Unit _5__ Overview

Subject: Math

Grade: 5

Bold = TAKS
Italics - Upper Grade TAKS

Terminal Performance Objective:
TLW build a foundation of basic understanding of geometry and spatial reasoning using formal language to identify, compare, and classify shapes and solids, and review problem-solving situations.

E.O.#	Content:	Time Range	Date	Resource
1	**TLW identify essential attributes including parallel, perpendicular, and congruent parts of two and three dimensional figures.**	45 mins. for 2 days	MT	BB
2	**TLW use critical attributes to define geometric shapes or solids.**	45 mins. for 2 days	MT	BB
3	**TLW describe the transformation that generates one figure to another when given two figures on a Quadrant I coordinate grid.**	45 mins. for 2 days	MT	
4	**TLW connect models with their respective formula and appropriate formulas to measure length and perimeter.**	45 mins. for 2 days	MT	
5	**TLW connect models with their respective formulas and use appropriate units and formulas to measure area.**	45 mins. for 3 days	MT	
6	**TLW connect models with their respective formulas and select and use appropriate units and formulas to measure volume.**	45 mins. for 4 days	MT	
7	**TLW use addition, subtraction, multiplication, and division to solve problems, involving whole numbers (no more than 3 digits by two digits without technology).**	45 mins. for 1 day	MT	
8	**TLW use strategies to estimate solutions to addition, subtraction, multiplication, and division problems, including rounding and compatible numbers.**	45 mins. for 1 day	MT	BB

INSTRUCTIONAL PROCESS

Subject: **Math** **Unit #** **5**
Grade: **5** **E.O. #** **1**

Cognitive Level:	**Instructional Steps:**
K	• TTW review 2D and 3D figures. • TLW define the geometric terms; face, edge, vertex, side, corner, and vertices. • TLW identify the geometric terms on illustrations of shapes.
C	TLW distinguish geometric parts (face, edge, vertex, side, and corner) on 3D and 2D figures.
Ap	TLW solve problems that involve identifying geometric terms.

Reteach:	**Special Population Modification Options**
TLW sketch a chart containing geometric shapes and the number of faces, vertices, edges, and corners for each shape. **Enrichment:** TLW utilize the Internet to find a variety of 2D and 3D figures and their attributes.	**Bilingual/ESL:** TLW prepare an illustration of a shape and identify geometric terms. **Special Services:** TLW manipulate yarn and hangers to create shapes. **Gifted/Talented:** • TLW create riddles for different space figures. • TLW create manipulatives to identify geometric parts.

MATH
CURRICULUM

Grade: 5 **Unit Title:** 5 **Time Range: 45 mins. for 2 days**

Terminal Performance Objective: TLW build a foundation of basic understanding of geometry and spatial reasoning using formal language to identify, compare, and classify shapes and solids, and review problem-solving situations.

T.E.K.S.: 7

State/National Testing Targets: **TAKS OBJ. 3**

Tested TEKS: 7 - Identify essential attributes including parallel, perpendicular, and congruent parts of two and three dimensional geometric figures.

Enabling Objective: 1

Prerequisite Skills:

Name and describe shapes.

Content:

TLW **identify** an <u>understanding of 2 and 3 dimensional figures</u> and **recognize** <u>essential attributes</u> of each, including faces, edges, vertices, and corners.

Cognitive Level: Application

Context:

Class-like

Given geometric terms, TLW create illustrations and identify faces, edges, vertices, and corners on 2 and 3 dimensional figures.

Test-like

Given a multiple choice problem, TLW identify a correct answer from 4 answer choices and bubble in the correct answer.

Real World

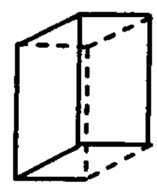
TLW create a list of products and identify their packaging as a 2 or 3 dimensional figure.

Standard of Performance:

- 70% correct on unit test
- 80% on teacher-made formative test

Sample Test Item:

A rectangular prism has how many faces?



