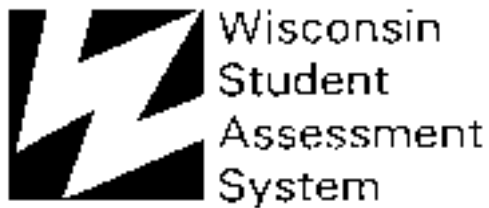


*Wisconsin Knowledge and
Concepts Examinations*

An Alignment Study
at
Grade 8



Wisconsin Department of Public Instruction

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Concepts Examinations*

**An Alignment Study
at
Grade 8**

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Executive Summary

Alignment of Level 18 *TerraNova*, Form A, to Wisconsin Model Academic Standards

On April 20-21, 1998, CTB/McGraw-Hill staff conducted a workshop for the Department of Public Instruction (DPI) to match items on *TerraNova*, Form A, at Levels 14, 18, and 20 to the Model Academic Standards for Grades 4, 8, and 12 respectively. *TerraNova* is currently administered to Wisconsin students in Grades 4, 8, and 10. The purpose of conducting the match was to determine whether individual *TerraNova* items assess the Model Academic Standards and the extent to which the Model Academic Standards are addressed by *TerraNova* items—that is, breadth of coverage. Approximately ten Wisconsin educators participated in the alignment workshop for each of the four content areas assessed by *TerraNova*: reading/language arts, mathematics, science, and social studies. CTB facilitated content area groups by providing instructions on the specific tasks to be performed and on documentation procedures. Participants worked in pairs to review a draft match completed by CTB then presented their findings to the whole group for discussion; groups reached consensus on each item. Test items could be matched to more than one performance standard, and an item was considered to match if it either directly assessed the content of the standard or if it assessed related content.

Major Findings

- At Grade 8, 99 percent of all *TerraNova*, Form A, items on Level 18 match one or more of the Model Academic Standards.
- In Reading Language Arts, all 64 items (100%) match one or more performance standards.
- All 35 Science items and 41 Mathematics items match one or more performance standards.
- In Social Studies, 34 of 35 (97%) items match at least one performance standard.

At Grade 8 there are a total of 173 performance standards, of which 158 were judged to be appropriate for large-scale, paper-and-pencil kinds of tests. Of the 158 assessable standards, 85 (54%) are measured by items on *TerraNova*, Form A.

- Of the 12 Reading Language Arts performance standards which are appropriate for large-scale assessment, ten (83%) are addressed by one or more *TerraNova* items.
- Seventy-one percent of the Mathematics assessable standards (22 of 31) are measured by *TerraNova* items.
- In Science, 46 percent of the assessable performance standards are tested by *TerraNova* items. Of the 63 Science performance standards, 56 were determined to be appropriate for large-scale assessments.
- In Social Studies, 27 of 58 (47%) assessable performance standards are measured by *TerraNova* items.

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The purpose of this document is to present the findings of the alignment study completed by Wisconsin educators in April 1998. On the following pages are summary tables showing how many *TerraNova*, Form A, items match the Wisconsin Model Academic Standards. In addition, the breadth of coverage of the performance standards by *TerraNova* items is also presented. Sample items for each content area show the kinds of items found in *TerraNova* Level 18.

Grade 8

TerraNova Level 18

A standardized achievement test is designed to sample the skills and knowledge that students are usually expected to acquire as they progress through school. No standardized test can measure all of the academic standards that Wisconsin students are expected to learn. *TerraNova* Level 18 was matched to the Grade 8 Wisconsin Model Academic Standards to determine how well the test does measure the Wisconsin standards.

***TerraNova*, Form A, Items Measuring Wisconsin Model Academic Standards**

This table shows that nearly all of the items on the eighth-grade test measure at least one Wisconsin Model Academic Standard. Some items may measure more than one standard. For example, a math test item might measure both geometry and problem solving.

	Number of Test Items on <i>TerraNova</i> , Form A	Number of Items Measuring Wisconsin Performance Standards	Percent of Items Measuring Wisconsin Performance Standards
Reading/Language Arts	64	64	100%
Mathematics	41	41	100%
Science	35	35	100%
Social Studies	35	34	97%
Total Battery	175	174	99%

On the following pages are tables that summarize the extent to which *TerraNova* items measure the Grade 8 Wisconsin Model Academic Standards. It is important to keep in mind that some performance standards cannot be efficiently or effectively measured on an achievement test like *TerraNova*. This is because some performance standards require students to do an oral performance or participate in a discussion of a topic. Other standards might require students to create a product or work on a project that may take several days or weeks to complete. Standards such as these are more appropriately assessed by regular classroom testing, observing students at work, or examining students' work products.

Following the tables are sample items illustrative of those on *TerraNova* Level 18. For each item, the Wisconsin Model Academic Standard to which the item is matched is highlighted in the shaded box beside the item. The descriptive information explains what the item measures and identifies other skills measured by similar items.

Grade 8

TerraNova Level 18

Several Wisconsin Model Academic Standards for English/Language Arts cannot be assessed with a large-scale, paper-and-pencil test. The standards that cannot be assessed in this way include two Oral Language Standards and all but one of the Media and Technology standards. These standards require the students to do oral presentations, participate in discussions, use computers to gather and organize information, and to analyze and create media presentations. These are essential skills for Wisconsin students to acquire, but they are best measured using other assessment methods.

English/Language Arts

Wisconsin Model Academic Standards			
Content Standards	Number of Performance Standards	Performance Standards That Can Be Assessed by Large-Scale Tests	Number of Performance Standards Matched by TerraNova, Form A, Items
A. Reading/Literature	4	4	4
B. Writing	3	3	3
C. Oral Language	3	1	0
D. Language	2	2	2
E. Media/Technology	5	1	0
F. Research/Inquiry	1	1	1
Total	18	12	10

Grade 8
***TerraNova* Level 18**

Mathematics

Wisconsin Model Academic Standards			
Content Standards	Number of Performance Standards	Performance Standards That Can Be Assessed by Large-Scale Tests	Number of Performance Standards Matched by <i>TerraNova</i>, Form A, Items
A. Mathematical Process	6	4	2*
B. Number Operations & Relations	7	7	6
C. Geometry	5	5	5
D. Measurement	4	5	2
E. Statistics & Probability	7	6	4
F. Algebraic Relationships	5	5	3
Total	34	31	22

*Three performance standards are addressed by items; a fourth standard is addressed by the scoring rubrics for constructed response items.

Grade 8

TerraNova Level 18

Science

Wisconsin Model Academic Standards			
Content Standards	Number of Performance Standards	Performance Standards That Can Be Assessed by Large-Scale Tests	Number of Performance Standards Matched by TerraNova, Form A, Items
A. Science Connections	8	6	0
B. Nature of Science	6	6	2
C. Science Inquiry	11	9	4
D. Physical Science	10	10	7
E. Earth & Space Science	8	8	4
F. Life & Environmental Science	10	10	5
G. Science Applications	7	5	3
H. Science in Personal and Social Perspectives	3	2	1
Total	63	56	26

Grade 8
***TerraNova* Level 18**

Social Studies

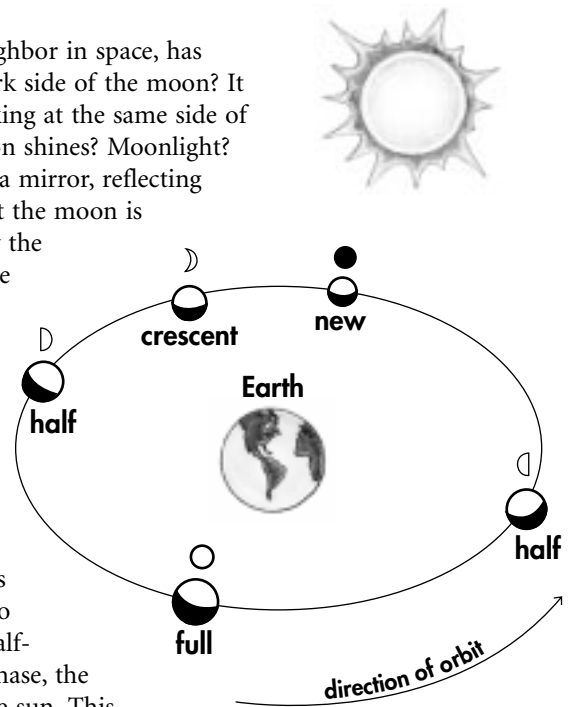
Wisconsin Model Academic Standards			
Content Standards	Number of Performance Standards	Performance Standards That Can Be Assessed by Large-Scale Tests	Number of Performance Standards Matched by <i>TerraNova</i>, Form A, Items
A. Geography	11	11	7
B. History	12	12	8
C. Political Science & Citizenship	9	9	3
D. Economics	11	11	3
E. The Behavioral Sciences	15	15	6
Total	58	58	27

The Moon

Perhaps you have gazed at the moon and wondered why it looks different at different times. This article will help explain why the moon seems to change shape. Read the article. Then do Numbers 1 through 4.

