passages 20 multiple-choice items 1 extended-response item
	(Some items will be pilot items.)

Shorter Passage Followed by Multiple-Choice Sample Items

Being a Fish
by
Russell E. Erickson
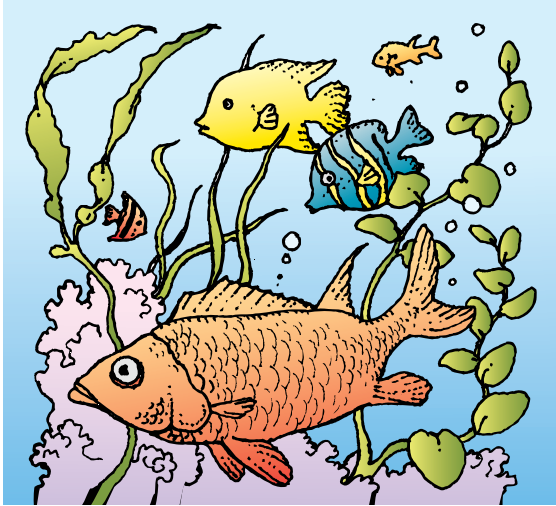
Would it be fun to be a fish? They are, after all, quite different from us.

Fish have no ears as we do. Their bodies are covered with thin, flat plates called scales. The only sounds they know are what they feel using certain scales along their sides. These are special scales called lateral lines.

We get oxygen from the air by using our lungs. Fish get oxygen from the water by using the gills on the sides of their heads. We can play in water and on land, but fish must stay in the water all the time.

Fish never get hot or cold. They are called cold-blooded because they are always the same temperature as the water around them. That means they have no need for hot soup, or cold lemonade, or cozy blankets, or cool sandals.

All in all, it's probably more fun being us.

1

This story mainly tells —

- (A) how fish are different from people
- (B) how many kinds of fish there are
- (C) where fish can be found
- (D) how fish swim

2

Which question does the article answer?

- (A) Do fish have teeth?
- (B) How can I catch a fish?
- (C) Do fish sleep?
- (D) What does cold-blooded mean?

3

You would most likely find an article like this in a book about —

- (A) farm animals
- (B) water fun
- (C) sea life
- (D) fishing

4

How do fish hear?

- (A) With ears
- (B) By feeling
- (C) By tasting
- (D) By smelling

STOP

Answer Key with Assessment Objectives Identified

<table>
<thead>
<tr>
<th></th>
<th>Item Number</th>
<th>Correct Answer</th>
<th>Assessment Objective</th>
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<tbody>
<tr>
<td rowspan="4">Shorter Passage</td>
<td>1</td>
<td>A</td>
<td>**1.3.17** Identify explicit and implicit main ideas.</td>
</tr>
<tr>
<td>2</td>
<td>D</td>
<td>**1.3.20** Determine the answer to a literal or simple inference question regarding the meaning of a passage.</td>
</tr>
<tr>
<td>3</td>
<td>C</td>
<td>**2.3.10** Identify the following forms and genres: short story, poem, fairy tale, tall tale, fable, nonfiction, and essay.</td>
</tr>
<tr>
<td>4</td>
<td>B</td>
<td>**1.3.20** Determine the answer to a literal or simple inference question regarding the meaning of a passage.</td>
</tr>
</tbody>
</table>

To view all the reading assessment objectives, download the *Illinois Reading Assessment Framework* for Grades 3–8 online at www.isbe.net/assessment/IAFindex.htm.

Longer Passage Followed by Multiple-Choice Sample Items

This passage is all about penguins. It tells about how penguins survive in the wild.

Waddle, Dive, and Swim
by Kathleen Weidner Zoehfeld

1   A flock of penguins <u>waddles</u> across the ice and snow. They walk upright, heads held high. As they step, step, step with their wide, three-toed feet and short, stubby legs, they rock from side to side like chubby wind-up toys.

2   Penguins can't fly. But they are birds. Like all birds, penguins have feathers and wings. A penguin's wings are small and flat. While climbing up slippery slopes, or hopping from rock to rock, penguins hold their wings out to the side for balance. To go downhill, they flop on their bellies and slide, using their wings to steer.

3   Penguins live mostly in the ocean. But for a few weeks or months each year, they come ashore to nest and hatch their eggs. Once their chicks are grown, penguins hurry back to the sea. They gather at the edge of the ice and peer into the cold water. Their thick coat of waterproof feathers can protect them from the cold, but not from enemies! They watch for lurking sharks, leopard seals, or killer whales.

4   When all's clear, they plunge into the water, one after the other, like Olympic divers. Although penguins may look silly while waddling and tobogganing[1] across the land, they are <u>graceful</u> in water. Lots of swimming birds, such as ducks and geese, use their big feet to paddle along. But with their strong, flipperlike wings penguins can "fly" through the sea.

5   When penguins are hungry, they dive down deep to hunt for food. Most birds have light, hollow bones to help them rise up in the air. Penguins have heavy bones and sleek, streamlined bodies. That helps them dive deeper and swim faster than any other type of bird.

---

[1]*tobogganing* — to ride as if on a small sled

GO ON ▶

6   Penguins can spend months at sea without ever touching land. But like all birds they must breathe air. Penguins breathe by leaping out of the water like porpoises while swimming fast. They glide over the water for a second or two, gulp a breath of air, then dive back in. "Porpoising[2]" is also a good way to confuse enemies. A stalking shark or seal loses sight of a penguin when it's out of the water.

7   If porpoising doesn't work, a penguin can escape an enemy by quickly changing direction. It uses its webbed feet and pointy tail like a ship's rudder to zigzag this way and that. If an iceberg is floating nearby, the penguin can rocket straight out of the water and land on the ice, out of the enemy's reach.

8   Penguins know all the moves they need to stay safe and have fun — both on land and in the sea.

---

[2]*porpoising* — to leap out of the water like a porpoise or dolphin

GO ON ▶

1

What does waddles mean in this sentence from the passage?

A flock of penguins waddles across the ice and snow.

- Ⓐ Flies
- Ⓑ Skips
- Ⓒ Walks
- Ⓓ Jumps

2

According to the passage, what do the penguins do after their chicks are grown?

- Ⓐ Follow the seals
- Ⓑ Slide down hills
- Ⓒ Go back out to sea
- Ⓓ Build another nest

3

What is the base word for graceful?

- Ⓐ ful
- Ⓑ ace
- Ⓒ race
- Ⓓ grace

4

What does the author mean in the sentence below?

Penguins can "fly" through the sea.

- Ⓐ They slip and slide.
- Ⓑ They are quick and graceful.
- Ⓒ They dive deeper than many whales.
- Ⓓ They use their pointy tails to swim straight.

5

Why are penguins good swimmers?

- Ⓐ They have short, stubby legs.
- Ⓑ They can breathe underwater.
- Ⓒ They can peer into the cold water.
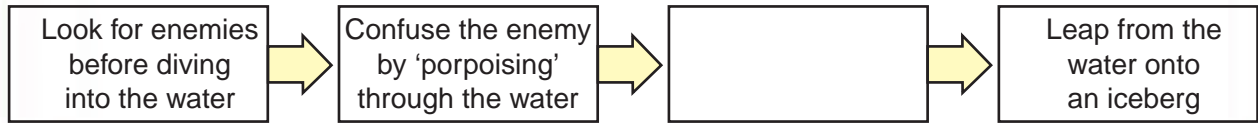- Ⓓ They have sleek, streamlined bodies.

GO ON▶

6

This diagram shows how penguins avoid their enemies.

Look for enemies before diving into the water	→	Confuse the enemy by 'porpoising' through the water	→		→	Leap from the water onto an iceberg

What belongs in the empty box?

Ⓐ Slide across the land
Ⓑ Dive deep to get food
Ⓒ Breathe in water slowly
Ⓓ Change direction quickly

7

What best describes the meaning of <u>nearby</u>?

Ⓐ Soon
Ⓑ Over
Ⓒ Close
Ⓓ Across

8

Which of these is an opinion?

Ⓐ Penguins have feathers and wings.
Ⓑ Penguins live mostly in the ocean.
Ⓒ Penguins may look silly while waddling and tobogganing across the land.
Ⓓ Penguins breathe by leaping out of the water like porpoises while swimming fast.