A 6
B 12
C 4
D 8

Aligned Instructional Resources:

<u>SBG Mathematics</u> Chapter 7

Resources That Need Modification For Test Format:

- Big Books:
  <u>Mighty Milestones</u>-Calvin Irons

INSTRUCTIONAL PROCESS

Subject: **Math** **Unit #** **5**
Grade: **5** **E.O. #** **2**

Cognitive Level:	**Instructional Steps:**
K	TTW review the following vocabulary: ray, point, line, line segment, planes, parallel, perpendicular.
C	TLW create flash cards with above mentioned terms and an illustration of each.
Ap	TLW produce their own illustrations of the above mentioned terms.
An	TLW identify ray, points, lines, line segments, planes, parallel lines, and perpendicular lines in a problem.

Reteach:
TLW use rope or string to model geometric terms.

Enrichment:
TLW identify rays, points, lines, line segments, planes, parallel lines, perpendicular lines in the classroom.

Special Population Modification Options
Bilingual/ESL:
TLW create flashcards with the above mentioned vocabulary in Spanish.

Special Services:
TLW match the geometric term to an illustration of the term.

Gifted/Talented:
TLW make and label physical models to represent these geometric terms: point, line, line segment, ray, plane, parallel lines, and perpendicular lines using materials such as string, wire, cardboard, wood, etc.

MATH
CURRICULUM

Grade: 5 **Unit Title:** 5 **Time Range: 45 mins. for 2 days**

Terminal Performance Objective: TLW build a foundation of basic understanding of geometry and spatial reasoning using formal language to identify, compare, and classify shapes and solids, and review problem-solving situations.

T.E.K.S.: 7

State/National Testing Targets: **TAKS OBJ. 3**
Tested TEKS: 7 - Identify essential attributes including parallel, perpendicular and congruent parts of two and three dimensional geometric figures.

Enabling Objective:___2___

Prerequisite Skills:

Basic geometry
Vocabulary

Content:

TLW **identify** the following two and three dimensional geometric attributes in problems: point, ray, line, line segment, plane, parallel, and perpendicular, and congruent.

Cognitive Level: Analysis

Context:

Class-like

Given geometric attributes such as point, ray, line, line segment, congruent, parallel, plane, and perpendicular, TLW illustrate and identify attributes on geometric figures.

Test-like

Given a multiple choice problem, TLW identify the correct answer from 4 answer choices and bubble in the correct answer.

Real World

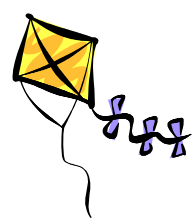
TLW observe and identify geometric attributes on school building.

Standard of Performance:

- 70% on unit test
- 80% on formative test

Sample Test Item:

Johnny bought this kite. What kind of lines does the back of his kite suggest?



A Parallel Lines
B Lines
C Rays
D Perpendicular Lines

Aligned Instructional Resources:

SBG Mathematics Chapter 7

Resources That Need Modification For Test Format:

N/A

INSTRUCTIONAL PROCESS

Subject: **Math** **Unit #** **5**
Grade: **5** **E.O. #** **3**

Cognitive Level:	**Instructional Steps:**
K	TTW define rotation, translation and reflection of single and/or two congruent figures. TLW identify examples of rotation, translation, and reflection of single and/or two congruent figures.
C	TLW illustrate examples of rotations, translations, and reflections of single and/or two congruent figures.
Ap	TLW manipulate two congruent figures to display examples of transformations.
An	TLW differentiate between all transformations in order to solve problems.

Reteach:
TLW manipulate puppets in order to create examples of translations, reflections, and rotations.

Enrichment:
TLW examine a variety of patterns to find transformations in the design.

Special Population Modification Options

Bilingual/ESL:
TLW create index cards that have examples of the transformation with illustrations.

Special Services:
TLW manipulate objects and use mirrors to see reflection, rotation, and transformation.