Throughout the ages, the moon, our closest neighbor in space, has excited our curiosity. Have you ever heard of the dark side of the moon? It is the side that never faces Earth. We are always looking at the same side of the moon! And what do we really see when the moon shines? Moonlight? Actually, the moon has no light of its own. It is like a mirror, reflecting the sun's light. Perhaps the most curious thing about the moon is that even though the side we see is always lighted by the sun, it appears to change its shape. Sometimes we see a full moon, sometimes we see a half moon, and other times we see just a sliver of the moon.

The moon seems to change shape because we see different amounts of the moon's lighted side as it revolves around Earth. These apparent changes are called phases. In the first phase, called the new moon, we see no moon at all. In the nights following, the moon seems to grow from a sliver of light to a crescent moon. After a week, the moon has moved far enough in its circle around Earth for us to see half of its lighted side. This phase is called the half-moon phase. About one week after the half-moon phase, the entire side of the moon facing Earth is lighted by the sun. This is the full-moon phase. As the moon continues on its journey, it appears to grow smaller again, shrinking to a sliver and then disappearing altogether to become, once again, a new moon.



English/Language Arts

Sample Items

Grade 8, Level 18

Wisconsin Model Academic Standards Measured

1 The words *full*, *half*, and *crescent* describe *phases* of the moon. Find the word that means about the same as *phases*.

- A** names
- B** lights
- C** colors
- D** stages

A Reading/Literature

TerraNova Objective 02
Basic Understanding

In this item, the student is asked to identify the meaning of an on-grade-level vocabulary word. Other items for this content standard focus on measuring the student's ability to recall passage details, sequence events, understand a stated main idea, and gather stated information from graphics.

2 Which of these is the best title for this article?

- A** "The Different Faces of the Moon"
- B** "The Dark Side of the Moon"
- C** "Our Neighbor, the Sun"
- D** "Earth's Journey in Space"

A Reading/Literature

TerraNova Objective 03
Analyze Text

This item measures the student's ability to determine the main idea of a passage and choose a title that most accurately conveys that main idea. Other items measure the student's ability to interpret text and draw conclusions, gather supporting evidence, infer relationships such as cause and effect, identify story elements such as plot and setting, analyze characters and character actions, and recognize the use of literary and persuasive techniques.

A Reading/Literature

*TerraNova Objective 04
Evaluate and Extend Meaning*

In this item, the student is asked to distinguish between facts and opinions. Other items require the student to extend the meaning of text by understanding the author's purpose and predicting future events or actions.

3 Which of these statements from the article is a fact about the moon?

- ✓A The moon does not shine with its own light.
- B Moonlight is more mysterious than sunlight.
- C The moon has a sinister side that intrigues us.
- D People have been more curious about the moon than about the sun.

A Reading/Literature

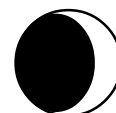
*TerraNova Objective 05
Identify Reading Strategies*

This item focuses on the student's ability to make connections between the text and graphic representations of text concepts. Other items measuring the use of reading strategies focus on the student's ability to formulate questions about the text, recognize underlying text structures, or use strategies to determine the meaning

4 Here are the first four phases of the moon, beginning with the new moon.

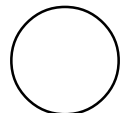


new



crescent

?



full

Which phase is missing?



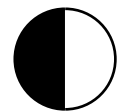
A



B



C



D



Here is a story a student wrote about seeing the moon one night. There are a couple of mistakes that need correcting. Read the story. Then do Numbers 5 and 6.

1 Last night it was very warm, so I go outside and looked at
2 the full moon. It looked perfectly round and was very bright.
3 I could see many of its features easily, even though I didn't have
4 a telescope. The night was so clear and the moonlight was so
5 bright that I sat down on the porch steps and read a book.
It was the more beautifuller night I've seen in a long time.

5 Which is the best way to write Sentence 1?

- A** Last night it was very warm, so I go outside and look at the full moon.
- ✓ **B** Last night it was very warm, so I went outside and looked at the full moon.
- C** Last night it was very warm, I went outside and looked at the moon.
- D** Best as it is

B Writing

TerraNova Objective 07
Sentence Structure

This item asks the student to identify correct sentence structure. Other items cover sentence fragments, run-on sentences, and sentence combining.

B Writing

TerraNova Objective 09
Editing Skills

This item asks the student to demonstrate an understanding of the correct use of a superlative adjective form. Other items measuring writing skills focus on correct use of nouns, pronouns, verbs, and capitalization and punctuation in existing or related texts.

6 Choose the best way to write Sentence 5.

- ✓ **A** It was the most beautiful night I've seen in a long time.
- B** It was the beautifullest night I've seen in a long time.
- C** It was the more beautiful night I've seen in a long time.
- D** Best as it is

A Reading/Literature

TerraNova Objective 05
Identify Reading Strategies

In this constructed-response item, the student compares information across two texts (a poem and the informational piece about the moon's phases). The item focuses on the student's ability to use effective reading strategies to locate and record information found in text.

7 "The Path on the Sea" and the article about the moon's phases are examples of how two writers can choose different ways to write about the moon. The categories in the chart below will help you identify some of these differences. Write the missing information in the appropriate boxes.

categories	"The Path on the Sea"	article about moon's phases
author's point of view		third person
author's purpose	to describe how the moonlight on the sea looks to her	
author's approach		factual and educational
language	figurative	literal
organization	a new line for each image	

8 The author of the poem and the author of the article chose different ways to write about the moon. Which did you enjoy reading more, the poem or the article? Support your answer by choosing one of the elements from the chart that identifies what you liked about the poem or the article. Give an example from the text that illustrates that element.



B Writing

TerraNova Objective 05
Identify Reading Strategies

This item, which builds upon the previous item, asks the student to state a position and to support that opinion with information from the chart. The student writes a response that communicates his or her reading experience to an audience.

- 9** Here is a paragraph a student wrote about the moon. The student made five errors in grammar, capitalization, and punctuation. Draw a line through each part that has a mistake, and write the correction above it.

People has many misconceptions about the moon. Some people think that the moon is a source of light, but that's not true. It only reflected light that originates from the sun. Others believe that a crescent moon occurs because the moon has moved into the sun's shadow, but that's not true either. These people are confusing the phases of the moon with an eclipse, the most silliest misconception about the moon that I've ever heard is that the moon is made of green cheese. If you can't figure out why that doesn't make any sense, there's no point in my trying to explain it to you!

B Writing

*TerraNova Objective 09
Editing Skills*

This constructed-response editing item requires the student to proofread and correct errors in usage, punctuation, and capitalization.

Mathematics

Sample Items

Grade 8, Level 18

Wisconsin Model Academic Standards Measured

The students at Greg's school raised money to help pay for school projects. The charts show how the money was raised and how it was spent. Study the charts. Then do Numbers 1 through 3.

How Money Was Raised

Car Wash	\$ 750
Flea Market	\$2500
Used Book Sale	\$ 750

How Money Was Spent

Field Trips	\$1500
Computer Lab	\$ 900
Band Equipment	\$1600

1 Which of these numbers represents the part of the total money raised that was spent for field trips?

- A** 37.5%
- B** $\frac{2}{5}$
- C** 0.15
- D** five-eighths

2 The students found 500 things to sell at the Flea Market. Everything was sold. How would you find the average price of each object sold?

- A** divide 500 by 2500
- B** multiply 500 by 2500
- C** divide 4000 by 500
- D** divide 2500 by 500

B Number Operations and Relationships

TerraNova Objective 10
Number and Number Relations

Items of this type measure the student's ability to recognize and use various number types. Concepts in this content standard that are measured on Level 18 also include number properties, divisibility, multiples, factors, number systems, and general number theory. In the sample item, the student applies number concepts to a real-world situation.

B Number Operations and Relationships

TerraNova Objective 12
Operation Concepts

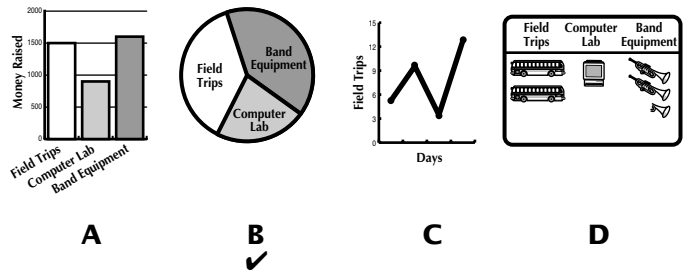
This item measures the student's understanding of operational procedure within the context of a data analysis problem. Other items focus on properties of operations, operational order, and the student's ability to apply proportional thinking in a variety of problem situations.

