Biology 1 Name:

**Mosquito Chromosomes**Date:

 Hour:

The following images represent the chromosomes from two adult mosquito body cells. These mosquitos, after a whirlwind romantic courtship, produced several baby mosquitos. Answer the questions that follow.

|  |  |
| --- | --- |
| Mother | Father |
|  |  |

1. What is the diploid number of chromosomes for the mosquito?
2. How many chromosomes will be in the gametes of these mosquitos? (What is the haploid number for this species?)
3. Complete the diagram below with the chromosomes that would be present at the end of Meiosis 1 & 2 for the mother only.
4. Circle a pair of homologous chromosomes.
5. But a box around a pair of sister chromatids.
6. Put an asterisk next to the cell in which tetrads form.

Meiosis 1

Meiosis 2

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Offspring | 1 | | 2 | | 3 | |
| Chromosomes |  | |  | |  | |
| Parent Gametes | Mother | Father | Mother | Father | Mother | Father |
|  |  |  |  |  |  |

7. Look at the offspring below. Use the diagram to determine what each parent gamete cell looked like.

8. Use the equation 2n to calculate how many different gametes each parent can produce.

9. Draw the chromosomes present in each possible (father) gamete in the sperm outlines below.

|  |  |
| --- | --- |
| Mother | Father |
|  |  |

10. Challenge: Using the same parents (pictured below), make two offspring that are exactly 2/3 identical to each other.



1 2

11. Which family members CAN/COULD share the most identical genetic information? Parent and offspring or two siblings? Explain.

12. Draw an example of two chromosomes that could result from crossing over between these homologous chromosomes: