

A Correlation of  
Population Connection Materials

from

**People and the Planet:**  
*Lessons for a Sustainable Planet*

to

**New Jersey Core Curriculum  
Content Standards**

**Organized by:**

*1. Subject*

*2. Grade*

*3. Standard*

*4. Population Connection Activity*

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# Language Arts

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## Grade 3

### Language Arts.3.3.1 (Reading)

All Students Will Understand And Apply The Knowledge Of Sounds, Letters, And Words In Written English To Become Independent And Fluent Readers, And Will Read A Variety Of Materials And Texts With Fluency And Comprehension.

#### G. Comprehension Skills and Response to Text

11. Participate in creative responses to texts (e.g., dramatizations, oral presentations).  
Who Polluted the Potomac?

### Language Arts.3.3.3 (Speaking)

All Students Will Speak In Clear, Concise, Organized Language That Varies In Content And Form For Different Audiences And Purposes.

#### A. Discussion (small group and whole class)

1. Listen and follow a discussion in order to contribute appropriately.  
Cougar Hunt  
Treasures Underground  
Timber!  
Water, Water Everywhere (Elementary/Intermediate)  
Who Polluted the Potomac?

#### B. Questioning (Inquiry) and Contributing

1. Develop appropriate questions to explore a topic.  
Timber!  
Who Polluted the Potomac?
2. Contribute information, ideas, and experiences to classroom inquiry.  
Cougar Hunt  
Who Polluted the Potomac?

### Language Arts.3.3.4 (Listening)

All Students Will Listen Actively To Information From A Variety Of Sources In A Variety Of Situations.

#### B. Listening Comprehension

1. Follow two-and three-step directions.  
Cougar Hunt  
Treasures Underground  
Timber!
2. Listen to a story read aloud and/or information from television or film, and summarize main ideas.  
Who Polluted the Potomac?

## Grade 4

### Language Arts.4.3.1 (Reading)

All Students Will Understand And Apply The Knowledge Of Sounds, Letters, And Words In Written English To Become Independent And Fluent Readers, And Will Read A Variety Of Materials And Texts With Fluency And Comprehension.

#### G. Comprehension Skills and Response to Text

5. Follow simple multiple-steps in written instructions.  
Timber!

Language Arts.4.3.3 (Speaking)

All Students Will Speak In Clear, Concise, Organized Language That Varies In Content And Form For Different Audiences And Purposes.

A. Discussion (small group and whole class)

1. Use details, examples and reasons to support central ideas or clarify a point of view.  
Who Polluted the Potomac?

B. Questioning (Inquiry) and Contributing

3. Explore concepts by describing, narrating, or explaining how and why things happen.  
Treasures Underground

6. Solve a problem or understand a task through group cooperation.

Timber!

Who Polluted the Potomac?

D. Oral Presentation

5. Participate in a dramatization or role-play across the curriculum.

Who Polluted the Potomac?

Language Arts.4.3.4 (Listening)

All Students Will Listen Actively To Information From A Variety Of Sources In A Variety Of Situations.

A. Active Listening

1. Listen actively for a variety of purposes such as enjoyment and obtaining information.  
Who Polluted the Potomac?

## Grade 5

Language Arts.5.3.1 (Reading)

All Students Will Understand And Apply The Knowledge Of Sounds, Letters, And Words In Written English To Become Independent And Fluent Readers, And Will Read A Variety Of Materials And Texts With Fluency And Comprehension.

H. Inquiry and Research

8. Produce projects and reports, using visuals, media, and/or technology to show learning and support the learning of an audience.

Looking to the Future

Language Arts.5.3.3 (Speaking)

All Students Will Speak In Clear, Concise, Organized Language That Varies In Content And Form For Different Audiences And Purposes.

A. Discussion (small group and whole class)

1. Use details, examples, and reasons to support central ideas or clarify a point of view.  
Who Polluted the Potomac?

5. Participate in class discussions appropriately.

Cougar Hunt

Timber!

Who Polluted the Potomac?

B. Questioning (Inquiry) and Contributing

6. Solve a problem or understand a task through group cooperation.

Timber!

Who Polluted the Potomac?

Language Arts.5.3.4 (Listening)

All Students Will Listen Actively To Information From A Variety Of Sources In A Variety Of Situations.

A. Active Listening

1. Listen actively for a variety of purposes such as enjoyment and obtaining information.  
Who Polluted the Potomac?

B. Listening Comprehension

1. Demonstrate competence in active listening through responding to a story, interview, or oral report (e.g., summarizing, reacting, retelling).  
Who Polluted the Potomac?

Language Arts.5.3.5 (Viewing And Media Literacy)

All Students Will Access, View, Evaluate, And Respond To Print, Nonprint, And Electronic Texts And Resources.

A. Constructing Meaning

2. Use graphs, charts, and diagrams to report data.  
Timber!

## Grade 6

Language Arts.6.3.1 (Reading)

All Students Will Understand And Apply The Knowledge Of Sounds, Letters, And Words In Written English To Become Independent And Fluent Readers, And Will Read A Variety Of Materials And Texts With Fluency And Comprehension.

A. Concepts About Print/Text

3. Recognize and use common print formats to obtain information (e.g., newspapers, magazines, electronic sources).  
Growing Pains in Texas Hill Country  
Looking to the Future

G. Comprehension Skills and Response to Text

3. Use cause and effect and sequence of events to gain meaning.  
Educating Wanjiku  
Growing Pains in Texas Hill Country

4. Construct meaning from text by making conscious connections to self, an author, and others.  
Educating Wanjiku

H. Inquiry and Research

4. Interpret and use graphic sources of information such as maps, graphs, timelines, or tables to address research questions.  
The Balance of Nature  
Global Family Ties  
Power of the Pyramids

5. Summarize and organize information by taking notes, outlining ideas, and/or making charts.  
Everything Is Connected  
Growing Pains in Texas Hill Country  
Looking to the Future

Language Arts.6.3.2 (Writing)

All Students Will Write In Clear, Concise, Organized Language That Varies In Content And Form For Different Audiences And Purposes.

D. Writing Forms, Audiences, and Purposes (exploring a variety of forms)

1. Write for different purposes (e.g., to express ideas, inform, entertain, respond to literature, persuade, question, reflect, clarify, share) and a variety of audiences (e.g., self, peers, community).

Looking to the Future

3. Develop and use knowledge of a variety of genres, including expository, narrative, persuasive, poetry, critiques, and everyday/ workplace writing.

Looking to the Future

Language Arts.6.3.3 (Speaking)

All Students Will Speak In Clear, Concise, Organized Language That Varies In Content And Form For Different Audiences And Purposes.

A. Discussion (small group and whole class)

1. Support a position with organized, appropriate details.

Eco Ethics

Growing Pains in Texas Hill Country

In Search of Sustainable Life

Take a Stand

2. Stay focused on a topic and ask relevant questions.

Eco Ethics

Growing Pains in Texas Hill Country

In Search of Sustainable Life

3. Acknowledge others' opinions and respond appropriately.

Growing Pains in Texas Hill Country

Take a Stand

5. Participate in class discussion appropriately.

Eco Ethics

Educating Wanjiku

Everything Is Connected

If Money Won't Buy It

In Search of Sustainable Life

People on the Move

Take a Stand

B. Questioning (Inquiry) and Contributing

4. Discuss information heard, offer personal opinions, and ask for restatement or general explanation to clarify meaning.

Eco Ethics

Growing Pains in Texas Hill Country

Take a Stand

6. Solve a problem or understand a task through group cooperation.

Everything Is Connected

Food for Thought

For the Common Good

The Hunger Banquet

In Search of Sustainable Life

D. Oral Presentation

2. Prepare, rehearse, and deliver a formal presentation in logical or sequential order, including an opening, supportive details, and a closing statement.

Growing Pains in Texas Hill Country

## Looking to the Future

### Language Arts.6.3.4 (Listening)

All Students Will Listen Actively To Information From A Variety Of Sources In A Variety Of Situations.

#### A. Active Listening

1. Listen actively for a variety of purposes such as enjoyment and obtaining information.

Food for Thought

Growing Pains in Texas Hill Country

Take a Stand

2. Listen attentively and critically to a variety of speakers.

Growing Pains in Texas Hill Country

Take a Stand

4. Recognize and analyze persuasive techniques while listening.

Growing Pains in Texas Hill Country

Take a Stand

### Language Arts.6.3.5 (Viewing And Media Literacy)

All Students Will Access, View, Evaluate, And Respond To Print, Nonprint, And Electronic Texts And Resources.

#### A. Constructing Meaning

4. Identify the central theme in a movie, film, or illustration.

Timber!

## Grade 7

### Language Arts.7.3.1 (Reading)

All Students Will Understand And Apply The Knowledge Of Sounds, Letters, And Words In Written English To Become Independent And Fluent Readers, And Will Read A Variety Of Materials And Texts With Fluency And Comprehension.

#### G. Comprehension Skills and Response to Text

3. Differentiate between fact, opinion, bias, and propaganda in newspapers, periodicals, and electronic texts.

Growing Pains in Texas Hill Country

### Language Arts.7.3.2 (Writing)

All Students Will Write In Clear, Concise, Organized Language That Varies In Content And Form For Different Audiences And Purposes.

#### D. Writing Forms, Audiences, and Purposes (exploring a variety of forms)

9. Demonstrate writing clarity and supportive evidence when answering open-ended and essay questions across the curriculum.

Eco Ethics

Family Perspective

Looking to the Future

Market Research

Transportation Tally

A World of Difference

### Language Arts.7.3.3 (Speaking)

All Students Will Speak In Clear, Concise, Organized Language That Varies In Content And Form For Different Audiences And Purposes.

#### A. Discussion (small group and whole class)

1. Support a position, acknowledging opposing views.

Eco Ethics  
Growing Pains in Texas Hill Country  
Transportation Tally

2. Present ideas and opinions spontaneously in response to a topic or other speakers.

Eco Ethics  
Educating Wanjiku  
In Search of Sustainable Life  
Take a Stand

3. Apply rules for cooperative or whole class debate on a controversial issue.

Growing Pains in Texas Hill Country  
Take a Stand

5. Participate in an informal debate (e.g., small group discussion).

Eco Ethics

7. Participate in class discussions appropriately.

Eco Ethics  
Everything Is Connected  
Growing Pains in Texas Hill Country  
If Money Won't Buy It  
In Search of Sustainable Life  
People on the Move  
Take a Stand

**B. Questioning (Inquiry) and Contributing**

1. Paraphrase others' comments to clarify viewpoints.

Growing Pains in Texas Hill Country  
Take a Stand

2. Question to clarify others' opinions.

Growing Pains in Texas Hill Country  
Take a Stand

3. Talk with others to identify and explore issues and problems.

Eco Ethics  
Everything Is Connected  
Growing Pains in Texas Hill Country  
In Search of Sustainable Life  
Take a Stand  
Who Polluted the Potomac?

4. Solve a problem or understand a task through group cooperation.

Eco Ethics  
Everything Is Connected  
For the Common Good  
In Search of Sustainable Life  
Seeing Double  
Timber!  
Waste Not, Want Not  
A World of Difference

**Language Arts.7.3.4 (Listening)**

All Students Will Listen Actively To Information From A Variety Of Sources In A Variety Of Situations.

#### A. Active Listening

1. Demonstrate active listening behaviors in a variety of situations (e.g., one-on-one or small group).  
Eco Ethics  
Food for Thought  
Growing Pains in Texas Hill Country  
Take a Stand
2. Demonstrate active listening by analyzing information, ideas, and opinions to determine relevancy.  
Growing Pains in Texas Hill Country  
Take a Stand
4. Recognize persuasive techniques and credibility in oral communication.  
Growing Pains in Texas Hill Country  
Take a Stand
5. Listen to determine a speaker's purpose, attitude, and perspective.  
Growing Pains in Texas Hill Country  
Take a Stand
3. Critique information heard or viewed.  
Growing Pains in Texas Hill Country  
Take a Stand

### Grade 8

#### Language Arts.8.3.1 (Reading)

All Students Will Understand And Apply The Knowledge Of Sounds, Letters, And Words In Written English To Become Independent And Fluent Readers, And Will Read A Variety Of Materials And Texts With Fluency And Comprehension.

#### H. Inquiry and Research

1. Produce written and oral work that demonstrates comprehension of informational materials.  
Looking to the Future

#### Language Arts 8.3.3 (Speaking)

All Students Will Speak In Clear, Concise, Organized Language That Varies In Content And Form For Different Audiences And Purposes.

#### A. Discussion (small group and whole class)

1. Support a position, acknowledging opposing views.  
Eco Ethics  
Growing Pains in Texas Hill Country  
Take a Stand
2. Present ideas and opinions spontaneously in response to a topic or other speakers.  
Eco Ethics  
Educating Wanjiku  
In Search of Sustainable Life  
Take a Stand
3. Apply rules for cooperative or whole class debate on a controversial issue.  
Growing Pains in Texas Hill Country  
Take a Stand
5. Participate in a formal debate (e.g., panel discussion).  
Growing Pains in Texas Hill Country  
Take a Stand

7. Participate in class discussion appropriately.

- Eco Ethics
- Growing Pains in Texas Hill Country
- If Money Won't Buy It
- In Search of Sustainable Life
- People on the Move
- Take a Stand

**B. Questioning (Inquiry) and Contributing**

1. Paraphrase others' comments to clarify viewpoints.

- Growing Pains in Texas Hill Country
- Take a Stand

4. Solve a problem or understand a task through group cooperation.

- Eco Ethics
- Everything Is Connected
- For the Common Good
- In Search of Sustainable Life
- Seeing Double
- Timber!
- Waste Not, Want Not
- A World of Difference

**Language Arts.8.3.4 (Listening)**

All Students Will Listen Actively To Information From A Variety Of Sources In A Variety Of Situations.

**A. Active Listening**

1. Demonstrate active listening behaviors in a variety of situations (e.g., one-on-one or small group).

- Eco Ethics
- Food for Thought
- Growing Pains in Texas Hill Country
- Take a Stand

2. Demonstrate active listening by analyzing information, ideas, and opinions to determine relevancy.

- Growing Pains in Texas Hill Country
- Take a Stand

4. Recognize persuasive techniques and credibility in oral communication.

- Growing Pains in Texas Hill Country
- Take a Stand

**B. Listening Comprehension**

3. Critique information heard or viewed.

- Growing Pains in Texas Hill Country
- Take a Stand

**Grade 9 to Grade 12**

**Language Arts.9-12.3.3 (Speaking)**

All Students Will Speak In Clear, Concise, Organized Language That Varies In Content And Form For Different Audiences And Purposes.

**A. Discussion**

1. Support a position integrating multiple perspectives.

- Growing Pains in Texas Hill Country
- Take a Stand

2. Support, modify, or refute a position in small or large-group discussions.  
Growing Pains in Texas Hill Country  
Take a Stand

D. Oral Presentation

1. Speak for a variety of purposes (e.g., persuasion, information, entertainment, literary interpretation, dramatization, personal expression).  
Growing Pains in Texas Hill Country  
Take a Stand

Language Arts.9-12.3.4 (Listening)

All Students Will Listen Actively To Information From A Variety Of Sources In A Variety Of Situations.

A. Active Listening

1. Explore and reflect on ideas while hearing and focusing attentively.  
Eco Ethics  
Food for Thought  
Growing Pains in Texas Hill Country  
Take a Stand
2. Listen skillfully to distinguish emotive and persuasive rhetoric.  
Growing Pains in Texas Hill Country  
Take a Stand
3. Demonstrate appropriate listener response to ideas in a persuasive speech, oral interpretation of a literary selection, or scientific or educational presentation.  
Growing Pains in Texas Hill Country

B. Listening Comprehension

4. Listen and respond appropriately to a debate.  
Growing Pains in Texas Hill Country  
Take a Stand

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# Mathematics

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## Kindergarten to Grade 2

Math.K-2.4.1 (Number And Numerical Operations)

All Students Will Develop Number Sense And Will Perform Standard Numerical Operations And Estimations On All Types Of Numbers In A Variety Of Ways.

### A. Number Sense

1. Use real-life experiences, physical materials, and technology to construct meanings for numbers (unless otherwise noted, all indicators for grade 2 pertain to these sets of numbers as well).

- Whole numbers through hundreds.
- Ordinals.
- Proper fractions (denominators of 2, 3, 4, 8, 10).
  - Population Circle
  - Timber!
  - Water, Water Everywhere (Elementary/Intermediate)

5. Compare and order whole numbers.

- Cougar Hunt
- Food for Thought
- Timber!

### B. Numerical Operations

4. Construct, use, and explain procedures for performing addition and subtraction calculations with:

- Pencil-and-paper.
- Mental math.
- Calculator.
  - Cougar Hunt
  - Timber!

### C. Estimation

1. Judge without counting whether a set of objects has less than, more than, or the same number of objects as a reference set.

- Food for Thought
- The Stork and the Grim Reaper

Math.K-2.4.3 (Patterns And Algebra)

All Students Will Represent And Analyze Relationships Among Variable Quantities And Solve Problems Involving Patterns, Functions, And Algebraic Concepts And Processes.

### C. Modeling

1. Recognize and describe changes over time (e.g., temperature, height).

- Population Circle

Math.K-2.4.4 (Data Analysis, Probability, And Discrete Mathematics)

All Students Will Develop An Understanding Of The Concepts And Techniques Of Data Analysis, Probability, And Discrete Mathematics, And Will Use Them To Model Situations, Solve Problems, And Analyze And Draw Appropriate Inferences From Data.

### A. Data Analysis

2. Read, interpret, construct, and analyze displays of data.

- Pictures, tally chart, pictograph, bar graph, Venn diagram.
- Smallest to largest, most frequent (mode).
  - Food for Thought

B. Probability

2. Provide probability of specific outcomes.

- Probability of getting specific outcome when coin is tossed, when die is rolled, when spinner is spun (e.g., if spinner has five equal sectors, then probability of getting a particular sector is one out of five).
- When picking a marble from a bag with three red marbles and four blue marbles, the probability of getting a red marble is three out of seven.

Food for Thought

## Kindergarten to Grade 12

Math.K-12.4.5 (Mathematical Processes)

All Students Will Use Mathematical Processes Of Problem Solving, Communication, Connections, Reasoning, Representations, And Technology To Solve Problems And Communicate Mathematical Ideas.

A. Problem Solving

1. Learn mathematics through problem solving, inquiry, and discovery.

Earth: The Apple of Our Eye (Intermediate/Secondary)

Measuring a Million

On the Double

Population Circle

Power of the Pyramids

Seeing Double

Stage Stepping

The Stork and the Grim Reaper

Timber!

Transportation Tally

Water, Water Everywhere (Elementary/Intermediate)

A World of Difference

2. Solve problems that arise in mathematics and in other contexts (cf. workplace readiness standard 8.3).

- Open-ended problems.
- Non-routine problems.
- Problems with multiple solutions.
- Problems that can be solved in several ways.

Measuring a Million

The Stork and the Grim Reaper

Timber!

A World of Difference

4. Pose problems of various types and levels of difficulty.

Measuring a Million

On the Double

Population Circle

Power of the Pyramids

Seeing Double

Stage Stepping

The Stork and the Grim Reaper

Timber!

Transportation Tally

A World of Difference

World Real Estate

B. Communication

1. Use communication to organize and clarify their mathematical thinking.

- Reading and writing.
- Discussion, listening, and questioning.

Earth: The Apple of Our Eye (Intermediate/Secondary)  
Family Perspective  
Population Circle  
Power of the Pyramids  
The Stork and the Grim Reaper  
Timber!  
A World of Difference

2. Communicate their mathematical thinking coherently and clearly to peers, teachers, and others, both orally and in writing.

Earth: The Apple of Our Eye (Intermediate/Secondary)  
Family Perspective  
Food for Thought  
Measuring a Million  
On the Double  
Population Circle  
Power of the Pyramids  
Seeing Double  
Stage Stepping  
The Stork and the Grim Reaper  
Timber!  
Transportation Tally  
Water, Water Everywhere (Elementary/Intermediate)  
A World of Difference  
World Real Estate

4. Use the language of mathematics to express mathematical ideas precisely.

Earth: The Apple of Our Eye (Intermediate/Secondary)  
Food for Thought  
Measuring a Million  
On the Double  
Power of the Pyramids  
Seeing Double  
Stage Stepping  
The Stork and the Grim Reaper  
Timber!  
Transportation Tally  
Water, Water Everywhere (Elementary/Intermediate)  
A World of Difference  
World Real Estate

### C. Connections

3. Recognize that mathematics is used in a variety of contexts outside of mathematics.

Cougar Hunt  
Earth: The Apple of Our Eye (Intermediate/Secondary)  
Family Perspective  
Food for Thought  
Measuring a Million  
On the Double  
Population Circle  
Power of the Pyramids  
Seeing Double  
Stage Stepping  
The Stork and the Grim Reaper  
Timber!  
Transportation Tally

Water, Water Everywhere (Elementary/Intermediate)  
A World of Difference  
World Real Estate

4. Apply mathematics in practical situations and in other disciplines.

Cougar Hunt  
Earth: The Apple of Our Eye (Intermediate/Secondary)  
Family Perspective  
Food for Thought  
Measuring a Million  
On the Double  
Population Circle  
Power of the Pyramids  
Seeing Double  
Stage Stepping  
The Stork and the Grim Reaper  
Timber!  
Transportation Tally  
Water, Water Everywhere (Elementary/Intermediate)  
A World of Difference  
World Real Estate

D. Reasoning

2. Use reasoning to support their mathematical conclusions and problem solutions.

Population Circle  
Power of the Pyramids  
Seeing Double  
The Stork and the Grim Reaper  
Timber!  
A World of Difference

E. Representations

1. Create and use representations to organize, record, and communicate mathematical ideas.

- Concrete representations (e.g., base-ten blocks or algebra tiles).
- Pictorial representations (e.g., diagrams, charts, or tables).
- Symbolic representations (e.g., a formula).
- Graphical representations (e.g., a line graph).

Earth: The Apple of Our Eye (Intermediate/Secondary)  
Population Circle  
Power of the Pyramids  
Stage Stepping  
The Stork and the Grim Reaper  
Timber!  
Transportation Tally  
A World of Difference

2. Select, apply, and translate among mathematical representations to solve problems.

Stage Stepping  
The Stork and the Grim Reaper  
Timber!

3. Use representations to model and interpret physical, social, and mathematical phenomena.

Earth: The Apple of Our Eye (Intermediate/Secondary)  
Food for Thought  
Population Circle  
The Stork and the Grim Reaper

Timber!  
Water, Water Everywhere (Elementary/Intermediate)  
A World of Difference

### Grade 3

#### Math.3.4.1 (Number And Numerical Operations)

All Students Will Develop Number Sense And Will Perform Standard Numerical Operations And Estimations On All Types Of Numbers In A Variety Of Ways.

##### A. Number Sense

1. Use real-life experiences, physical materials, and technology to construct meanings for numbers (unless otherwise noted, all indicators for grade 3 pertain to these sets of numbers as well).

- Whole numbers through hundred thousands.
- Commonly used fractions (denominators of 2, 3, 4, 5, 6, 8, 10) as part of a whole, as a subset of a set, and as a location on a number line.

Food for Thought

Population Circle

The Stork and the Grim Reaper

Timber!