E Statistics and Probability

*TerraNova Objective 15
Data Analysis, Statistics,
and Probability*

Data analysis items in the Mathematics test measure the student's ability to interpret the purpose of a data presentation and to design data presentations for specific uses. In the sample item, the student determines what type of graph is best for a given purpose. Other items for this content standard measure procedural knowledge and applications of statistical analysis and probability.

3 Greg is designing a graph to show the fraction of the total money raised that will be spent on band equipment this year. These graphs are from past years. Which of these is the best type of graph for him to use?



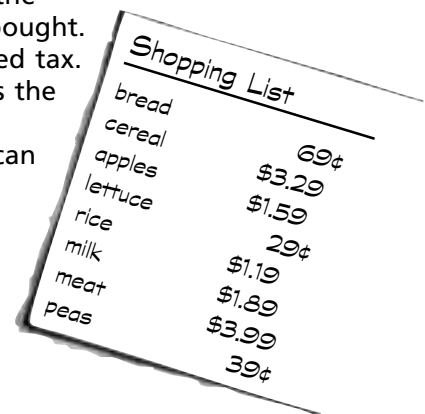
B Number Operations and Relationships

*TerraNova Objective 11
Computation and Numerical
Estimation*

In this item, the student is required to recognize and use numerical relationships in estimating the solution to an everyday problem.

4 Margot's shopping list shows the prices of all the things that she bought. She paid no added tax. Which of these is the least amount of money that she can give the clerk to pay for her purchases?

- A** \$10
- B** \$15
- ✓ **C** \$20
- D** \$25

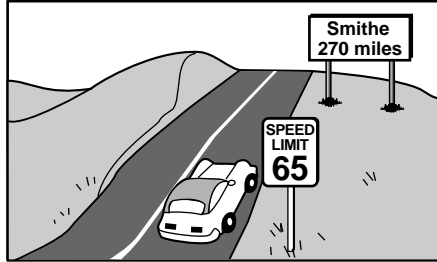


Mathematics
Sample Items
Grade 8, Level 18

Wisconsin Model Academic
Standards Measured

5 Frank is driving 270 miles from Arnett to Smithe. His speed will vary between 55 and 65 miles per hour. Which of these is the best estimate of how long the trip will take?

- A less than 4 hours
- ✓ B between 4 and 5 hours
- C between 5 and 6 hours
- D more than 6 hours



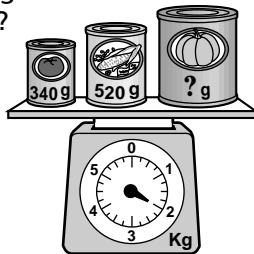
D Measurement

TerraNova Objective 13
Measurement

Measurement items primarily involve solid figures, indirect measurement (using formulas or missing entities), and rate. In the sample item, the student estimates a rate using the real-world context of miles per hour. Other items measuring this content standard require the student to translate units of measure without equivalencies given.

6 How much does the largest can on the scale weigh?

- ✓ A 860 grams
- B 1,060 grams
- C 1,140 grams
- D 2,860 grams



A Mathematical
Processes

TerraNova Objective 17
Problem Solving and Reasoning

Items for this content standard commonly present non-routine problems using a variety of content and context from other content standards. This item measures the student's ability to combine knowledge of measurement, data analysis, and algebra to formulate and use a multi-step strategy that leads to the correct answer.

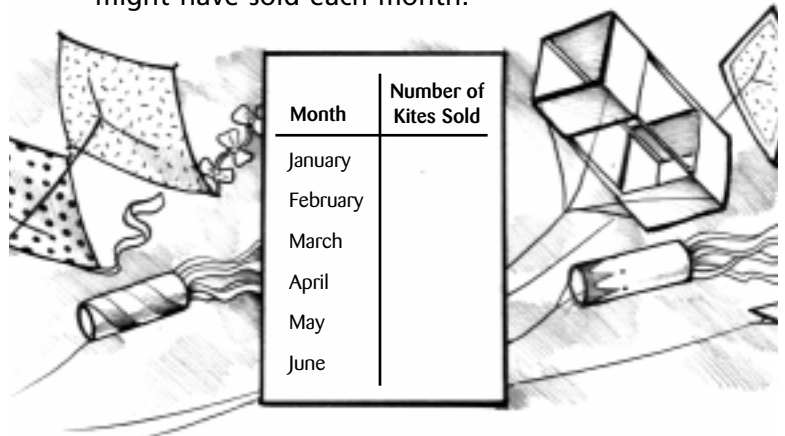
A Mathematical Processes

*TerraNova Objective 15
Data Analysis, Statistics
and Probability
and
TerraNova Objective 18
Communication*

Mathematical communication is most directly measured by constructed-response items that require the student to independently find a strategy and devise a solution to problems having no unique answer. In the sample item, the student completes a chart with data that meet given statistical specifications and constructs a bar graph that reflects this data. Many solutions fit the criteria and multiple strategies exist.

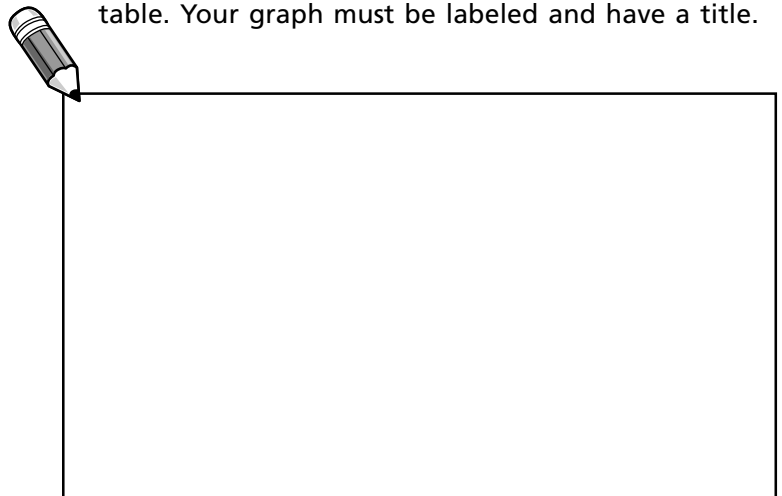
7 Danny sells kites at the *Fly & Float Shop*. In the first six months of the year, he sold a total of 1,000 kites. Kite sales increased every month until May, and then went down in June.

Fill in the table to show how many kites Danny might have sold each month.



Month	Number of Kites Sold
January	
February	
March	
April	
May	
June	

Draw a bar graph that shows the information in the table. Your graph must be labeled and have a title.

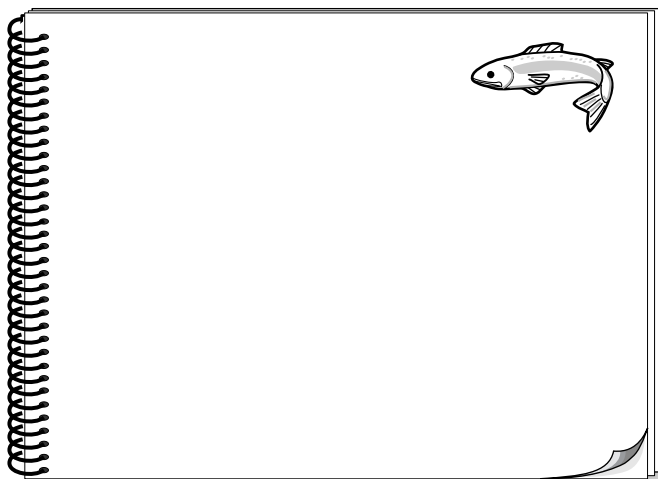




A tank can hold 6 guppies, or 6 mollies, or 1 algae eater, or 2 angel fish for every 5 gallons of water.

- 8** Josie has \$80.00 to spend on an aquarium and fish. She wants at least 5 fish in her tank. She wants to be sure that an angel fish and an algae eater are part of her selection.

In the space below, make a plan to show Josie how she can buy the fish she wants and the right size tank. You must show the cost of each item and the total amount she will spend.



F Algebraic Relationships

TerraNova Objective 16
Patterns, Functions, Algebra
and

TerraNova Objective 17
Problem Solving and Reasoning

In this problem-solving item, the student analyzes and evaluates a situation for pertinent facts and then generates a combination of elements that will satisfy multiple constraints.

A Nature of Science

*TerraNova Objective 25
History and Nature of Science*

Items for this standard measure the student's knowledge of science-related history. Items measuring this standard cover scientists and their discoveries, inventors and inventions, and major advancements in science and technology. Items pertaining to science careers are also in this objective. This item asks the student to identify the way in which false beliefs can be changed by factual information.

