

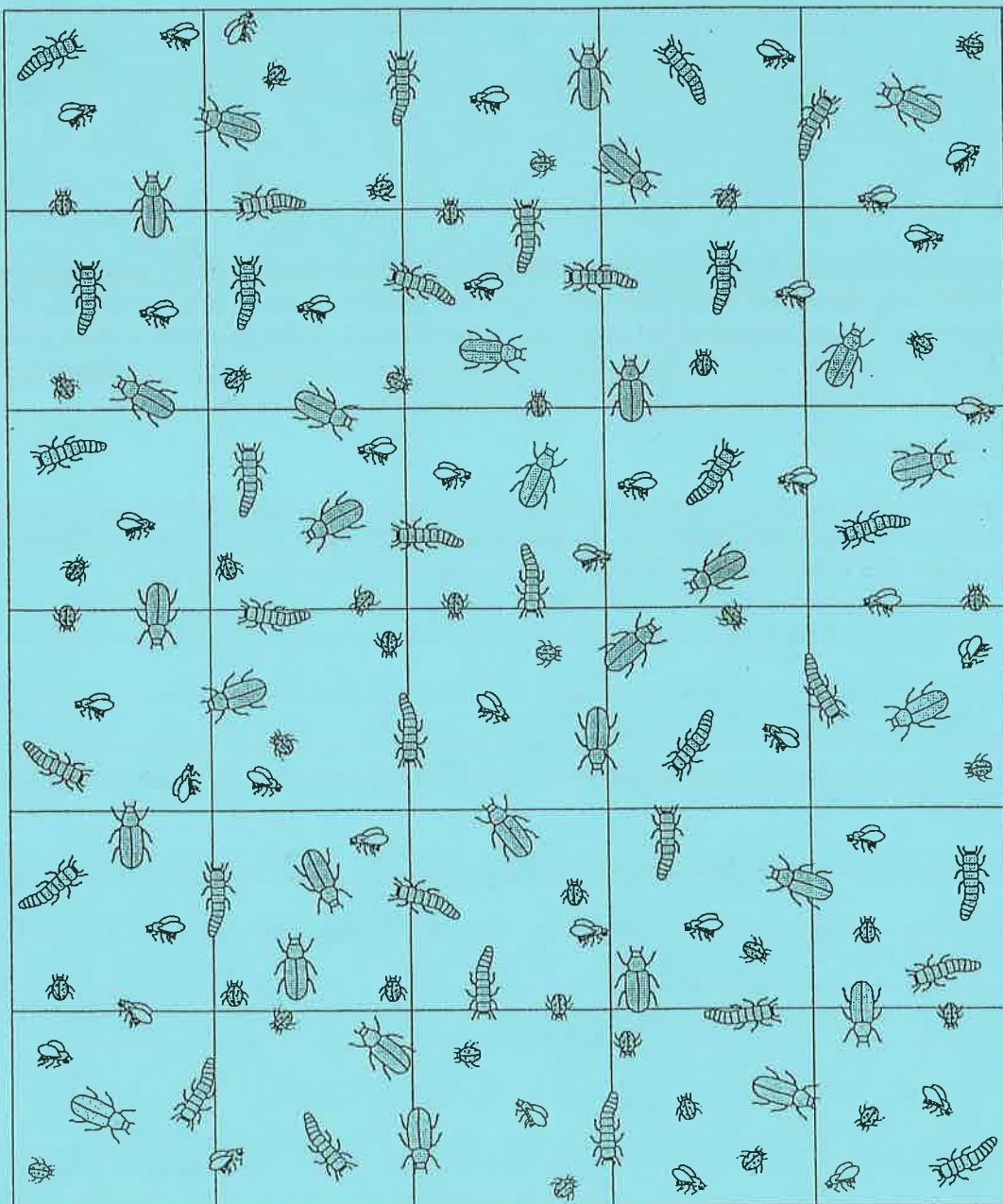
CHAPTER 13, SECTION 13.2

**PROCESS SKILLS WORKSHEET 13.B**

# TRANSECT SAMPLING

Often, scientists such as sociologists and ecologists need to determine the number of organisms in a population. The most obvious way to determine such a number would be to count each and every organism. However, if the ecologist wanted to know the size of the ant population on 20 hectares of land, the ecologist would have quite a job to do.

Fortunately, it is possible to make a good estimate of the population size by transect sampling. With transect sampling the 20 hectares are sectioned into small, equally sized areas, or transections. The ant population in one transection is counted. This number is then multiplied by the number of transections within the larger study area, providing a total population size for the entire 20 hectares.



## PART A

Answer the following questions.

1. What is the approximate community size shown on the grid?

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2. Why is it important to study the changes in population size from year to year?

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3. What might happen if population grows at an uncontrolled rate?

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## PART B



Two assumptions must be made in a transect sampling. One must assume that a population is evenly distributed over the entire study area. Also, one must assume that the transection chosen contains a representative population of the organisms to be counted. If the population is *not* evenly distributed, then the scientist must divide up the area and take one sample where the population is very concentrated, and another sample where the population is less concentrated.

Answer the following questions

1. On a separate sheet of paper, draw a grid similar to the one in this worksheet. Draw a pond somewhere on the grid, and show how the population distribution might look. What different samples might you take to determine the insect population across the entire area?

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2. What factors might affect how evenly a human population is distributed throughout an area? Think about your own state, and specify which areas have a high, low, or medium population density. Why?

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