**Key Differences (Asexual vs Sexual Reproduction)**

|  |  |  |
| --- | --- | --- |
| **Basis for Comparison** | **Asexual Reproduction** | **Sexual Reproduction** |
| **Definition** | Asexual reproduction is a mode of reproduction that occurs without the fusion of gametes and doesn’t involve the exchange of genetic information, resulting in offsprings identical to their parents. | Sexual reproduction is a mode of reproduction involving a complex life cycle where the formation of new organisms occurs by the combination of genetic information from two different individuals of two different types (sexes). |
| **Occurs in** | Asexual reproduction mostly occurs in primitive living beings like bacteria, fungi, and primitive plants. | Sexual reproduction is common in higher organisms like multicellular animals, some fungi, and plants. |
| **Complexity** | Asexual reproduction is less complex than sexual reproduction. | Sexual reproduction is more complex than asexual reproduction. |
| **Process** | Asexual reproduction is a uni-parental process where a single parent is sufficient to produce a new offspring. | Sexual reproduction is mostly a bi-parental process involving two different parents except in the case of hermaphrodite. |
| **Involvement of gametes** | Gametes are not involved in asexual reproduction. | Gametes are involved in sexual reproduction. |
| **Reproductive units** | Somatic cells act as reproductive units during asexual reproduction. | Gametes act as the reproductive units during sexual reproduction. |
| **Fertilization** | Fertilization doesn’t occur during sexual reproduction. | Sexual reproduction occurs with the fertilization of male and female gametes. Fertilization can be either internal or external. |
| **Cell division** | Asexual reproduction occurs by a series of mitotic divisions. No meiotic divisions are involved. | Sexual reproduction occurs by a series of mitotic and meiotic divisions. |
| **Chromosomes** | The chromosomes remain diploid during asexual reproduction. | Meiosis produces haploid chromosomes during sexual reproduction. |
| **Types** | Depending on the mechanism of the process, asexual reproduction can occur in several ways; fission, budding, vegetative propagation, fragmentation, spore formation, and parthenogenesis. | Sexual reproduction is of several types depending on the mechanism of the process and the parents involved; autogamy, allogamy, syngamy, and conjugation. |
| **Diversity** | No genetic diversity is brought about by asexual reproduction. | Sexual reproduction is important for introducing genetic diversity within a population. |
| **Speed** | The process of asexual reproduction is rapid, which is useful for organisms whose strategy to survive is to reproduce rapidly. | The process is also comparatively slower as the production of offsprings in sexual reproduction occurs less rapidly. |
| **Organs** | Organisms reproducing asexually do not have specialized reproductive organs. | Organisms reproducing sexually have specialized reproductive organs. |
| **Offspring** | The offspring formed by asexual reproduction are genetically identical. | The offspring formed by sexual reproduction are genetically different. |
| **Importance** | Asexual reproduction is important as it allows the continuity of genetic information through different generations. | Sexual reproduction is important as it brings genetic variation, which allows the evolution to proceed. |
| **Examples** | Examples of asexual reproduction are observed in bacteria, most fungi, and some vertebrates like lizards. | Examples of sexual reproduction are seen in higher organisms like humans and other mammals, and plants. |