C Science Inquiry

*TerraNova Objective 19
Science Inquiry*

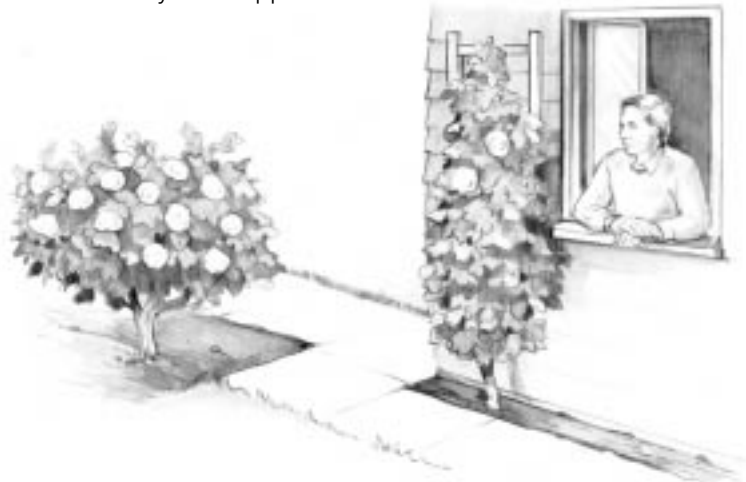
Science Inquiry items at Level 18 measure the student's laboratory skills, particularly those of observation, hypothesis, and subsequent experimental proof. This item requires the student to respond to a given observation with a scientific hypothesis.

1 Until the 1800s, people believed that decaying meat turned into flies, and hair became worms. Which of these led to a better understanding of the origin of flies and worms?

- A** careful study of ancient textbooks
- B** improved sanitary conditions
- C** improved communication systems
- D** careful observation and experimentation

2 Al noticed that the roses growing near the pathway looked healthier than the roses growing near his window. Which of these is a hypothesis that Al might make about the roses?

- A** Roses near the pathway look healthier than the roses outside the window because they receive more sunlight.
- B** Fourteen roses bloom near the pathway while only two bloom near the window.
- C** The roses outside the window seem taller than the roses near the pathway.
- D** All of the roses growing outside the window appear to have yellow-tipped leaves.



Science
Sample Items
Grade 8, Level 18

Wisconsin Model Academic
Standards Measured

3 Which of these is an example of a chemical change?

- ✓ **A** a candle burning
- B** ice cream melting
- C** a puddle evaporating
- D** a sugar cube dissolving in water

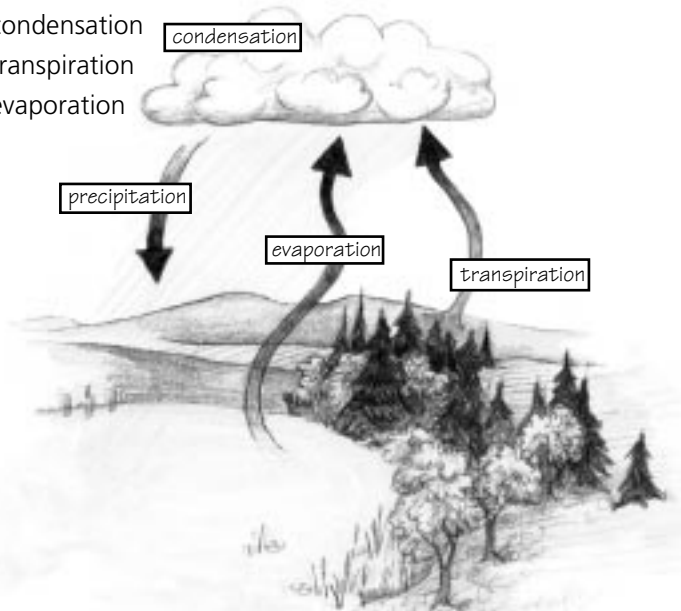
D Physical Science

TerraNova Objective 20
Physical Science

This item measures the student's ability to differentiate between physical and chemical reactions. Other Physical Science items at Level 18 cover concepts about the physical and chemical properties of elements and other substances, motion of objects, and the forms, transmission, and conservation of energy.

4 Which process of the water cycle is the same as the process that causes dew to form in the morning?

- A** precipitation
- ✓ **B** condensation
- C** transpiration
- D** evaporation



E Earth and Space Science

TerraNova Objective 22
Earth and Space

Earth and Space Science items at Level 14 cover geology, knowledge of the solar system, and patterns and cycles in the earth's daily, yearly, and long-term changes. This item focuses on understanding and using correct terminology related to the water cycle.

E Earth and Space Science

*TerraNova Objective 24
Personal and Social Perspectives
in Science*

This item assesses the student's understanding of conservation and resources. Other Earth and Space Science items address geology, meteorology, and the structures and forces which affect the earth.

5 Which of these is both a natural and a nonrenewable resource?

- A oil
- B cotton
- C wood
- D water

F Life and Environmental Science

*TerraNova Objective 21
Life Science*








Life and Environmental Science items at Level 18 measure knowledge of plants and animals and their interactions with their environment. Other concepts measured relate to the structure and function of cells, basic principles of heredity, and the diversity of organisms. This item measures the student's understanding that organisms are regulated both internally and externally.

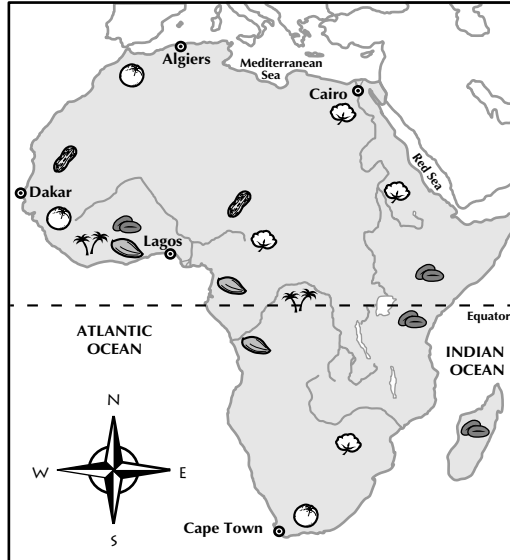
6 Which of these animals has a body temperature that stays about the same throughout the year?

- A a frog
- B a fish
- C a duck
- D a snail

This map shows some products of Africa. Study the map and key. Then do Numbers 1 and 2.

SOME PRODUCTS OF AFRICA—1990s

KEY	
cocoa	
coffee	
cotton	
fruit	
peanuts	
palm oil	
city	



1 According to the map, which of these products is produced farthest east?

- A** fruit
- B** cocoa
- C** coffee
- D** peanuts

A Geography

TerraNova Objective 26
Geographic Perspectives

In this item, the student analyzes the map and applies basic geographic skills to answer the question. Other concepts and skills assessed relate to the five themes of geography: location, place, regions, movement, and human-environment interaction.

D Economics

*TerraNova Objective 29
Economic Perspectives*

The focus of the item is on a basic economic concept related to resource use. Other concepts and skills related to this standard include production, distribution, and consumption of goods and how personal decisions can have a global impact.

B History

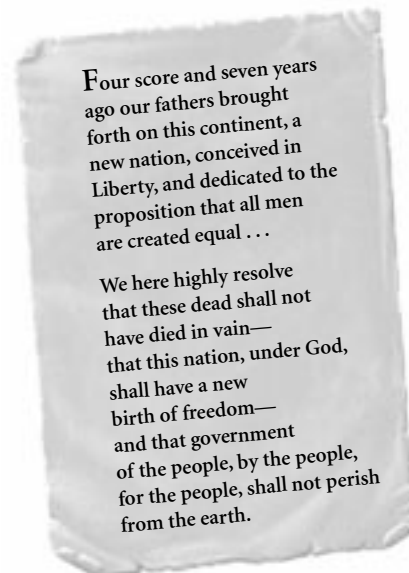
*TerraNova Objective 27
Historical and Cultural Perspective*

For most items measuring this content standard, the student uses historical documents, diaries, letters, biographical sketches, and political cartoons, as well as graphic displays such as maps and flow charts to apply historical concepts and skills. The sample item measures skills that include recognizing historical patterns and cause-and-effect relationships.

2 A product that is often used to make clothing is produced closest to

- A** Cairo
- B** Dakar
- C** Lagos
- D** Cape Town

3 Read this excerpt from Abraham Lincoln's Gettysburg Address. Then answer Number 3.



3 Which of these was probably the main purpose of Lincoln's speech?

- A** to persuade the Confederacy to free the slaves
- B** to convince the nation that the preservation of the Union was too costly
- C** to defend the right of the Confederacy to secede from the Union
- D** to urge people to continue the struggle to reunify the nation

Social Studies
Sample Items
Grade 8, Level 18

appointing judges
making treaties
commanding the armed forces

- 4** The powers listed in the box belong to
- ✓ **A** the president
 - B** city governments
 - C** state governments
 - D** the Supreme Court

Wisconsin Model Academic
Standards Measured

C Political Science
and Citizenship

TerraNova Objective 28
Civics and Government Perspectives

In this item, the student applies knowledge of the basic principles of government and the roles of the various branches of government. Other concepts and skills measuring this standard relate to understanding important political documents, citizenship, democratic processes, and world affairs.

