GEOMETRY

Junior High School
Publisher: Gakko Tosho

Aida Yap, NISMED - University of the Philippines
Guillermo Bautista Jr., NISMED - University of the Philippines
Masami Isoda, CRICED - University of Tsukuba
JH Grade 1

Features:

- Includes Recall at the beginning of the chapter
JH Grade 1

Features:

- Uses real pictures, drawings, diagrams
- Considers gender equality
- Challenges students to think
JH Grade 1

Features:

- Encourages students to explore and investigate

- Assesses student learning after each lesson (Let’s Check)

- Mathematical connections

- Recall is also found within the lesson

Features:

- Encourages students to explore and investigate

- Assesses student learning after each lesson (Let’s Check)

- Mathematical connections

- Recall is also found within the lesson
JH Grade 1

Features:

- Integrates Japanese culture
- Further discussion of concepts (Close Up)
- Emphasizes key words

SEAMEO RECSAM – University of Tsukuba Joint Seminar
15-18 February 2016, Tokyo, Japan
JH Grade 1

Features:

- Assesses student learning of the lessons in the chapter

(Summary Problems)
JH Grade 1

Features:

- Deepens students’ understanding through application to real life situations

(Deepen your Understanding)
JH Grade 1

Features:

- Includes real pictures of students doing the task
- Develops students’ communication skills

**Various Constructions**

**Basic Constructions**

**Aim:** Let's draw various figures based on what we have learned from the properties of the plane figures.

**Features:**

- Includes real pictures of students doing the task
- Develops students’ communication skills

SEAMEO RECSAM – University of Tsukuba Joint Seminar
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Features:

- Emphasizes mathematical thinking and investigation

**Constructions of Perpendicular Bisectors**

| Q | Line segment AB is shown on the left. Let's fold this page to match points A and B, and then open it. What line will the folding line be?

We can construct a perpendicular bisector of the line segment using triangles as shown in the following Fig. 2.

**Properties of Perpendicular Bisectors**

| Q | In the figure on the right, take point P on perpendicular bisector h1, and then draw a circle using point P as the center and PA as the radius. What can you observe?

Ex. 2. Construct a perpendicular bisector of line segment AB.

**Method**

Use the fact that one diagonal of trapezium is a perpendicular bisector of the other.

**Process**

1. Draw a circle using point A and any length as the radius.
2. Using the same radius, draw another circle using point B as the center (and then name the points of intersection P and Q)
3. Draw a line that passes through points P and Q

**Draw any line segment AB, and then construct its perpendicular bisector.

Find midpoint M of line segment AB.

Find point P that is of the same distance from points A and B and is on line l using constructions in the figure below.
JH Grade 1

Features:

- Encourages students to think and investigate
- Relates concept to real objects
- Important ideas are emphasized or placed in a box

Circle O is shown in the figure on the right. Let’s fold it to make points A and B, and then open it. What will we be folding in part?

As shown in the figure on the right, when a point M on a segment AB, such as point M, is folded onto line AB, BY and YM are equal. The point O is the intersection of perpendicular bisector of line AB and line OM.

Point M is called the midpoint of line AB.

As shown in the figure on the right, if we draw line l that is perpendicular to diameter ST, M as the intersection of l and ST, points A and B and the intersections of l and circle O, then ST is an axis of symmetry of circle O. So, AM = BM.

When M is moved as shown in the figure, A and B will gradually become closer to each other, and then they will meet at point T.

When a circle and a line intersect at only one point, we say a circle and a line are tangent. The intersection is called the point of tangency. The line that is tangent to the circle is called the tangent of circle.
JH Grade 1

Features:

- Uses situations which are within the experience of the students
- Relates ideas to real life structures or buildings found in different places in Japan
JH Grade 2

Features:
- Promotes Japanese culture through the given task
- Relates mathematical ideas with real life structures or buildings found not only in Japan but in other countries as well.
Thank you for your comments and suggestions on the four chapters on Geometry.