


## Grade 4 Mathematics

### Number and Number Relations: Lesson 18

Read aloud to the students the material that is printed in **boldface type** inside the boxes. Information in regular type inside the boxes and all information outside the boxes should **not** be read to students. Possible student responses are included in parentheses after the questions.

NOTE: The directions read to students may depend on the available materials. Read only those parts of the lesson that apply to the materials you are using.

Any directions that ask you to do something, such as to turn to a page or to hand out materials to students, will have an arrow symbol (  ) by them.

#### *Purpose of Lesson 18:*

- In this lesson, the tutor and the students will
  - ✓ locate whole numbers on a number line, and
  - ✓ use number sense and estimation skills with whole numbers.

#### *Equipment/Materials Needed:*

- Copies of Student Sheets 93 and 94 for students
- Paper and pencils
- Chalkboard

#### *Preparations before beginning Lesson 18:*

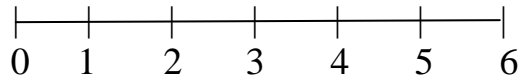
- Run one copy of Student Sheets 93 and 94 for each student.
- Have paper and pencils available.

## Lesson 18: Number and Number Relations

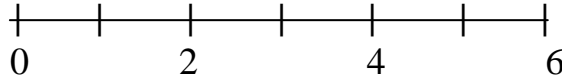
Write the words *number line* on the board.

Say:

**Does anyone know what a number line is?** (Answers will vary, but some students may say that it is a straight line with numbers on it.) **Can someone draw a number line with the numbers 1 through 6 on it?** Allow a student to draw a number line on the board. It should look something like the one below.



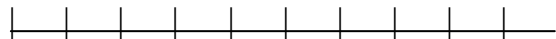
**What is special about a number line?** (Answers will vary, but these are some of the ideas that you want to come out. Number lines can be horizontal, such as the number line in most math classrooms, or vertical, such as a thermometer. When one moves to the right, or up on a number line, the numbers get larger. When one moves to the left, or down on a number line, the numbers get smaller. The markings on a number line must be equally spaced. The numbers do not have to be one unit apart. For the number line above, I could draw one similar to the one below.)



Give Students Student Sheet 93. This sheet can possibly be omitted, if your students really understand the numbering on a number line. It should be a quick activity, anyway.

Answers: 1. 61      2. 56      3. 59      4. 63  
5. 114      6. 108      7. C      8. 120      9. 98      10. 100

Give Student Sheet 94. This sheet can be used to see whether students have number sense, and whether they can estimate numbers on a number line. It is important that they discuss each problem. Students need to understand the difference in the number of marks and the number of spaces between the numbers. If you want 10 spaces between two numbers, you draw 9 marks.



0

1

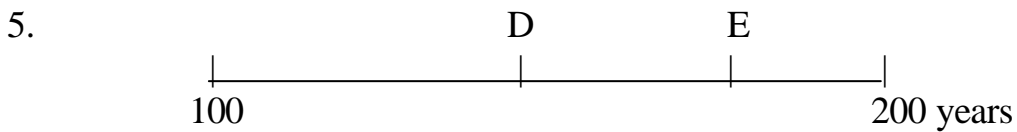
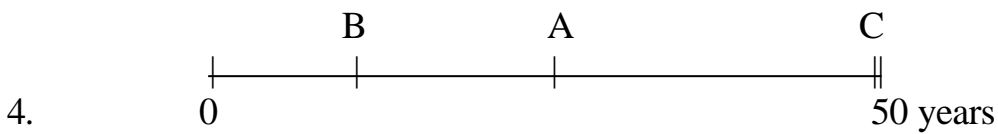
Answers:

1.a. 10 spaces    b. 1 year    c. 1, 2, 3, 4, 5, 6, 7, 8, 9

2.a. 2 spaces    b. 5 years    c. 5

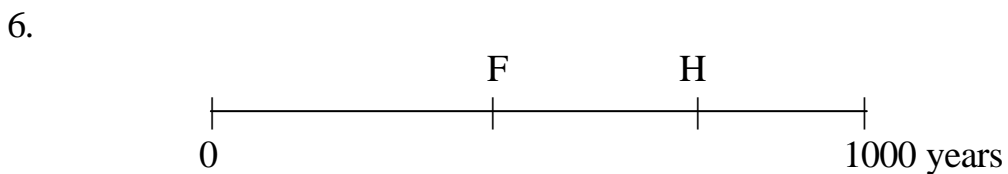
3.a. 10 spaces    b. 10 years    c. 110, 120, 130, 140, 150, 160, 170, 180, 190

On the next problems, students' marks and labels should be approximately in the same places as the ones below. Don't be too picky about the placement. You are looking to see whether they can approximate the position of the points.




b. 100 years    d. 200 years

These two questions focus on rounding.

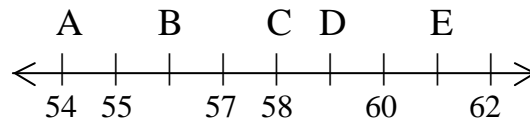


b. 0 years    d. 1000 years

 Have one student summarize today's lesson. Using a number line can help students develop better number sense and can help them with rounding.