B History

*TerraNova Objective 27
Historical and Cultural Perspective*

In the sample item, the student analyzes the photograph and makes a comparison between the past and the present. The item addresses the way advances in technology have changed people's lives.

This photo of people listening to a radio was taken in the early days of radio communication. Use the picture to do Number 5.



Courtesy of National Archives

- 5** Write about two ways in which methods of communication have changed since the time when this photo was taken.

- _____

- _____

Appendix A • Wisconsin Alignment Participants

WSAS Test Alignment Workshop Participants

Language Arts

Sandra Dickerson
Milwaukee Public Schools

Mark Hieke
Howard-Suamico
Public Schools

Jacqueline Hill
Whitnall Public Schools

Janet Miller
Milwaukee Public Schools

Joe Papenfuss
Racine Public Schools

Sue Reader
Ashland Public Schools

Connie Russell
Eau Claire Public Schools

Roni Telfer
Whitewater Public Schools

Lisa Wiedmann
Rhineland Public Schools

Brad Wiese
Appleton Public Schools

Mathematics

Janet Alekna
Wisconsin Rapids
Public Schools

William Breisch
Monona Grove Public Schools

Jane Howell
Platteville Public Schools

J. Marshall Osborn
UW-Madison

Barbara Martinko
Milwaukee Public Schools

Steve Reinhart
Chippewa Falls Public Schools

Pat Reisdorf
Madison Metropolitan Schools

James Marty
Waukesha Public Schools

Science

Kathleen Damrow
Milwaukee Public Schools

Kris Dimock
Bloomer Public Schools

Alfred A., Jr. Hovey
Wauwatosa Public Schools

Mark Klawiter
Ladysmith Public Schools

Pat Marinac
Appleton Public Schools

Sharon Nelson
Waunakee Public Schools

Tom Reisenauer
Marshall Public Schools

Rhulene Swanigan
Milwaukee Public Schools

Paul Tweed
Augusta Public Schools

Social Studies

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Baraboo Public Schools

Walt R. Herscher
Appleton Public Schools

James D. Kraft
Wausau Public Schools

Jeanne M. Kress
Franklin Public Schools

Margaret Laughlin
UW-Green Bay

Michael McKinnon
Janesville Public Schools

Iris Othrow
McFarland Public Schools

Michelle T. Trevino
Milwaukee Public Schools

Dave C. Wessel
Spencer Public School

Michael M. Yell
Hudson Public Schools

DPI Staff Participants

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Instructional Services

Sue Grady, Director
Content and Learning Team

Jodean Grunow, Education Consultant
Mathematics

Jacque Karbon, Education Consultant
Language Arts

Susan Ketchum, Measurement Specialist
Office of Education Accountability

Ellen Last, Education Consultant
Language Arts

Shelley Lee, Education Consultant
Social Studies

Jennifer Thayer, Education Consultant
Mathematics, Title I

Marsha Behnke, Program Assistant
Office of Education Accountability

Maggie Burke, Education Consultant
High School Graduate Test

Verlena Johnson, Special Assistant
High School Graduation Test

Guests and Observers

Luther Olson, State Representative
Chairman, State Assembly
Committee on Education

Sue Gehn, Mathematics Teacher
Monona Grove Public Schools

Lowell Gillette, Chair
Title I Committee of Practitioners

Appendix B • Description of Alignment Procedures

Alignment Procedures

On April 20-21, 1998, CTB/McGraw-Hill staff conducted a workshop for the Department of Public Instruction (DPI) to match items on *TerraNova*, Form A, at Levels 14, 18, and 20 to the Model Academic Standards for Grades 4, 8, and 12, respectively. *TerraNova* is currently administered to Wisconsin students in Grades 4, 8, and 10. A common criticism of nationally standardized, norm-referenced tests is that the items do not assess a particular state's or locality's curriculum. Therefore, one purpose of conducting the match was to determine whether individual *TerraNova*, Form A, items assess the Model Academic Standards and the extent to which the Model Academic Standards are addressed by *TerraNova*, Form A, items—that is, breadth of coverage.

The content assessed by *TerraNova* was defined by reviewing objectives and frameworks in state, district, and diocesan curriculum guides; standards in the most recent national standards publications; content of current, widely used basal texts and series; and practices in model educational programs. Based on this review, items were written to address the content that was common to these documents. Nonetheless, the Wisconsin Department of Public Instruction wanted to provide Wisconsin educators with information about the breadth of coverage of the Model Academic Standards and how many *TerraNova*, Form A, items match one or more standards.

At the time the workshop was conducted, only *TerraNova*, Form A, had been administered in Wisconsin; however, Form B will also be administered in future years. The *TerraNova* objective structure and the number of items measuring each objective remain constant across, Form A, and Form B. However, if the Wisconsin Model Academic Standards were to be matched to *TerraNova* Form B, it is likely that the number of items measuring the Wisconsin content standards may shift slightly.

The Department of Public Instruction invited Wisconsin educators to participate in the workshop. Many of the teachers selected for completing the match were also involved in the development of the Model Academic Standards. The participating educators represented elementary, middle, and high school grades. Approximately ten educators were selected for each of the four content areas assessed by *TerraNova*: reading/language arts, mathematics, science, and social studies. At least one Department of Public Instruction staff member observed each content area group and provided information or responded to questions only when requested by the participants.

Prior to the workshop, CTB content specialists reviewed the Model Academic Standards and completed a draft match of *TerraNova*, Form A, items to the standards. CTB also indicated which Model Academic Standards could or could not be reasonably assessed using large-scale, paper-and-pencil tests. These drafts served as a starting point for discussion.

CTB provided each participant with a copy of the draft match for each grade level and a *TerraNova*, Form A, test booklet for Levels 14, 18, and 20. Participants also had a *TerraNova* Teacher's Guide as a resource document.

During the morning of the first day of the workshop, participants received information about the nature and purpose of the alignment task. The national assessment consultant for CTB provided basic foundation information about the different purposes of norm-referenced and criterion-

referenced tests and the information derived from each. The presentation included information about different assessment formats (selected response, constructed response, essay, performance tasks, observation, and personal communication) and how different formats are better suited for certain types of achievement targets than other formats. The participants were also provided with information about the specific tasks each group would be completing and the record-keeping procedures that the groups would be using.

The alignment tasks were completed for each grade level, one grade at a time. Participants worked in dyads to complete the match for a portion of the Model Academic Standards for each grade level. Each dyad then presented their findings to the whole group; the whole group either accepted the findings or engaged in discussion until consensus was reached. CTB facilitators encouraged discussion and frequently checked to ensure that the participants had reached consensus.

CTB facilitators recorded changes to the draft match documents while participants discussed their findings. In addition, participants' comments or concerns about individual items or about other large-scale assessment issues were documented. When the participants could not reach consensus, CTB facilitators asked for a show of hands and made note of any discrepancies.

CTB staff kept a record of each *TerraNova*, Form A, item and the performance standards each item matched. If, at the end of the review, any item was not matched to a standard, the participants reviewed the item to determine whether it matched any standard. The results of the matches completed by the Wisconsin educators have been summarized and presented in this document.

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National Assessment Consultant

Steve Marsh
Evaluation Consultant

Appendix C • Summary of TerraNova Items and Objectives Matching Wisconsin Model Academic Standards

Wisconsin Model Academic Standards		<i>TerraNova</i> , Form A, Multiple Assessments Level 18 Items Matched	<i>TerraNova</i> Objectives
A. Reading/Literature			
A.8.1	Use effective reading strategies to achieve their purpose in reading.	1–6, 8, 12, 13, 16, 19–22, 26, 31–34, 35, 38–39, 42, 43, 45, 46–48, 54, 62, 63	02, 03, 04, 05
A.8.2	Read interpret, and critically analyze literature.	1–6, 12, 14, 15, 17–18, 31–34, 35, 38–39, 54, 63	02, 03, 04, 05
A.8.3	Read and discuss literary and nonliterary texts in order to understand human experience.	1, 4–6, 12, 14–15, 31–34, 35, 41, 44, 47, 62, 63	02, 03, 04
A.8.4	Read and acquire information.	18, 41, 44–47, 49, 52, 53, 62, 63	02, 03, 04, 05, 08
B. Writing			
B.8.1	Create or produce writing to communicate with different audiences for a variety of purposes.	27, 28, 31–33, 60, 62, 64	03, 04, 08, 09
B.8.2	Plan, revise edit, and publish clear and effective writing.	31–33, 50, 51, 62, 64	03, 04, 08, 09
B.8.3	Understand the function of various forms, structures, and punctuation marks of standard American English and use them appropriately in communications.	7, 9, 10, 11, 23–25, 29, 30, 33, 40, 56–59, 61, 64	04, 07, 08, 09
C. Oral Language			
C.8.1	Orally communicate information, opinions, and ideas effectively to different audiences for a variety of purposes.		
C.8.2	Listen to and comprehend oral communications.		
C.8.3	Participate effectively in discussion.		
D. Language			
D.8.1	Develop their vocabulary and ability to use words, phrases, idioms, and various grammatical structures as a means of improving communication.	1, 13, 14, 16, 19–22, 31, 32, 35, 42, 43, 54, 62	02, 03, 04, 05
D.8.2	Recognize and interpret various uses and adaptations of language in social, cultural, regional, and professional situations, and learn to be flexible and responsive in their use of English.	42, 43	05
E. Media and Technology			
E.8.1	Use computers to acquire, organize, analyze, and communicate information.		
E.8.2	Make informed judgments about media and products.		
E.8.3	Create media products appropriate to audience and purpose.		
F. Research and Inquiry			
F.8.1	Conduct research and inquiry on self-selected or assigned topics, issues, or problems and use an appropriate form to communicate their findings.		