Water, Water Everywhere (Elementary/Intermediate)

2. Demonstrate an understanding of whole number place value concepts.

Food for Thought

6. Compare and order numbers.

Cougar Hunt

Food for Thought

Timber!

##### C. Estimation

2. Construct and use a variety of estimation strategies (e.g., rounding and mental math) for estimating both quantities and the result of computations.

Population Circle

The Stork and the Grim Reaper

#### Math.3.4.2 (Geometry And Measurement)

All Students Will Develop Spatial Sense And The Ability To Use Geometric Properties, Relationships, And Measurement To Model, Describe And Analyze Phenomena.

##### D. Units of Measurement

2. Select and use appropriate standard units of measure and measurement tools to solve real-life problems.

- Length - fractions of an inch ( $1/4$ ,  $1/2$ ), mile, decimeter, kilometer.
- Area - square inch, square centimeter.
- Weight - ounce.
- Capacity - fluid ounce, cup, gallon, milliliter.

The Stork and the Grim Reaper

#### Math.3.4.3 (Patterns And Algebra)

All Students Will Represent And Analyze Relationships Among Variable Quantities And Solve Problems Involving Patterns, Functions, And Algebraic Concepts And Processes.

##### B. Functions and Relationships

1. Use concrete and pictorial models to explore the basic concept of a function.

- Input/output tables, T-charts.

The Stork and the Grim Reaper

Timber!

### C. Modeling

1. Recognize and describe change in quantities.

- Graphs representing change over time (e.g., temperature, height).

Population Circle

The Stork and the Grim Reaper

Timber!

### Math.3.4.4 (Data Analysis, Probability, And Discrete Mathematics)

All Students Will Develop An Understanding Of The Concepts And Techniques Of Data Analysis, Probability, And Discrete Mathematics, And Will Use Them To Model Situations, Solve Problems, And Analyze And Draw Appropriate Inferences From Data.

#### A. Data Analysis

2. Read, interpret, construct, analyze, generate questions about, and draw inferences from displays of data.

- Pictograph, bar graph, table.

Timber!

#### B. Probability

1. Use everyday events and chance devices, such as dice, coins, and unevenly divided spinners, to explore concepts of probability.

- Likely, unlikely, certain, impossible.

- More likely, less likely, equally likely.

Family Perspective

2. Predict probabilities in a variety of situations (e.g., given the number of items of each color in a bag, what is the probability that an item picked will have a particular color).

- What students think will happen (intuitive).

- Collect data and use that data to predict the probability (experimental).

Food for Thought

Population Circle

#### D. Discrete Mathematics - Vertex- Edge Graphs and Algorithms

1. Follow, devise, and describe practical sets of directions (e.g., to add two 2-digit numbers).

Cougar Hunt

Timber!

## Grade 4

### Math.4.4.1 (Number And Numerical Operations)

All Students Will Develop Number Sense And Will Perform Standard Numerical Operations And Estimations On All Types Of Numbers In A Variety Of Ways.

#### A. Number Sense

1. Use real-life experiences, physical materials, and technology to construct meanings for numbers (unless otherwise noted, all indicators for grade 4 pertain to these sets of numbers as well).

- Whole numbers through millions

- Commonly used fractions (denominators of 2, 3, 4, 5, 6, 8, 10, 12, and 16) as part of a whole, as a subset of a set, and as a location on a number line

- Decimals through hundredths.

Food for Thought

Population Circle

Power of the Pyramids

The Stork and the Grim Reaper

Timber!

Water, Water Everywhere (Elementary/Intermediate)

2. Demonstrate an understanding of place value concepts.  
Food for Thought
3. Demonstrate a sense of the relative magnitudes of numbers.  
Food for Thought  
The Stork and the Grim Reaper  
Timber!
6. Compare and order numbers.  
Food for Thought  
Timber!

#### B. Numerical Operations

3. Construct, use, and explain procedures for performing whole number calculations and with:
  - Pencil-and-paper.
  - Mental math.
  - Calculator.
 Cougar Hunt  
The Stork and the Grim Reaper  
Timber!

#### C. Estimation

2. Construct and use a variety of estimation strategies (e.g., rounding and mental math) for estimating both quantities and the results of computations.  
Food for Thought  
Population Circle  
The Stork and the Grim Reaper

#### Math.4.4.2 (Geometry And Measurement)

All Students Will Develop Spatial Sense And The Ability To Use Geometric Properties, Relationships, And Measurement To Model, Describe And Analyze Phenomena.

#### D. Units of Measurement

2. Select and use appropriate standard units of measure and measurement tools to solve real-life problems.
  - Length - fractions of an inch ( $\frac{1}{8}$ ,  $\frac{1}{4}$ ,  $\frac{1}{2}$ ), mile, decimeter, kilometer
  - Area - square inch, square centimeter.
  - Volume - cubic inch, cubic centimeter.
  - Weight - ounce.
  - Capacity - fluid ounce, cup, gallon, milliliter.
 Measuring a Million  
The Stork and the Grim Reaper
4. Incorporate estimation in measurement activities (e.g., estimate before measuring).  
The Stork and the Grim Reaper  
Measuring a Million
5. Solve problems involving elapsed time.  
On the Double  
Population Circle  
Timber!

#### Math.4.4.3 (Patterns And Algebra)

All Students Will Represent And Analyze Relationships Among Variable Quantities And Solve Problems Involving Patterns, Functions, And Algebraic Concepts And Processes.

#### A. Patterns

1. Recognize, describe, extend, and create patterns.
  - Descriptions using words, number sentences/expressions, graphs, tables, variables (e.g., shape, blank, or letter).Timber!

### C. Modeling

1. Recognize and describe change in quantities.
  - Graphs representing change over time (e.g., temperature, height).
  - How change in one physical quantity can produce a corresponding change in another (e.g., pitch of a sound depends on the rate of vibration).Population Circle  
The Stork and the Grim Reaper  
Timber!

### Math.4.4.4 (Data Analysis, Probability, And Discrete Mathematics)

All Students Will Develop An Understanding Of The Concepts And Techniques Of Data Analysis, Probability, And Discrete Mathematics, And Will Use Them To Model Situations, Solve Problems, And Analyze And Draw Appropriate Inferences From Data.

#### A. Data Analysis

1. Collect, generate, organize, and display data in response to questions, claims, or curiosity.
  - Data collected from the school environment.Timber!
  
2. Read, interpret, construct, analyze, generate questions about, and draw inferences from displays of data.
  - Pictograph, bar graph, line plot, line graph, table.
  - Average (mean), most frequent (mode), middle term (median).Population Circle  
Power of the Pyramids  
Timber!

#### B. Probability

1. Use everyday events and chance devices, such as dice, coins, and unevenly divided spinners, to explore concepts of probability.
  - Likely, unlikely, certain, impossible, improbable, fair, unfair.
  - More likely, less likely, equally likely.
  - Probability of tossing "heads" does not depend on outcomes of previous tosses.Family Perspective
  
2. Determine probabilities of simple events based on equally likely outcomes and express them as fractions.  
Family Perspective
  
3. Predict probabilities in a variety of situations (e.g., given the number of items of each color in a bag, what is the probability that an item picked will have a particular color).
  - What students think will happen (intuitive).
  - Collect data and use that data to predict the probability (experimental).
  - Analyze all possible outcomes to find the probability (theoretical).Family Perspective

#### C. Discrete Mathematics- Systematic Listing and Counting

1. Represent and classify data according to attributes, such as shape or color, and relationships.
  - Venn diagrams.
  - Numerical and alphabetical order.Food for Thought  
Power of the Pyramids

D. Discrete Mathematics- Vertex- Edge Graphs and Algorithms

1. Follow, devise, and describe practical sets of directions (e.g., to add two 2-digit numbers).  
On the Double  
The Stork and the Grim Reaper  
Timber!

## Grade 5

Math.5.4.1 (Number And Numerical Operations)

All Students Will Develop Number Sense And Will Perform Standard Numerical Operations And Estimations On All Types Of Numbers In A Variety Of Ways.

A. Number Sense

1. Use real-life experiences, physical materials, and technology to construct meanings for numbers (unless otherwise noted, all indicators for grade 5 pertain to these sets of numbers as well).
  - All fractions as part of a whole, as subset of a set, as a location on a number line, and as divisions of whole numbers.
  - All decimals.
    - Food for Thought
    - Population Circle
    - Stage Stepping
    - The Stork and the Grim Reaper
    - Timber!
    - Transportation Tally
    - Water, Water Everywhere (Elementary/Intermediate)
3. Demonstrate a sense of the relative magnitudes of numbers.
  - Food for Thought
  - Population Circle
  - Seeing Double
4. Use whole numbers, fractions, and decimals to represent equivalent forms of the same number.
  - Water, Water Everywhere (Elementary/Intermediate)
6. Compare and order numbers.
  - Food for Thought
  - On the Double
  - Timber!

B. Numerical Operations

1. Recognize the appropriate use of each arithmetic operation in problem situations.
  - On the Double
  - Power of the Pyramids
  - Transportation Tally

C. Estimation

1. Use a variety of estimation strategies for both number and computation.
  - Food for Thought
  - Population Circle
  - Stage Stepping
  - The Stork and the Grim Reaper

Math.5.4.2 (Geometry And Measurement)

All Students Will Develop Spatial Sense And The Ability To Use Geometric Properties, Relationships, And Measurement To Model, Describe And Analyze Phenomena.

D. Units of Measurement

2. Convert measurement units within a system (e.g., 3 feet = \_\_\_\_ inches).  
Measuring a Million  
The Stork and the Grim Reaper
3. Know approximate equivalents between the standard and metric systems (e.g., one kilometer is approximately 6/10 of a mile).  
Measuring a Million
4. Use measurements and estimates to describe and compare phenomena.  
Population Circle  
The Stork and the Grim Reaper  
Water, Water Everywhere (Elementary/Intermediate)

#### Math.5.4.3 (Patterns And Algebra)

All Students Will Represent And Analyze Relationships Among Variable Quantities And Solve Problems Involving Patterns, Functions, And Algebraic Concepts And Processes.

##### A. Patterns

1. Recognize, describe, extend, and create patterns involving whole numbers.
  - Descriptions using tables, verbal rules, simple equations, and graphs.  
The Stork and the Grim Reaper  
Timber!  
Transportation Tally

##### B. Functions & Relationships

2. Graph points satisfying a function from T-charts, from verbal rules, and from simple equations.  
Population Circle  
Power of the Pyramids  
Timber!

##### C. Modeling

1. Use number sentences to model situations.
  - Using variables to represent unknown quantities.
  - Using concrete materials, tables, graphs, verbal rules, algebraic expressions/equations.  
On the Double  
The Stork and the Grim Reaper  
Timber!  
Transportation Tally
2. Draw freehand sketches of graphs that model real phenomena and use such graphs to predict and interpret events.
  - Changes over time.
  - Rates of change (e.g., when is plant growing slowly/rapidly, when is temperature dropping most rapidly/slowly).  
Population Circle  
Timber!

#### Math.5.4.4 (Data Analysis, Probability, And Discrete Mathematics)

All Students Will Develop An Understanding Of The Concepts And Techniques Of Data Analysis, Probability, And Discrete Mathematics, And Will Use Them To Model Situations, Solve Problems, And Analyze And Draw Appropriate Inferences From Data.

##### A. Data Analysis

2. Read, interpret, select, construct, analyze, generate questions about, and draw inferences from displays of data.
  - Bar graph, line graph, circle graph, table.

- Range, median, and mean.
- Population Circle
- Power of the Pyramids
- Timber!

3. Respond to questions about data and generate their own questions and hypotheses.

- Food for Thought
- On the Double
- Population Circle
- Power of the Pyramids
- Seeing Double
- Stage Stepping
- The Stork and the Grim Reaper
- Timber!
- Transportation Tally
- World Real Estate

#### B. Probability

1. Determine probabilities of events.

- Event, probability of an event.
- Probability of certain event is 1 and of impossible event is 0.
- Family Perspective
- A World of Difference

2. Determine probability using intuitive, experimental, and theoretical methods (e.g., using model of picking items of different colors from a bag).