Gifted/Talented:
TLW manipulate art books and magazines to find examples of transformations.

MATH
CURRICULUM

Grade: 5 **Unit Title:** 5 **Time Range: 45 mins. for 2 days**

Terminal Performance Objective: TLW build a foundation of basic understanding of geometry and spatial reasoning using formal language to identify, compare, and classify shapes and solids, and review problem-solving situations.

T.E.K.S.: **8**A, **B** - Sketch the results of translations, rotations, and reflections on a Quadrant I coordinate grid.

State/National Testing Targets: 8B TAKS OBJ. 3
Tested TEKS: 8B Describe the transformation that generates one figure from the other when given two congruent figures on a Quadrant I coordinate grid.

Enabling Objective: 3

Prerequisite Skills:
- Basic shapes
- Geometric concepts

Content:
TLW describe the transformation that generates one figure to another when given two congruent figures on a Quadrant I coordinate grid.

Cognitive Level: Analysis

Context:

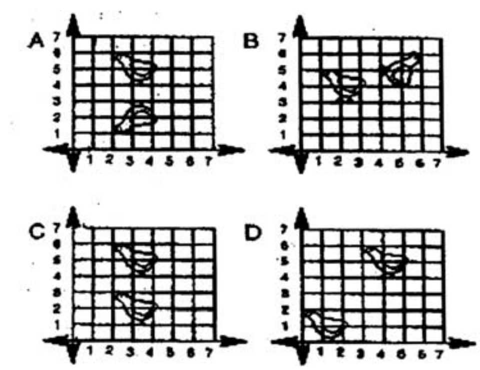
Class-like
Given two congruent figures, TLW display examples of transformation in order to solve problems.

Test-like
Given a multiple choice problem, TLW identify the correct answer from 4 answer choices and bubble in the correct answer.

Real World
TLW create a collage using transformations.

Standard of Performance:
- 70% on unit test
- 80% on formative test

Sample Test Item:
Which of the following is an example of a reflection?



Aligned Instructional Resources:
SBG Mathematics Chapter 7

Resources That Need Modification For Test Format:
N/A

INSTRUCTIONAL PROCESS

Subject: **Math** **Unit #** **5**
Grade: **5** **E.O. #** **4**

Cognitive Level:	**Instructional Steps:**
K	TTW define perimeter. TTW model how to find the perimeter of a polygon using a grid. TTW model how to find the perimeter of a polygon without a grid.
C	TLW measure the perimeter of drawings, solids, and 3D shapes using a ruler. (metric and customary)
Ap	TLW solve word problems finding the perimeter of a polygon, with and without grids, using metric and customary units of measurement.

Reteach:
TLW use geoboards and rubber bands to construct rectangles of different sizes to demonstrate perimeter.

Enrichment:
TLW use a ruler to find the perimeter of textbooks, folders, classroom, etc.

Special Population Modification Options

Bilingual/ESL:
TLW review vocabulary in Spanish and then use geoboards to demonstrate perimeter.

Special Services:
TLW measure the perimeter of objects using paper clips.

Gifted/Talented:
TLW use grid paper to draw as many different shapes as possible using 5 squares. Students find the perimeter of each shape.

MATH
CURRICULUM

Grade: 5 **Unit Title:** 5 **Time Range: 45 mins. for 2 days**

Terminal Performance Objective: TLW build a foundation of basic understanding of geometry and spatial reasoning using formal language to identify, compare, and classify shapes and solids, and review problem-solving situations.

T.E.K.S.: 10A, B, C

State/National Testing Targets: **TAKS OBJ. 4**

Tested TEKS: 10B, C - Connect models for perimeter, area, and volume with their respective formulas. Select and use appropriate units and formulas to measure length, perimeter, area, and volume.

Enabling Objective:___4___

Prerequisite Skills:

Addition
Multiplication

Content:

TLW **connect** models with their respective formula and **use** appropriate formulas to **measure** length and perimeter.