Appendix C • Summary of TerraNova Items and Objectives Matching Wisconsin Model Academic Standards

Wisconsin Model Academic Standards		TerraNova, Form A, Multiple Assessments Level 18 Items Matched	TerraNova Objectives
A. Mathematical Processes			
A.8.1	Use reasoning abilities to: <ul style="list-style-type: none"> • evaluate information • perceive patterns • identify relationships • formulate questions for further exploration • evaluate strategies • justify statements • test reasonableness of results 	14	17
A.8.2	Communicate logical arguments clearly to show why a result makes sense		
A.8.3	Analyze non-routine problems by modeling, illustrating, guessing, simplifying, generalizing, shifting to another point of view, etc.	36	12, 17
A.8.4	Develop effective oral and written presentations that include <ul style="list-style-type: none"> • appropriate use of technology • the conventions of mathematical discourse (e.g., symbols, definitions, labeled drawings) • mathematical language • clear organization of ideas and procedures • understanding of purpose and audience 		
A.8.5	Explain mathematical concepts, procedures, and ideas to others who may not be familiar with them		
A.8.6	Read and understand mathematical texts and other instructional materials and recognize mathematical ideas as they appear in other contexts		
B. Number Operations and Relationships			
B.8.1	Read, represent, and interpret various rational numbers (whole numbers, integers, decimals, fractions, and percents) with verbal descriptions, geometric models, and mathematical notation (e.g., expanded, scientific, exponential)	19, 37	10, 13, 18
B.8.2	Perform and explain operations on rational numbers (add, subtract, multiply, divide, raise to a power, extract a root, take opposites and reciprocals, determine absolute value)	1, 2, 3	11
B.8.3	Generate and explain equivalencies among fractions, decimals, and percents	36	12, 17
B.8.4	Express order relationships among rational numbers using appropriate symbols ($>$, $<$, $>$, $<$, π)	9	10
B.8.5	Apply proportional thinking in a variety of problem situations that include, but are not limited to	5, 7, 20	11, 13
B.8.6	Model and solve problems involving number-theory concepts such as	28	
B.8.7	In problem-solving situations, select and use appropriate computational procedures with rational numbers such as	4, 6, 7, 8, 11, 25, 29	10, 11, 13, 16
C. Geometry			
C.8.1	Describe special and complex two- and three-dimensional figures (e.g., rhombus, polyhedron, cylinder) and their component parts (e.g., base, altitude, and slant height) by	39	14, 18
C.8.2	Identify and use relationships among the component parts of special and complex two- and three-dimensional figures (e.g., parallel sides, congruent faces)	13, 23, 30	14
C.8.3	Identify three-dimensional shapes from two-dimensional perspectives and draw two-dimensional sketches of three-dimensional objects preserving their significant features		

Appendix C • Summary of TerraNova Items and Objectives Matching Wisconsin Model Academic Standards

Wisconsin Model Academic Standards		<i>TerraNova</i> , Form A, Multiple Assessments Level 18 Items Matched	<i>TerraNova</i> Objectives
C.8.4	Perform transformations on two-dimensional figures and describe and analyze the effects of the transformations on the figures	18	14
C.8.5	Locate objects using the rectangular coordinate system	30	14
D. Measurement			
D.8.1	Identify and describe attributes in situations where they are not directly or easily measurable (e.g., distance, area of an irregular figure, likelihood of occurrence)		
D.8.2	Demonstrate understanding of basic measurement facts, principles, and techniques including the following		
D.8.3	Determine measurement directly using standard units (metric and US Customary) with these suggested degrees of accuracy	20, 34	13
D.8.4	Determine measurements indirectly using	20, 21, 26, 29, 35	13, 17
E. Statistics and Probability			
E.8.1	Work with data in the context of real-world situations by		
E.8.2	Organize and display data using		
E.8.3	Extract, interpret, and analyze information from organized and displayed data by using	38	15, 18
E.8.4	Use the results of data analysis to	15, 16, 32	15, 18
E.8.5	Compare several sets of data to generate, test, and, as the data dictate, confirm or deny hypotheses		
E.8.6	Evaluate presentations and statistical analyses from a variety of sources for	24, 32, 17	15, 18
E.8.7	Determine the likelihood of occurrence of simple events by	31, 41	15, 18
F. Algebraic Relationships			
F.8.1	Work with algebraic expressions in a variety of ways, including	12, 22, 40	16, 17
F.8.2	Work with linear and nonlinear patterns and relationships in a variety of ways, including		
F.8.3	Recognize, describe, and analyze functional relationships by generalizing a rule that characterizes the pattern of change among variables. These functional relationships include exponential growth and decay (e.g., cell division, depreciation)	27	16
F.8.4	Use linear equations and inequalities in a variety of ways, including	33	17, 16
F.8.5	Recognize and use generalized properties and relations, including		

Appendix C • Summary of TerraNova Items and Objectives Matching Wisconsin Model Academic Standards

Wisconsin Model Academic Standards		<i>TerraNova</i> , Form A, Multiple Assessments Level 18 Items Matched	<i>TerraNova</i> Objectives
A. Science Connections			
A.8.1	Develop their understanding of the science themes by using the themes to frame questions about science-related issues and problems		
A.8.2	Describe limitations of science systems and give Reasons why specific science themes are included in or excluded from those systems		
A.8.3	Defend explanations and models by collecting and organizing evidence that supports them and critique explanations and models by collecting and organizing evidence that conflicts with them		
A.8.4	Collect evidence to show that models developed as explanations for events were (and are) based on the evidence available to scientists at the time		
A.8.5	Show how models and explanations, based on systems, were changed as new evidence accumulated (the effects of constancy, evolution, change, and measurement should all be part of these explanations)		
A.8.6	Use models and explanations to predict actions and events in the natural world		
A.8.7	Design real or thought investigations to test the usefulness and limitations of a model		
A.8.8	Use the themes of evolution, equilibrium, and energy to predict future events or changes in the natural world		
B. Nature of Science			
B.8.1	Describe how scientific knowledge and concepts have changed over time in the earth and space, life and environmental, and physical sciences		
B.8.2	Identify and describe major changes that have occurred over in conceptual models and explanations in the earth and space, life and environmental, and physical sciences and identify the people, cultures, and conditions that led to these developments	4	24
B.8.3	Explain how the general rules of science apply to the development and use of evidence in science investigations, model-making, and applications		
B.8.4	Describe types of reasoning and evidence used outside of science to draw conclusions about the natural world		
B.8.5	Explain ways in which science knowledge is shared, checked, and extended, and show how these processes change over time		
B.8.6	Explain the ways in which scientific knowledge is useful and also limited when applied to social issues		
C. Science Inquiry			
C.8.1	Identify questions they can investigate using resources and equipment they have available	18	19
C.8.2	Identify data and locate sources of information including their own records to answer the questions being investigated	8	19
C.8.3	Design and safely conduct investigations that provide reliable quantitative or qualitative data, as appropriate, to answer their questions	25, 28, 29	19
C.8.4	Use inferences to help decide possible results of their investigations, use observations to check their inferences	15, 19	19, 24
C.8.5	Use accepted scientific knowledge, models, and theories to explain their results and to raise further questions about their investigations		

Appendix C • Summary of TerraNova Items and Objectives Matching Wisconsin Model Academic Standards

