

## Comparing Mitosis and Meiosis

Mitosis is a type of cellular reproduction where a cell will produce an identical copy of itself with the same number and pattern of genes and chromosomes.

Meiosis is a special process in which cells are created that have half the number of chromosomes of the original cell. In addition, the genes and chromosomes occur in different patterns in each cell created.

The following table summarizes many of the ways in which mitosis and meiosis differ.

	<b>Mitosis</b>	<b>Meiosis</b>
<b>Type of reproduction:</b>	asexual	sexual
<b>Occurs in:</b>	all organisms	humans, plants, animals, fungi
<b>Function:</b>	growth and repair of the body	sexual reproduction
<b>Creates:</b>	all cells except gametes	gametes
<b>Number of cell divisions:</b>	1	2
<b>Number of daughter cells produced:</b>	2	4
<b>Chromosome number:</b>	diploid	haploid
<b>Genetically:</b>	identical	different

## Comparing Asexual and Sexual Reproduction

The table below compares asexual and sexual reproduction in terms of the advantages and disadvantages of both.

	<b>Advantages</b>	<b>Disadvantages</b>
<b>Asexual</b>	<ul style="list-style-type: none"> <li>• can produce large numbers of offspring in a short amount of time</li> <li>• no partner is required, so no energy is spent looking</li> <li>• offspring have all the advantages of the parent</li> </ul>	<ul style="list-style-type: none"> <li>• offspring have all the weaknesses of the parent</li> <li>• species that reproduce asexually are slow to adapt to changing environments</li> <li>• only one parent (at most) to care for the offspring</li> </ul>
<b>Sexual</b>	<ul style="list-style-type: none"> <li>• ability to generate lots of genetic diversity</li> <li>• ability to produce variable offspring, some of which will have improved chances of survival</li> <li>• reduces the chance of passing on negative traits</li> <li>• species that reproduce sexually are highly adaptable to changing environments</li> <li>• offspring will have two parents to care for them</li> </ul>	<ul style="list-style-type: none"> <li>• finding a partner requires a lot of energy</li> <li>• only half of each parent's genetic material gets carried forward</li> <li>• genetic mistakes are more common</li> <li>• offspring may have a weakness that the parents did not have</li> <li>• some organisms may never find a partner (and never reproduce)</li> </ul>