

MEIOSIS PUZZLE

You already know the general purpose and vocabulary behind Meiosis. Now it's time to investigate the specifics as to how gametes are produced via the process of Meiosis in living organisms.

YOUR TASK: Place these images of actual cells in sequential order from Pro I - Telo II.

1. **Label each** of the images with their appropriate **stage**: Prophase I, Metaphase I, Anaphase I, Telophase I, Prophase II, Metaphase II, Anaphase II, and Telophase II.
2. **Match each** image with their appropriate **caption** (below) describing what's happening in the image.

It's not easy-You'll have to stay patient & use your partners and your notes! Expect some debate!

Image

Letter:

Captions:

- | | |
|--------------------------|---|
| <input type="checkbox"/> | <i>The chromosomes become visible again, this time in the middle of 2 new haploid cells.</i> |
| <input type="checkbox"/> | <i>The original germ cell is divided into two new cells.</i> |
| <input type="checkbox"/> | <i>Sister chromatids are lined up in the middle of 2 different cells.</i> |
| <input type="checkbox"/> | <i>Homologous chromosome pairs are being separated and pulled towards opposite ends of the original germ cell.</i> |
| <input type="checkbox"/> | <i>Sister chromatids are being separated & pulled towards opposite ends of 2 different cells.</i> |
| <input type="checkbox"/> | <i>Homologous chromosome pairs line up in the middle of the original germ cell.</i> |
| <input type="checkbox"/> | <i>The original germ cell is now split into four separate haploid cells.</i> |
| <input type="checkbox"/> | <i>The chromosomes begin to condense and crossing over occurs between homologous chromosomes in the middle of the original germ cell.</i> |

Questions:

1. WHAT SPECIFICALLY NEEDED TO OCCUR PRIOR TO THE EIGHT STAGES SHOWN ABOVE?
(This is a critical question !)

2. Contrast the purposes of Meiosis I vs. Meiosis II in the space below.

3. What is the purpose and significance of Meiosis to sexual reproduction? You should discuss the affect of meiosis on offspring **chromosome number** and **genetic diversity** in your answer!

PUT THESE REAL IMAGES OF MEIOSIS I AND II IN SEQUENTIAL ORDER BELOW:



