FORM #1: LESSON PLAN FORMAT

Name: <u>Rebecca Rouas</u>   Date: _____

Lesson Title/Subject: <u>Pythagorean Theorem</u>   Grade(s): <u>8th</u>

Anticipated length of time for this lesson: <u>55 minutes</u>

At what point in the sequence of the unit is this lesson? Check one:

    <u>   X   </u>at the beginning of the unit of study

    _____between the beginning and the end of the unit of study

    _____at the end of the unit of study

PART A: DESCRIBE YOUR STUDENTS

Grade Level: <u> 8th Grade _____</u>

Content Area:<u> Mathematics _____</u>

Subject Matter: Geometry _____

Age range of students:<u> 13-14 _____</u>

Total Number of Students:<u> 22 _____</u>

Number of Male Students:<u> 12 _____</u>   Number of Female Students:<u> 10 _____</u>

Percentage of students receiving free or reduced lunch:<u> 20% _____</u>

Areas in which students live (check all that apply) _____ Urban   <u>X</u> Suburban _____ Rural

Ethnicity of students (give numbers)	<u> 1 </u> African American or Black _____ American Indian/Alaskan Native 2_ Asian or pacific Islander <u>13</u> White <u>6</u>_ Hispanic or Latino _____ Other (Specify) _____
Language proficiency of students (give numbers)	<u>20</u>_ Fluent English Proficient 1_ English Learner
Identified special need categories represented (give numbers)	_____ Specific learning Disability _____ Speech/Language Impaired _____ Hard of Hearing _____ Visually Impaired _____ Deaf _____ Orthopedically Impaired _____ Deaf-Blind _____ Emotionally Disturbed _____ Other Health Impaired _____ Mental Retardation _____ Multiple Disabilities _____ Autistic _____ Brain Injury _____ Established Medical Disability (0-5years)

ENGLISH LANGUAGE LEARNER(S): Who are the English Language Learners in the class? What are their ELD levels according to the CELDT?

Jaqueline Gomez: Early Advanced

STUDENTS with IEPs: Who are the students with IEP goals? List their academic achievement levels in this content area.

None

OTHER STUDENTS: Which students will require additional support with this lesson?

None

PART B: LINK THE LESSON TO STANDARDS

ACADEMIC CONTENT STANDARD(S): What academic content standard(s) does this lesson address?

Common Core Standard 8G-7:Understand and apply the Pythagorean Theorem. Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions

Geometry 15.0: Students use the Pythagorean theorem to determine distance and find missing lengths of sides of right triangles.

ELA 1.0 Written and Oral English Language Conventions: Students write and speak with a command of Standard English conventions appropriate to this grade level.

UNIT of STUDY: Describe the UNIT of STUDY that addresses the standards above.

In this unit students will lean, understand and apply the Pythagorean theorem in class and real-world examples.

ELD STANDARD(S): Identify the ELD standards for this subject area that will be addressed in this lesson (listening, speaking, reading and/or writing) for each ELD level in your class.

Listening and Speaking: Participate in and initiate more ex- tended social conver- sations with peers and adults on unfamiliar topics by asking and answering questions and restating and soliciting information.

Writing: Create coherent paragraphs through effective transitions and parallel constructions.

STUDENTS WITH IEPs: Identify the IEP goals for this subject area that will be addressed in this lesson.

None

PART C: PLAN THE LESSON

ACADEMIC LEARNING GOALS (outcomes/objectives) For This Lesson: What specifically do you expect students to know or be able to do as a result of the lesson? (Goals/outcomes/outcomes must be observable and measurable.)

Students will be able to use the Pythagorean Theorem to solve for the missing side of a triangle, given 2 sides.

Students will be able to identify Pythagorean Triples.

Students will be able to create and measure right angles using a 3-4-5 rope.

Students will use the appropriate mathematical language when speaking or writing about the Pythagorean Theorem.

LANGUAGE GOALS (outcomes/objectives) For EL Learners: What specific behaviors will the students demonstrate to show they have met the ELD standard(s)? (Outcomes must be observable and measurable.)

Students will use the appropriate mathematical language when speaking or writing about the Pythagorean Theorem.

Student will develop clear sentences when speaking or writing.

STUDENT LEARNING GOALS (outcomes/objectives) for STUDENTS with IEPs: Describe how the Academic Learning Goals will be modified for students with IEPs (if necessary).

None

PART D: COMPONENTS OF THIS LESSON

Think about the sequence of this lesson. Describe our plans for instruction in the order in which they will be implemented. Under "Instructional Strategies," explain what you will do to present the content to the students. What will you do/say? Under "Student Activities," explain what the students will do during instruction.

INTRO-INSTRUCTIONAL STRATEGIES:

A. How will you hook your students' interest? State your exact wording.

Display an image of The Great Pyramids.
Say: *Today we are going to learn how the Ancient Egyptians measured perfect right angles to build the Great Pyramids*.
Demonstrate 3-4-5 rope.
Say: *This is a special relationship of numbers; they are called a Pythagorean Triple. Today we are going to learn the Pythagorean Theorem and how to use it.*

B. How will you connect the content of this lesson to prior learning? State your exact wording.

Prior knowledge of Ancient Egyptian Civilization (maybe Aztec and Mayan?).

C. How will you connect the content to the life experiences of your students?

Pythagorean Theorem is used in construction (geometry).

Right Angles are everywhere (discuss with students).

D. How will you present the academic learning goals (outcomes/objectives)? State your exact wording.

Point out new 'color' of standard.

Say: *We are starting a new unit and we have some new standards. You will see the Pythagorean Theorem for the rest of your math career, so if you don't want it to haunt you, you should make it your friend now!*

Have the students record standards in Organized Binder.

INTO-STUDENT ACTIVITIES: How will students be engaged during the introduction to the lesson? Consider grouping, pair work, guided practice, individual work, etc.

Students will work in groups of 3 and explore with a 3-4-5 rope, measuring right angles in the classroom.

THROUGH-INSTRUCTIONAL STRATEGIES:

A. List the steps of your lesson presentation.
1. Kahn Academy Website
2. Pythagorean Theorem Notes
3. Pythagorean Theorem Interactive at white board (partner check and cold call)
4. Pythagorean Theorem Interactive in partners

B. What strategies will you use to check for understanding?

Formative Assessments:

Observe for understanding during cold calling.

Monitor progress during partner work.

Homework.

Through-Student Activities: How will students be engaged during each part of the lesson? Consider grouping, pair work, guided practice, individual practice; application, etc.
1. Students volunteer questions or responses.
2. Students record the Pythagorean Theorem notes: key vocabulary and examples.
3. Students work individually to solve practice problems, then check work with partner. Students are cold-called to provide answers on the with board.
4. Students create practice problems and then switch with their partners and solve.

BEYOND-INSTRUCTIONAL STRATEGIES:

A. How will you close the lesson?
1. Learning Log Entry: 5 minute journal entry about what you learned. Must include student's definition of the Pythagorean Theorem in <u>words.</u>
2. Assign Homework #85

B. Describe any informal/formal assessments used.

Formative assessments:

Observations

Homework #85

BEYOND-STUDENT ACTIVITIES:

What are students expected to do before the next lesson or class? Describe homework, if any.

Homework #85: WB p. 65 #1-13 odd

MATERIALS/TECHNOLOGY/RESOURCES:
What materials (supplies, equipment, teaching aids) need to be prepared and available? How will you use aides/volunteers in this lesson, if available? What technology links are made in this lesson?

12-knot rope
Overhead Projector
Laptop
Internet Connection

PART E: ADAPTATIONS

ENGLISH LANGUAGE LEARNERS: Explain how your lesson plan is adapted according to each of the following components of the SIOP model: Preparation, Building Background, Comprehensible Input/Strategies, Interaction, Practice/Application, Review/Assessment.

Building Background: Vocabulary, History of Pythagorean Theorem

Comprehensible input: Kahn Academy website, graphics, visuals

Interaction: Individual, partner

Practice: Interactive white board, partner work

Review: Homework

STUDENTS with IEPS:

List the specific accommodations/adaptations that you have made for your students with IEPs. Explain how these accommodation/adaptations provide access to the Academic Content Standards.

None

Are there other students for whom you want to make adaptations? Explain these adaptations.

None

PART F: REFLECTION

SELF-EVALUATION:

Describe the effectiveness of this lesson in helping students meet the learning goals.

_____

How will you apply what you have learned when you plan instruction in the future?

_____