Cognitive Level: Application

Context:

Class-like

Given polygon illustrations, TLW solve problems to find perimeter using metric and customary units.

Test-like

Given a multiple choice problem, TLW identify the correct answer from 4 answer choices and bubble in the correct answer.

Real World

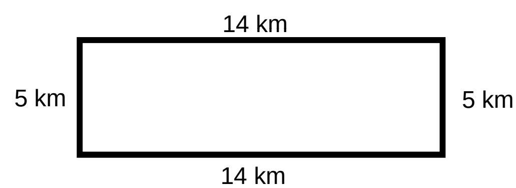
TLW find the perimeter of school play areas, backyard, and cafeteria.

Standard of Performance:

- 70% on unit test
- 80% on formative test

Sample Test Item:

What is the perimeter of the rectangle?



A 33 km
B 38 km
C 53 km
D 70 km

Aligned Instructional Resources:

SBG Mathematics Chapter 11

Resources That Need Modification For Test Format:

INSTRUCTIONAL PROCESS

Subject: **Math** **Unit #** **5**

Grade: **5** **E.O. #** **5**

Cognitive Level:	**Instructional Steps:**
K	TTW define area. give formula for area, and explain square units. TTW model how to find the area of a polygon using a grid. TTW model how to find the area of a polygon without using a grid.
C	TLW calculate the area of a given polygon.
Ap	TLW solve word problems finding the area of a polygon, with and without grids, using metric and customary units of measurement. (multi-steps) e.g. finding the length of a side prior to finding area.

Reteach:

TLW use graph paper to create squares and rectangles. TLW count the squares to determine the area.

Enrichment:

TLW use area to determine how much tile or carpet is needed in their bedroom.

Special Population Modification Options

Bilingual/ESL:

TLW review vocabulary in Spanish and then use geoboards to demonstrate area.

Special Services:

TLW use a geobard and rubber band to create squares and rectangles. TLW then will find the area of these shapes.

Gifted/Talented:

TLW determine the area of the classroom and a school building.

MATH
CURRICULUM

Grade: 5 **Unit Title: 5** **Time Range: 45 minutes for 3 days**

Terminal Performance Objective: TLW build a foundation of basic understanding of geometry and spatial reasoning using formal language to identify compare and classify shapes and solids, and review problem-solving situations.

T.E.K.S.: 10A, B, C

State/National Testing Targets: **TAKS OBJ. 4**

Tested TEKS: 10B, C - Connect models for perimeter, area, and volume with their respective formulas; select and use appropriate units and formulas to measure length, perimeter, area, and volume.

Enabling Objective: 5

Prerequisite Skills:

Multiplication

Content:

TLW **connect** models with their respective formula and **use** appropriate formulas to **measure** area.

Cognitive Level: Application

Context:

Class-like

Given a problem involving a polygon, TLW find the area using metric and customary units.

Test-like

Given a multiple choice problem, TLW identify the correct answer from 4 answer choices and bubble in the correct answer.

Real World

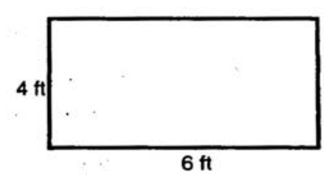
TLW use area to determine how much tile or carpet would be needed in their bedrooms.

Standard of Performance:

- 70% on unit test
- 80% on formative test

Sample Test Item:

Andy is baking cookies. He plans to lay the cookies out on a cabinet to cool. Each cookie is 2-inches in diameter. The drawing shows the countertop on which he will lay the cookies.



What is the area of the counter top?