GO ON

9

What would be another good title for "Waddle, Dive, and Swim"?

- Ⓐ "Penguin Feathers Are Thick"
- Ⓑ "Friends of the Happy Porpoise"
- Ⓒ "Using Sense of Direction Wisely"
- Ⓓ "The Amazing World of Penguins"

10

What is the genre of "Waddle, Dive, and Swim"?

- Ⓐ Fable
- Ⓑ Short story
- Ⓒ Fairy tale
- Ⓓ Nonfiction

STOP ■

Answer Key with Assessment Objectives Identified

	Item Number	Correct Answer	Assessment Objective
Longer Passage with Multiple-Choice Items	1	C	**1.3.07** Determine the meaning of unknown words using within-sentence clues.
	2	C	**1.3.23** Identify or summarize the order of events in a story.
	3	D	**1.3.02** Identify the word base of familiar words with affixes from Roots and Affixes list (e.g., misspelled, unfinished).
	4	B	**1.3.24** Draw inferences, conclusions, or generalizations about text, and support them with textual evidence and prior knowledge.
	5	D	**1.3.21** Distinguish the main ideas and supporting details in any text.
	6	D	**1.3.23** Identify or summarize the order of events in a story.
	7	C	**1.3.06** Determine the meaning of unknown compound words by applying knowledge of individual known words (e.g., baseball).
	8	C	**1.3.25** Differentiate between fact and opinion.
	9	D	**1.3.22** Identify the main idea of a selection when it is not explicitly stated (e.g., by choosing the best alternative title from among several suggested for a given passage).
	10	D	**2.3.10** Identify the following forms and genres: short story, poem, fairy tale, tall tale, fable, nonfiction, and essay.

To view all the reading assessment objectives, download the *Illinois Reading Assessment Framework* for Grades 3–8 online at www.isbe.net/assessment/IAFindex.htm.

Extended-Response Sample Item

Assessment Objective: 1.3.24 Draw inferences, conclusions, or generalizations about text, and support them with textual evidence and prior knowledge.

1

Penguins can survive both on land and in water. Explain how penguins are different from most birds. Use information from the passage and your own ideas to support your answer.

STOP

Extended-Response Scoring Rubric

Reading Extended-Response Scoring Rubric

Readers identify important information found explicitly and implicitly in the text. Readers use this information to interpret the text and/or make connections to other situations or contexts through analysis, evaluation, or comparison/contrast. A student-friendly version of this extended-response rubric is available online at www.isbe.net/assessment/reading.htm.

Score	Criteria
4	• Reader demonstrates an accurate understanding of important information in the text by focusing on the key ideas presented explicitly and implicitly. • Reader uses information from the text to interpret significant concepts or make connections to other situations or contexts logically through analysis, evaluation, inference, or comparison/contrast. • Reader uses relevant and accurate references; most are specific and fully supported. • Reader integrates interpretation of the text with text-based support (balanced).
3	• Reader demonstrates an accurate understanding of information in the text by focusing on some key ideas presented explicitly and implicitly. • Reader uses information from the text to interpret significant concepts or make connections to other situations or contexts logically (with some gaps) through analysis, evaluation, inference, or comparison/contrast. • Reader uses relevant and accurate references; some are specific; some may be general and not fully supported. • Reader partially integrates interpretation of the text with text-based support.
2	• Reader demonstrates an accurate but limited understanding of the text. • Reader uses information from the text to make simplistic interpretations of the text without using significant concepts or by making only limited connections to other situations or contexts. • Reader uses irrelevant or limited references. • Reader generalizes without illustrating key ideas; may have gaps.
1	• Reader demonstrates little or no understanding of the text; may be inaccurate. • Reader makes little or no interpretation of the text. • Reader uses no references, or the references are inaccurate. • Reader's response is insufficient to show that criteria are met.
0	• Reader's response is absent or does not address the task. • Reader's response is insufficient to show that criteria are met.

| **Grade: 3** | **Sample: 1** | **Score: 2** |

DIRECTIONS ▶ **Question 1 is an extended-response question. Make sure you**

- **Read the question completely before you start to write your answer,**
- **Write your answer to the question in your own words,**
- **Write as clearly as you can so that another person can read your answer and understand what you were thinking,**
- **Read over your answer to see if you need to rewrite any part of it.**

1

Penguins can survive both on land and in water. Explain how penguins are different from most birds. Use information from the passage and your own ideas to support your answer.

They can't fly, they don't look like most birds and and most birds can't stay under water for a long time

* This response demonstrates an accurate but limited understanding of the text. The reader makes simplistic interpretations/comparisons (*They can't fly...most birds can't stay under water for a long time*).

Grade: 3	Sample: 2	Score: 2

DIRECTIONS ▷ **Question 1 is an extended-response question. Make sure you**

- **Read the question completely before you start to write your answer,**
- **Write your answer to the question in your own words,**
- **Write as clearly as you can so that another person can read your answer and understand what you were thinking,**
- **Read over your answer to see if you need to rewrite any part of it.**

1

Penguins can survive both on land and in water. Explain how penguins are different from most birds. Use information from the passage and your own ideas to support your answer.

Penguins can't fly even know theire birds and the Penguins have 3 toes and their wings are flat.

The author says that the Penguins look like chubby wind-up toys some of the Penguins have holloy bones and others hove heavy bones and the Penguins skin hove sleek streamlined bodies.

I know from experience I was watching this show and Penguins were in the water swiming and their were jumping out of the water.

My opinion is that the Penguens have a a cool life and they have to watch out of the sharks, leopard seals, and killer whales to eat the penguins.

*This response demonstrates an accurate but limited understanding of the text. The reader retells the story with little interpretation. There are text references. There are generalizations with illustrating key ideas.

Grade: 3	Sample: 3	Score: 3

DIRECTIONS ▸ **Question 1 is an extended-response question. Make sure you**

- **Read the question completely before you start to write your answer,**
- **Write your answer to the question in your own words,**
- **Write as clearly as you can so that another person can read your answer and understand what you were thinking,**
- **Read over your answer to see if you need to rewrite any part of it.**

1

Penguins can survive both on land and in water. Explain how penguins are different from most birds. Use information from the passage and your own ideas to support your answer.

Penguins are diffrent from other birds because they can swim underwater, other birds fly and penguins can't, and penguins live in cold places and other birds live in hot places. Also birds kind of hop when they walk and Penguins waddle. Penguins have to eat alot to get fat and be nice and warm and other birds don't have to eat so much. Another reason why is that penguins can survive in the cold and other birds can't really

survive in the cold. Also Whales are kind of like penguins and dolphins are like other birds because penguins and some whales live in the North and South poles, and they also can survie in the cold, and swim. Other birds and dolphins are kind of the same because they both live in warm places, and they both can't survive in the cold.

*This reader demonstrates an accurate understanding of the text and of some key ideas in the text. The reader does offer some text references for interpretation (*they can swim underwater, other birds fly and penguins can't, and penguins live in cold places and other birds live in hot places*). The reader also introduces some information that is not in the text, however, the interpretation is not supported (*Penguins have to eat alot to get fat and be nice and warm and other birds don't have to eat so much*). This creates a gap in the analysis. The reader also attempts a connection to dolphins and whales, but this is not logically connected and does not add any value to the response.

Grade: 3   **Sample: 4**   **Score: 3**

DIRECTIONS ▷ **Question 1 is an extended-response question. Make sure you**

- **Read the question completely before you start to write your answer,**
- **Write your answer to the question in your own words,**
- **Write as clearly as you can so that another person can read your answer and understand what you were thinking,**
- **Read over your answer to see if you need to rewrite any part of it.**

1

Penguins can survive both on land and in water. Explain how penguins are different from most birds. Use information from the passage and your own ideas to support your answer.

Penguins are different from most birds, because they can't fly and because they have heavy bones and, sleek streamlined bodies, Unlike most birds they porpoise out of the water to get air or confuse enemies, And they also waddle instead of walking or flying, They also slide on the stomaches to slide down the ice, Also they can spend

months at sea without touching the ice and snow, otherwise known as land. This is how penguins are different from other birds.

*This response demonstrates an accurate understanding of important information in the text. The reader makes interpretations of the significant concepts (*because they can't fly and because they have heavy bones and, sleek streamlined bodies. Unlike most birds they porpoise out of the water to get air or confuse enemies*). The reader uses relevant and accurate information from the text; most of it is specific.

