

# Difference Between Stomata and Lenticels

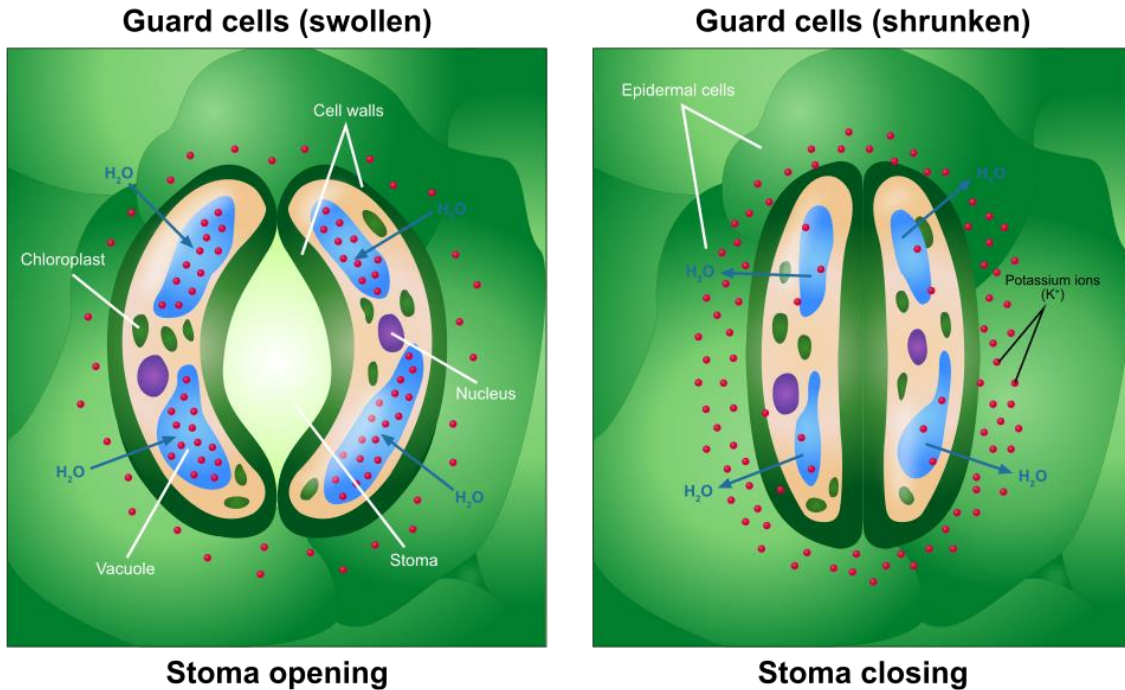
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## Key Difference - Stomata vs Lenticels

Gas exchange is an important task in [plants](#). Plants produce their own food and energy through [photosynthesis](#). In order to carry out photosynthesis, plants need [carbon dioxide](#). And also for [cellular respiration](#), plants need oxygen. Oxygen and carbon dioxide are the main gasses which exchange between internal [tissues](#) of the plants and the environment (atmosphere). Gas exchange mainly occurs through specialised pores present in plants. These pores are stomata and lenticels. Stomata are the pores found in the [epidermis](#) of the leaves, stems etc. Lenticels are the spongy areas present in woody trunks or stems of the plants. Stomata are the primary sources of gas exchange which occur during the daytime while lenticels become the primary source of gas exchange during the night time of the plants. The **key difference** between stomata and lenticels is that **stomata are found in the epidermis while lenticels are found in the periderm.**

## What are Stomata?

Stomata are tiny pores found in the epidermis of the plant leaves and stems which involve in gas exchange of plants. Stomata are more commonly found in the [lower epidermis](#) of the plant leaves to minimize the direct exposure to heat and air currents. The pore of the stoma is formed by two bean-shaped cells called guard cells. Guard cells contain [chloroplasts](#), [nucleus](#), [cell walls](#) etc. [Guard cells](#) can adjust the size of the cell during the opening and closing of stomata. Hence, guard cells are responsible for the regulation of the stomata opening and closing in plants.



**Figure 01: Stomata**

Carbon dioxide and oxygen exchange during the daytime mainly occur through stomata of the plants. Stomata assist transpiration of the plants as well. However, it is properly regulated by the stomata to prevent excess loss of water from the plants.

## What are Lenticels?

Lenticels are lens-shaped spots or present in the woody trunks or stems of the plants. They act as pores which involve mainly in the direct gas exchange of plants between internal cells of the stem and the environment. Lenticels appear as spongy areas on plant stems. The shape of the lenticels differs according to the type of the plant. Hence, the shape of the lenticel is one of the characteristics of the plant and can be used as a parameter for tree identification. During the night time, gas exchange occurs through lenticels. Lenticels are always open. They cannot be closed whenever needed. And also they are unable to photosynthesize due to the absence of [chlorophylls](#).



**Figure 02: Lenticels**

Lenticels sometime can cause [fungal infections](#) of the plant due to the exposure of the plant bark all the time to the environment. Lenticels can be found in different varieties of fruits as well such as apples. And also lenticels are present in respiratory roots (pneumatophores roots).

## What are the Similarities Between Stomata and Lenticels?

- Both are types of pores found in plants.
- Both are involved in the gas exchange of plants.
- Both are involved in giving out water vapour.

## What is the Difference Between Stomata and Lenticels?

### Stomata vs Lenticels

Stomata are pores found in the epidermis of leaves, stem and other organs that are used to control gas exchange.

Lenticels are lens shaped spots or pores present in the woody trunks or stems of the plants.

Location	
Stomata are located in the epidermis.	Lenticels are located in the periderm.
Regulation	
Stomata opening and closing can be regulated.	Lenticels are always open.
Photosynthesis Ability	
Guard cells of stomata contain chlorophylls hence they can photosynthesize.	Lenticels are unable to photosynthesize.
Function	
Stomata are responsible for transpiration and gas exchange.	Lenticels are responsible mainly for gas exchange.
Active Time	
Stomata are active during the daytime.	Lenticels are active during the night.
Guard Cells	
Stomata have guard cells.	Lenticels do not have guard cells.
The Amount of Water Vapour Given Out	
Stomata are giving out a large amount of water vapour to the atmosphere.	Lenticels permit a small amount of water vapour to the atmosphere.
Presence in Fruits and Respiratory Roots	
Stomata are not found in fruits and roots.	Lenticels are found in fruits and respiratory roots as well.

## Summary - Stomata vs Lenticels

Stomata and lenticels are two types of openings or pores found in plants which involve in the gas exchange between the internal tissues of the plants and the atmosphere. Stomata are found mainly in the epidermis of the plant leaves and some stems. Lenticels are found in the bark of the plants. Stomata actively exchange gasses during the daytime when the photosynthesis occurs. Lenticels work mainly at night when the stomata shut and stop the gas exchange. There are two specialized bean-shaped cells in the stomata which are known as guard cells. Lenticels do not contain guard cells. This is the difference between stomata and lenticels.

**Reference:**

1. Bailey, Regina. "What's the Function of Stomata?" ThoughtCo. [Available here](#)
2. "Lenticel." Wikipedia, Wikimedia Foundation, 23 Dec. 2017. [Available here](#)

**Image Courtesy:**

1. 'Opening and Closing of Stoma' By Ali Zifan - Own work ([CC BY-SA 4.0](#)) via [Commons Wikimedia](#)
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