- Given numbers of various types of items in a bag, what is the probability that an item of one type will be picked.
- Given data obtained experimentally, what is the likely distribution of items in the bag.
- Family Perspective
- Food for Thought
- A World of Difference

3. Model situations involving probability using simulations (with spinners, dice) and theoretical models.

- Family Perspective
- A World of Difference

#### C. Discrete Mathematics- Systematic Listing and Counting

1. Solve counting problems and justify that all possibilities have been enumerated without duplication.

- Organized lists, charts, tree diagrams, tables.
- Power of the Pyramids
- Stage Stepping

## Grade 6

Math.6.4.1 (Number And Numerical Operations)

All Students Will Develop Number Sense And Will Perform Standard Numerical Operations And Estimations On All Types Of Numbers In A Variety Of Ways.

#### A. Number Sense

1. Use real-life experiences, physical materials, and technology to construct meanings for numbers (unless otherwise noted, all indicators for grade 6 pertain to these sets of numbers as well).

- All integers.
- All fractions as part of a whole, as subset of a set, as a location on a number line, and as divisions of whole numbers.
- All decimals.

Earth: The Apple of Our Eye (Intermediate/Secondary)

Food for Thought  
Measuring a Million  
Population Circle  
Stage Stepping  
The Stork and the Grim Reaper  
Timber!  
Transportation Tally  
Water, Water Everywhere (Elementary/Intermediate)  
World Real Estate

3. Demonstrate a sense of the relative magnitudes of numbers.

Food for Thought  
Measuring a Million  
On the Double  
Seeing Double

4. Explore the use of ratios and proportions in a variety of situations.

Earth: The Apple of Our Eye (Intermediate/Secondary)  
Food for Thought  
The Stork and the Grim Reaper  
Water, Water Everywhere (Elementary/Intermediate)  
World Real Estate  
A World of Difference

5. Understand and use whole-number percents between 1 and 100 in a variety of situations.

Earth: The Apple of Our Eye (Intermediate/Secondary)  
On the Double  
Power of the Pyramids  
Water, Water Everywhere (Elementary/Intermediate)  
World Real Estate

6. Use whole numbers, fractions, and decimals to represent equivalent forms of the same number.

Earth: The Apple of Our Eye (Intermediate/Secondary)  
Water, Water Everywhere (Elementary/Intermediate)  
World Real Estate

8. Compare and order numbers.

Food for Thought  
On the Double  
Timber!

B. Numerical Operations

1. Recognize the appropriate use of each arithmetic operation in problem situations.

Measuring a Million  
On the Double  
Power of the Pyramids  
Stage Stepping  
Timber!  
Transportation Tally  
World Real Estate

2. Construct, use, and explain procedures for performing calculations with fractions and decimals with:

- Pencil-and-paper.
- Mental math.
- Calculator.

Measuring a Million

On the Double  
Power of the Pyramids  
Stage Stepping  
Timber!  
Transportation Tally  
World Real Estate

C. Estimation

1. Use a variety of strategies for estimating both quantities and the results of computations.  
Population Circle  
Stage Stepping  
The Stork and the Grim Reaper

Math.6.4.2 (Geometry And Measurement)

All Students Will Develop Spatial Sense And The Ability To Use Geometric Properties, Relationships, And Measurement To Model, Describe And Analyze Phenomena.

D. Units of Measurement

3. Convert measurement units within a system (e.g., 3 feet = \_\_\_ inches).  
Measuring a Million  
The Stork and the Grim Reaper  
Water, Water Everywhere (Elementary/Intermediate)
4. Know approximate equivalents between the standard and metric systems (e.g., one kilometer is approximately 6/10 of a mile).  
Measuring a Million
5. Use measurements and estimates to describe and compare phenomena.  
The Stork and the Grim Reaper  
Water, Water Everywhere (Elementary/Intermediate)

Math.6.4.3 (Patterns And Algebra)

All Students Will Represent And Analyze Relationships Among Variable Quantities And Solve Problems Involving Patterns, Functions, And Algebraic Concepts And Processes.

A. Patterns

1. Recognize, describe, extend, and create patterns involving whole numbers and rational numbers.
  - Descriptions using tables, verbal rules, simple equations, and graphs.
  - Formal iterative formulas (e.g., NEXT = NOW \* 3).
  - Recursive patterns, including Pascal's Triangle (where each entry is the sum of the entries above it) and the Fibonacci Sequence: 1, 1, 2, 3, 5, 8, . . . (where NEXT = NOW + PREVIOUS).  
Seeing Double  
Stage Stepping  
Timber!

C. Modeling

1. Use patterns, relations, and linear functions to model situations.
  - Using variables to represent unknown quantities.
  - Using concrete materials, tables, graphs, verbal rules, algebraic expressions/equations/inequalities.  
Earth: The Apple of Our Eye (Intermediate/Secondary)  
Food for Thought  
Seeing Double  
Stage Stepping  
The Stork and the Grim Reaper  
Timber!  
Transportation Tally

Water, Water Everywhere (Elementary/Intermediate)  
World Real Estate

2. Draw freehand sketches of graphs that model real phenomena and use such graphs to predict and interpret events.

- Changes over time.
- Relations between quantities.
- Rates of change (e.g., when is plant growing slowly/rapidly, when is temperature dropping most rapidly/slowly).

Population Circle

Stage Stepping

Timber!

Water, Water Everywhere (Elementary/Intermediate)

Math.6.4.4 (Data Analysis, Probability, And Discrete Mathematics)

All Students Will Develop An Understanding Of The Concepts And Techniques Of Data Analysis, Probability, And Discrete Mathematics, And Will Use Them To Model Situations, Solve Problems, And Analyze And Draw Appropriate Inferences From Data.

A. Data Analysis

2. Read, interpret, select, construct, analyze, generate questions about, and draw inferences from displays of data.

- Bar graph, line graph, circle graph, table, histogram.
- Range, median, and mean.
- Calculators and computers used to record and process information.

Earth: The Apple of Our Eye (Intermediate/Secondary)

Food for Thought

Population Circle

Power of the Pyramids

Stage Stepping

Timber!

Water, Water Everywhere (Elementary/Intermediate)

World Real Estate

3. Respond to questions about data, generate their own questions and hypotheses, and formulate strategies for answering their questions and testing their hypotheses.

Earth: The Apple of Our Eye (Intermediate/Secondary)

Food for Thought

Measuring a Million

On the Double

Population Circle

Power of the Pyramids

Seeing Double

Stage Stepping

The Stork and the Grim Reaper

Timber!

Transportation Tally

Water, Water Everywhere (Elementary/Intermediate)

A World of Difference

World Real Estate

B. Probability

2. Determine probability using intuitive, experimental, and theoretical methods (e.g., using model of picking items of different colors from a bag).

- Given numbers of various types of items in a bag, what is the probability that an item of one type will be picked.

- Given data obtained experimentally, what is the likely distribution of items in the bag.  
Food for Thought  
A World of Difference
- 3. Explore compound events.  
Family Perspective  
A World of Difference
- 4. Model situations involving probability using simulations (with spinners, dice) and theoretical models.  
Family Perspective  
A World of Difference
- 5. Recognize and understand the connections among the concepts of independent outcomes, picking at random, and fairness.  
Family Perspective  
A World of Difference

## Grade 7

Math.7.4.1 (Number And Numerical Operations)

All Students Will Develop Number Sense And Will Perform Standard Numerical Operations And Estimations On All Types Of Numbers In A Variety Of Ways.

### A. Number Sense

1. Extend understanding of the number system by constructing meanings for the following (unless otherwise noted, all indicators for grade 7 pertain to these sets of numbers as well):
  - Rational numbers.
  - Percents.
  - Whole numbers with exponents.  
Food for Thought  
Measuring a Million  
On the Double  
Power of the Pyramids  
Timber!
2. Demonstrate a sense of the relative magnitudes of numbers.  
Food for Thought  
Measuring a Million  
On the Double  
Seeing Double
3. Understand and use ratios, proportions, and percents (including percents greater than 100 and less than 1) in a variety of situations.  
Earth: The Apple of Our Eye (Intermediate/Secondary)  
Food for Thought  
On the Double  
Power of the Pyramids  
The Stork and the Grim Reaper  
Water, Water Everywhere (Elementary/Intermediate)  
A World of Difference  
World Real Estate
5. Use whole numbers, fractions, decimals, and percents to represent equivalent forms of the same number.  
Earth: The Apple of Our Eye (Intermediate/Secondary)  
Water, Water Everywhere (Elementary/Intermediate)

### B. Numerical Operations

1. Use and explain procedures for performing calculations with integers and all number types named above with:

- Pencil-and-paper.
- Mental math.
- Calculator.
  - Measuring a Million
  - On the Double
  - Power of the Pyramids
  - Stage Stepping
  - Timber!
  - Transportation Tally
  - World Real Estate

#### Math.7.4.3 (Patterns And Algebra)

All Students Will Represent And Analyze Relationships Among Variable Quantities And Solve Problems Involving Patterns, Functions, And Algebraic Concepts And Processes.

##### A. Patterns

1. Recognize, describe, extend, and create patterns involving whole numbers, rational numbers, and integers.

- Descriptions using tables, verbal and symbolic rules, graphs, simple equations or expressions.
- Finite and infinite sequences.
- Generating sequences by using calculators to repeatedly apply a formula.
  - Seeing Double
  - Stage Stepping
  - Timber!

##### C. Modeling

2. Use patterns, relations, symbolic algebra, and linear functions to model situations.

- Using manipulatives, tables, graphs, verbal rules, algebraic expressions/ equations/ inequalities.
- Growth situations, such as population growth and compound interest, using recursive (e.g., NOW-NEXT) formulas (cf. science standard 5.5 and social studies standard 6.6).

- Earth: The Apple of Our Eye (Intermediate/Secondary)
  - On the Double
  - Population Circle
  - Stage Stepping
  - The Stork and the Grim Reaper
  - Timber!
  - Water, Water Everywhere (Elementary/Intermediate)
  - World Real Estate

#### Math.7.4.4 (Data Analysis, Probability, And Discrete Mathematics)

All Students Will Develop An Understanding Of The Concepts And Techniques Of Data Analysis, Probability, And Discrete Mathematics, And Will Use Them To Model Situations, Solve Problems, And Analyze And Draw Appropriate Inferences From Data.

##### A. Data Analysis

1. Select and use appropriate representations for sets of data, and measures of central tendency (mean, median, and mode).

- Type of display most appropriate for given data.
- Box-and-whisker plot, upper quartile, lower quartile.
- Scatter plot.
- Calculators and computer used to record and process information.
  - Timber!
  - World Real Estate

2. Make inferences and formulate and evaluate arguments based on displays and analysis of data.

Earth: The Apple of Our Eye (Intermediate/Secondary)  
Population Circle  
Power of the Pyramids  
Timber!  
Water, Water Everywhere (Elementary/Intermediate)  
World Real Estate

**B. Probability**

1. Interpret probabilities as ratios, percents, and decimals.  
A World of Difference
2. Model situations involving probability with simulations (using spinners, dice, calculators and computers) and theoretical models.  
- Frequency, relative frequency.  
Family Perspective  
A World of Difference
3. Estimate probabilities and make predictions based on experimental and theoretical probabilities.  
A World of Difference
4. Play and analyze probability-based games, and discuss the concepts of fairness and expected value.  
Family Perspective  
A World of Difference

**Grade 8**

Math.8.4.1 (Number And Numerical Operations)

All Students Will Develop Number Sense And Will Perform Standard Numerical Operations And Estimations On All Types Of Numbers In A Variety Of Ways.