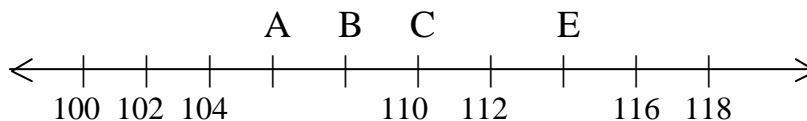
## Student Sheet 93 (Number Relations: Lesson 18)

Use the number line below to answer questions 1 – 4.



1. Which number belongs where you see the letter E? \_\_\_\_\_
2. Which number belongs where you see the letter B? \_\_\_\_\_
3. Which number belongs where you see the letter D? \_\_\_\_\_
4. If you continued the number line to the right, what number would you mark next? \_\_\_\_\_

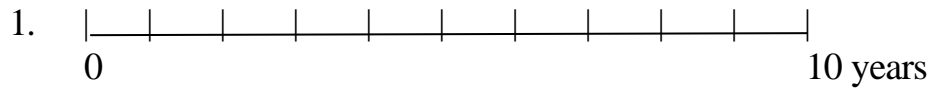
-----  
Use the number line below to answer questions 5 – 10.



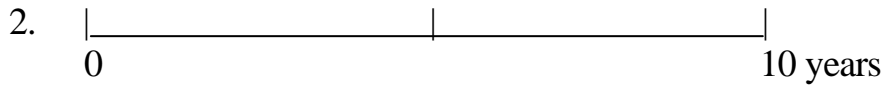
5. Which number belongs where you see the letter E? \_\_\_\_\_
6. Which number belongs where you see the letter B? \_\_\_\_\_
7. Which letter goes with the number that is between 108 and 112? \_\_\_\_\_
8. On the number line above, the last number shown is 118. If you continued drawing and marking the number line to the right, what number would you mark next? \_\_\_\_\_
9. On the number line above, the first number shown is 100. If you continued drawing and marking the number line to the left, what number would you mark before 100? \_\_\_\_\_
10. Is the number 104 closer to 110 or to 100? \_\_\_\_\_

## Student Sheet 94 (Number Relations: Lesson 18)

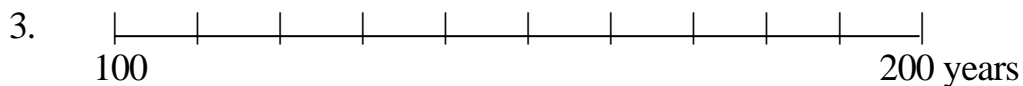
The number lines in problems 1—3 show years. Not all of the years have been labeled.



- How many spaces are between 0 and 10? \_\_\_\_\_
  - How many years are represented by each space? \_\_\_\_\_
  - Label each marking with a year.
- 



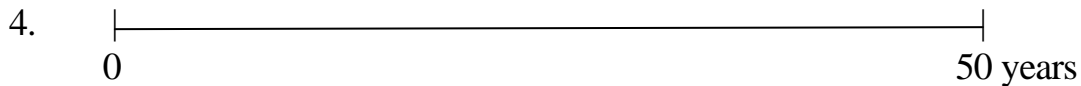
- How many spaces are between 0 and 10? \_\_\_\_\_
  - How many years are represented by each space? \_\_\_\_\_
  - Label each marking with a year.
- 



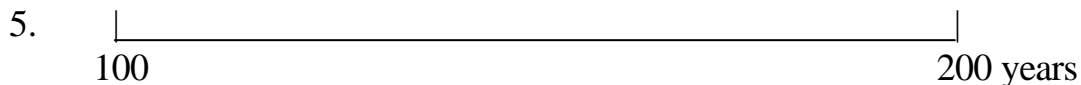
- How many spaces are between 100 and 200 years? \_\_\_\_\_
- How many years are represented by each space? \_\_\_\_\_
- Label each marking with a year.

**Student Sheet 94 (Number Relations: Lesson 18) continued**

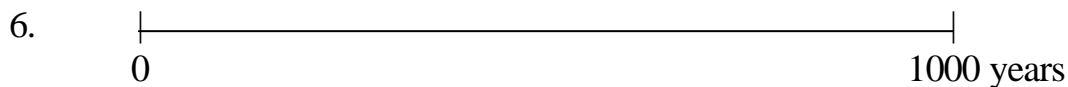
**The number lines in problems 4—6 have no markings to show spaces. You have to estimate where you would place the numbers. Again, the number lines show years.**



- a. On the number line, draw a mark that you estimate represents 25 years. Label this mark A.
  - b. On the number line, draw a mark that you estimate represents 10 years. Label this mark B.
  - c. On the number line, draw a mark that you estimate represents 49 years. Label this mark C.
- 



- a. On the number line, draw a mark that you estimate represents 145 years. Label this mark D.
  - b. Is 145 years closer to 100 years or 200 years? \_\_\_\_\_
  - c. On the number line, draw a mark that you estimate represents 179 years. Label this mark E.
  - d. Is 179 years closer to 100 years or 200 years? \_\_\_\_\_
- 



- a. On the number line, draw a mark that you estimate represents 489 years. Label this mark F.
- b. Is 489 years closer to 0 years or 1000 years? \_\_\_\_\_
- c. On the number line, draw a mark that you estimate represents 749 years. Label this mark as G.
- d. Is 749 years closer to 0 years or 1000 years? \_\_\_\_\_