

# TYPES OF REPRODUCTION...



# Purpose of Reproduction

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- To make sure a species can continue.
  - ▣ Definition: Reproduction is the process by which an organism produces others of its same kind.

# Asexual Reproduction

- A new organism (sometimes more than one) is produced from one organism.
- The offspring will have hereditary material uniform with the hereditary material of the parent organism. This means they will be genetically alike.

# Sexual Reproduction

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- Requires two sex cells – egg and sperm
- The egg and sperm join to form an entirely new organism
  - ▣ Different from the parent organism

# Comparison

## □ Asexual Reproduction

- ▣ involves only 1 parent
- ▣ Single parent passes all genetic material to offspring.
- ▣ offspring genetically identical to parent
- ▣ involves regular body cells
- ▣ its quick

## □ Sexual Reproduction

- ▣ involves 2 parents
- ▣ Each parent passes on half of its genetic material to its offspring
- ▣ offspring genetic mix of both parents
- ▣ involves specialized sex cells
- ▣ its slow

# Which is Better?

*It depends!*

## Asexual Reproduction

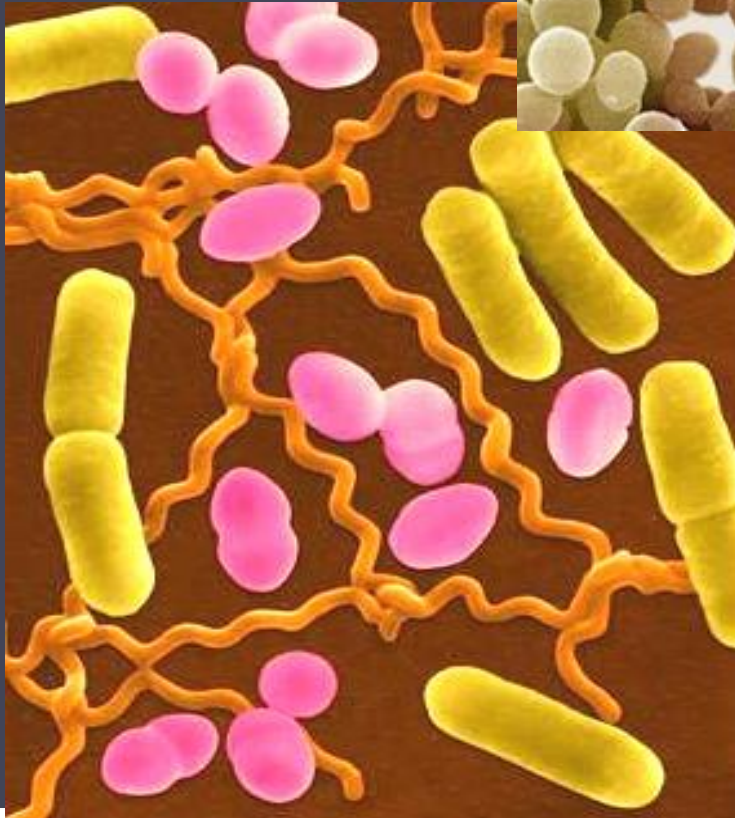
- advantages
  - ▣ does not require special cells or a lot of energy
  - ▣ can produce offspring quickly
  - ▣ in a stable environment creates large, thriving population
- disadvantages
  - ▣ limited ability to adapt
  - ▣ face massive die-off if environment changes

## Sexual Reproduction

- advantages
  - ▣ lots of variation within a species
  - ▣ able to live in a variety of environmental settings
  - ▣ able to adapt to changes in the environment
- disadvantages
  - ▣ needs time & energy
  - ▣ produce small populations

## MITOSIS (BINARY FISSION)

A bacterial cell reproducing by binary fission. The two resultant daughter cells are genetically identical.



[HTTP://WWW.YOUTUBE.COM/WATCH?V=GEWZDYDCIWC](http://www.youtube.com/watch?v=GEWZDYDCIWC)