Grade: 3   **Sample: 5**   **Score: 4**

DIRECTIONS ▶ **Question 1 is an extended-response question. Make sure you**

– **Read the question completely before you start to write your answer,**
– **Write your answer to the question in your own words,**
– **Write as clearly as you can so that another person can read your answer and understand what you were thinking,**
– **Read over your answer to see if you need to rewrite any part of it.**

1

Penguins can survive both on land and in water. Explain how penguins are different from most birds. Use information from the passage and your own ideas to support your answer.

Penguins can't fly but birds can. But also birds can't swimm because If there wings get to wet in wille to heavy and their wings will be to silly. Birds live mostly in the city or near beaches, last the forest oh and the country and deserts. But penguins live basickly near the ocean and near cold places. Penguins find their food in the water. Birds find their food on grass, ground, or basicly mud.

Birds fly in the air and penguins fly threw water. Penguins have very heavy bones but birds have kind of in the heavy and in the not so heavy. Birds have fly'ing bodies but penguins have swiming bodies. Penguins they can spend months in the water with out touching land but I don't think birds can fly in the sky for a month with out touching land. Make that months for raibouls and mouths for bids with an s' at the end.

* This reader demonstrates an accurate understanding of important information in the text. The reader makes interpretations of the significant concepts (*…can't fly but birds can. But also birds can't swimm because If their wings get to wet in will be to heavy…Birds live mostly in the city or near beaches, last the forest oh and the country and deserts. But penguins live basickly near the ocean and near cold places*). The reader uses relevant and accurate information from the text; most of it is specific. The reader integrates interpretation of the text with text-based support, creating a balanced response.

Grade: 3	Sample: 6	Score: 4

DIRECTIONS ▶ **Question 1 is an extended-response question. Make sure you**

- **Read the question completely before you start to write your answer,**
- **Write your answer to the question in your own words,**
- **Write as clearly as you can so that another person can read your answer and understand what you were thinking,**
- **Read over your answer to see if you need to rewrite any part of it.**

1

Penguins can survive both on land and in water. Explain how penguins are different from most birds. Use information from the passage and your own ideas to support your answer.

They are diffrent becus penguins can't fly like the birds we have outside. Penguins can waddle across the snow and ice. The birds outside cannot do that. They walk diffrent than the birds we have. Penguins can swim in water. The birds here cannot swim in water. Some ducks, and geses around here can swim water. Penguins look for there enemys before they get in the water. But thabirds aroudhere that

Can swim I think that they do not have no enemys in the water. They know there moves to keep them save. The birds around here sleepi in trees. Penguins do not sleepi'n trees. There is a thing that they have they have a nest. But baby penguins when they grow there parents hurry back to the sea. Penguins and the birds we have they both have feathers. The birds we have they get cold if it is very cold. Penguins do not think it is so cold to them at all. Penguins can breath air and water. Other birds can not breath water. They only can breath air. When birds are tired of walking they do not sli'd on there bellys.

Only penguins can. When penguins get chase dey there enemys the go to a small place. That way they will not get eatcn by an enemys. These birds do not swim in cold water. Only penguins.

*This response reveals an accurate understanding of the text by focusing on key ideas in the text. The reader makes interpretations of the significant concepts (…*can't fly like the birds we have…They walk diffrent than the birds we have…birds around here sleep in trees. Penguins do not sleep in trees*). The reader uses relevant and accurate information from the text; most of it is specific. The reader integrates interpretation of the text with text-based support, creating a balanced response.

Illinois Standards Achievement Test
Mathematics Samples

Structure of the Grade 3 Mathematics ISAT

ISAT Mathematics testing in spring 2011 will consist of 30 norm-referenced items, as well as 45 criterion-referenced items, some of which will be used for developmental purposes. The 30 norm-referenced items are an abbreviated form of the *Stanford 10 Mathematics Problem Solving* assessment, developed by Pearson, Inc. The 45 criterion-referenced items are all written by Illinois educators and pilot tested with Illinois students.

Item Formats

All 75 items are aligned to the *Illinois Mathematics Assessment Framework*, which defines the elements of the Illinois Learning Standards that are suitable for state testing.

Multiple-choice items require students to read, reflect, or compute, and then to select the alternative that best expresses what they believe the answer to be. This format is appropriate for quickly determining whether students have achieved certain knowledge and skills. Well-designed multiple-choice items can measure student knowledge and understanding, as well as students' selection and application of problem-solving strategies. A carefully constructed multiple-choice item can assess any of the levels of mathematical complexity from simple procedures to sophisticated concepts. They can be designed to reach beyond the ability of students to "plug-in" alternatives or eliminate choices to determine a correct answer. Such items are limited in the extent to which they can provide evidence of the depth of students' thinking.

Short-response items pose similar questions as multiple-choice items and provide a reliable and valid basis for extrapolating about students' approaches to problems. These items reduce the concern about guessing that accompanies multiple-choice items. The short-response items are scored with a rubric and count as 5% of the scale score of the test.

Extended-response items require students to consider a situation that demands more than a numerical response. These items require students to model, as much as possible, real problem solving in a large-scale assessment context. When an extended-response item poses a problem to solve, the student must determine what is required to "solve" the problem, choose a plan, carry out the plan, and interpret the solution in terms of the original situation. Students are expected to clearly communicate their decision-making processes in the context of the task proposed by the item (e.g., through writing, pictures, diagrams, or well-ordered steps). The extended-response items are scored with a rubric and count as 10% of the scale score of the test.

Scoring Extended- and Short-Response Items

Extended- and short-response items are evaluated according to an established scoring scale, called a rubric, developed from a combination of expectations and a sample of actual student responses. Such rubrics must be particularized by expected work and further developed by examples of student work in developing a guide for scorers. Illinois educators play a substantial role in developing these guides used for the scoring of the short- and extended-response items. Committees of mathematics educators from throughout the state attend a validation meeting, during which they use the mathematics scoring rubrics to establish task-specific criteria that are used to score all short- and extended-response items consistently and systematically.

Test Booklet for Grade 3 Mathematics ISAT

Students in grade 3 respond to all test items directly in a test booklet. Test administrators should monitor students carefully during testing to make sure students are not making stray marks that may adversely affect intended answer choices.

Mathematics Sessions

All standard time administration test sessions are a minimum of 45 minutes in length. Any student who is still actively engaged in testing when the 45 minutes have elapsed will be allowed up to an additional 10 minutes to complete that test session. More details about how to administer this extra time will appear in the *ISAT Test Administration Manual*. This policy does not affect students who already receive extended time as determined by their IEP.
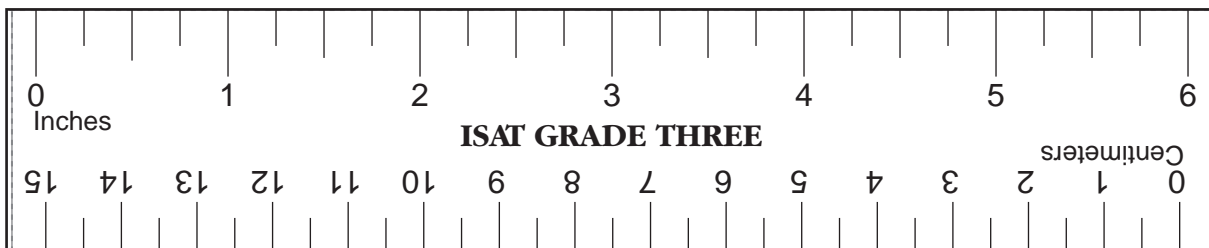
Mathematics ISAT Grade 3	
Session 1 **45 minutes**	40 multiple-choice items (30 of these are an abbreviated form of the *Stanford 10*.)
Session 2 **45 minutes**	30 multiple-choice items 3 short-response items
Session 3 **45 minutes**	2 extended-response items
(Some items will be pilot items.)	

Calculator Use for Grade 3 Mathematics ISAT

In grade 3, students are not allowed to use calculators on any session of the mathematics assessment, unless it is a documented accommodation for a student with an Individualized Education Program (IEP). This policy was developed in light of the continued work on the development of algorithms and the basic facts of whole numbers in grade 3 and the general lighter use of technology in classrooms at this level.

Rulers for Grade 3 Mathematics ISAT

All students in grade 3 will be provided with a ruler to use during all sessions of the mathematics assessment. This ruler will allow students to measure in both inches and centimeters.

Scratch Paper and Work Space for Grade 3 Mathematics ISAT

Students must be provided with blank scratch paper to use during only session 1. Only session 1 contains norm-referenced items, which were normed under such conditions. Students may not use scratch paper during session 2 or session 3. Work space boxes are provided on several pages in session 2 for students to use as scratch paper for the multiple-choice questions. Anything written in these spaces will not be considered for scoring. A sample work space box is provided after the last multiple-choice sample in this book. Students must show their work, when required, for the short-response items in session 2 directly in the test booklet. Students must show their work for the extended-response items in session 3 directly in the test booklet.
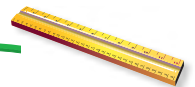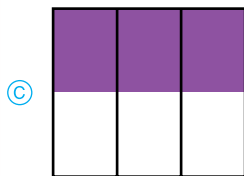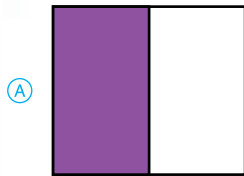
1

What is the value of the digit 3 in the number 24,367?

Ⓐ Thirty

Ⓑ Three hundred

Ⓒ Three thousand

Ⓓ Thirty thousand

2

Which of these has $\frac{1}{3}$ of the figure shaded?

Ⓐ

Ⓑ

Ⓒ

Ⓓ

3

Which is another way to write the expression shown below?

$$4 + 4 + 4 + 4 + 4$$

Ⓐ 4×5

Ⓑ $4 + 4$

Ⓒ $5 + 4$

Ⓓ 5×5

4

George collected 489 rocks for his science project. Matthew collected 100 fewer than George. How many rocks did Matthew collect?

| 389 | 479 | 589 | 379 |
| Ⓐ | Ⓑ | Ⓒ | Ⓓ |

5

Ed has 19 eggs. He has 2 empty egg cartons that can hold 12 eggs in each carton.

How many <u>more</u> eggs does Ed need to fill the 2 egg cartons?

| 5 | 7 | 24 | 33 |
| Ⓐ | Ⓑ | Ⓒ | Ⓓ |

GO ON▶

6

What digit goes in the ☐ to make the problem true?

$$\begin{array}{r} 4\ 6\ 4 \\ +2\ \square\ 3 \\ \hline 7\ 0\ 7 \end{array}$$

0	3	4	6
Ⓐ	Ⓑ	Ⓒ	Ⓓ

7

John bought 2 notebooks. Each notebook costs $1.80. John gave the clerk $5.00 to pay for the notebooks.

How much change should John receive?

Ⓐ $1.40

Ⓑ $2.40

Ⓒ $3.20

Ⓓ $3.60

8

What number should go in the box to make the number sentence true?

$$5 \times 6 = 30$$
$$50 \times 6 = \square$$

44	56	300	3000
Ⓐ	Ⓑ	Ⓒ	Ⓓ

GO ON▶

9

What number belongs in the box to make the number sentence true?

$$8 + 9 = 17$$
$$17 - 9 = \square$$

8	9	17	26
Ⓐ	Ⓑ	Ⓒ	Ⓓ

10

Tom made 10 free throws in a basketball game. Each free throw was worth 1 point.

Which number sentence could be used to show Tom's points from free throws?

Ⓐ $10 \times 1 = 10$

Ⓑ $10 + 10 = 20$

Ⓒ $10 - 1 = 9$

Ⓓ $10 + 1 = 11$

11

The chart shows the number of miles Johanna rode her bike each day for 5 days.

Johanna's Bike Riding

Day	Number of Miles
Sunday	19
Monday	14
Wednesday	26
Thursday	14
Saturday	21

If each number of miles is rounded to the nearest ten, which estimate best represents the total number of miles Johanna rode in 5 days?

Ⓐ 70

Ⓑ 80

Ⓒ 90

Ⓓ 100

GO ON▶

12

If a month ends on a Tuesday, on what day does the next month begin?

Ⓐ Monday

Ⓑ Tuesday

Ⓒ Wednesday

Ⓓ Thursday

13

The clock shows 12:45.
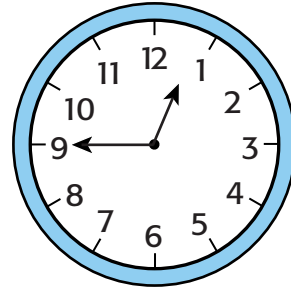
What time will it be in 45 minutes?

Ⓐ 12:00

Ⓑ 1:30

Ⓒ 1:45

Ⓓ 2:15

GO ON▶

14

Use your centimeter ruler to help you answer this question.

How many centimeters long is the drawing of this crayon?

CRAYON

Ⓐ 4 cm

Ⓑ 5 cm

Ⓒ 6 cm

Ⓓ 7 cm

15

What is the perimeter of this square?

5 m

Ⓐ 25 m

Ⓑ 20 m

Ⓒ 15 m

Ⓓ   5 m

GO ON▶
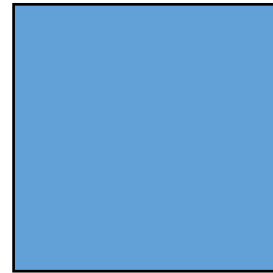
16

What is the area of this figure?
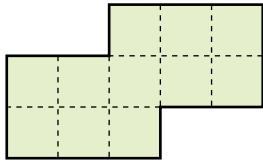
= 1 square unit

Ⓐ 16 square units

Ⓑ 15 square units

Ⓒ 12 square units

Ⓓ 11 square units

17

How many oranges equal the same weight as one cube?

Ⓐ 2 oranges

Ⓑ 4 oranges

Ⓒ 8 oranges

Ⓓ 16 oranges

GO ON▶

18

What is the volume of the solid figure?
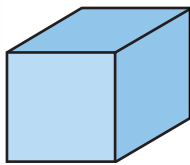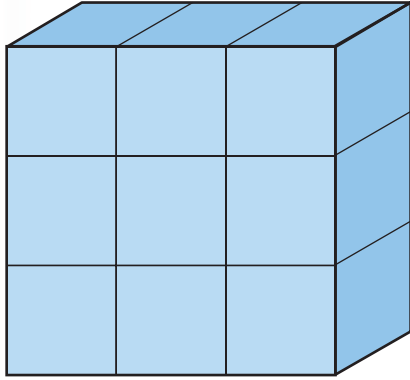
= 1 cube

Ⓐ 12 cubes

Ⓑ 9 cubes

Ⓒ 6 cubes

Ⓓ 3 cubes

19

How many inches are equal to $1\frac{1}{2}$ feet?

Ⓐ 24 inches

Ⓑ 18 inches

Ⓒ 8 inches

Ⓓ 6 inches

20

What is the missing number in this increasing pattern?

82, 88, 94, _____, 106, 112

102	100	98	96
Ⓐ	Ⓑ	Ⓒ	Ⓓ

GO ON ▶
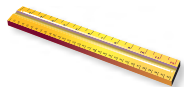
21

Tom wants to buy 5 toy cars that cost $0.98 each. Which expression shows one way to find how much money Tom needs to buy all 5 cars?

Ⓐ 5 + $0.98

Ⓑ 5 × $0.98

Ⓒ 5 − $0.98

Ⓓ 5 ÷ $0.98

22

What number goes in the box to make this number sentence true?

$$12 - \square = 3$$

4   7   9   15
Ⓐ   Ⓑ   Ⓒ   Ⓓ

23

Sarah counted 18 birds in a tree. Some of the birds flew away. Then there were 6 birds in the tree.

How many of the birds flew away?

24   12   6   3
Ⓐ   Ⓑ   Ⓒ   Ⓓ

24

How many sides does a hexagon have?

5   6   7   8
Ⓐ   Ⓑ   Ⓒ   Ⓓ

25

Which of the following has exactly one vertex?

