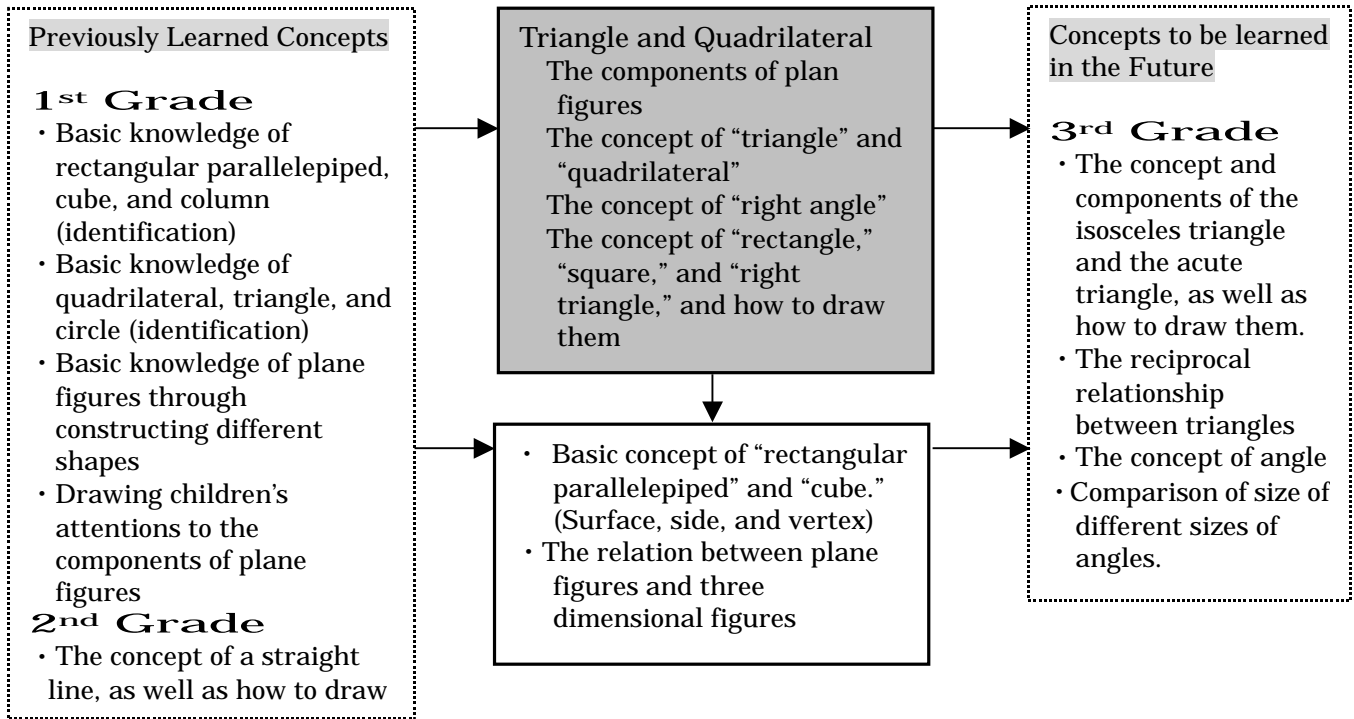


# 2<sup>nd</sup> Grade, Class A & B Mathematics Lesson Plan

November 14, 2000 (Tuesday)  
 2<sup>rd</sup> Period Gym #1  
 Instructor: Hiroshi Kataoka  
 Takashi Teratani  
 Number of Students: 44

## 1. Name of the Unit: Triangles and Quadrilaterals

## 2. Relationship of the Unit to the Curriculum



## 3. Instructional Plan

### Triangles and Quadrilaterals

- Triangles and quadrilaterals . . . . . 2 lessons
- Right triangle . . . . . 1 lesson
- Rectangle and Square . . . . . 4 lessons
- Let's explore the world of triangle and quadrilaterals! . . . . . 2 lessons <Team teaching>  
 (This lesson is the second lesson)

## 4. Instruction of this Lesson

(1) Title: Let's Explore the World of Triangles and Quadrilaterals!

(2) Goal

To solve some new problems, using knowledge acquired in the previous 8 lessons (learning to draw different triangles and quadrilaterals; distinguishing squares, rectangles, right triangles, and other plane figures; and discussing and understanding the definitions and characteristics of those figures.)

To foster students' individual motivation for learning and to excite their spirit of curiosity by letting them engage in their activities that require previously learned knowledge, skills, and approaches.

(3) Relationship of the lesson to the Goal of Mathematics Education at the School

Students have already acquired the concepts of the triangle (right triangle) and the quadrilaterals (squares and rectangles) and how to draw them. They have used rulers and triangular squares to

understand plane figures. This lesson's purpose is to summarize the unit.

Hands-on activities are created to make students approach sets of problems as if they were playing games. The problems are also designed to help students feel a sense of accomplishment and fulfillment when they finally solve them. With some activities such as "Pattern Blocks" and "Animal Bingo", we encourage students to use predictions for approaching problem-solving.

Team Teaching allows us to pay attention to all the students and be able to instruct some students individually.

