

## PRE-READING

Look at the pictures and read the title of the lesson.

1. Choose the words and expressions which have the same meaning as the underlined words in the sentences below. Write them on the lines.

- a) The land in picture 1 is flooded. It is \_\_\_\_\_ with water. (filled / empty)  
 b) The land in picture 2 is dry. It is land \_\_\_\_\_ water. (with / without)  
 c) In picture 3, the desert is a large area of sand which is \_\_\_\_\_. (hot and dry / wet and cold)  
 d) Picture 4 shows a sunny day. There is \_\_\_\_\_. (moonlight / sunlight)  
 e) Picture 5 shows a rainy day. This means that water falls from \_\_\_\_\_. (the sky / the ground)

Picture 1



Picture 2



Picture 3



Picture 4



Picture 5



2. Match pictures (1 - 5) with their descriptions below. Write the picture numbers on the lines.

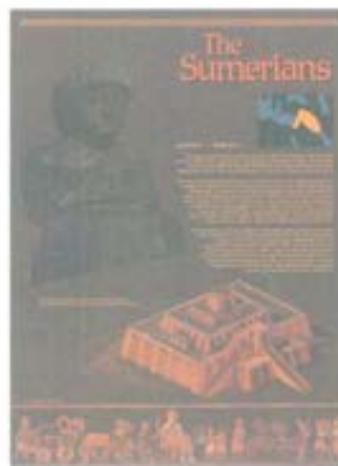
- \_\_\_\_\_ a) Which picture shows a rainy day?  
 \_\_\_\_\_ b) Which picture shows a sunny day?  
 \_\_\_\_\_ c) Which picture shows flooded land?  
 \_\_\_\_\_ d) Which picture shows a desert?  
 \_\_\_\_\_ e) Which picture shows dry land?

## READING TEXT

### GEOMETRY

#### Beginning of geometry

- 5 Geometry was developed when people began to describe areas of land and changes in these areas mathematically. This happened at about the same time that writing was invented. Therefore, historians can tell us quite a lot about these developments. The Ancient Sumerians developed mathematics
- 10 in order to make accurate measurements of areas of land along the Tigris and Euphrates Rivers. Meanwhile, the Ancient Egyptians developed similar mathematical ideas to measure areas of land along the Nile. Every year the water in these areas rose and flooded the dry land near them. After the
- 15 level of water fell again, people had to recalculate accurately the area of land which belonged to each farmer.



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The above examples show that the development of mathematics has been used to solve spatial problems since it was first developed. The Ancient Greeks continued the development of mathematics in relation to geometrical shapes. In Greek, 'geo' refers to the Earth and 'metrical' is related to 'measure'. So, the word geometry originally meant the measurement of the Earth or of areas of land.

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#### Later developments

- 30 Geometry remained extremely important to early Muslim mathematicians, who translated many Greek geometry texts into Arabic. At the same time, however, they developed algebra by learning to solve equations which expressed changes with numbers. These equations contained variables (quantities which change).

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About 800 years ago, European mathematicians began to learn geometry and algebra by translating Arabic texts. At first, geometry and algebra remained separate.