Ⓐ Cube

Ⓑ Cone

Ⓒ Square Pyramid

Ⓓ Rectangular Prism

GO ON▶

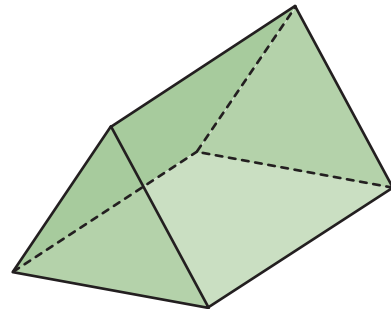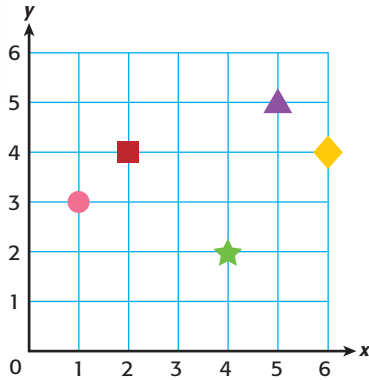**26**

Which shape has exactly 4 vertices and 6 edges?

Ⓐ

Ⓒ

Ⓑ

Ⓓ
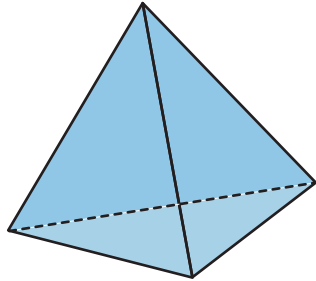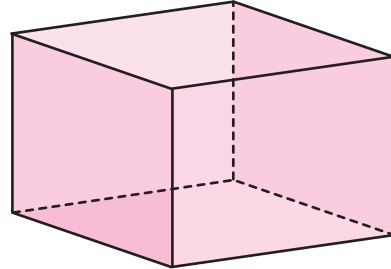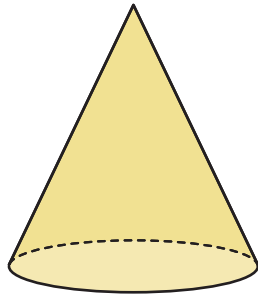
27

The grid below shows the locations of some shapes.

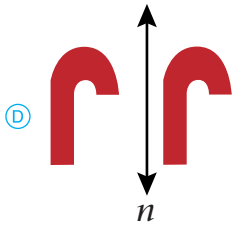Which shape is 2 units to the left and 2 units up from the star?

Ⓐ ●

Ⓑ ■

Ⓒ ▲

Ⓓ ◆

28

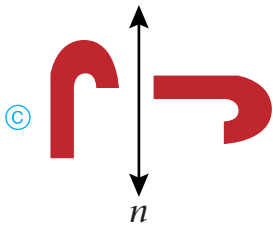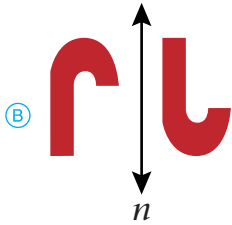Which letter appears to have exactly one line of symmetry?

Ⓐ **I**

Ⓑ **R**

Ⓒ **L**

Ⓓ **W**

GO ON ▶

29

Which shows only a flip (reflection) of the shape over line *n*?

(A)

n

(B)

n

(C)

n

(D)

n
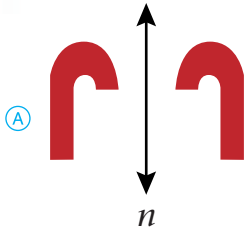
30

Which lines appear to be parallel?

m and *x*	*x* and *y*	*m* and *n*	*n* and *y*
Ⓐ	Ⓑ	Ⓒ	Ⓓ
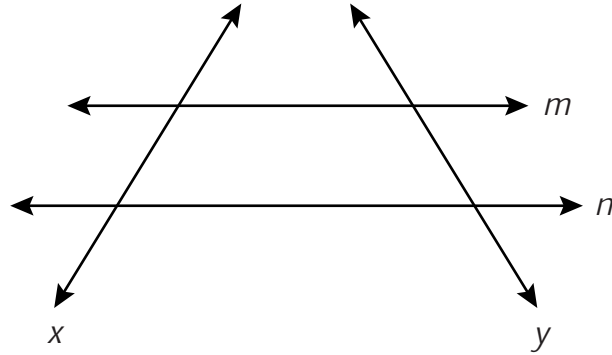
31

Which of the following best describes the faces of this prism?

5 inches

10 inches

5 inches
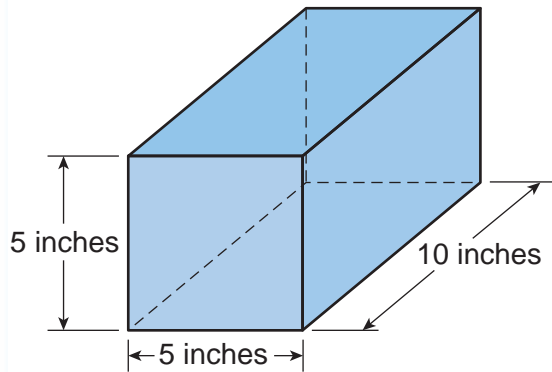
Ⓐ 4 rectangles and 2 squares

Ⓑ 2 rectangles and 4 squares

Ⓒ 6 rectangles and 2 squares

Ⓓ 2 rectangles and 6 squares

32

What solid shape can be made by folding this pattern along the dashed lines?
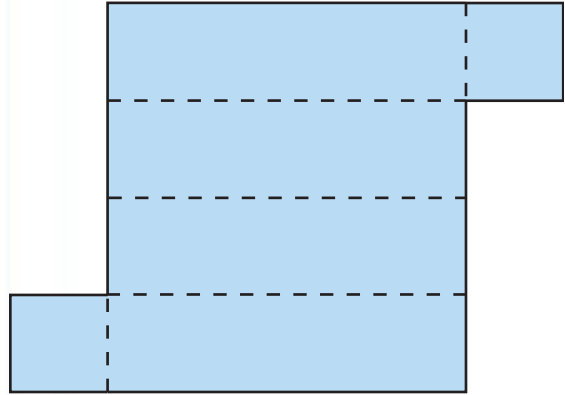
Ⓐ Rectangular Pyramid

Ⓑ Rectangular Prism

Ⓒ Triangular Prism

Ⓓ Cube

GO ON ▶

33

How many cubic units could be added to the figure below to make one large cube?
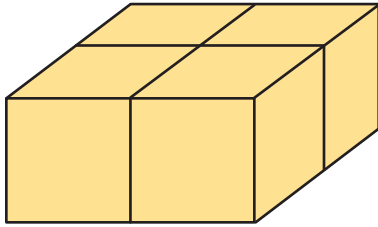
Ⓐ 8 more cubic units

Ⓑ 6 more cubic units

Ⓒ 4 more cubic units

Ⓓ 2 more cubic units

34

Which shapes below appear to be congruent?

1   2   3   4

1 and 4   2 and 4   2 and 3   1 and 3

Ⓐ   Ⓑ   Ⓒ   Ⓓ

GO ON▶

35

Which is closest to the distance from point *M* to point *N* on the number line below?

M   N

0   15
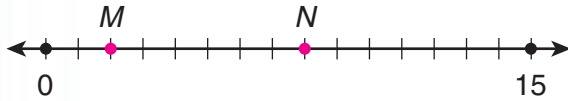
Ⓐ 8 units

Ⓑ 7 units

Ⓒ 6 units

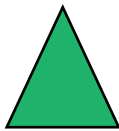Ⓓ 5 units

36

A class of 24 students recorded information on the tally chart below about what type of pet they have.

Students' Pets

Type of Pet	Number of Students
Fish	JHT II
Dog	JHT IIII
Cat	JHT III

According to the tally chart, how many students have a cat for a pet?

7   8   9   24

Ⓐ   Ⓑ   Ⓒ   Ⓓ

GO ON▶

37

Mrs. Robbins' class voted for their favorite kinds of books to read.

Books We Like
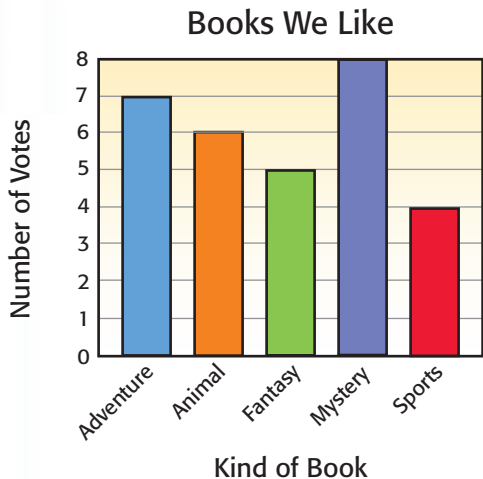
How many more students voted for books about adventures than books about sports?