The aim of the lesson is to help students acquire knowledge of triangles and quadrilaterals, and how to draw them. They will expand those concepts in the third grade when they will learn the characteristics of figures, reciprocal relations among them, the concepts of angles, and the concepts of size of figures.

Following are the points to take into consideration:

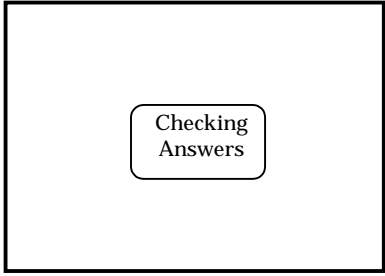
Create a learning environment where students enjoy their learning as well as feel accomplishment and fulfillment when they finally solve problems. Encourage students to use the knowledge, skills, and approaches that they have acquired to solve new problems with logical thinking. With the help of Team Teaching, try to assess each student's understanding, and approach each student as an individual.

Use the group activities to help students interact with each other, compete with each other, and acknowledge each other's good qualities.

(4) Lesson Process

Steps	Activity of the Students	Teacher's Support and Points to Remember	Evaluation View Point
Intro- duction 5 min.	<div style="border: 1px solid black; padding: 5px; text-align: center; margin-bottom: 10px;"> <b>Let's explore the world of triangles and quadrilaterals!</b> </div> 1. Students listen to the aim of the lesson Learning how to explore Materials to prepare: Ruler, Triangular square, Stickers, Glue, Dice, Pattern blocks, Worksheet  (***) An explanation of the classroom activity is provided at the end of this lesson plan)	<ul style="list-style-type: none"> <li>• Tell students to use the knowledge and skills they have acquired in the unit to approach these lessons new problems.</li> <li>• Ask the students to record which group they belong to.</li> <li>• Instruct them about how to move the classroom and explain some rules.</li> </ul>	<ul style="list-style-type: none"> <li>• Do students understand the aim and rules?</li> </ul>

<p>Development (40)</p>	<p>2. Solving problems with group members</p> <p>&lt;Five groups and five different activities&gt;</p> <p>For the activities and , students' answers are checked.</p> <p>→ "County" of Figures</p> <p>A picture is presented in which students are asked to find right angles, triangles, and quadrilaterals and place the appropriate stickers on what they find.</p> <ul style="list-style-type: none"> <li>• Right angle – Pink</li> <li>• Triangle – Yellow</li> <li>• Right triangle – Red</li> <li>• Square – Blue</li> <li>• Rectangle – Green</li> </ul> <p>↓ "Country" of Patterns</p> <p>Make patterns using different shapes and glue them to a piece of paper.</p> <p>↓ "Country" of Bingo</p> <p>Throw the dice and draw lines around the animals according to the number on the dice.</p> <p>↓ "Country" of Combination</p> <p>Make patterns using small triangles and quadrilaterals ( Pattern blocks )</p> <p>↓ "Country" of Discovery</p> <p>Connect dots on the sheet to draw the picture (a "connect-the-dots" handout. Find triangles and quadrilaterals from the picture and place the stickers</p> <ul style="list-style-type: none"> <li>• Right triangle – Red</li> <li>• Square – Blue</li> <li>• Rectangle – Green</li> </ul>	<ul style="list-style-type: none"> <li>• Create a figure by placing shapes without spaces between them and glue them on a sheet of paper.</li> <li>• Do not use a line more than once. Count the animals in the lines, the number of right angles, and give them points.</li> <li>• Draw students' attention to the length of lines, the size of angles. Use variety of figures in different sizes.</li> <li>• Tell students to check the length of lines and the size of angles.</li> </ul>	<ul style="list-style-type: none"> <li>• Do students understand the concepts of the right angle, triangles, and quadrilaterals?</li> <li>• Do students consider the length of lines and the size of angles in making patterns?</li> <li>• Can students use rules correctly, and use a variety of triangles?</li> <li>• How many types of combinations did they make?</li> <li>• Did the students use rules correctly, and distinguish different figures?</li> </ul>
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<p>Conclu- sion 5 min.</p>	<p><b><u>Classroom arrangement</u></b></p> <div style="text-align: center;">  </div> <p>(Table in center for checking answers with teacher)</p> <p>3. Ask students to share their thoughts and self-reflections.</p> <ul style="list-style-type: none"> <li>• Did you enjoy the lesson?</li> <li>• Were you able to rulers and triangular squares well?</li> <li>• Did you cooperate with others in your group?</li> </ul>	<ul style="list-style-type: none"> <li>• Ask several students to share with the class</li> </ul>	
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( 5 ) Evaluation

Do students understand the concepts of triangles and quadrilaterals?

Do they draw lines well using rulers and triangular square?

Do they cooperate with others?

Do they discover something new through the activities? (Ask students to write their answer to this question on a worksheet.)

\*\*\* Classroom is divided into 5 areas (“countries”). Each “country” has a set of materials or worksheet with associated instructions for problem-solving. Students are divided into 5 groups. Each group goes to a different “country” and solves that “country’s” assignment. When finished (or at the end of a certain time) the groups rotate around the room so each student gets to visit all the “countries.” Groups visiting countries and can have their answers checked at the center table.