# Asexual or Sexual?

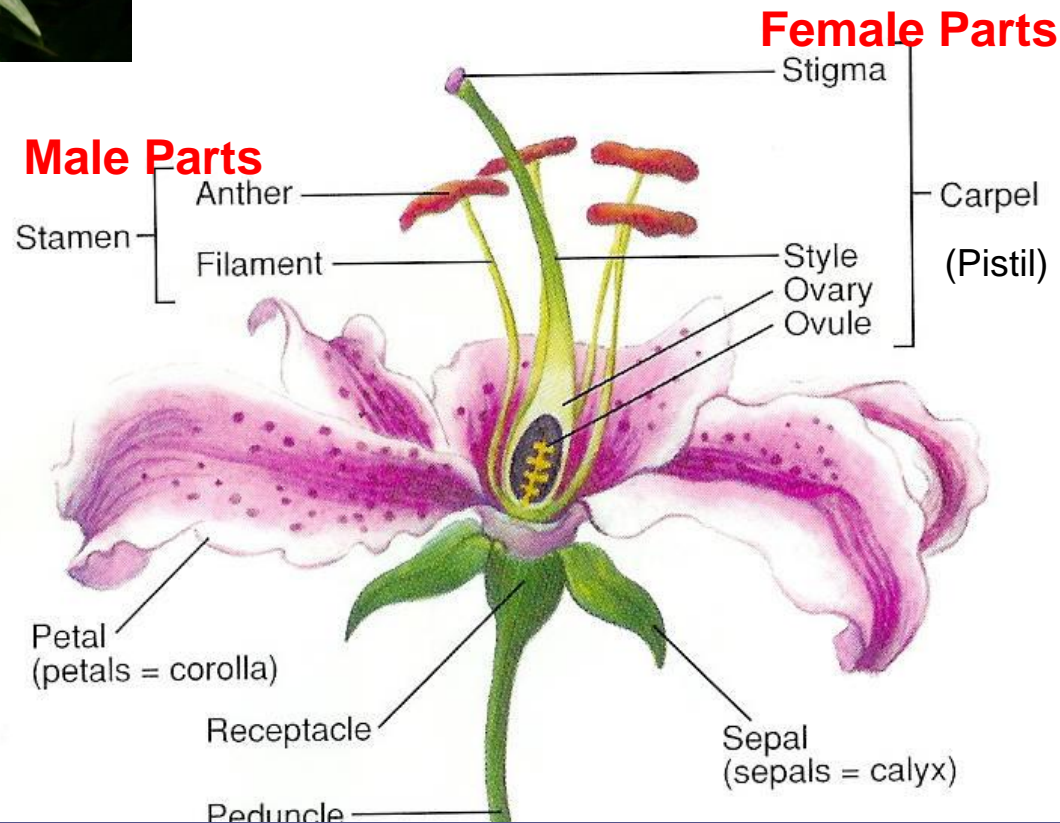


**BUDDING:** In this form of reproduction, an offspring grows out of the body of the parent

Asexual or Sexual?



# Sexual Reproduction in Plants



**pollen (male) + ovule (female) → single-celled zygote → multi-celled embryo (contained in a seed) → new individual**



**POLLINATION:** The transfer of pollen from the anthers of a flower to the stigma of the same flower or of another flower.

Fertilization allows the flower to develop seeds.



Asexual or Sexual?



**PARTHENOGENESIS:** This type of reproduction involves the development of an egg that has not been fertilized into an individual.

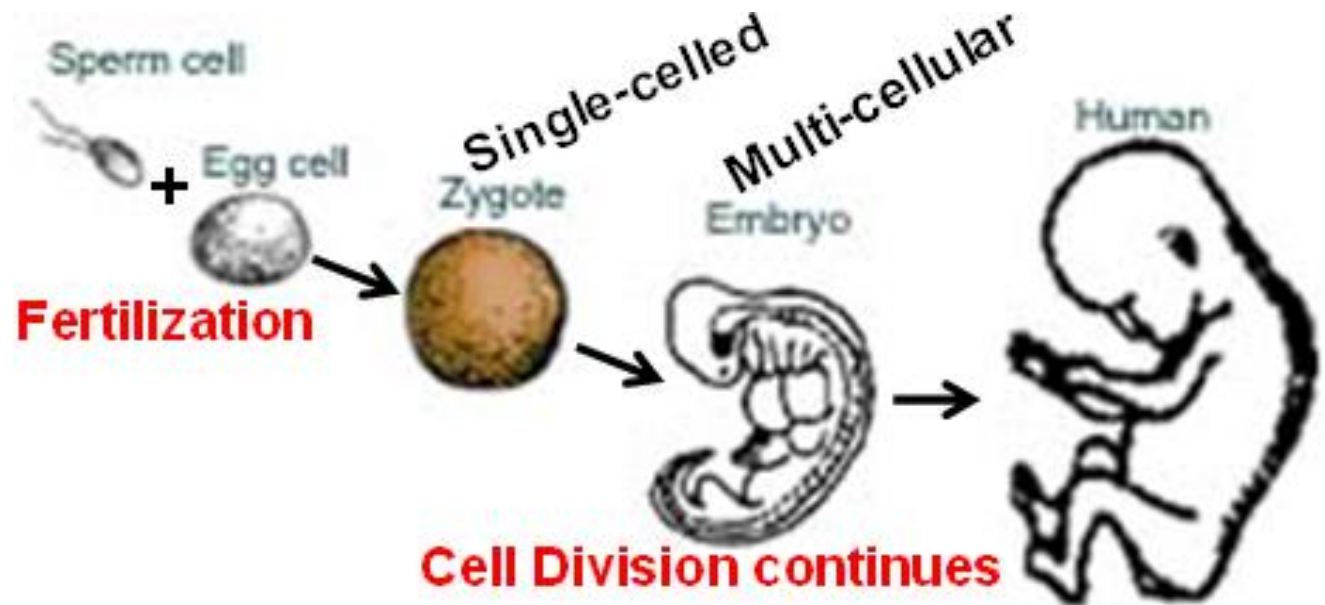
Animals like most kinds of wasps, bees, and ants that have no sex chromosomes reproduce by this process. Some reptiles and fish are also capable of reproducing in this manner.