A $12\ ft^2$
B $24\ ft^2$
C $22\ ft^2$
D $10\ ft^2$

Aligned Instructional Resources:

SBG Mathematics Chapter 11

Resources That Need Modification For Test Format:

N/A

INSTRUCTIONAL PROCESS

Subject: **Math** **Unit #** **5**
Grade: **5** **E.O. #** **6**

Cognitive Level:	**Instructional Steps:**
K	TTW define volume, teach formula of volume, and explain cubic units. TTW model how to measure volume with a concrete model of cubic units. TTW model how to find volume of a 3-D shape using the formula.
C	TLW measure volume using a concrete model of cubic units.
Ap	TLW solve word problems finding the volume of a 3-D shape in cubic units using the formula.

Reteach:
- TLW create different prisms using cubes to demonstrate volume.
- TTW review formula for volume.

Enrichment:
TLW estimate the volume of different containers, and then use cubes to find the actual volume.

Special Population Modification Options
Bilingual/ESL:
TLW review vocabulary in Spanish and use cubes to demonstrate volume.

Special Services:
TLW count cubes of a given model to find volume.

Gifted/Talented:
TLW measure the classroom (length, width, height) to find the volume.

MATH
CURRICULUM

Grade: 5 **Unit Title: 5** **Time Range: 45 minutes for 4 days**

Terminal Performance Objective: TLW build a foundation of basic understanding of geometry and spatial reasoning using formal language to identify compare and classify shapes and solids, and review problem-solving situations.

T.E.K.S.: 10A, B, C

State/National Testing Targets: **TAKS OBJ. 4**

Tested TEKS: 10, B, C - Connect models for perimeter, area, and volume with their respective formulas; select and use appropriate units and formulas to measure length, perimeter, area, and volume.

Enabling Objective:___6___

Prerequisite Skills:
- 3D figures
- Multiplication

Content:

TLW **connect** models with their respective formulas and **select** and **use** appropriate units and formulas to **measure** volume.

Cognitive Level: Application

Context:

Class-like

Given a problem, TLW find the volume of a 3-D figure using the volume formula.

Test-like

Given a multiple choice problem, TLW identify the correct answer from 4 answer choices and bubble in the correct answer.

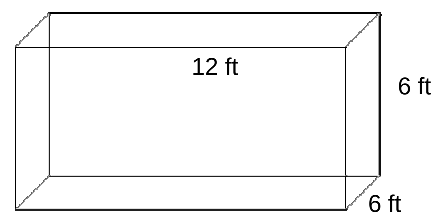
Real World

TLW estimate the volume of different containers and then use cubes to check volume.

Standard of Performance:
- 70% on unit test
- 80% on formative test

Sample Test Item:

Which equation would you use to find v, the volume of this rectangular prism?



○ V=12+6+6
○ V=12x6x6
○ V=(12x6)-6
○ V=6x6

Aligned Instructional Resources:

SBG Mathematics Chapter 11

Resources That Need Modification For Test Format:

N/A

INSTRUCTIONAL PROCESS

Subject: **Math** **Unit #** **5**
Grade: **5** **E.O. #** **7**

Cognitive Level:	**Instructional Steps:**
K	TTW review the problem-solving model.
C	TLW practice the problem-solving model.
Ap	TLW solve word problems involving the four operations (+, -, × , ÷) using the problem solving model.

Reteach:	**Special Population Modification Options**
TLW use their chart of the problem-solving model to help them solve word problems.	**Bilingual/ESL:** TTW translate the word problems.
	Special Services: TLW draw an illustration of the problem to help them solve.
Enrichment: TLW use a budget to plan a party for the class.	**Gifted/Talented:** TLW brainstorm real-world reasons to use the four operations and record those on a chart. TLW then select an example from the chart and write an original problem for others to solve.

MATH
CURRICULUM

Grade: 5 **Unit Title: 5** **Time Range: 45 minutes a day for 1 day**

Terminal Performance Objective: TLW build a foundation of basic understanding of geometry and spatial reasoning using formal language to identify compare and classify shapes and solids, and review problem-solving situations.