**A. Number Sense**

1. Extend understanding of the number system by constructing meanings for the following (unless otherwise noted, all indicators for grade 8 pertain to these sets of numbers as well):  
- Rational numbers.  
- Percents.  
- Exponents.  
- Roots.  
- Absolute values.  
- Numbers represented in scientific notation.  
Food for Thought  
Measuring a Million  
On the Double  
Power of the Pyramids  
Timber!
2. Demonstrate a sense of the relative magnitudes of numbers.  
Food for Thought  
Measuring a Million  
Seeing Double
3. Understand and use ratios, proportions, and percents (including percents greater than 100 and less than 1) in a variety of situations.  
Earth: The Apple of Our Eye (Intermediate/Secondary)  
Food for Thought  
On the Double  
Power of the Pyramids  
The Stork and the Grim Reaper

Water, Water Everywhere (Elementary/Intermediate)  
World Real Estate  
A World of Difference

5. Use whole numbers, fractions, decimals, and percents to represent equivalent forms of the same number.  
Earth: The Apple of Our Eye (Intermediate/Secondary)  
Water, Water Everywhere (Elementary/Intermediate)  
World Real Estate

**B. Numerical Operations**

1. Use and explain procedures for performing calculations involving addition, subtraction, multiplication, division, and exponentiation with integers and all number types named above with:
- Pencil-and-paper.
  - Mental math.
  - Calculator.
- Measuring a Million  
On the Double  
Power of the Pyramids  
Stage Stepping  
Timber!  
Transportation Tally  
World Real Estate

**Math.8.4.2 (Geometry And Measurement)**

All Students Will Develop Spatial Sense And The Ability To Use Geometric Properties, Relationships, And Measurement To Model, Describe And Analyze Phenomena.

**D. Units of Measurement**

3. Recognize that the degree of precision needed in calculations depends on how the results will be used and the instruments used to generate the measurements.
- Measuring a Million  
The Stork and the Grim Reaper

**Math.8.4.3 (Patterns And Algebra)**

All Students Will Represent And Analyze Relationships Among Variable Quantities And Solve Problems Involving Patterns, Functions, And Algebraic Concepts And Processes.

**A. Patterns**

1. Recognize, describe, extend, and create patterns involving whole numbers, rational numbers, and integers.
- Descriptions using tables, verbal and symbolic rules, graphs, simple equations or expressions.
  - Finite and infinite sequences.
  - Arithmetic sequences (i.e., sequences generated by repeated addition of a fixed number, positive or negative).
  - Geometric sequences (i.e., sequences generated by repeated multiplication by a fixed positive ratio, greater than 1 or less than 1).
  - Generating sequences by using calculators to repeatedly apply a formula.
- Seeing Double  
Stage Stepping  
Timber!

**B. Functions and Relationships**

2. Recognize and describe the difference between linear and exponential growth, using tables, graphs, and equations.
- On the Double  
Stage Stepping  
Timber!

### C. Modeling

2. Use patterns, relations, symbolic algebra, and linear functions to model situations.

- Using concrete materials (manipulatives), tables, graphs, verbal rules, algebraic expressions/ equations/ inequalities.

- Growth situations, such as population growth and compound interest, using recursive (e.g., NOW-NEXT) formulas (cf. science standard 5.5 and social studies standard 6.6).

Earth: The Apple of Our Eye (Intermediate/Secondary)

On the Double

Population Circle

Stage Stepping

The Stork and the Grim Reaper

Timber!

Water, Water Everywhere (Elementary/Intermediate)

World Real Estate

### Math.8.4.4 (Data Analysis, Probability, And Discrete Mathematics)

All Students Will Develop An Understanding Of The Concepts And Techniques Of Data Analysis, Probability, And Discrete Mathematics, And Will Use Them To Model Situations, Solve Problems, And Analyze And Draw Appropriate Inferences From Data.

#### A. Data Analysis

1. Select and use appropriate representations for sets of data, and measures of central tendency (mean, median, and mode).

- Type of display most appropriate for given data.

- Box-and-whisker plot, upper quartile, lower quartile.

- Scatter plot.

- Calculators and computer used to record and process information.

- Finding the median and mean (weighted average) using frequency data.

- Effect of additional data on measures of central tendency.

Timber!

World Real Estate

2. Make inferences and formulate and evaluate arguments based on displays and analysis of data.

Earth: The Apple of Our Eye (Intermediate/Secondary)

Population Circle

Power of the Pyramids

Timber!

World Real Estate

#### B. Probability

1. Interpret probabilities as ratios, percents, and decimals.

A World of Difference

2. Determine probabilities of compound events.

A World of Difference

4. Model situations involving probability with simulations (using spinners, dice, calculators and computers) and theoretical models.

- Frequency, relative frequency.

Family Perspective

A World of Difference

5. Estimate probabilities and make predictions based on experimental and theoretical probabilities.

A World of Difference

6. Play and analyze probability-based games, and discuss the concepts of fairness and expected value.  
Family Perspective  
A World of Difference

## **Grade 9 to Grade 12**

Math.9-12.4.1 (Number And Numerical Operations)

All Students Will Develop Number Sense And Will Perform Standard Numerical Operations And Estimations On All Types Of Numbers In A Variety Of Ways.

### **B. Numerical Operations**

1. Extend understanding and use of operations to real numbers and algebraic procedures.  
Transportation Tally

Math.9-12.4.2 (Geometry And Measurement)

All Students Will Develop Spatial Sense And The Ability To Use Geometric Properties, Relationships, And Measurement To Model, Describe And Analyze Phenomena.

### **D. Units of Measurement**

1. Understand and use the concept of significant digits.  
On the Double  
Transportation Tally

Math.9-12.4.3 (Patterns And Algebra)

All Students Will Represent And Analyze Relationships Among Variable Quantities And Solve Problems Involving Patterns, Functions, And Algebraic Concepts And Processes.

### **C. Modeling**

1. Use functions to model real-world phenomena and solve problems that involve varying quantities.
- Linear, quadratic, exponential, periodic (sine and cosine), and step functions (e.g., price of mailing a first-class letter over the past 200 years).
  - Direct and inverse variation.
  - Absolute value.
  - Expressions, equations and inequalities.
  - Same function can model variety of phenomena.
  - Growth/decay and change in the natural world.
  - Applications in mathematics, biology, and economics (including compound interest).
- On the Double  
The Stork and the Grim Reaper  
Timber!

Math.9-12.4.4 (Data Analysis, Probability, And Discrete Mathematics)

All Students Will Develop An Understanding Of The Concepts And Techniques Of Data Analysis, Probability, And Discrete Mathematics, And Will Use Them To Model Situations, Solve Problems, And Analyze And Draw Appropriate Inferences From Data.

### **A. Data Analysis**

1. Use surveys and sampling techniques to generate data and draw conclusions about large groups.
- Advantages/disadvantages of sample selection methods (e.g., convenience sampling, responses to survey, random sampling).
- A World of Difference
2. Evaluate the use of data in real-world contexts.
- Accuracy and reasonableness of conclusions drawn.
  - Bias in conclusions drawn (e.g., influence of how data is displayed).
  - Statistical claims based on sampling.
- On the Double

Power of the Pyramids  
Transportation Tally  
A World of Difference

3. Design a statistical experiment, conduct the experiment, and interpret and communicate the outcome.  
A World of Difference  
Family Perspective

B. Probability

1. Calculate the expected value of a probability-based game, given the probabilities and payoffs of the various outcomes, and determine whether the game is fair.  
A World of Difference
3. Model situations involving probability with simulations (using spinners, dice, calculators and computers) and theoretical models, and solve problems using these models.  
Family Perspective  
A World of Difference

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# Science

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## Kindergarten to Grade 2

Science.K-2.5.5 (Characteristics Of Life)

All Students Will Gain An Understanding Of The Structure, Characteristics, And Basic Needs Of Organisms And Will Investigate The Diversity Of Life.

A. Matter, Energy and Organization in Living Systems

1. Investigate the basic needs of humans and other organisms.  
Cougar Hunt

Science.K-2.5.8 (Earth Science)

All Students Will Gain An Understanding Of The Structure, Dynamics, And Geophysical Systems Of The Earth.

B. Atmosphere and Water

1. Identify the sources and uses of water.  
Water, Water Everywhere (Elementary/Intermediate)

Science.K-2.5.10 (Environmental Studies)

All Students Will Develop An Understanding Of The Environment As A System Of Interdependent Components Affected By Human Activity And Natural Phenomena.

A. Natural Systems and Interactions

1. Associate organisms' basic needs with how they meet those needs within their surroundings.  
Cougar Hunt

B. Human Interactions and Impact

1. Identify various needs of humans that are supplied by the natural or constructed environment.  
Treasures Underground

## Grade 3 to Grade 4

Science.3-4.5.1 (Scientific Processes)

All Students Will Develop Problem-Solving, Decision-Making And Inquiry Skills, Reflected By Formulating Usable Questions And Hypotheses, Planning Experiments, Conducting Systematic Observations, Interpreting And Analyzing Data, Drawing Conclusions, And Communicating Results.

A. Habits of Mind

1. Raise questions about the world around them and be willing to seek answers through making careful observations and experimentation.

Measuring a Million  
Population Circle  
The Stork and the Grim Reaper  
Timber!  
Water, Water Everywhere (Elementary/Intermediate)  
Who Polluted the Potomac?

2. Keep records that describe observations, carefully distinguish actual observations from ideas and speculations, and are understandable weeks and months later.

Measuring a Million  
Stash the Trash  
Timber!

B. Inquiry and Problem Solving

1. Develop strategies and skills for information-gathering and problem-solving, using appropriate tools and technologies.

- Eco Ethics
- Measuring a Million
- Treasures Underground
- Population Circle
- Power of the Pyramids
- The Stork and the Grim Reaper
- Timber!
- Water, Water Everywhere (Elementary/Intermediate)
- Who Polluted the Potomac?

2. Identify the evidence used in an explanation.

- Measuring a Million
- Population Circle
- Power of the Pyramids
- The Stork and the Grim Reaper
- Timber!
- Who Polluted the Potomac?

Science.3-4.5.3 (Mathematical Applications)

All Students Will Integrate Mathematics As A Tool For Problem-Solving In Science, And As A Means Of Expressing And/Or Modeling Scientific Theories.

A. Numerical Operations

1. Determine the reasonableness of estimates, measurements, and computations of quantities when doing science.

- Food for Thought
- Measuring a Million
- Population Circle
- The Stork and the Grim Reaper
- Water, Water Everywhere (Elementary/Intermediate)

2. Recognize and comprehend the orders of magnitude associated with large and small physical quantities.

- Food for Thought
- Population Circle

3. Express quantities using appropriate number formats, such as:

- integers.
- fractions.
- Cougar Hunt
- Food for Thought
- Measuring a Million
- Population Circle
- The Stork and the Grim Reaper
- Timber!
- Water, Water Everywhere (Elementary/Intermediate)

B. Geometry and Measurement

1. Select appropriate measuring instruments based on the degree of precision required.

- Measuring a Million
- The Stork and the Grim Reaper
- Water, Water Everywhere (Elementary/Intermediate)

2. Use a variety of measuring instruments and record measured quantities using the appropriate units.

- Measuring a Million

The Stork and the Grim Reaper  
Timber!  
Water, Water Everywhere (Elementary/Intermediate)

D. Data Analysis and Probability

1. Use tables and graphs to represent and interpret data.

Population Circle  
Power of the Pyramids  
Timber!

Science.3-4.5.5 (Characteristics Of Life)

All Students Will Gain An Understanding Of The Structure, Characteristics, And Basic Needs Of Organisms And Will Investigate The Diversity Of Life.

