



# How Many Indiana Bats Can Sleep in a Shoebox?

*Spatial Reasoning*

**Materials:** Shoebox ● copies of pg. 18-2 ● crayons or markers ● scissors ●? glue or scotch tape

In October, Indiana bats converge in large caves with specific climatic conditions (low temperatures and high humidity). There may be as many as 125,000 bats per cave. They hibernate in tightly packed clusters, one row deep and so neatly arranged that only the faces, ears and wrists of each bat can be seen. They are squeezed so closely together, that there may be from 300—484 bats in one square foot of cave roof!



Photo: © Richard L. Clawson

To give your students an idea of what this looks like, construct your own bat cluster by making the bat boxes on page 18-2 and placing them into a shoebox.

1. Each student should make several bat boxes. The number you need depends on the size of your shoebox. We fit 100-120 in a 5in. X 10in. Box (depending on the directions the bats were facing).
2. Color the bats.
3. Cut them out on the solid lines.
4. Fold on the dotted lines.
5. Glue (or tape) where indicated.
6. The resulting “bat box” is the approximate size on an actual Indiana bat with it’s wings folded into it’s sides for hibernation.
7. Pack the bats as tightly as you can into a shoebox. The faces should be facing out, and you should pack them only one layer deep.





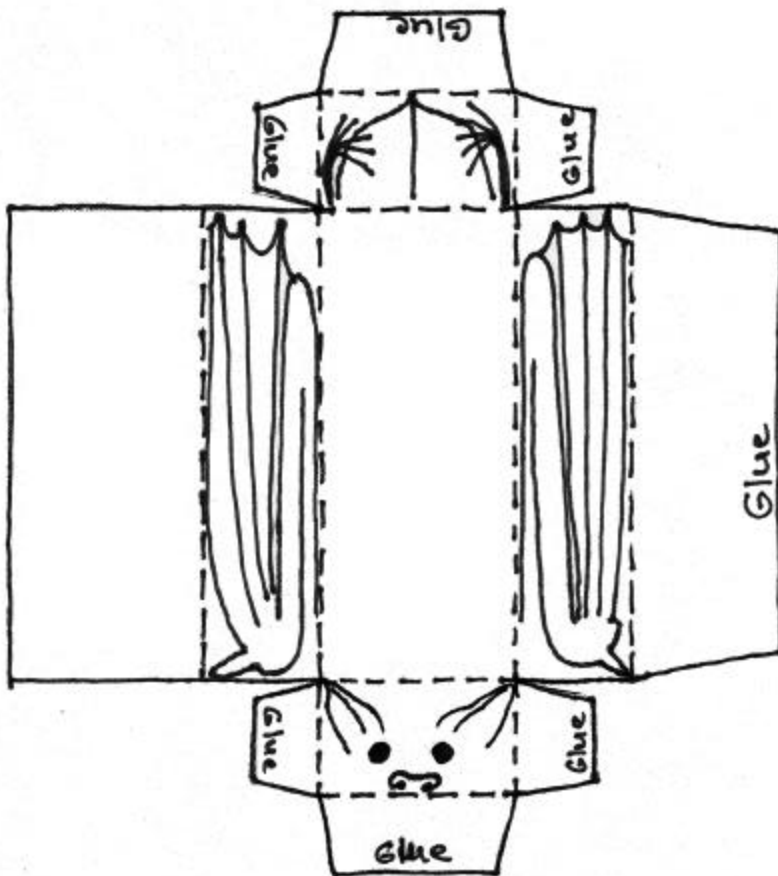
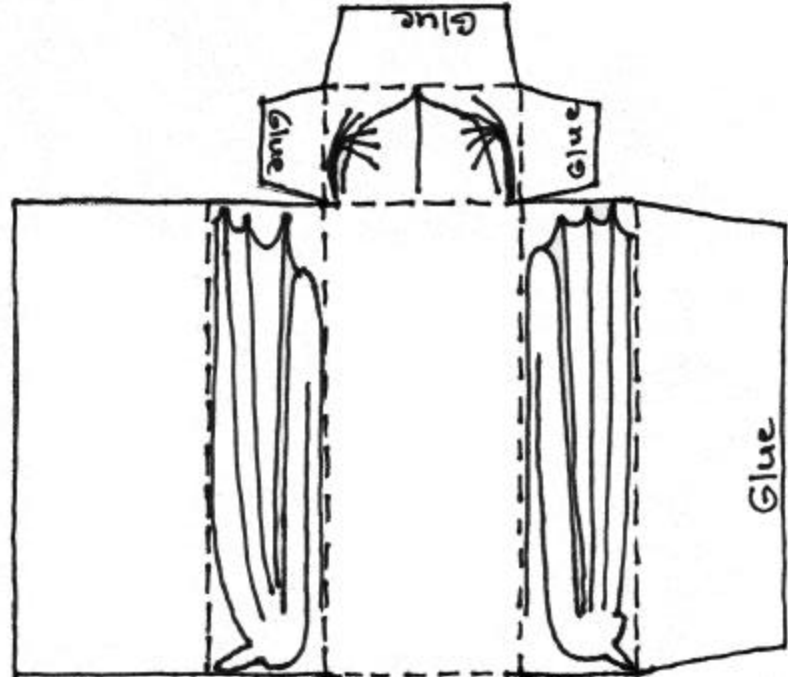
# 18

Name \_\_\_\_\_

## How Many Indiana Bats Can Sleep in a Shoebox?\*

Make bat boxes to determine how many Indiana bats could hibernate in a shoebox.

1. Color the bats.
2. Cut out along the solid lines.
3. Fold along the dotted lines.
4. Glue or tape where indicated.
5. "Hang" your bats with only their faces showing to fill your shoebox.



*\* Of course, real bats would never live in a shoebox!*





Name \_\_\_\_\_

## How Many Indiana Bats Can Sleep in a Shoebox?

Answer the following questions about your shoebox full of bats.

1. What size is your shoebox? Give the dimensions.

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2. How many bats fit inside your shoebox?

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3. Would more or fewer real Indiana Bats fit into that sized space? Why?

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4. Think about what it would be like to be so tightly packed together. What happens in the spring when the bats start to wake? Describe what you think happens to its neighbors when a bat wakes and flies away.

