

100 Hungry Ants

Grade 2

Activity #225

Relevant Chapters in the *Digi-Block Comprehensive Teacher's Guide*:

Book II, Unit 4-2: Joining Equal Groups of Ones, pages 95 - 97

Book III, Unit 3-1: Developing Meaning for Multiplication, pages 75-79

Book III, Unit 3-2: Combining Equal Groups of Single Blocks, pages 80-83

Overview

Students use blocks to represent the different arrangements of 100 ants marching to reach a picnic feast: 1 line of 100, 2 lines of 50, and so on. They create their own versions of the story to explore different numbers.

Objectives

Thinking Skills: Students explore different representations of 100. They find many factors of 100, and practice counting by those multiples to 100. Students apply what they learn to different numbers.

Mastery Skills: Students learn to count to 100 by 1's, 50's, 25's, 20's and 10's.

Materials

For the Introduction and Student Activity:

- 100 Hungry Ants by Eleanor Pinczes, Bonnie MacKain (illustrator)

ISBN: 0395971233

Publisher: Houghton Mifflin Company

Pub. Date: September 1999

- 100 single blocks or 10 blocks-of-10

For the Activity:

- Single blocks, according to story title, for each student

Introduction

(10 minutes)

Show the book and read the title. Explain that as they hear the story of the hungry ants, they will use blocks to model what happens.

Open the book to the first page. Have students study the illustration and tell what they see (the ant hill, the long line of ants, the picnic with good smells wafting in their direction).

- Ask, **How many ants are there?** (100)
- Say, **Imagine the ants are blocks. How many blocks will we need?**

Ask, **How should we arrange the blocks to look like the ants?**

- Have students arrange the blocks in a single line on the classroom floor. (Note: They may line up the blocks end-to-end with or without the holders. If students use blocks in holders, the activity is much faster. Make sure they open the covers so they can see all the "ants marching.")



- Students will exclaim that the blocks/ants make a very long line!
- Ask, **Will all the ants arrive at the same time? How do you think the first ant in line feels? The last ant? Why?**

Continue reading and having the students rearrange the blocks to show:

- 2 lines of 50
- 4 lines of 25
- 5 lines of 20
- 10 lines of 10

Ask, after each new arrangement, **Are there still 100 ants? How do you know?**

Help students translate their thinking into numbers and number sentences, such as:

- $50 + 50 = 100$
- $25 + 25 + 25 + 25 = 100$
- Counting by 25's: 25, 50, 75, 100
- 5 lines of 20 makes 100: $20 + 20 + 20 + 20 + 20 = 100$
- 20, 40, 60, 80, 100

If students are ready and they suggest using the multiplication symbol, consider including:

- 4 lines of 25: $4 \times 25 = 100$
- 10 lines of 10: $10 \times 10 = 100$

Finish the story including its unhappy ending. Ask, **If the ants had more time, how else might the littlest ant have suggested they arrange themselves?** Students may suggest:

- 20 lines of 5
- 25 lines of 4
- 50 lines of 2, or even
- 100 lines of 1 (This way, they'd all arrive together!)

Students will notice that the same numbers keep coming up! This is an important observation illustrating the commutative property of multiplication: 5 lines of 20 is equivalent to 20 lines of 5.

Activity

(25-30 minutes)

Explain to students that they will be working in small groups to write their own version of the story. Their version doesn't involve ants, however, as it will be titled, "60 Starving Salamanders."

- Encourage other titles, for example: "24 Terrible Turtles," "36 Thirsty Thoroughbreds," etc. Include additional suggestions students may have.

- Adjust the numbers to meet students' abilities, being sure to use numbers that have many factors.
- It may be a good idea to look back at 100 Hungry Ants to review the structure of the book. Remind students that in the beginning the ants are all marching in single file, but as they change the arrangement again and again, they always have the *same number* of ants in each line.
- Tell students that they, too, must find arrangements of the animals so that they have an equal number in each line.

Provide blocks to each group so they can explore with different arrangements of the blocks in lines.

- Observe students as they work with the blocks. Some groups will be systematic about determining line sizes. Other groups will choose line sizes randomly.
- After students have had a chance to "explore" with different arrangements, allow a bit of time for sharing strategies.

Provide paper and any other materials needed for groups to create their story.

- Have students begin modeling and writing their story.
- A separate page should be used to show each new arrangement.
- Have students include numbers and number sentences that describe each new arrangement. (Refer to the list generated from the Introduction.)
- Depending on student interest and time, consider having students write a draft on newsprint that will be edited and improved upon before writing the final copy.

After students have recorded various ways to arrange their animals, encourage them to embellish their story to make it entertaining to read.

- Provide markers and crayons for students to add details to their illustrations.

Closure

(30 minutes)

Have groups take turns reading their story. Ask students to:

- Identify the mathematics on each page: number sentences, counting by a certain number, and line arrangements.

- Prove that the number of animals remains constant as each new page (arrangement) is shown.

Assessment

While students are working with blocks, observe and note: Do they -

- Arrange the blocks in lines of equal number?
- Describe and record arrangements mathematically (using numbers, counting, operations)?

Extension

- To further illustrate 100 Hungry Ants and counting skills, use copies of the 1 - 100 paper number lines.
 - Cut apart the number line to model each arrangement of ants.
 - For example, cut the number line into 2 equal lines and place them side-by-side. Students will see the numbers, 50 and 100 at the end of each.
 - Then, cut the 2 strips in half again, placing the 4 strips side by side. Students will see the numbers 25, 50, 75, and 100 at the ends of each.
- Students could repeat the first extension activity with the numbers from their own versions of the story! For example, they could make a 0 - 60 number line, cut it to show 2 lines of 30, 3 lines of 20, 4 lines of 15, and so on.