0	1	2	3
Ⓐ	Ⓑ	Ⓒ	Ⓓ

38

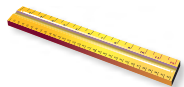The chart below shows the shoe size for each of six students.

Student	Shoe Size
Bill	$2\frac{1}{2}$
Mary	$2\frac{1}{2}$
Carl	3
Susan	$2\frac{1}{2}$
Kurt	$4\frac{1}{2}$
Lynn	4

What is the mode for the data in the chart?

$4\frac{1}{2}$	3	$2\frac{1}{2}$	2
Ⓐ	Ⓑ	Ⓒ	Ⓓ

GO ON▶

39

Dan will spin the arrow shown below many times.
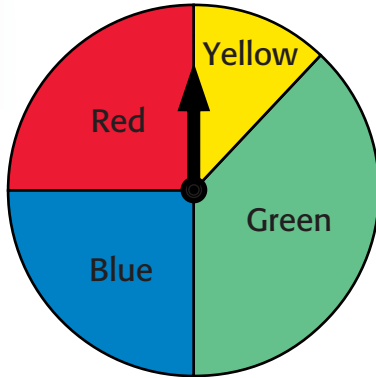
In which colored space is the arrow least likely to land?

Ⓐ Red

Ⓑ Blue

Ⓒ Green

Ⓓ Yellow

40

Holly will flip a penny 100 times.

How many times should Holly expect to get tails when she flips the penny?

- Ⓐ 25 out of 100
- Ⓑ 50 out of 100
- Ⓒ 75 out of 100
- Ⓓ 90 out of 100

WORK SPACE

STOP ■

Answer Key with Assessment Objectives Identified

Item Number	Correct Answer	Assessment Objective
1	B	**6.3.01** Read, write, recognize, and model equivalent representations of whole numbers and their place values up to 100,000.
2	D	**6.3.03** Recognize a fraction represented with a pictorial model.
3	A	**6.3.04** Represent multiplication as repeated addition.
4	A	**6.3.08** Solve problems involving descriptions of numbers, including characteristics and relationships (e.g., odd/even, factors/multiples, greater than, less than).
5	A	**6.3.09** Solve problems and number sentences involving addition and subtraction with regrouping.
6	C	**6.3.09** Solve problems and number sentences involving addition and subtraction with regrouping.
7	A	**6.3.10** Solve problems involving the value of a collection of bills and coins whose total value is $10.00 or less, and make change.
8	C	**6.3.11** Model and apply basic multiplication facts (up to 10×10), and apply them to related multiples of 10 (e.g., $3 \times 4 = 12$, $30 \times 4 = 120$).
9	A	**6.3.12** Use the inverse relationships between addition and subtraction to complete basic fact sentences and solve problems (e.g., $5 + 3 = 8$ and $8 - 3 = \_\_$).
10	A	**6.3.13** Solve problems involving the multiplicative identity of one (e.g., $3 \times 1 = 3$) and the additive identity of zero (e.g., $3 + 0 = 3$).
11	C	**6.3.14** Make estimates appropriate to a given situation with whole numbers.
12	C	**7.3.01** Solve problems involving simple elapsed time in compound units (e.g., hours, minutes, days).
13	B	**7.3.01** Solve problems involving simple elapsed time in compound units (e.g., hours, minutes, days).
14	C	**7.3.02** Select and use appropriate standard units and tools to measure length (to the nearest inch or cm), time (to the nearest minute), and temperature (to the nearest degree).
15	B	**7.3.03** Solve problems involving the perimeter of a polygon with given side lengths or a given non–standard unit (e.g., paperclip).
16	D	**7.3.04** Solve problems involving the area of a figure when whole and half square units are shown within the figure.
17	B	**7.3.05** Compare and estimate length (including perimeter), area, and weight/mass using referents.
18	B	**7.3.06** Determine the volume of a solid figure that shows cubic units.

Item Number	Correct Answer	Assessment Objective
19	B	**7.3.07** Solve problems involving simple unit conversions within the same measurement system for time and length.
20	B	**8.3.01** Determine a missing term in a pattern (sequence), describe a pattern (sequence), and extend a pattern (sequence) when given a description or pattern (sequence).
21	B	**8.3.02** Write an expression to represent a given situation.
22	C	**8.3.04** Solve one–step addition and subtraction equations that have a missing number or missing operation sign (e.g., $3 + \square = 5, 6 \square 1 = 7$).
23	B	**8.3.05** Solve word problems involving unknown quantities.
24	B	**9.3.01** Identify, describe, and sketch two–dimensional shapes (triangles, squares, rectangles, pentagons, hexagons, and octagons) according to the number of sides, length of sides, and number of vertices.
25	B	**9.3.02** Identify and describe three-dimensional shapes (cubes, spheres, cones, cylinders, prisms, and pyramids) according to their characteristics (faces, edges, vertices).
26	A	**9.3.02** Identify and describe three-dimensional shapes (cubes, spheres, cones, cylinders, prisms, and pyramids) according to their characteristics (faces, edges, vertices).
27	B	**9.3.03** Locate and identify points using numbers and symbols on a grid, and describe how points relate to each other on a grid (e.g., ♥ is 2 units below ☀, point A is 3 units to the right of point B).
28	D	**9.3.04** Identify whether or not a figure has a line of symmetry, and sketch or identify the line of symmetry.
29	A	**9.3.05** Identify images resulting from flips (reflections), slides (translations), or turns (rotations).
30	C	**9.3.06** Identify parallel lines.
31	A	**9.3.07** Identify the two–dimensional components of a three-dimensional object (e.g., a cube has square faces).
32	B	**9.3.08** Identify a three–dimensional object from its net.
33	C	**9.3.09** Predict the result of putting shapes together (composing) and taking them apart (decomposing).
34	D	**9.3.10** Identify congruent and similar figures by visual inspection.
35	C	**9.3.11** Determine the distance between two points on the number line in whole numbers.
36	B	**10.3.01** Read and interpret data represented in a pictograph, bar graph, Venn diagram (with two circles), tally chart, or table.

Item Number	Correct Answer	Assessment Objective
37	D	**10.3.01** Read and interpret data represented in a pictograph, bar graph, Venn diagram (with two circles), tally chart, or table.
38	C	**10.3.03** Determine the mode, given a set of data or a graph.
39	D	**10.3.04** Classify events using words such as certain, most likely, equally likely, least likely, possible, and impossible.
40	B	**10.3.05** Describe the chances associated with a context presented visually, including using the response format "3 out of 4."

To view all the mathematics assessment objectives, download the *Illinois Mathematics Assessment Framework* for Grades 3–8 online at www.isbe.net/assessment/IAFindex.htm.

Mathematics Short-Response Scoring Rubric Followed by Student Samples

Mathematics Short-Response Scoring Rubric

The following rubric is used to score the short-response items for all grade levels.

SCORE LEVEL	DESCRIPTION
2	Completely correct response, including correct work shown and/or correct labels/units if called for in the item
1	Partially correct response
0	No response, or the response is incorrect

Using Short-Response Samples

Beginning with the spring 2008 ISAT, the sample short-response question and answer (shown below) that appeared in the 2006 and 2007 ISAT test directions will no longer be included in the directions immediately prior to session 2. ISBE encourages educators to practice these types of items with students during the course of the school year so they are familiar with them prior to ISAT testing.

SAMPLE SHORT-RESPONSE QUESTION

Sam can buy his lunch at school. Each day, he wants to buy juice that costs 50¢, a sandwich that costs 90¢, and fruit that costs 35¢.

Exactly how much money does Sam need to buy lunch for 5 days?

Show your work and label your answer.

SAMPLE SHORT-RESPONSE ANSWER

Please refer to the 2008 and 2009 ISAT sample books for additional short-response items and student samples (online at www.isbe.net/assessment/htmls/sample_books.htm).

Mathematics Short-Response Sample Item 1

Below is a short-response sample item, followed by 3 samples of student responses.

This short-response sample item is classified to assessment objective 6.3.02, "Identify and write (in words and standard form) whole numbers up to 100,000."

1

Lily has thirty-six thousand two hundred four marbles in her bucket.

1. Write the number of Lily's marbles in standard form.

2. What digit is in the tens place?

Short-Response Student Sample 1A

1

Lily has thirty-six thousand two hundred four marbles in her bucket.

1. Write the number of Lily's marbles in standard form.

2. What digit is in the tens place?

36,204

O is in the tens place.

Short-Response Student Sample 1A

Rubric Score Point = 2

Note: The number of marbles is correctly written in standard form (*36,204*) and a zero is correctly identified as the digit in the tens place.

Short-Response Student Sample 1B

1

Lily has thirty-six thousand two hundred four marbles in her bucket.

1. Write the number of Lily's marbles in standard form.

2. What digit is in the tens place?

my answer
1. 36,204

my answer
2. 36,2⓪4

Short-Response Student Sample 1B

Rubric Score Point = 2

Note: The number of marbles is correctly written in standard form (*36,204*) and a zero is circled to correctly identify it as the digit in the tens place.

Short-Response Student Sample 1C

1

Lily has thirty-six thousand two hundred four marbles in her bucket.

1. Write the number of Lily's marbles in standard form.

2. What digit is in the tens place?

36,240

The 4 is in the 10's Place.

Short-Response Student Sample 1C

Rubric Score Point = 1

Note: The number of marbles is incorrectly written in standard form (*36,240*); however, the student correctly identifies the four as the digit in the tens place of the incorrect number.

Mathematics Short-Response Sample Item 2

Below is a short-response sample item, followed by 3 samples of student responses.

This short-response sample item is classified to assessment objective 8.3.04, "Solve one-step addition and subtraction equations that have a missing number or missing operation sign (e.g., $3 + \square = 5$, $6 \square 1 = 7$)."

2

Fill in the correct number or sign in each of the boxes to make both number sentences true.

$$63 = \square + 21$$
$$48 = 59 \,\square\, 11$$

Short-Response Student Sample 2A

2

Fill in the correct number or sign in each of the boxes to make both number sentences true.

$$63 = \boxed{42} + 21$$
$$48 = 59 \boxed{-} 11$$

Short-Response Student Sample 2A

Rubric Score Point = 2

Note: The student correctly indicates that "*42*" belongs in the box for the first equation, and the student correctly identifies the subtraction sign that belongs in the box for the second equation.

Short-Response Student Sample 2B

2

Fill in the correct number or sign in each of the boxes to make both number sentences true.

$$63 = \boxed{42} + 21$$
$$48 = 59 \boxed{-} 11$$

My answer is
42 for question one
and subtract for question
two

Short-Response Student Sample 2B

Rubric Score Point = 2

Note: The student correctly indicates that "*42*" belongs in the box for the first equation, and the student correctly identifies the subtraction sign that belongs in the box for the second equation.

Short-Response Student Sample 2C

2

Fill in the correct number or sign in each of the boxes to make both number sentences true.

$$63 = \boxed{42} + 21$$
$$48 = 59 \boxed{+} 11$$

Short-Response Student Sample 2C

Rubric Score Point = 1

Note: The student identifies "*42*" as the missing number for the first equation, but the student mistakenly indicates an addition sign is missing in the second equation.

Mathematics Extended-Response Scoring Rubric Followed by Student Samples

Mathematics Extended-Response Scoring Rubric

The following rubric is used to score the extended-response items for all grade levels. A student-friendly version of this extended-response scoring rubric is available online at www.isbe.net/assessment/math.htm.

SCORE LEVEL	MATHEMATICAL KNOWLEDGE: Knowledge of mathematical principles and concepts which result in a correct solution to a problem.	STRATEGIC KNOWLEDGE: Identification and use of important elements of the problem that represent and integrate concepts which yield the solution (e.g., models, diagrams, symbols, algorithms).	EXPLANATION: Written explanation of the rationales and steps of the solution process. A justification of each step is provided. Though important, the length of the response, grammar, and syntax are not the critical elements of this dimension.
4	• shows complete understanding of the problem's mathematical concepts and principles • uses appropriate mathematical terminology and notations including labeling answer if appropriate • executes algorithms and computations completely and correctly	• identifies all important elements of the problem <u>and</u> shows complete understanding of the relationships among elements • shows complete evidence of an appropriate strategy that would correctly solve the problem	• gives a complete written explanation of the solution process; clearly explains <u>what</u> was done and <u>why</u> it was done • may include a diagram with a complete explanation of all its elements
3	• shows nearly complete understanding of the problem's mathematical concepts and principles • uses mostly correct mathematical terminology and notations • executes algorithms completely; computations are generally correct but may contain minor errors	• identifies most of the important elements of the problem and shows a general understanding of the relationships among them • shows nearly complete evidence of an appropriate strategy for solving the problem	• gives a nearly complete written explanation of the solution process; clearly explains <u>what</u> was done and begins to address <u>why</u> it was done • may include a diagram with most of its elements explained
2	• shows some understanding of the problem's mathematical concepts and principles • uses some correct mathematical terminology and notations • may contain major algorithmic or computational errors	• identifies some important elements of the problem but shows only limited understanding of the relationships among them • shows some evidence of a strategy for solving the problem	• gives some written explanation of the solution process; either explains <u>what</u> was done or addresses <u>why</u> it was done • explanation is vague, difficult to interpret, or does not completely match the solution process • may include a diagram with some of its elements explained
1	• shows limited to no understanding of the problem's mathematical concepts and principles • may misuse or fail to use mathematical terminology and notations • attempts an answer	• fails to identify important elements or places too much emphasis on unrelated elements • reflects an inappropriate strategy for solving the problem; strategy may be difficult to identify	• gives minimal written explanation of the solution process; may fail to explain <u>what</u> was done and <u>why</u> it was done • explanation does not match presented solution process • may include minimal discussion of the elements in a diagram; explanation of significant elements is unclear
0	• no answer attempted	• no apparent strategy	• no written explanation of the solution process is provided

Using Extended-Response Samples

Beginning with the spring 2008 ISAT, the sample extended-response problem and solution (shown below) that appeared in the 2006 and 2007 ISAT test directions will no longer be included in the directions immediately prior to session 3. ISBE encourages educators to practice these types of items with students during the course of the school year so they are familiar with them prior to ISAT testing.

SAMPLE EXTENDED-RESPONSE PROBLEM

Mrs. Martin wants to put tiles on the floor by the front door of her house. She wants to use 3 different colors of tiles in her design.
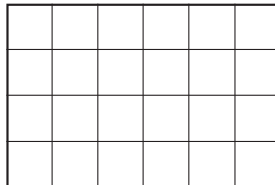
She also wants

$\frac{1}{2}$ of the tiles to be blue,

$\frac{1}{4}$ of the tiles to be gray, and

$\frac{1}{4}$ of the tiles to be red.

Use the grid below to design a floor for Mrs. Martin. Label each tile with the first letter of the color that should be placed there.

Show all your work. Explain in words how you found your answer. Tell why you took the steps you did to solve the problem.

SAMPLE EXTENDED-RESPONSE SOLUTION

B	B	B	B	B	B	$\}$ $\frac{1}{2}$ blue
B	B	B	B	B	B	
G	G	G	G	G	G	$\leftarrow$ $\frac{1}{4}$ gray
R	R	R	R	R	R	$\leftarrow$ $\frac{1}{4}$ red

First, I know that there are 4 equal rows, so 2 rows is half and 1 row is $\frac{1}{4}$. So I made 2 rows B for blue because she wants half the tiles blue. Then I made 1 row G for gray because she wants $\frac{1}{4}$ of the tiles to be gray. Since she wants gray and red to be the same amount of tiles, I made the last row R for red.

Please refer to the 2008 and 2009 ISAT sample books for additional extended-response items and student samples (online at www.isbe.net/assessment/htmls/sample_books.htm).
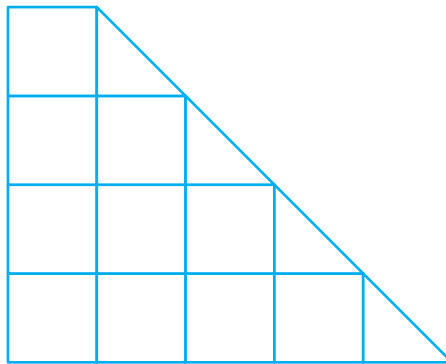
Mathematics Extended-Response Sample Item 1

Below is an extended-response sample item, followed by 3 student samples.