T.E.K.S.: 3A, B, C

State/National Testing Targets: **TAKS OBJ. 2**

Tested TEKS: 3A-C - Use addition, subtraction, multiplication, and division to solve problems involving whole numbers (no more than three digits times two digits without technology).

Enabling Objective: 7

Prerequisite Skills:

- Addition
- Subtraction
- Multiplication
- Division
- Problem-solving model

Content:

TLW **use** addition, subtraction, multiplication and division to **solve** problems involving whole numbers (no more then 3 digits by two digits without technology).

Cognitive Level: Application

Context:

Class-like

Given word problems, TLW use Problem Solving model to solve.

Test-like

Given a multiple choice problem, TLW identify the correct answer from 4 answer choices and bubble in the correct answer.

Real World

TLW brainstorm everyday situations that require problem solving.

Standard of Performance:

- 70% on unit test
- 80% on teacher-made test

Sample Test Item:

Megan exercises for 45 minutes each day. She has been exercising for 2 years. How many minutes does she exercise in 1 week?

- ⬭ 450 minutes
- ⬭ 350 minutes
- ⬭ 315 minutes
- ⬭ 45 minutes
- ⬭ Not here

Aligned Instructional Resources:

- Lonestar Math

Resources That Need Modification For Test Format:

N/A

INSTRUCTIONAL PROCESS

Subject: **Math** **Unit #** **5**

Grade: **5** **E.O. #** **8**

Cognitive Level:	**Instructional Steps:**
K	TTW model the reading of a word problem to find a reasonable solution.
	TTW think aloud the steps used to solve the word problem.
C	TLW interpret the word problem to find information necessary to solve the word problem.
Ap	TLW solve the word problem for a reasonable answer.
An	TLW distinguish whether answers to word problems are reasonable.

Reteach:

TLW demonstrate how to solve word problems with teacher support.

Enrichment:

TLW predict outcomes for a variety of scenarios. Such as:

(1) Will you have enough money to buy a certain amount of items with a fixed budget?

(2) You want to go on a field trip that costs $1000. How many fundraisers will you need to have?

Special Population Modification Options

Bilingual/ESL:

TTW translate the word problem for TL.

Special Services:

TLW read a variety of stories and provide possible endings.

Gifted/Talented:

TLW create a game using reasonableness problems.

MATH CURRICULUM

Grade: 5 **Unit Title: 5** **Time Range: 45 minutes a day for 1 day**

Terminal Performance Objective: TLW build a foundation of basic understanding of geometry and spatial reasoning using formal language to identify compare and classify shapes and solids, and review problem-solving situations.

T.E.K.S.: 4

State/National Testing Targets: **TAKS OBJ. 1**

Tested TEKS: 4 - The student is expected to use strategies, including rounding and compatible numbers to estimate solutions to addition, subtraction, multiplication, and division problems.

Enabling Objective: __8__

Prerequisite Skills:
- Addition
- Subtraction
- Multiplication
- Division
- Problem-solving model

Content:

TLW **use** strategies to **estimate** solutions to addition, subtraction, multiplication, and division problems, including rounding and compatible numbers.

Cognitive Level: Analysis

Context:

Class-like

Given word problems, TLW distinguish whether solutions are reasonable.

Test-like

Given a multiple choice problem, TLW identify the correct answer from 4 answer choices and bubble in the correct answer.

Real World

TTW read scenarios and discuss whether certain situations are reasonable or unreasonable.

Standard of Performance:
- 80% on teacher-made formative test
- 70% correct on unit test

Sample Test Item:

Regina worked in the garden yesterday. She spent 1/4 hour planting beans, 35 minutes staking the tomato plants, and 1/2 hour trimming the cucumber vines.

What is a reasonable estimate of how much time Regina worked in the garden?

A. Less than 1 hour
B. Between 1 hour and 2 hours
C. Between 2 hours and 3 hours
D. More than 3 hours

Aligned Instructional Resources:

N/A

Resources That Need Modification For Test Format:

N/A