[video](#)

Asexual or Sexual?

# Sexual Reproduction in Animals

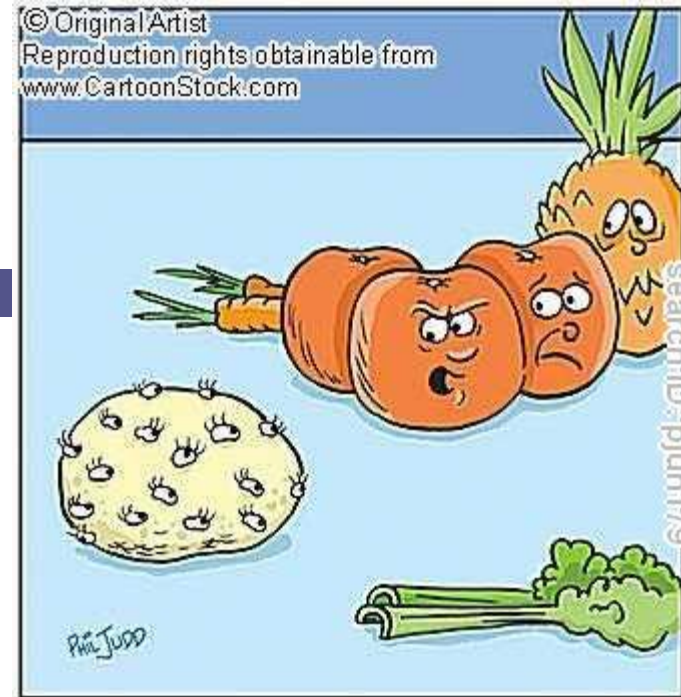
- involves specialized sex cells called **gametes**
- the union of a male and female gamete results in the formation of a **zygote** that develops into a new individual





Female pandas ovulate only once a year, in the spring. A short period of two to three days around ovulation is the only time she is able to conceive. Calls and scents draw males and females to each other.

# Asexual or Sexual?



# Vegetative Reproduction

does not involve seeds

some offspring can grow from cuttings (e.g. coleus), runners (e.g. strawberries), tubers (e.g. potatoes) or bulbs (e.g. tulips)... which are part of the parent plant

## Sexual or Asexual?



**REGENERATION:** if a piece of a parent is detached, it can grow and develop into a completely new individual.



Asexual or Sexual



Adult females produce a single baby each year, however, sometimes the sloths lack of movement actually keeps females from finding males for longer than one year. They give birth upside down hanging from a tree branch. Infant sloths normally cling to their mothers fur, but occasionally fall off. Sloths are very sturdily built and rarely die from a fall.

Asexual or Sexual?





**FRAGMENTATION:** In this type of reproduction, the body of the parent breaks into distinct pieces, each of which can produce an offspring.

Asexual or Sexual?



This species gives birth to just one live young per pregnancy and the infants are born with their eyes open and a full body of hair. The mother cares for the young and carries it in her mouth.

Asexual or Sexual?

<http://news.discovery.com/animals/boa-constrictor-virgin-birth.html>



Asexual or Sexual?

# PANDO...



<https://www.youtube.com/watch?v=IGYBTma6y8s>

<http://fox13now.com/2012/10/30/pando-one-of-the-worlds-largest-living-organisms-is-dying/>

## Sexual or Asexual?

# Some Organisms do Both

- most plants that produce seeds (sexual reproduction) can also reproduce asexually by things like cuttings or runners
- this gives them an advantage for survival

sponges and hydra



mosses

