

PRE-READING

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

1. Circle your answers about pictures 1 through 5. Write them on the lines.

- a. In addition to the word 'Mathematics', picture 1 shows _____ 2 & 3. (scripts / digits)
 b. Picture 2 shows four mathematical _____. (signs / equations)
 c. The machine in picture 3 is a _____. (computer / calculator)
 d. A _____ is one of the tools shown in picture 4. (ruler / leader)
 e. Four is the only number of spots shown _____ in picture 5. (once / twice)

Picture 1



Picture 2



Picture 3



Picture 4



Picture 5



2. Match the pictures above with their descriptions. Write the correct number of the pictures above on the lines below.

- ___ a) This picture shows seven dice.
 ___ b) This machine can do calculations such as adding and multiplying.
 ___ c) This picture has information in numbers and writing.
 ___ d) This picture shows addition, subtraction, division and multiplication signs.
 ___ e) Most of these instruments are used for measuring things or drawing lines.

Picture 6



Picture 7



Picture 8



3. Study pictures (6 - 8) and fill in the gaps in the table.

Picture 6	a) Eight _____ five equal three.
Picture 7	b) If you _____ twenty five by five, you get five.
Picture 7	c) If you _____ three by five you get fifteen.
Picture 7	d) The _____ number in this picture is twenty five.
Picture 8	e) The time in this picture is eight minutes _____ two.

READING TEXT

A BRIEF HISTORY OF MATHEMATICS

Descriptions: words and numbers

5 The verb 'describe' means to say or write about something or someone by giving details. Describing change and movement is a basic part of mathematics. Understanding change in numbers and size is a very important feature of this. When we describe how people or things look, we use words like 'big', 'small', or 'exciting'. When describing action, however, we may use words like 'fast' or 'slow'. These are ways we describe people, places, or things. Now let's take a look at how we give descriptions using mathematics!

10 In mathematics, we do not have to use words to describe a thing or a place. Instead, we can use numbers and signs. Mathematical signs tell us what the relationships between numbers are, and how to work out the problem; for example $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$. There are many relationships between numbers and signs, mainly those that involve change.

15 A brief history of mathematics

Ever since the beginning of mathematics, the description of change and difference has been a major part of it. There are no written records dating back to the beginning of mathematics because writing was invented a long time after mathematics, about 5,000 years after.



25 Historians (people who study the past) say that mathematics started with counting. People needed to count their sheep or goats. A shepherd would count his goats by placing a small rock in his right hand for each goat that left his tent. Later, he would move the small rocks from his right hand to his left for each goat that came back to the tent. If there was a rock in his right hand when he finished counting his goats, he knew that one goat was missing. The remaining rock represented a change in the number of goats. The man in this example did not write any numbers. The rocks, however, made the idea of numbers clear because they were something the shepherd could see.

VOCABULARY & UNDERSTANDING

1. Which sentences are true? Circle the letters of the true sentences.

1. a) Describing change and movement is a basic part of mathematics.
b) Describing change and movement isn't a basic part of mathematics.
2. a) We don't use words to describe people, places, things and actions.
b) We use words to describe people, places, things and actions.
3. a) Descriptions in mathematics can use numbers only.
b) Descriptions in mathematics can use numbers and signs.
4. a) There are no relationships between numbers and signs.
b) There are many relationships between numbers and signs.
5. a) There are no written records dating back to the beginning of mathematics.
b) There are many written records dating back to the beginning of mathematics.

2. Circle the words that have the same meaning as the underlined words.

- | | | |
|---|-------------|-------------|
| a) Describing change and movement is a <u>basic</u> part of mathematics. | essential | unimportant |
| c) Mathematical signs tell us how to <u>work out</u> mathematical problems. | solve | write |
| c) There are <u>many</u> relationships between numbers and signs. | a single | a lot of |
| d) This is a <u>brief</u> history of mathematics. | short | long |
| e) The description of change and difference is a <u>major</u> part of mathematics. | unimportant | important |
| f) If there was a rock left in his hand, he knew that one goat was <u>missing</u> . | found | absent |

COMPREHENSION CHECK

1. Answer the following questions based on the Reading text.

a) Explain what the expression 'to describe something or someone' means.

b) What do mathematical signs tell us?

c) Why are there no written records which tell us about the beginning of mathematics?

d) How did a shepherd count his goats?

2. Answer the questions below based on the Reading text.

a. What does the word 'these' on line 8 refer to?

b. On line 13, what does the word 'those' refer to?

c. What does the pronoun 'it' at the beginning of line 19 refer to?

d. On line 30, which hand is 'the remaining rock' left in?

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

1. The teacher didn't have time, so he explained the lesson briefly. Briefly means:

- a) In a few words
- b) For a long time
- c) With 3 examples

2. What kind of word is 'briefly'?

- a) An adjective
- b) An adverb
- c) A noun

3. Which of the following is a mathematical sign?

- a) !
- b) ∴
- c) π

4. 'Change and Difference are a major part of mathematics' means they are:

- a) Only a small part of mathematics
- b) An important part of mathematics
- c) Not part of mathematics

5. The verb 'invent' means 'create or make something for the first time'. Its noun is:

- a) Inverse
- b) Invasion
- c) Invention

6. Mr. Al-Shammari counted his books in the evening and found that one was missing. This means:

- a) There was one book extra
- b) There was one book less
- c) All books were there

LANGUAGE FOCUS

1. Choose the correct word.

- a) 'Describe' means to write about something or someone by (give/giving) details about them.
- b) (Describe/describing) change and movement is a basic part of mathematics.
- c) (Understand/understanding) change in numbers and size is an important feature of mathematics.
- d) When we (describe/describing) how people or things look, we use words like 'big' and 'small'.
- e) When (describe/describing) action, we may use words like 'fast' or 'slow'.
- f) A shepherd would count his goats by (place/placing) small rocks in his right hand.
- g) There was a rock in his right hand when he finished (count/counting) his goats.

2. Use the lines below to write the letters of the sentences where the 'verb+ing' form is:

- a) After a preposition _____ / _____
- b) At the beginning of the sentence _____ / _____
- c) After a verb _____
- d) After an expression of time _____

3. Write a sentence of your own containing the 'verb+ing' form.

4. Answer these 'Yes/No' questions with short answers.

Example - Is describing change and movement a basic part of mathematics?

Yes, it is.

No, it isn't.

a) Do you mean using words like 'big' and 'small'?

Yes, _____

No, _____

b) Are these ways we describe people, places, or things?

Yes, _____

No, _____

c) Does a description in mathematics use numbers and signs?

Yes, _____

No, _____

d) Are there any written records dating back to the beginning of mathematics?

Yes, _____

No, _____

e) Did the shepherd know that one goat was missing?

Yes, _____

No, _____

f) Was writing invented a long time after mathematics?

Yes, _____

No, _____