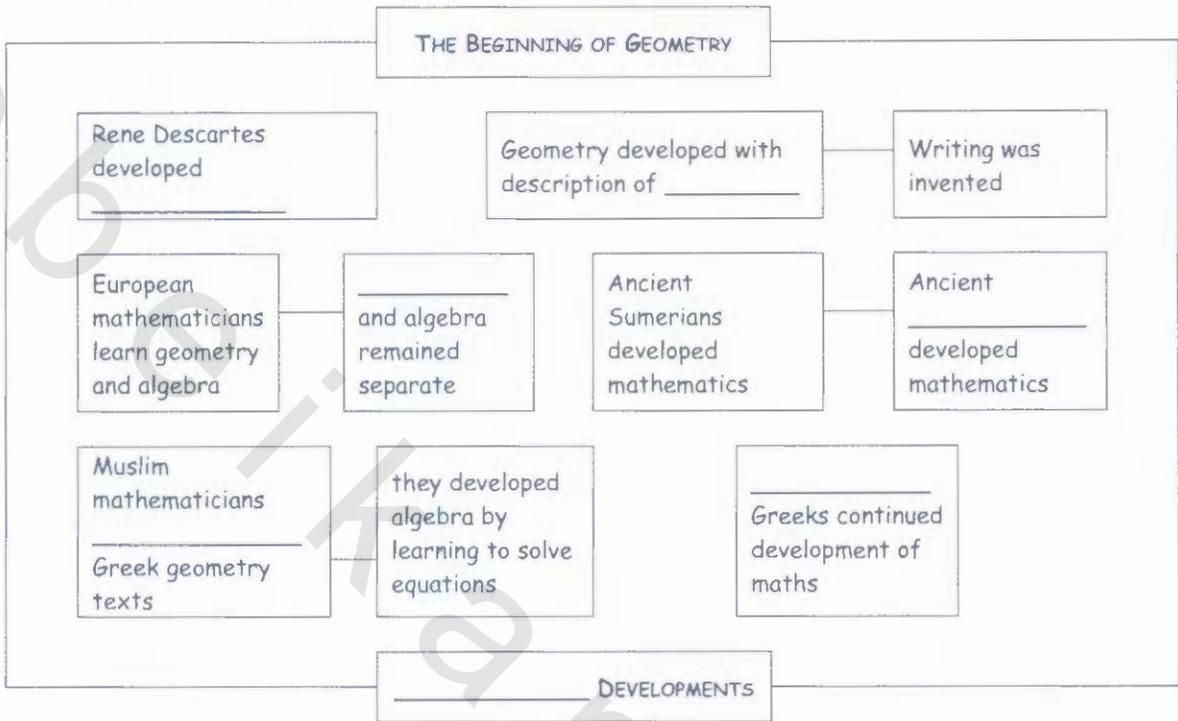
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Then in 1637 Rene Descartes, a French mathematician, developed graphs which enabled him to express geometrical lines and curves as algebraic equations.



VOCABULARY & UNDERSTANDING

1. Complete the missing information in the boxes below based on the Reading text.



2. Draw lines from the words on the left to the words on the right to complete the sentences.

- |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> <li>1. Geometry was developed</li> <li>2. The Ancient Sumerians developed mathematics</li> <li>3. The Ancient Egyptians developed mathematical ideas</li> <li>4. The Ancient Greeks developed mathematics in relation</li> <li>5. The word 'geometry' originally meant</li> <li>6. Muslim mathematicians</li> <li>7. European mathematicians learned geometry and algebra</li> </ol> | <ol style="list-style-type: none"> <li>a) translated many Greek geometry texts into Arabic.</li> <li>b) to geometrical shapes.</li> <li>c) by translating Arabic texts.</li> <li>d) to measure areas of land along the Nile.</li> <li>e) at about the same time that writing was invented.</li> <li>f) the measurement of the Earth or of areas of land.</li> <li>g) to measure areas of land along the Tigris and Euphrates Rivers.</li> </ol> |
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COMPREHENSION CHECK

1. Answer these questions based on the Reading text.
  - a) How did the water affect the Ancient Egyptians in areas of land along the Nile River?  
\_\_\_\_\_
  - b) What did the word 'geometry' originally mean in Greek?  
\_\_\_\_\_
  - c) How did both Muslim and European mathematicians learn geometry and algebra?  
\_\_\_\_\_

2. Read these expressions and circle the letter with the most appropriate answer.

1. Which of the following is part of Mathematics?

- a) Mechanics
- b) Geometry
- c) Magnetism

2. What's the meaning of the verb 'invent'?

- a) Make something for the second time
- b) Break something and make it again
- c) Create or make something for the first time

3. 'Mathematics allows us to make accurate measurements of areas' means:

- a) Mathematics allows us to make wrong measurements of areas
- b) Mathematics allows us to make a lot of measurements of areas
- c) Mathematics allows us to make correct measurements of areas

4. 'Accurate' is an adjective. What is its adverbial form?

- a) Accurately
- b) Accurating
- c) Accurate (doesn't change)

5. 'Mathematics is used to solve spatial problems' means:

- a) Mathematics is used to find solutions for weight problems
- b) Mathematics is used to solve speed problems
- c) Mathematics is used to find solutions for problems of position, size and shape

6. Which of the following are shapes?

- a) A cone
- b) Green
- c) A triangle
- d) Height

7. Algebra is another part of Mathematics. It

- a) deals with angles of triangles
- b) uses letters and signs to represent numbers and values
- c) deals with the study of lines

8. In Mathematics, a 'Constant' is a fixed number. What is a 'Variable'?

- a) A Variable is similar to a Constant (i.e. doesn't change).
- b) A Variable is a number whose value changes sometimes only.
- c) A Variable is a number whose value changes.