A. Matter, Energy and Organization in Living Systems

1. Identify the roles that organisms may serve in a food chain.

Cougar Hunt

Science.3-4.5.8 (Earth Science)

All Students Will Gain An Understanding Of The Structure, Dynamics, And Geophysical Systems Of The Earth.

B. Atmosphere and Water

2. Recognize that most of Earth's surface is covered by water and be able to identify the characteristics of those sources of water.

- oceans.
- rivers.
- lakes.
- underground sources.
- glaciers.

Water, Water Everywhere (Elementary/Intermediate)

## Grade 5 to Grade 6

Science.5-6.5.10 (Environmental Studies)

All Students Will Develop An Understanding Of The Environment As A System Of Interdependent Components Affected By Human Activity And Natural Phenomena.

B. Human Interactions and Impact

1. Describe the effect of human activities on various ecosystems.

Earth: The Apple of Our Eye (Intermediate/Secondary)

Everything Is Connected

For the Common Good

Growing Pains in Texas Hill Country

Treasures Underground

Stash the Trash

Timber!

Transportation Tally

Water, Water Everywhere (Elementary/Intermediate)

Who Polluted the Potomac?

A World of Difference

2. Evaluate the impact of personal activities on the local environment.

Eco Ethics

For the Common Good

Stage Stepping

Transportation Tally

Who Polluted the Potomac?

## **Grade 7 to Grade 8**

Science.7-8.5.1 (Scientific Processes)

All Students Will Develop Problem-Solving, Decision-Making And Inquiry Skills, Reflected By Formulating Usable Questions And Hypotheses, Planning Experiments, Conducting Systematic Observations, Interpreting And Analyzing Data, Drawing Conclusions, And Communicating Results.

### **A. Habits of Mind**

1. Evaluate the strengths and weaknesses of data, claims, and arguments.

Eco Ethics

For the Common Good

Growing Pains in Texas Hill Country

Take a Stand

### **B. Inquiry and Problem Solving**

1. Identify questions and make predictions that can be addressed by conducting investigations.

Stage Stepping

Timber!

Transportation Tally

A World of Difference

3. Collect, organize, and interpret the data that result from experiments.

Stage Stepping

Timber!

A World of Difference

Science.7-8.5.2 (Science And Society)

All Students Will Develop An Understanding Of How People Of Various Cultures Have Contributed To The Advancement Of Science And Technology, And How Major Discoveries And Events Have Advanced Science And Technology.

### **B. Historical Perspectives**

1. Describe the impact of major events and people in the history of science and technology, in conjunction with other world events.

*You're One in Six Billion!*

Science.7-8.5.3 (Mathematical Applications)

All Students Will Integrate Mathematics As A Tool For Problem-Solving In Science, And As A Means Of Expressing And/Or Modeling Scientific Theories.

### **A. Numerical Operations**

1. Express quantities using appropriate number formats, such as:

- percents.

On the Double

Power of the Pyramids

Water, Water Everywhere (Elementary/Intermediate)

### **B. Geometry and Measurement**

1. Perform mathematical computations using labeled quantities and express answers in correctly derived units.

On the Double

Population Circle

Power of the Pyramids

Timber!

Transportation Tally

A World of Difference

C. Patterns and Algebra

1. Express physical relationships in terms of mathematical equations derived from collected data.

Earth: The Apple of Our Eye (Intermediate/Secondary)

On the Double

Power of the Pyramids

The Stork and the Grim Reaper

Timber!

Transportation Tally

Water, Water Everywhere (Elementary/Intermediate)

D. Data Analysis and Probability

1. Represent and describe mathematical relationships among variables using:

- graphs.

- tables.

Earth: The Apple of Our Eye (Intermediate/Secondary)

On the Double

Power of the Pyramids

Timber!

World Real Estate

Science.7-8.5.4 (Nature And Process Of Technology)

All Students Will Understand The Interrelationships Between Science And Technology And Develop A Conceptual Understanding Of The Nature And Process Of Technology.

B. Nature of Technology

1. Analyze a product or system to determine the problem it was designed to solve, the design constraints, trade-offs and risks involved in using the product or system, how the product or system might fail, and how the product or system might be improved.

Earth: The Apple of Our Eye (Intermediate/Secondary)

Eco Ethics

For the Common Good

Growing Pains in Texas Hill Country

If Money Won't Buy It

Market Research

Stash the Trash

Science.7-8.5.5 (Characteristics Of Life)

All Students Will Gain An Understanding Of The Structure, Characteristics, And Basic Needs Of Organisms And Will Investigate The Diversity Of Life.

B. Diversity and Biological Evolution

2. Discuss how changing environmental conditions can result in evolution or extinction of a species.

Cougar Hunt

Growing Pains in Texas Hill Country

A World of Difference

Science.7-8.5.10 (Environmental Studies)

All Students Will Develop An Understanding Of The Environment As A System Of Interdependent Components Affected By Human Activity And Natural Phenomena.

B. Human Interactions and Impact

1. Compare and contrast practices that affect the use and management of natural resources.

Earth: The Apple of Our Eye (Intermediate/Secondary)

Eco Ethics

Everything Is Connected

For the Common Good  
 Growing Pains in Texas Hill Country  
 In Search of Sustainable Life  
 Market Research  
 Stage Stepping  
 Stash the Trash  
 Take a Stand  
 Timber!  
 Transportation Tally  
 Water, Water Everywhere (Elementary/Intermediate)  
 Who Polluted the Potomac?  
 A World of Difference

## Grade 9 to Grade 12

Science.9-12.5.1 (Scientific Processes)

All Students Will Develop Problem-Solving, Decision-Making And Inquiry Skills, Reflected By Formulating Usable Questions And Hypotheses, Planning Experiments, Conducting Systematic Observations, Interpreting And Analyzing Data, Drawing Conclusions, And Communicating Results.

### A. Habits of Mind

1. When making decisions, evaluate conclusions, weigh evidence, and recognize that arguments may not have equal merit.

Earth: The Apple of Our Eye (Intermediate/Secondary)

Eco Ethics

Everything Is Connected

Food for Thought

For the Common Good

Growing Pains in Texas Hill Country

If Money Won't Buy It

In Search of Sustainable Life

Take a Stand

2. Assess the risks and benefits associated with alternative solutions.

Eco Ethics

Everything Is Connected

Food for Thought

For the Common Good

Growing Pains in Texas Hill Country

If Money Won't Buy It

In Search of Sustainable Life

Market Research

Take a Stand

4. Explore cases that demonstrate the interdisciplinary nature of the scientific enterprise.

Earth: The Apple of Our Eye (Intermediate/Secondary)

Eco Ethics

Everything Is Connected

Food for Thought

For the Common Good

Growing Pains in Texas Hill Country

If Money Won't Buy It

In Search of Sustainable Life

Power of the Pyramids

Stage Stepping

Take a Stand

The Stork and the Grim Reaper

Timber!  
Transportation Tally

Science.9-12.5.2 (Science And Society)

All Students Will Develop An Understanding Of How People Of Various Cultures Have Contributed To The Advancement Of Science And Technology, And How Major Discoveries And Events Have Advanced Science And Technology.

A. Cultural Contributions

1. Recognize the role of the scientific community in responding to changing social and political conditions and how scientific and technological achievement effect historical events.

Earth: The Apple of Our Eye (Intermediate/Secondary)

Growing Pains in Texas Hill Country

Who Polluted the Potomac?

B. Historical Perspectives

2. Discuss significant technological achievements in which science has played an important part as well as technological advances that have contributed directly to the advancement of scientific knowledge.

Earth: The Apple of Our Eye (Intermediate/Secondary)

Science.9-12.5.3 (Mathematical Applications)

All Students Will Integrate Mathematics As A Tool For Problem-Solving In Science, And As A Means Of Expressing And/Or Modeling Scientific Theories.

A. Numerical Operations

1. Reinforce indicators from previous grade level.

Earth: The Apple of Our Eye (Intermediate/Secondary)

Power of the Pyramids

Stage Stepping

The Stork and the Grim Reaper

Timber!

Transportation Tally

A World of Difference

C. Patterns and Algebra

1. Apply mathematical models that describe physical phenomena to predict real world events.

Family Perspective

For the Common Good

Power of the Pyramids

Stage Stepping

Transportation Tally

D. Data Analysis and Probability

1. Construct and interpret graphs of data to represent inverse and non-linear relationships, and statistical distributions.

Timber!

Science.9-12.5.4 (Nature And Process Of Technology)

All Students Will Understand The Interrelationships Between Science And Technology And Develop A Conceptual Understanding Of The Nature And Process Of Technology.

B. Nature of Technology

1. Assess the impacts of introducing a new technology in terms of alternative solutions, costs, tradeoffs, risks, benefits and environmental impact.

Earth: The Apple of Our Eye (Intermediate/Secondary)

Stash the Trash

Take a Stand  
Transportation Tally  
Who Polluted the Potomac?

C. Technological Design

1. Plan, develop, and implement a proposal to solve an authentic, technological problem.  
Earth: The Apple of Our Eye (Intermediate/Secondary)  
Eco Ethics  
Growing Pains in Texas Hill Country  
Stash the Trash

Science.9-12.5.10 (Environmental Studies)

All Students Will Develop An Understanding Of The Environment As A System Of Interdependent Components Affected By Human Activity And Natural Phenomena.

B. Human Interactions and Impact

2. Use scientific, economic, and other data to assess environmental risks and benefits associated with societal activity.  
Earth: The Apple of Our Eye (Intermediate/Secondary)  
Food for Thought  
On the Double  
Population Circle  
The Stork and the Grim Reaper  
Timber!  
Transportation Tally  
A World of Difference  
World Real Estate

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# Social Studies

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## Kindergarten to Grade 2

Social Studies.K-2.6.1

All Students Will Utilize Historical Thinking, Problem Solving, And Research Skills To Maximize Their Understanding Of Civics, History, Geography, And Economics.

### A. Social Studies Skills

1. Explain the concepts of long ago and far away.  
Population Circle
2. Apply terms related to time including past, present, and future.  
Population Circle

## Grade 3 to Grade 4

Social Studies.3-4.6.1

All Students Will Utilize Historical Thinking, Problem Solving, And Research Skills To Maximize Their Understanding Of Civics, History, Geography, And Economics.

### A. Social Studies Skills

1. Explain how present events are connected to the past.  
Population Circle  
Who Polluted the Potomac?
2. Apply terms related to time including years, decades, centuries, and generations.  
Who Polluted the Potomac?

Social Studies.3-4.6.2 (Civics)

All Students Will Know, Understand And Appreciate The Values And Principles Of American Democracy And The Rights, Responsibilities, And Roles Of A Citizen In The Nation And The World.

### C. The Constitution and American Democracy

3. Identify major services provided by state and local government.  
Who Polluted the Potomac?

### E. International Education: Global Challenges, Cultures, and Connections

5. Identify current issues that may have a global impact (e.g., pollution, diseases) and discuss ways to address them.  
Treasures Underground  
The Stork and the Grim Reaper  
Timber!  
Water, Water Everywhere (Elementary/Intermediate)  
Who Polluted the Potomac?
9. Examine common and diverse traits of other cultures and compare to their own culture.  
The Stork and the Grim Reaper

Social Studies.3-4.6.4 (United States And New Jersey History)

All Students Will Demonstrate Knowledge Of United States And New Jersey History In Order To Understand Life And Events In The Past And How They Relate To The Present And Future.

### A. Family and Community Life

2. Compare family life in a community of the past to life in a community of the present.  
Who Polluted the Potomac?

Social Studies.3-4.6.5 (Economics)

All Students Will Acquire An Understanding Of Key Economic Principles.

A. Economic Literacy

2. Distinguish between a want and a need and explain how to choose needed goods and services.

Cougar Hunt

4. Discuss how natural, human, and capital resources are used to produce goods and to provide services.

Treasures Underground

Social Studies.3-4.6.6 (Geography)

All Students Will Apply Knowledge Of Spatial Relationships And Other Geographic Skills To Understand Human Behavior In Relation To The Physical And Cultural Environment.

