**BIOLOGICAL
SCIENCES
INITIATIVE**

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Predator-Prey Beetles Game

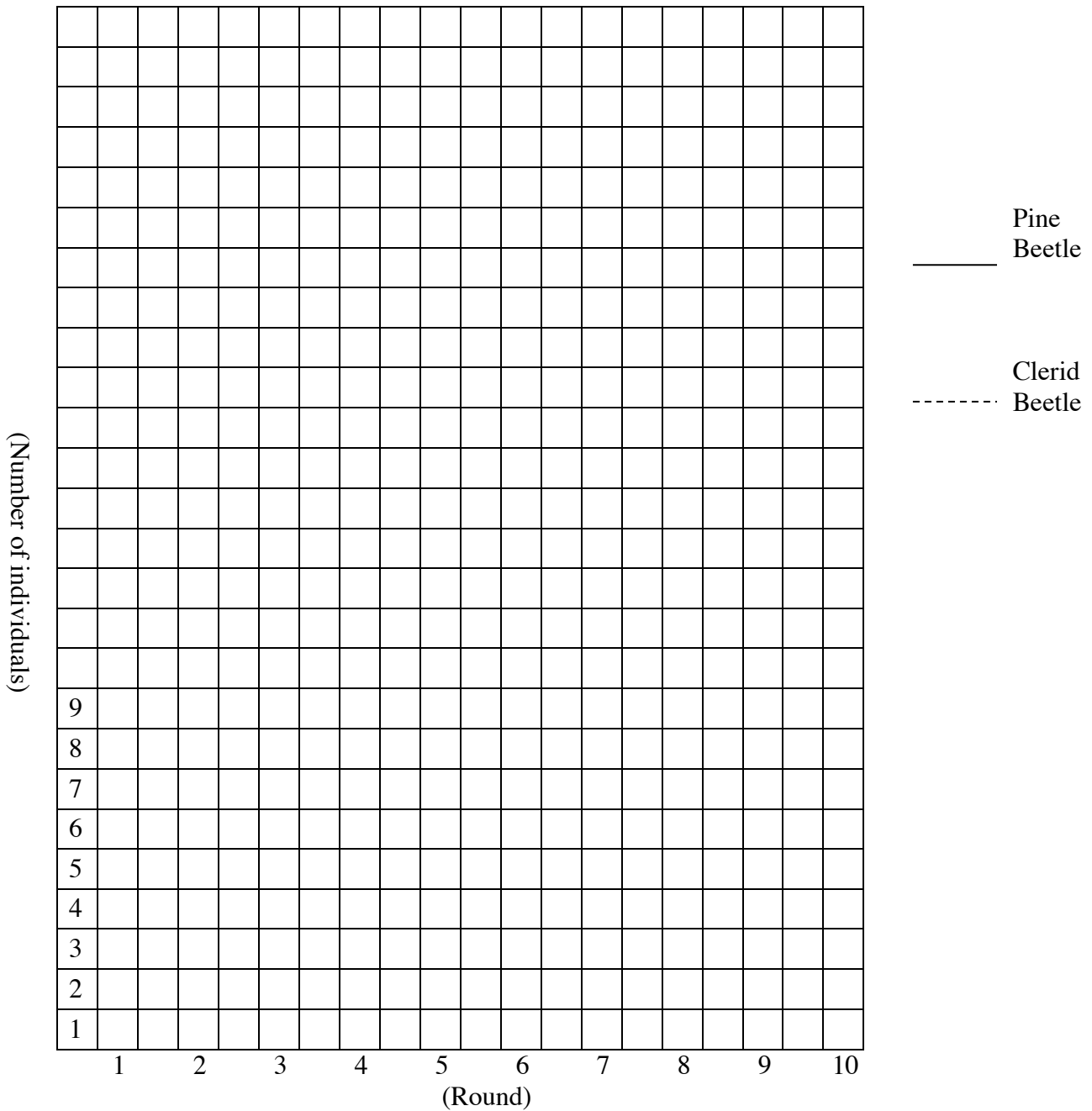**Instructions:**
Place a plain sheet of paper on your bench top.

Clerid Beetles and Pine Beetles
1) Arrange five Pine Beetles on the paper. Distribute the Pine Beetles as evenly as possible on the paper.

2) Take one Clerid Beetle and drop it onto the paper from a height of 30 cm (no cheating!). Aim your drop to land on as many Pine Beetles as possible.

3) Remove all Pine Beetle that the Clerid Beetle is touching. These Pine Beetle have been captured and eaten.

4) If the Clerid Beetle catches two Pine Beetle, it survives and reproduces, having one offspring. This means that in the next round, you will have two Clerid Beetles instead of one.

5) Clerid Beetles that do not capture at least two Pine Beetles die. At least one Clerid Beetle always survives to the next round, but if it doesn't capture at least two Pine Beetles it can't reproduce.

6) All Pine Beetles remaining on the sheet of paper have one offspring each. Place these on the paper, distributing them evenly. You may only place as many Pine Beetles on the paper as can fit without overlapping. At least one Pine Beetle will always survive to the next round.

7) Count the number of Clerid Beetles and Pine Beetles before beginning the next round and record in the data table.

Complete at least 10 rounds and record you data in the following table:

Round	Number of Clerid Beetles (cannot be < 1)	Number of Pine Beetles (cannot be < 1)
Beginning	1	5
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Make a graph in which number of individuals is on the Y-axis and Round number is on the X-axis. Use a solid line to represent the Pine Beetle population and a dashed line to represent the Clerid Beetle population.

Pine Beetle _____

Clerid Beetle - - - - - -

(Number of individuals)

9
8
7
6
5
4
3
2
1

1   2   3   4   5   6   7   8   9   10
(Round)

Questions:
1) What happened to the Clerid Beetle (predator) population over time?

2) What happened to the Pine Beetle (prey) population over time?

3) What pattern do you notice between the Clerid Beetle (predator) and Pine Beetle (prey)?