Curriculum: Ginger Lathrop

Learning-Focused Toolbox

Date: November 18, 2011 ET

Teacher / Team Name: Mrs. Lathrop

Topic: Analytic Trigonometry

Days: 25

Subject(s): Math

Grade(s): 10th, 11th, 12th

Know:	Understand:	Do:
G.TGT.3 -- Unranked Understand that the sine, cosine and tangent of the sum or difference of two angles can be expressed in terms of sine, cosine, and tangent of the angles themselves using the addition formulas.	Understand how to simplify expressions and solve equations by using trigonometric identities.	**F.TF.8 -- Unranked** Prove the Pythagorean identity sin2() + cos2() = 1 and use it to calculate trigonometric ratios. **F.TF.9 -- Unranked** Prove the addition and subtraction formulas for sine, cosine, and tangent and use them to solve problems.

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Common Assessments on what students should know and do in this unit:

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Key Learning: **Understand how to simplify expressions and solve equations by using trigonometric identities.**

Unit Essential Question(s): **How do you simplify and solve equations by using trigonometric identities?**

Concept: **Using Fundamental Identities**	Concept: **Verifying Trigonometric Identities**	Concept: **Solving Trigonometric Equations**
Lesson Essential Question(s): How do you rewrite trigonometric expressions in order to simplify and evaluate functions? (A)	**Lesson Essential Question(s):** How do you verify a trigonometric identity? (A)	**Lesson Essential Question(s):** How do you solve trigonometric equations written in quadratic form or containing more than one angle? (A)
Vocabulary:	**Vocabulary:**	**Vocabulary:**

Concept: **Sum and Difference Formulas**	Concept: **Multiple Angle and Product-to-Sum Formulas**
Lesson Essential Question(s): How do you simplify expressions and solve equations that contain sums or differences of angles? (A)	**Lesson Essential Question(s):** How do you rewrite trigonometric expressions that contain functions of multiple or half-angles, or functions that involve squares or products of trigonometric expressions? (A)
Vocabulary:	**Vocabulary:** double-angle formulas, power-reducing formulas, product-to-sum formulas, half-angle formulas

Additional Information:

Attached Document(s):

Curriculum: Ginger Lathrop

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Vocab Report for Topic: Analytic Trigonometry

Days: 25

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Concept: Multiple Angle and Product-to-Sum Formulas

double-angle formulas -
power-reducing formulas -
product-to-sum formulas -
half-angle formulas -

Date: November 18, 2011 ET

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Grade(s): 10th, 11th, 12th

Concept: Using Fundamental Identities

5. Acquisition Lesson

Plan for the Concept, Topic, or Skill -- Not for the Day

Lesson Essential Question:

How do you rewrite trigonometric expressions in order to simplify and evaluate functions?

Instruction Date:

November 18, 2011

What do students need to learn to be able to answer the Essential Question?

Assessment Prompt 1: Recognize and write the fundamental trigonometric identities.
Assessment Prompt 2: Use the fundamental trigonometric identities to evaluate trigonometric functions, simplify trig5onometric expressions, and rewrite trigonometric expressions.

Activating Strategy:

Have students preview the section by looking over p. 374-375 after they finish the 4.5-4.8 Test on the day before this lesson.

Teaching Strategies:

Instruction:

Start by going over extra examples #1 and #2. They should have already looked at examples #1 and #2 the night before. Take questions. Then work through examples 3-8 on pages 376-378. They already know the trigonometric identities. This section introduces them to simplify expressions that contain those identities.

Assignment and/or Assessment:

p. 379-380 #2, 12, 15-26, 30, 34, 44, 45, 49, 50, 52, 55, 57, 60, 61, 62, 68

Time (in days):

1

Date: November 18, 2011 ET

Teacher / Team Name: Mrs. Lathrop

Topic: Analytic Trigonometry

Days: 25

Subject(s): Math

Grade(s): 10th, 11th, 12th

Concept: Verifying Trigonometric Identities

5. Acquisition Lesson

Plan for the Concept, Topic, or Skill -- Not for the Day

Lesson Essential Question:

How do you verify a trigonometric identity?

Instruction Date:

November 21, 2011

What do students need to learn to be able to answer the Essential Question?

Assessment Prompt 1: Verify trigonometric identities.

Activating Strategy:

5.2 Warm-up flipchart

Teaching Strategies:

Instruction:

Work through examples #1-5 on p. 383-385 with them on day 1. Finish anything from yesterday that didn't get done, then do the last examples from this section on day 2.

Assignment and/or Assessment:

p. 387 #1-12/p. 387-388 #15-31 odds, 47-50/Quiz 5.1 - 5.2

Time (in days):

3

Date: November 18, 2011 ET

Teacher / Team Name: Mrs. Lathrop

Topic: Analytic Trigonometry

Days: 25

Subject(s): Math

Grade(s): 10th, 11th, 12th

Concept: Solving Trigonometric Equations

5. Acquisition Lesson

Plan for the Concept, Topic, or Skill -- Not for the Day

Lesson Essential Question:

How do you solve trigonometric equations written in quadratic form or containing more than one angle?

Instruction Date:

November 30, 2011

What do students need to learn to be able to answer the Essential Question?

Assessment Prompt 1: Use standard algebraic techniques to solve trigonometric equations.
Assessment Prompt 2: Solve trigonometric equations of quadratic type.
Assessment Prompt 3: Solve trigonometric equations involving multiple angles.
Assessment Prompt 4: Use inverse trigonometric functions to solve trigonometric equations.

Activating Strategy:

Solve sinx = 1/2 for the interval to 2 pi.

Teaching Strategies:

Instruction:

Go over extra examples 31-5 on p. 389-392 on day 1. Go over extra examples #6-9 on day 2.

Assignment and/or Assessment:

p. 396-397 #7-16, 21-26, 29-31, 55 and 57 to the nearest minute, 60-62/p. 396-397 #17, 18, 20, 26, 35-40, 56, 59/5.3 Quiz

Time (in days):

2

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Teacher / Team Name: Mrs. Lathrop

Topic: Analytic Trigonometry

Days: 25

Subject(s): Math

Grade(s): 10th, 11th, 12th

Concept: Sum and Difference Formulas

5. Acquisition Lesson

Plan for the Concept, Topic, or Skill -- Not for the Day

Lesson Essential Question:

How do you simplify expressions and solve equations that contain sums or differences of angles?

Instruction Date:

December 2, 2011

What do students need to learn to be able to answer the Essential Question?

Assessment Prompt 1: Use sum and difference formulas to evaluate trigonometric functions, verify identities, and solve trigonometric equations.

Teaching Strategies:

Instruction:

Go over p. 400-403 examples. Do a practice 5.3 Quiz to get ready for 5.3 Quiz tomorrow.

Assignment and/or Assessment:

worksheet with 6 problems/, 47, 49, 51, p.404-405 #1, 3, 23, 25, 29, 32, 33 35, 37, 38, 41, 42, 45, 47, 49, 51, 60-62/5.4 Quiz

Time (in days):

2

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Days: 25

Subject(s): Math

Grade(s): 10th, 11th, 12th

Concept: Multiple Angle and Product-to-Sum Formulas

5. Acquisition Lesson

Plan for the Concept, Topic, or Skill -- Not for the Day

Lesson Essential Question:

How do you rewrite trigonometric expressions that contain functions of multiple or half-angles, or functions that involve squares or products of trigonometric expressions?

What do students need to learn to be able to answer the Essential Question?

Teaching Strategies:

Time (in days):

1

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