This extended-response sample item is classified to assessment objective 7.3.04, "Solve problems involving the area of a figure when whole and half square units are shown within the figure."

1

Maria drew the figure below.

Each ☐ represents 1 square unit.

> Draw a different figure on your grid paper with the same area as Maria's.
>
> Show all your work on this page and on the next page. Explain in words how you found your answer. Write why you took the steps you did to solve the problem.

Mathematics Extended-Response Sample Item 1
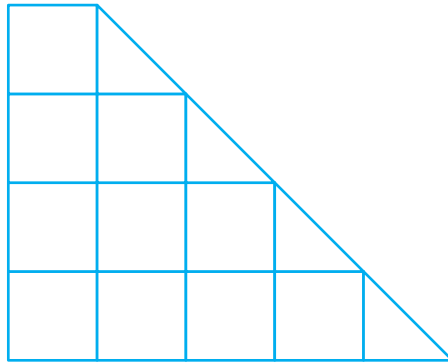# (Page 2 of Response Space)

1

DIRECTIONS ▶ **Make sure you**
— **show all your work in solving the problem,**
— **clearly label your answer,**
— **write in words how you solved the problem,**
— **write in words why you took the steps you did to solve the problem, and**
— **write as clearly as you can.**

Extended-Response Student Sample 1A

1

Maria drew the figure below.

Each ☐ represents 1 square unit.

Draw a <u>different</u> figure on your grid paper with the same area as Maria's.

Show all your work on this page and on the next page. Explain in words how you found your answer. Write why you took the steps you did to solve the problem.

1

DIRECTIONS

Make sure you
— show all your work in solving the problem,
— clearly label your answer,
— write in words how you solved the problem,
— write in words why you took the steps you did to solve the problem, and
— write as clearly as you can.

First I read the problem carefully. I needed to draw a figure that is different but has the same areas as maria's. I started my picture by drawing a figure because the problem told me I had to draw a figure. Next I some of the design because it went over an area of twelve. Then I counted the area because I didn't want it to be not enough. My solution is see my picture above.

Extended-Response Student Sample 1B
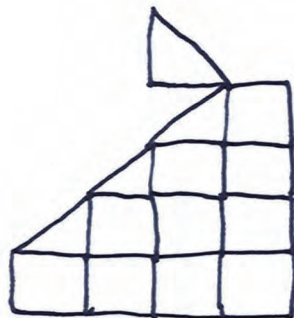
1

Maria drew the figure below.
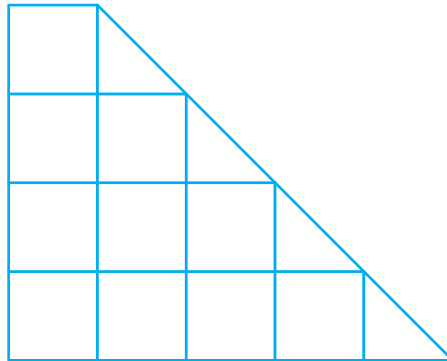
Each ☐ represents 1 square unit.

Draw a <u>different</u> figure on your grid paper with the same area as Maria's.

Show all your work on this page and on the next page. Explain in words how you found your answer. Write why you took the steps you did to solve the problem.
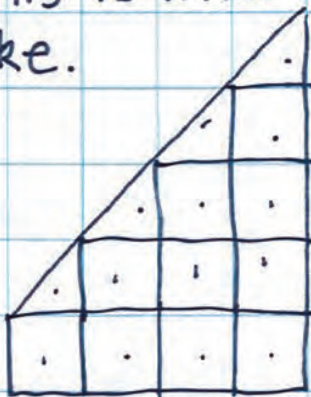
Extended-Response Student Sample 1B Continued

1

Make sure you
— **show all your work in solving the problem,**
— **clearly label your answer,**
— **write in words how you solved the problem,**
— **write in words why you took the steps you did to solve the problem, and**
— **write as clearly as you can.**

what I did	Why I did It
First I read the Problem and decided to use my stratgy	help me find the answer easily.
Second to draw a different figure	I did this because that will help me more.
Next it Said 12 areas I drew it	did this because to help me on this sheet
Finally I found my answer and this is what it look like.	Marias Looks about the same to mine but I had 12 areas. I did it becquse thats my answer I wrote 12 areas to find my answer.

Extended-Response Student Sample 1C

1

Maria drew the figure below.
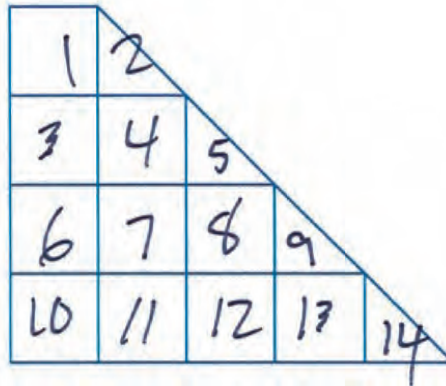
Each ☐ represents 1 square unit.

Draw a <u>different</u> figure on your grid paper with the same area as Maria's.

Show all your work on this page and on the next page. Explain in words how you found your answer. Write why you took the steps you did to solve the problem.

Extended-Response Student Sample 1C Continued

1

Make sure you
— show all your work in solving the problem,
— clearly label your answer,
— write in words how you solved the problem,
— write in words why you took the steps you did to solve the problem, and
— write as clearly as you can.

What I did	Why I did It
I drew a shap that has the egsact same amount of square units Maria drew on her shape.	becase the directions Said draw a shape that has the same number of square units Maria has.
I counted the square units up.	to figure out how many square units maria has on her shape and there where 14.

Solution Sentence: I counted all the square units up to figure out how many square units Maria has on her Shape and there were 14 square units on her shape.

Scoring Guide for "Maria's Figure"

To solve this problem, students are asked to draw a different figure that has the same area as the figure shown.

Extended-Response Student Sample 1A

MATHEMATICAL KNOWLEDGE	STRATEGIC KNOWLEDGE	EXPLANATION
4	**4**	**4**
The response shows complete understanding of the problem's mathematical concepts and principles. The student draws a different figure that is non-congruent, but equal in area, to Maria's original of 12 square units.	The response identifies all important elements of the problem and shows complete understanding of the relationships among elements. The student counts whole square units and half square units accurately (*area of twelve*) and draws a non-congruent figure with defined units.	The response gives a complete written explanation of the solution process: clearly explains what was done and why it was done. The student explains why they drew the picture (*draw a figure that is different but has the same areas…had to draw a figure*) and why they used an area of twelve square units (*went over an area of twelve. Then I counted… didn't want it to be not enough*).

Extended-Response Student Sample 1B

MATHEMATICAL KNOWLEDGE	STRATEGIC KNOWLEDGE	EXPLANATION
3	**3**	**2**
The response shows nearly complete understanding of the problem's mathematical concepts and principles. The student draws a figure congruent to Maria's, and it is equal in area (10 whole square units and 4 half square units), but rotates it to try to make it different.	The response shows that the student counts whole units and half units accurately and draws a figure with defined units. However, the student's drawn figure is congruent to Maria's figure since it is a transformation of the one shown.	The response gives some written explanation of the solution process. It contains an explanation of what was done (*draw a different figure…12 areas I drew it…found my answer and this is what it look like*) and attempts to explain why these steps were taken (*because that will help me more…to help me on this sheet*), but these why's do not explain why the student took the steps they did to solve the problem.

Extended-Response Student Sample 1C

MATHEMATICAL KNOWLEDGE	STRATEGIC KNOWLEDGE	EXPLANATION
2	**3**	**4**
The response shows some understanding of the problem's mathematical concepts and principles. The student draws a different figure with an area of 14 square units.	The response identifies most important elements of the problem and shows a general understanding of the relationship among them. The student counts whole square units accurately and draws a non-congruent figure with defined units, but does not accurately count the half square units correctly.	The response gives a complete written explanation of the solution process: clearly explains what was done and why it was done. The student explains why they counted and used 14 square units (*counted the square units up…to figure out how many square units maria has on her shape*) and why they drew the picture (*drew a shap that has the egsact same amount of square units…directions said draw a shape that has the same number of square units Maria has*).