B. Places and Regions

2. Explain changes in places and regions over time and the consequences of those changes.

Who Polluted the Potomac?

C. Physical Systems

1. Describe the basic components of the Earth's physical systems, including landforms, water, erosion, weather, and climate and discuss their impact on human development.

Water, Water Everywhere (Elementary/Intermediate)

E. Environment and Society

1. Differentiate between living and non-living natural resources.

Treasures Underground

Timber!

Water, Water Everywhere (Elementary/Intermediate)

2. Explain the nature, characteristics, and distribution of renewable and non-renewable resources.

Treasures Underground

Timber!

Water, Water Everywhere (Elementary/Intermediate)

## Grade 5 to Grade 8

Social Studies.5-8.6.1

All Students Will Utilize Historical Thinking, Problem Solving, And Research Skills To Maximize Their Understanding Of Civics, History, Geography, And Economics.

A. Social Studies Skills

1. Analyze how events are related over time.

Family Perspective

Growing Pains in Texas Hill Country

In Search of Sustainable Life

Looking to the Future

People on the Move

Population Circle

Power of the Pyramids

Who Polluted the Potomac?

World Real Estate

*You're One in Six Billion!*

2. Use critical thinking skills to interpret events, recognize bias, point of view, and context.

Cougar Hunt

Eco Ethics

Educating Wanjiku  
Family Perspective  
Food for Thought  
For the Common Good  
Growing Pains in Texas Hill Country  
The Hunger Banquet  
If Money Won't Buy It  
In Search of Sustainable Life  
Looking to the Future  
People on the Move  
Power of the Pyramids  
Stage Stepping  
The Stork and the Grim Reaper  
Take a Stand  
Who Polluted the Potomac?  
A World of Difference  
*The Balance of Nature*  
*Global Family Ties*  
*Your Place on the Planet*  
*You're One in Six Billion!*

4. Analyze data in order to see persons and events in context.

Earth: The Apple of Our Eye (Intermediate/Secondary)  
Educating Wanjiku  
Family Perspective  
Food for Thought  
On the Double  
Population Circle  
Power of the Pyramids  
Stage Stepping  
Timber!  
Transportation Tally  
A World of Difference  
World Real Estate  
*The Balance of Nature*  
*Global Family Ties*  
*You're One in Six Billion!*

5. Examine current issues, events, or themes and relate them to past events.

Family Perspective  
Growing Pains in Texas Hill Country  
People on the Move  
Population Circle  
Power of the Pyramids  
The Stork and the Grim Reaper  
Who Polluted the Potomac?  
World Real Estate  
*You're One in Six Billion!*

11. Summarize information in written, graphic, and oral formats.

Cougar Hunt  
Earth: The Apple of Our Eye (Intermediate/Secondary)  
Eco Ethics  
Educating Wanjiku  
Everything Is Connected  
Family Perspective

Food for Thought  
 For the Common Good  
 Growing Pains in Texas Hill Country  
 The Hunger Banquet  
 If Money Won't Buy It  
 In Search of Sustainable Life  
 Looking to the Future  
 Market Research  
 Treasures Underground  
 The More The Merrier?  
 On the Double  
 People on the Move  
 Population Circle  
 Power of the Pyramids  
 Stage Stepping  
 Stash the Trash  
 The Stork and the Grim Reaper  
 Take a Stand  
 Timber!  
 Waste Not, Want Not  
 Water, Water Everywhere (Elementary/Intermediate)  
 Who Polluted the Potomac?  
 A World of Difference  
 World Real Estate  
*The Balance of Nature*  
*Global Family Ties*  
*Your Place on the Planet*  
*You're One in Six Billion!*

Social Studies.5-8.6.2 (Civics)

All Students Will Know, Understand And Appreciate The Values And Principles Of American Democracy And The Rights, Responsibilities, And Roles Of A Citizen In The Nation And The World.

A. Civic Life, Politics, and Government

1. Discuss the sources, purposes, and functions of law and the importance of the rule of law for the preservation of individual rights and the common good.

For the Common Good  
 Growing Pains in Texas Hill Country  
 Looking to the Future  
 The More The Merrier?  
 Take a Stand  
*Your Place on the Planet*

5. Discuss examples of domestic policies and agencies that impact American lives, including the Environmental Protection Agency (e.g., clean air and water), the Department of Labor (e.g., minimum wage) and the Internal Revenue Service (e.g., Social Security, income tax).

Growing Pains in Texas Hill Country  
 In Search of Sustainable Life  
 Looking to the Future  
 Stash the Trash  
 Take a Stand

6. Explain how non-governmental organizations influence legislation and policies at the federal, state, and local levels.

Growing Pains in Texas Hill Country  
 Looking to the Future

*Global Family Ties*

D. Citizenship

1. Discuss the rights and responsibilities of American citizens, including obeying laws, paying taxes, serving on juries, and voting in local, state, and national elections.

For the Common Good

Growing Pains in Texas Hill Country

In Search of Sustainable Life

Take a Stand

*Your Place on the Planet*

5. Discuss basic contemporary issues involving the personal, political, and economic rights of American citizens (e.g., dress codes, sexual harassment, fair trial, free press, minimum wage).

Eco Ethics

Growing Pains in Texas Hill Country

In Search of Sustainable Life

Looking to the Future

Stash the Trash

Take a Stand

*Global Family Ties*

E. International Education: Global Challenges, Cultures, and Connections

1. Analyze ways in which nation-states interact with one another through trade, diplomacy, cultural exchanges, treaties or agreements, humanitarian aid, economic incentives and sanctions, and the use or threat of military force.

Food for Thought

For the Common Good

Take a Stand

2. Discuss factors that lead to a breakdown of order among nation-states (e.g., conflicts about national interests, ethnicity, and religion; competition for territory or resources; absence of effective means to enforce international law) and describe the consequences of the breakdown of order.

Food for Thought

For the Common Good

The Hunger Banquet

Looking to the Future

People on the Move

Take a Stand

6. Describe how one's heritage includes personal history and experiences, culture, customs, and family background.

Educating Wanjiku

Family Perspective

People on the Move

8. Discuss how global challenges are interrelated, complex, and changing and that even local issues may have a global dimension (e.g., environmental issues, transportation).

Earth: The Apple of Our Eye (Intermediate/Secondary)

Eco Ethics

Educating Wanjiku

Food for Thought

For the Common Good

Growing Pains in Texas Hill Country

The Hunger Banquet

In Search of Sustainable Life

Looking to the Future

On the Double  
People on the Move  
Power of the Pyramids  
Stage Stepping  
The Stork and the Grim Reaper  
Take a Stand  
Water, Water Everywhere (Elementary/Intermediate)  
A World of Difference  
World Real Estate  
*The Balance of Nature*  
*Global Family Ties*  
*Your Place on the Planet*  
*You're One in Six Billion!*

9. Discuss how cultures may change and that individuals may identify with more than one culture.

Educating Wanjiku  
Family Perspective  
Growing Pains in Texas Hill Country  
Looking to the Future  
People on the Move  
*You're One in Six Billion!*

Social Studies.5-8.6.3 (World History)

All Students Will Demonstrate Knowledge Of World History In Order To Understand Life And Events In The Past And How They Relate To The Present And The Future.

A. The Birth of Civilization to 1000 BCE

1. Describe the physical and cultural changes that shaped the earliest human communities as revealed through scientific methods, including:

- Differences between wild and domestic plants and animals.
- Differences between hunter/gatherer, fishing, and agrarian communities.

Who Polluted the Potomac?  
*You're One in Six Billion!*

Social Studies.5-8.6.4 (United States And New Jersey History)

All Students Will Demonstrate Knowledge Of United States And New Jersey History In Order To Understand Life And Events In The Past And How They Relate To The Present And Future.

F. Expansion and Reform (1801-1861)

1. Describe the political, economic, and social changes in New Jersey and American society preceding the Civil War, including the early stages of industrialization, the growth of cities, and the political, legal, and social controversies surrounding the expansion of slavery.

People on the Move  
Who Polluted the Potomac?  
*You're One in Six Billion!*

Social Studies.5-8.6.5 (Economics)

All Students Will Acquire An Understanding Of Key Economic Principles.

B. Economics and Society

1. Discuss how meeting the needs and wants of a growing world population impacts the environment and economic growth.

Food for Thought  
Growing Pains in Texas Hill Country  
The Hunger Banquet  
If Money Won't Buy It

Looking to the Future  
Power of the Pyramids  
Stash the Trash  
Take a Stand  
Timber!  
Who Polluted the Potomac?  
A World of Difference  
World Real Estate  
*The Balance of Nature*  
*Global Family Ties*  
*You're One in Six Billion!*

3. Discuss how societies have been affected by industrialization and by different political and economic philosophies.

Food for Thought  
If Money Won't Buy It  
In Search of Sustainable Life  
Power of the Pyramids  
Who Polluted the Potomac?  
*Global Family Ties*  
*You're One in Six Billion!*

4. Describe how inventions and innovations have improved standards of living over the course of history.

Population Circle  
The Stork and the Grim Reaper  
Take a Stand  
Timber!  
Who Polluted the Potomac?  
*Your Place on the Planet*

7. Discuss the need for ethical behavior in economic decisions and financial transactions.

Eco Ethics  
Food for Thought  
For the Common Good  
Market Research  
Take a Stand  
Transportation Tally  
*The Balance of Nature*

Social Studies.5-8.6.6 (Geography)

All Students Will Apply Knowledge Of Spatial Relationships And Other Geographic Skills To Understand Human Behavior In Relation To The Physical And Cultural Environment.

A. The World in Spatial Terms

5. Use geographic tools and technologies to pose and answer questions about spatial distributions and patterns on Earth.

Earth: The Apple of Our Eye (Intermediate/Secondary)  
Food for Thought  
The Hunger Banquet  
Water, Water Everywhere (Elementary/Intermediate)  
World Real Estate

8. Use thematic maps to describe places (e.g., patterns of population, diseases, rainfall).

Earth: The Apple of Our Eye (Intermediate/Secondary)  
Food for Thought  
Population Circle

Water, Water Everywhere (Elementary/Intermediate)  
*Global Family Ties*

## B. Places and Regions

1. Compare and contrast the physical and human characteristics of places in regions in New Jersey, the United States, and the world.

Earth: The Apple of Our Eye (Intermediate/Secondary)  
Educating Wanjiku  
Food for Thought  
In Search of Sustainable Life  
The More The Merrier?  
On the Double  
Power of the Pyramids  
The Stork and the Grim Reaper  
*Global Family Ties*

2. Describe how regions change over time.

People on the Move  
Population Circle  
Who Polluted the Potomac?  
World Real Estate  
*The Balance of Nature*  
*Global Family Ties*

3. Compare the natural characteristics used to define a region.

Earth: The Apple of Our Eye (Intermediate/Secondary)  
Food for Thought  
In Search of Sustainable Life  
Water, Water Everywhere (Elementary/Intermediate)  
World Real Estate

6. Discuss the similarities and differences among rural, suburban, and urban communities.

Food for Thought  
Growing Pains in Texas Hill Country  
The More The Merrier?  
Who Polluted the Potomac?  
*Global Family Ties*

## C. Physical Systems

1. Describe the characteristics and spatial distribution of major Earth ecosystems.

Earth: The Apple of Our Eye (Intermediate/Secondary)  
World Real Estate

2. Discuss how ecosystems function locally and globally.

Cougar Hunt  
Earth: The Apple of Our Eye (Intermediate/Secondary)  
Water, Water Everywhere (Elementary/Intermediate)  
World Real Estate  
*The Balance of Nature*

4. Discuss how the community and its environment function as an ecosystem.

Earth: The Apple of Our Eye (Intermediate/Secondary)  
Eco Ethics  
In Search of Sustainable Life  
Stash the Trash  
Take a Stand

Who Polluted the Potomac?  
A World of Difference  
World Real Estate  
*The Balance of Nature*  
*Global Family Ties*

5. Describe how the physical environment affects life in different regions (e.g., population density, architecture, transportation systems, industry, building materials, land use, recreation).