Wisconsin Model Academic Standards		<i>TerraNova</i> , Form A, Multiple Assessments Level 18 Items Matched	<i>TerraNova</i> Objectives
C.8.6	State what they have learned from investigations, relating their inferences to scientific knowledge and to data they have collected		
C.8.7	Explain their data and conclusions in ways that allow an audience to understand the questions they selected for investigation and the answers they have developed		
C.8.8	Use computer software and other technologies to organize, process, and present their data		
C.8.9	Evaluate, explain, and defend the validity of questions, hypotheses, and conclusions to their investigations		
C.8.10	Discuss the importance of their results and implications of their work with peers, teachers, and other adults		
C.8.11	Raise further questions which still need to be answered		
D. Physical Science			
PROPERTIES AND CHANGES OF PROPERTIES IN MATTER			
D.8.1	Observe, describe, and measure physical and chemical properties of elements and other substances to identify and group them according to properties such as density, melting points, boiling points, conductivity, magnetic attraction, solubility, and reactions to common physical and chemical tests		
D.8.2	Use the major ideas of atomic theory and molecular theory to describe physical and chemical interactions among substances, including solids, liquids, and gases	9	20
D.8.3	Understand how chemical interactions and behaviors lead to new substances with different properties	24	20
D.8.4	While conducting investigations, use the science themes to develop explanations of physical and chemical interactions and energy exchanges	10, 11	20
MOTIONS AND FORCES			
D.8.5	While conducting investigations, explain the motion of objects by describing the forces acting on them	14	20
D.8.6	While conducting investigations, explain the motion of objects using concepts of speed, velocity, acceleration, friction, momentum, and changes over time, among others, and apply these concepts and explanations to real-life situations outside the classroom	5	19
D.8.7	While conducting investigations of common physical and chemical interactions occurring in the laboratory and the outside world, use commonly accepted definitions of energy and the idea of energy conservation		
D.8.8	Describe and investigate the properties of light, heat, gravity, radio waves, magnetic fields, electrical fields, and sound waves as they interact with material objects in common situations	13	20
D.8.9	Explain the behaviors of various forms of energy by using the models of energy transmission, both in the laboratory and in real-life situations in the outside world	35	20
D.8.10	Explain how models of the atomic structure of matter have changed over time, including historical models and modern atomic theory		

Appendix C • Summary of TerraNova Items and Objectives Matching Wisconsin Model Academic Standards

Wisconsin Model Academic Standards		<i>TerraNova</i> , Form A, Multiple Assessments Level 18 Items Matched	<i>TerraNova</i> Objectives
E. Earth and Space Science			
STRUCTURE OF EARTH SYSTEM			
E.8.1	Using the science themes, explain and predict changes in major features of land, water, and atmospheric systems	16, 20, 30	22
E.8.2	Describe underlying structures of the earth that cause changes in the earth's surface		
E.8.3	Using the science themes during the process of investigation, describe climate, weather, ocean currents, soil movements and changes in the forces acting on the earth	20, 34	22
E.8.4	Using the science themes, analyze the influence living organisms have had on the earth's systems, including their impact on the composition of the atmosphere and the weathering of rocks	17	22
EARTH'S HISTORY			
E.8.5	Analyze the geologic and life history of the earth, including change over time, using various forms of scientific evidence	21, 22	19, 22
E.8.6	Describe through investigations the use of the earth's resources by humans in both past and current cultures, particularly how changes in the resources used for the past 100 years are the basis for efforts to conserve and recycle renewable and non-renewable resources		
EARTH IN THE SOLAR SYSTEM			
E.8.7	Describe the general structure of the solar system, galaxies, and the universe, explaining the nature of the evidence used to develop current models of the universe		
E.8.8	Using past and current models of the structure of the solar system, explain the daily, monthly, yearly, and long-term cycles of the earth, citing evidence gained from personal observation as well as evidence used by scientists		
F. Life and Environmental Science			
STRUCTURE AND FUNCTION IN LIVING THINGS			
F.8.1	Understand the structure and function of cells, organs, tissues, organ systems, and whole organisms	1, 23	21
F.8.2	Show how organisms have adapted structures to match their functions, providing means of encouraging individual and group survival within specific environments		
F.8.3	Differentiate between single-celled and multiple-celled organisms (humans) through investigation, comparing the cell functions of specialized cells for each type of organism		
REPRODUCTION AND HEREDITY			
F.8.4	Investigate and explain that heredity is comprised of the characteristic traits found in genes within the cell of an organism	3	21
F.8.5	Show how different structures both reproduce and pass on characteristics of their group		

Appendix C • Summary of TerraNova Items and Objectives Matching Wisconsin Model Academic Standards

Wisconsin Model Academic Standards		<i>TerraNova</i> , Form A, Multiple Assessments Level 18 Items Matched	<i>TerraNova</i> Objectives
REGULATION AND BEHAVIOR			
F.8.6	Understand that an organism is regulated both internally and externally		
F.8.7	Understand that an organism's behavior evolves through adaptation to its environment	6	21
POPULATIONS AND ECOSYSTEMS			
F.8.8	Show through investigations how organisms both depend on and contribute to the balance or imbalance of populations and/or ecosystems, which in turn contribute to the total system of life on the planet	7, 32	21
DIVERSITY AND ADAPTATIONS OF ORGANISMS			
F.8.9	Explain how some of the changes on the earth are contributing to changes in the balance of life and affecting the survival or population growth of certain species	31	21
F.8.10	Project how current trends in human resource use and population growth will influence the natural environment, and show how current policies affect those trends.		
G. Science Applications			
G.8.1	Identify and investigate the skills people need for a career in science or technology and identify the academic courses that a person pursuing such a career would need	26, 33	23, 24
G.8.2	Explain how current scientific and technological discoveries have an influence on the work people do and how some of these discoveries also lead to new careers		
G.8.3	Illustrate the impact that science and technology have had, both good and bad, on careers, systems, society, environment, and quality of life	2, 27	23
G.8.4	Propose a design (or re-design) of an applied science model or a machine that will have an impact in the community or elsewhere in the world and show how the design (or re-design) might work, including potential side-effects		
G.8.5	Investigate a specific local problem to which there has been a scientific or technological solution, including proposals for alternative courses of action, the choices that were made, reasons for the choices, any new problems created, and subsequent community satisfaction		
G.8.6	Use current texts, encyclopedias, source books, computers, experts, the popular press, or other relevant sources to identify examples of how scientific discoveries have resulted in new technology	12, 27	23
G.8.7	Show evidence of how science and technology are interdependent, using some examples drawn from personally conducted investigations		
H. Science in Personal and Social Perspectives			
H.8.1	Evaluate the scientific evidence used in various media (for example, television, radio, Internet, popular press, and scientific journals) to address a social issue, using criteria of accuracy, logic, bias, relevance of data, and credibility of sources		
H.8.2	Present a scientific solution to a problem involving the earth and space, life and environmental, or physical sciences and participate in a consensus-building discussion to arrive at a group decision		
H.8.3	Understand the consequences of decisions affecting personal health and safety	15	24

Appendix C • Summary of TerraNova Items and Objectives Matching Wisconsin Model Academic Standards

Wisconsin Model Academic Standards		<i>TerraNova</i> , Form A, Multiple Assessments Level 18 Items Matched	<i>TerraNova</i> Objectives
A. GEOGRAPHY: People, Places, and Environments			
A.8.1	Use a variety of geographic representations, such as political, physical, and topographic maps, a globe, aerial photographs, and satellite images, to gather and compare information about a place	12	26
A.8.2	Construct mental maps of selected locales, regions, states, and countries and draw maps from memory, representing relative location, direction, size, and shape	32	26
A.8.3	Use an atlas to estimate distance, calculate scale, identify dominant patterns of climate and land use, and compute population density		
A.8.4	Conduct a historical study to analyze the use of the local environment in a Wisconsin community and to explain the effect of this use on the environment		
A.8.5	Identify and compare the natural resource bases of different states and regions in the United States and elsewhere in the world, using a statistical atlas, aerial photographs, satellite images, and computer databases	13	26
A.8.6	Describe and distinguish between the environmental effects on the earth of short-term physical changes, such as those caused by floods, droughts, and snowstorms, and long-term physical changes, such as those caused by plate tectonics, erosion, and glaciation		
A.8.7	Describe the movement of people, ideas, diseases, and product throughout the world	14, 30, 31	26, 29
A.8.8	Describe and analyze the ways in which people in different regions of the world interact with their physical environments through vocational and recreational activities	15, 18, 26, 27	26, 29
A.8.9	Describe how buildings and their decoration reflect cultural values and ideas, providing examples such as cave paintings, pyramids, sacred cities, castles, and cathedrals		
A.8.10	Identify major discoveries in science and technology and describe their social and economic effects on the physical and human environment	14	29
A.8.11	Give examples of the causes and consequences of current global issues, such as the expansion of global markets, the urbanization of the developing world, the consumption of natural resources, and the extinction of species, and suggest possible responses by various individuals, groups, and nations	6, 8	26
B. HISTORY: Time, Continuity, and Change			
Fourth-Twelfth Grade Historical Eras and Themes			
While studying Wisconsin history, students in grades 4-12 will learn about:			
	The prehistory and the early history of Wisconsin's native people		
	Early explorers, traders, and settlers to 1812		
	The transition from territory to statehood, 1787-1848		
	Immigration and settlement		
	Wisconsin's role in the Civil War, 1860-1865		
	Mining, lumber, and agriculture		
	La Follette and the Progressive Era, 1874-1914		
	The world wars and conflicts		
	Prosperity, depression, industrialization, and urbanization		
	Wisconsin's response to 20th century change		

