

Lab #1: Asexual Reproduction

Why do most unicellular organisms perform asexual reproduction?

Genetics & Heredity Standard #1:

- Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.

Step 1: Research: Answer the questions listed below after watching the video:

1. Do unicellular organisms (one-celled living things) reproduce using sexual or asexual reproduction?

2. What are the four types of asexual reproduction?

3. What type of asexual reproduction do bacteria most commonly use?

4. Fill in the following table to compare asexual and sexual reproduction:

Type of Reproduction	# of Parents Required	Are the offspring identical or different ?
<i>Asexual</i>		
<i>Sexual</i>		

Step 2: Hypothesis: If I simulate harmful environments on a population of *Paramecium* that reproduces asexually, then _____.



Paramecia (unicellular organisms)

Step 3: Procedure:

1. Retrieve bags of colored "*Paramecia*" for your group.
2. Separate the pieces by color: purple, blue, red, and yellow. Each circle represents one *Paramecium*. The different colors represent different types of *Paramecia* with different genes.
3. Place 3 circles of each color on your placemat. The placemat will represent the pond the *Paramecia* live in. The 12 circles will be the original population (Generation 0). Record the quantity of each color in the data table provided below:
4. Follow the population of *Paramecia* through 5 generations. Be sure to record the number of each color after each event.

Step 4: Collect Data:

Generations	# of Purple	# of Blue	# of Red	# of Yellow	Events
Generation 0					
Generation 1					Event #1
					Event #2
Generation 2					Event #3
					Event #4
Generation 3					Event #5
					Event #6
Generation 4					Event #7

Step 5: Analyze the Data: Answer the questions listed below:

1. How many purple Paramecium survived? _____
2. How many blue Paramecium survived? _____
3. How many red Paramecium survived? _____
4. How many yellow Paramecium survived? _____

Step 6: Draw Conclusions: Answer the questions listed below:

1. What type of *Paramecium* had the "best genes"? How do you know?

2. If something happens to kill off a specific type of organism (for example, all red *Paramecia*), will that type of organism ever appear again? Why or why not?

3. Based on your results of this lab, why do you think that most multicellular organisms perform sexual reproduction?