Cougar Hunt  
Earth: The Apple of Our Eye (Intermediate/Secondary)  
Food for Thought  
Growing Pains in Texas Hill Country  
In Search of Sustainable Life  
Looking to the Future  
The More The Merrier?  
Take a Stand  
Water, Water Everywhere (Elementary/Intermediate)  
Who Polluted the Potomac?  
World Real Estate  
*Global Family Ties*

#### D. Human Systems

2. Analyze demographic characteristics to explain reasons for variations between populations.

Educating Wanjiku  
Food for Thought  
Looking to the Future  
The More The Merrier?  
On the Double  
Power of the Pyramids  
Stage Stepping  
The Stork and the Grim Reaper  
*Global Family Ties*

5. Discuss how and why people cooperate, but also engage in conflict, to control the Earth's surface.

Cougar Hunt  
Food for Thought  
For the Common Good  
Growing Pains in Texas Hill Country  
In Search of Sustainable Life  
Looking to the Future  
The More The Merrier?  
People on the Move  
Take a Stand  
*Your Place on the Planet*

6. Compare the patterns and processes of past and present human migration.

Food for Thought  
Growing Pains in Texas Hill Country  
People on the Move  
Who Polluted the Potomac?  
*Global Family Ties*

8. Describe how physical and human characteristics of regions change over time.

Growing Pains in Texas Hill Country  
Looking to the Future  
People on the Move

Population Circle  
Who Polluted the Potomac?  
*The Balance of Nature*  
*Global Family Ties*

E. Environment and Society

1. Discuss the environmental impacts or intended and unintended consequences of major technological changes (e.g., autos and fossil fuels, nuclear power and nuclear waste).

Looking to the Future  
Population Circle  
Transportation Tally  
Who Polluted the Potomac?  
*You're One in Six Billion!*

2. Analyze the impact of various human activities and social policies on the natural environment and describe how humans have attempted to solve environmental problems through adaptation and modification.

Earth: The Apple of Our Eye (Intermediate/Secondary)  
For the Common Good  
In Search of Sustainable Life  
Looking to the Future  
Treasures Underground  
Stash the Trash  
Take a Stand  
Waste Not, Want Not  
Who Polluted the Potomac?  
*The Balance of Nature*  
*Global Family Ties*

5. Describe world, national, and local patterns of resource distribution and utilization, and discuss the political and social impact.

Earth: The Apple of Our Eye (Intermediate/Secondary)  
Food for Thought  
Growing Pains in Texas Hill Country  
In Search of Sustainable Life  
Looking to the Future  
Treasures Underground  
Take a Stand  
Water, Water Everywhere (Elementary/Intermediate)  
World Real Estate  
*The Balance of Nature*

## Grade 9 to Grade 12

Social Studies.9-12.6.1

All Students Will Utilize Historical Thinking, Problem Solving, And Research Skills To Maximize Their Understanding Of Civics, History, Geography, And Economics.

A. Social Studies Skills

1. Analyze how historical events shape the modern world.

Power of the Pyramids

3. Gather, analyze, and reconcile information from primary and secondary sources to support or reject hypotheses.

Educating Wanjiku

6. Apply problem-solving skills to national, state, or local issues and propose reasoned solutions.

Earth: The Apple of Our Eye (Intermediate/Secondary)

Eco Ethics  
For the Common Good  
Growing Pains in Texas Hill Country  
Take a Stand

7. Analyze social, political, and cultural change and evaluate the impact of each on local, state, national, and international issues and events.

Educating Wanjiku  
Everything Is Connected  
Family Perspective  
Growing Pains in Texas Hill Country

#### Social Studies.9-12.6.2 (Civics)

All Students Will Know, Understand And Appreciate The Values And Principles Of American Democracy And The Rights, Responsibilities, And Roles Of A Citizen In The Nation And The World.

##### A. Civic Life, Politics, and Government

3. Analyze how individual responsibility and commitment to law are related to the stability of American society.

Eco Ethics  
Growing Pains in Texas Hill Country  
Take a Stand

5. Discuss how participation in civic and political life can contribute to the attainment of individual and public good.

Eco Ethics  
For the Common Good  
Growing Pains in Texas Hill Country

##### B. American Values and Principles

2. Propose and justify new local, state, or federal governmental policies on a variety of contemporary issues (e.g., definition of marriage, voting systems and procedures, censorship, religion in public places).

Earth: The Apple of Our Eye (Intermediate/Secondary)  
Growing Pains in Texas Hill Country  
Take a Stand

##### D. Citizenship

1. Evaluate the characteristics needed for effective participation in civic and political life.

For the Common Good

4. Recommend ways that citizens can use knowledge of state or federal government policies and decision-making processes to influence the formation, development, or implementation of current public policy issues (e.g., First Amendment right to petition for redress of grievances).

Growing Pains in Texas Hill Country

5. Discuss how citizens can participate in the political process at the local, state, or national level (e.g., registering to vote, voting, attending meetings, contacting a representative, demonstrating, petitions, boycotting) and analyze how these forms of political participation influence public policy.

Growing Pains in Texas Hill Country

##### E. International Education: Global Challenges, Cultures, and Connections

4. Analyze and evaluate the interconnections of local, regional, and national issues with global challenges and issues, and recommend possible solutions.

Earth: The Apple of Our Eye (Intermediate/Secondary)  
Everything Is Connected

5. Discuss how global interconnections can have both positive and negative consequences (e.g., international companies, transfer of jobs to foreign plants, international security and access to transportation).

Everything Is Connected  
Food for Thought  
For the Common Good  
The Hunger Banquet  
Take a Stand

6. Investigate a global challenge (e.g., hunger, AIDS, nuclear defense, global warming) in depth and over time, predict the impact if the current situation does not change, and offer possible solutions.

Educating Wanjiku  
Food for Thought  
For the Common Good  
The Hunger Banquet  
A World of Difference

8. Justify an opinion or idea about a global issue while showing respect for divergent viewpoints.

Food for Thought  
For the Common Good  
Take a Stand

9. Discuss the impact of technology, migration, the economy, politics, and urbanization on culture.

Food for Thought  
Growing Pains in Texas Hill Country

10. Compare and contrast common social and behavioral practices in various cultures (e.g., birth, marriage, death, gender issues, family structure, health issues).

Educating Wanjiku  
Family Perspective  
Food for Thought

#### Social Studies.9-12.6.3 (World History)

All Students Will Demonstrate Knowledge Of World History In Order To Understand Life And Events In The Past And How They Relate To The Present And The Future.

#### H. Looking to the Future (1980-present)

1. Analyze global political, economic, and social changes in the 20th century, including:

- The Gulf War.
- The war in Iraq.
- Growth of a world economy with the information, technological, and communications revolutions.
- The oil crisis and impact of oil producing countries on world economy.

Educating Wanjiku  
Family Perspective  
The Hunger Banquet

3. Evaluate the paradoxes and promises of the 21st century, including:

- Technological growth.
- Economic imbalance and social inequalities among the world's people.
- New patterns of world migration shaped by international labor demands.
- Global market, economy, trade, and communications.
- Rapid population growth and increasing urbanization.
- The growth of terrorism as a means of warfare.
- Democratic reform.

Food for Thought  
The Hunger Banquet  
Take a Stand

4. Analyze the development and effects of multinational corporations on trade, employment, and the environment.

Take a Stand

Social Studies.9-12.6.4 (United States And New Jersey History)

All Students Will Demonstrate Knowledge Of United States And New Jersey History In Order To Understand Life And Events In The Past And How They Relate To The Present And Future.

L. Contemporary America (1968-present)

6. Compare and contrast population trends and immigration and migration patterns in the United States (e.g., growth of Hispanic population, demographic and residential mobility).

Food for Thought

Take a Stand

7. Discuss major contemporary social issues, such as the evolution of governmental rights for individuals with disabilities, multiculturalism, bilingual education, gay rights, free expression in the media, and the modern feminist movement.

Food for Thought

The Hunger Banquet

Take a Stand

Social Studies.9-12.6.5 (Economics)

All Students Will Acquire An Understanding Of Key Economic Principles.

B. Economics and Society

2. Evaluate international trade principles and policies.

Take a Stand

3. Analyze labor and environmental issues affecting American citizens raised by economic globalization and free trade pacts.

For the Common Good

4. Discuss the value and role of free and fair competition versus the social need for cooperation and how business, industry, and government try to reconcile these goals.

For the Common Good

Take a Stand

6. Analyze the connections and potential effects of the widening gap between the rich and the poor in the United States, the decline in labor union membership since 1950, rapidly advancing technology, globalization, and problems of public schools.

Growing Pains in Texas Hill Country

Take a Stand

Social Studies.9-12.6.6 (Geography)

All Students Will Apply Knowledge Of Spatial Relationships And Other Geographic Skills To Understand Human Behavior In Relation To The Physical And Cultural Environment.

A. The World in Spatial Terms

2. Use maps of physical and human characteristics of the world to answer complex geographical questions.

Earth: The Apple of Our Eye (Intermediate/Secondary)

Food for Thought

4. Use geographic tools and technologies to pose and answer questions about spatial distributions and patterns on Earth.

Earth: The Apple of Our Eye (Intermediate/Secondary)

Food for Thought  
The Hunger Banquet

5. Apply spatial thinking to understand the interrelationship of history, geography economics, and the environment, including domestic and international migrations, changing environmental preferences and settlement patterns, and frictions between population groups.

Food for Thought  
The Hunger Banquet  
Power of the Pyramids

B. Places and Regions

2. Evaluate how human interaction with the physical environment shapes the features of places and regions.

Growing Pains in Texas Hill Country  
A World of Difference

3. Analyze why places and regions are important factors to individual and social identity.

Food for Thought  
Growing Pains in Texas Hill Country  
Power of the Pyramids

C. Physical Systems

2. Analyze the effects of both physical and human changes in ecosystems, such as acid rain, ozone layer, carbon-dioxide levels, and clean water issues.

Earth: The Apple of Our Eye (Intermediate/Secondary)  
Eco Ethics  
Food for Thought  
For the Common Good  
Growing Pains in Texas Hill Country  
Take a Stand  
Transportation Tally

D. Human Systems

1. Analyze the impact of human migration on physical and human systems.

Growing Pains in Texas Hill Country  
Take a Stand

5. Analyze how cooperation and conflict influence the control of economic, political, and social entities on Earth.

Food for Thought  
For the Common Good  
Take a Stand

E. Environment and Society

1. Discuss the global impacts of human modification of the physical environment (e.g., the built environment).

Earth: The Apple of Our Eye (Intermediate/Secondary)

2. Discuss the importance of maintaining biodiversity.

A World of Difference

3. Analyze examples of changes in the physical environment that have altered the capacity of the environment to support human activity, including pollution, salinization, deforestation, species extinction, population growth, and natural disasters.

Earth: The Apple of Our Eye (Intermediate/Secondary)  
Food for Thought  
A World of Difference

5. Evaluate policies and programs related to the use of local, national and global resources.

Earth: The Apple of Our Eye (Intermediate/Secondary)

Food for Thought

6. Analyze the human need for respect for and informed management of all resources (sustainability), including human populations, energy, air, land, and water to insure that the earth will support future generations.

Earth: The Apple of Our Eye (Intermediate/Secondary)

Food for Thought

For the Common Good

Growing Pains in Texas Hill Country

Take a Stand

A World of Difference