Appendix C • Summary of TerraNova Items and Objectives Matching Wisconsin Model Academic Standards

Wisconsin Model Academic Standards	<i>TerraNova</i> , Form A, Multiple Assessments Level 18 Items Matched	<i>TerraNova</i> Objectives
Fifth-Twelfth Grade Historical Eras and Themes		
While studying United States history, students in grades 5-12 will learn about:		
	The prehistory and early history of the Americas to 1607	
	Colonial history and settlement, 1607-1763	
	The American Revolution and the early national period, 1763-1815	
	The paradox of nationalism and sectionalism in an expanding nation, 1815-1860	
	The Civil War and Reconstruction, 1861-1877	
	The growth of industrialization and urbanization, 1865-1914	
	World War I and America's emergence as a world power, 1890-1920	
	Prosperity, depression, and the New Deal, 1920-1941	
	World War II, the Cold War, the Korean War, and the Vietnamese conflict, 1941-1975	
	The search for prosperity and equal rights in Cold War and post-Cold War America, 1945-present	
Fifth-Twelfth Grade Historical Eras and Themes		
While studying world history, students in grades 5-12 will learn about:		
	Prehistory to 2000 BC	
	Early pastoral civilizations, nonwestern empires, and tropical civilizations	
	Classical civilizations, including China, India, Egypt, Greece, and Rome, 1000 BC to 500 AD	
	Multiple religions (Judaism, Christianity, Islam, Buddhism, Hinduism) and civilizations to 1100 AD	
	Expansion and centralization of power, including the decline of feudalism, 1000-1500 AD	
	The early modern world, 1450-1800 AD	
	Global unrest, change, and revolution, 1750-1850 AD	
	Global encounters, industrialization, urbanization, and imperialism, 1850-1914 AD	
	Wars, revolutions, and ideologies, 1900-1945 AD	
	Post-industrialism, global interdependence, and fragmentation in the contemporary world, 1945-present	
B.8.1	Interpret the past using a variety of sources, such as biographies, diaries, journals, artifacts, eyewitness interviews, and other primary source materials, and evaluate the credibility of sources used	3, 4, 5, 9, 11, 12, 15, 18, 19, 28, 29, 33, 34
B.8.2	Employ cause-and-effect arguments to demonstrate how significant events have influenced the past and the present in United States and world history	14, 31, 35
B.8.3	Describe the relationships between and among significant events, such as the causes and consequences of wars in United States and world history	22
B.8.4	Explain how and why events may be interpreted differently depending upon the perspectives of participants, witnesses, reporters, and historians	28, 29

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Wisconsin Model Academic Standards		<i>TerraNova</i> , Form A, Multiple Assessments Level 18 Items Matched	<i>TerraNova</i> Objectives
B.8.5	Use historical evidence to determine and support a position about important political values, such as freedom, democracy, equality, or justice, and express the position coherently		
B.8.6	Analyze important political values such as freedom, democracy, equality, and justice embodied in documents such as the Declaration of Independence, the United States Constitution, and the Bill of Rights	10, 11, 19, 20, 28	28
B.8.7	Identify significant events and people in the major eras of United States and world history	1, 2, 4, 14, 15	26, 27, 29
B.8.8	Identify major scientific discoveries and technological innovations and describe their social and economic effects on society	14	29
B.8.9	Explain the need for laws and policies to regulate science and Technology		
B.8.10	Analyze examples of conflict, cooperation, and interdependence among groups, societies, or nations	1, 4, 27	27, 29
B.8.11	Summarize major issues associated with the history, culture, tribal sovereignty, and current status of the American Indian tribes and bands in Wisconsin		
B.8.12	Describe how history can be organized and analyzed using various criteria to group people and events chronologically, geographically, thematically, topically, and by issues		
C. POLITICAL SCIENCE AND CITIZENSHIP: Power, Authority, Governance, and Responsibility			
C.8.1	Identify and explain democracy's basic principles, including individual rights, responsibility for the common good, equal opportunity, equal protection of the laws, freedom of speech, justice, and majority rule with protection for minority rights	9, 10, 11, 19	28
C.8.2	Identify, cite, and discuss important political documents, such as the Constitution, the Bill of Rights, and landmark decisions of the Supreme Court, and explain their function in the American political System	9, 10, 11, 19, 20	28
C.8.3	Explain how laws are developed, how the purposes of government are established, and how the powers of government are acquired, maintained, justified, and sometimes abused	35, 29	27, 28
C.8.4	Describe and explain how the federal system separates the powers of federal, state, and local governments in the United States, and how legislative, executive, and judicial powers are balanced at the federal level		
C.8.5	Explain how the federal system and the separation of powers in the Constitution work to sustain both majority rule and minority rights		
C.8.6	Explain the role of political parties and interest groups in American politics		
C.8.7	Locate, organize, and use relevant information to understand an issue of public concern, take a position, and advocate the position in a debate		
C.8.8	Identify ways in which advocates participate in public policy debates		
C.8.9	Describe the role of international organizations such as military alliances and trade associations		
D. ECONOMICS: Production, Distribution, Exchange, Consumption			
D.8.1	Describe and explain how money makes it easier to trade, borrow, save, invest, and compare the value of goods and services		
D.8.2	Identify and explain basic economic concepts: supply, demand, production, exchange, and consumption; labor, wages, and capital; inflation and deflation; market economy and command economy; public and private goods and services	23, 24	29

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Wisconsin Model Academic Standards		<i>TerraNova</i> , Form A, Multiple Assessments Level 18 Items Matched	<i>TerraNova</i> Objectives
D.8.3	Describe Wisconsin's role in national and global economies and give examples of local economic activity in national and global markets		
D.8.4	Describe how investments in human and physical capital, including new technology, affect standard of living and quality of life		
D.8.5	Give examples to show how government provides for national defense; health, safety, and environmental protection; defense of property rights; and the maintenance of free and fair market activity		
D.8.6	Identify and explain various points of view concerning economic issues, such as taxation, unemployment, inflation, the national debt, and distribution of income		
D.8.7	Identify the location of concentrations of selected natural resources and describe how their acquisition and distribution generates trade and shapes economic patterns	26, 27	26, 29
D.8.8	Explain how and why people who start new businesses take risks to provide goods and services, considering profits as an incentive		
D.8.9	Explain why the earning power of workers depends on their productivity and the market value of what they produce		
D.8.10	Identify the economic roles of institutions such as corporations and businesses, banks, labor unions, and the Federal Reserve System		
D.8.11	Describe how personal decisions can have a global impact on issues such as trade agreements, recycling, and conserving the environment	6, 7, 8	26
E. THE BEHAVIORAL SCIENCES: Individuals, Institutions, and Society			
E.8.1	Give examples to explain and illustrate the influence of prior knowledge, motivation, capabilities, personal interests, and other factors on individual learning		
E.8.2	Give examples to explain and illustrate how factors such as family, gender, and socioeconomic status contribute to individual identity and development		
E.8.3	Describe the ways in which local, regional, and ethnic cultures may influence the everyday lives of people	16, 17, 18	26, 27, 29
E.8.4	Describe and explain the means by which individuals, groups, and institutions may contribute to social continuity and change within a community	1, 5	27
E.8.5	Describe and explain the means by which groups and institutions meet the needs of individuals and societies	25, 35	27, 28
E.8.6	Describe and explain the influence of status, ethnic origin, race, gender, and age on the interactions of individuals		
E.8.7	Identify and explain examples of bias, prejudice, and stereotyping, and how they contribute to conflict in a society	28, 29	27
E.8.8	Give examples to show how the media may influence the behavior and decision-making of individuals and groups	28, 29	27
E.8.9	Give examples of the cultural contributions of racial and ethnic groups in Wisconsin, the United States, and the world		
E.8.10	Explain how language, art, music, beliefs, and other components of culture can further global understanding or cause misunderstanding		
E.8.12	Explain how beliefs and practices, such as ownership of property or status at birth, may lead to conflict among people of different regions or cultures and give examples of such conflicts that have and have not been resolved		

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E.8.13	Describe conflict resolution and peer mediation strategies used in resolving differences and disputes		
E.8.14	Select examples of artistic expressions from several different cultures for the purpose of comparing and contrasting the beliefs expressed		
E.8.15	Describe cooperation and interdependence among individuals, groups, and nations, such as helping others in times of crisis	1	27