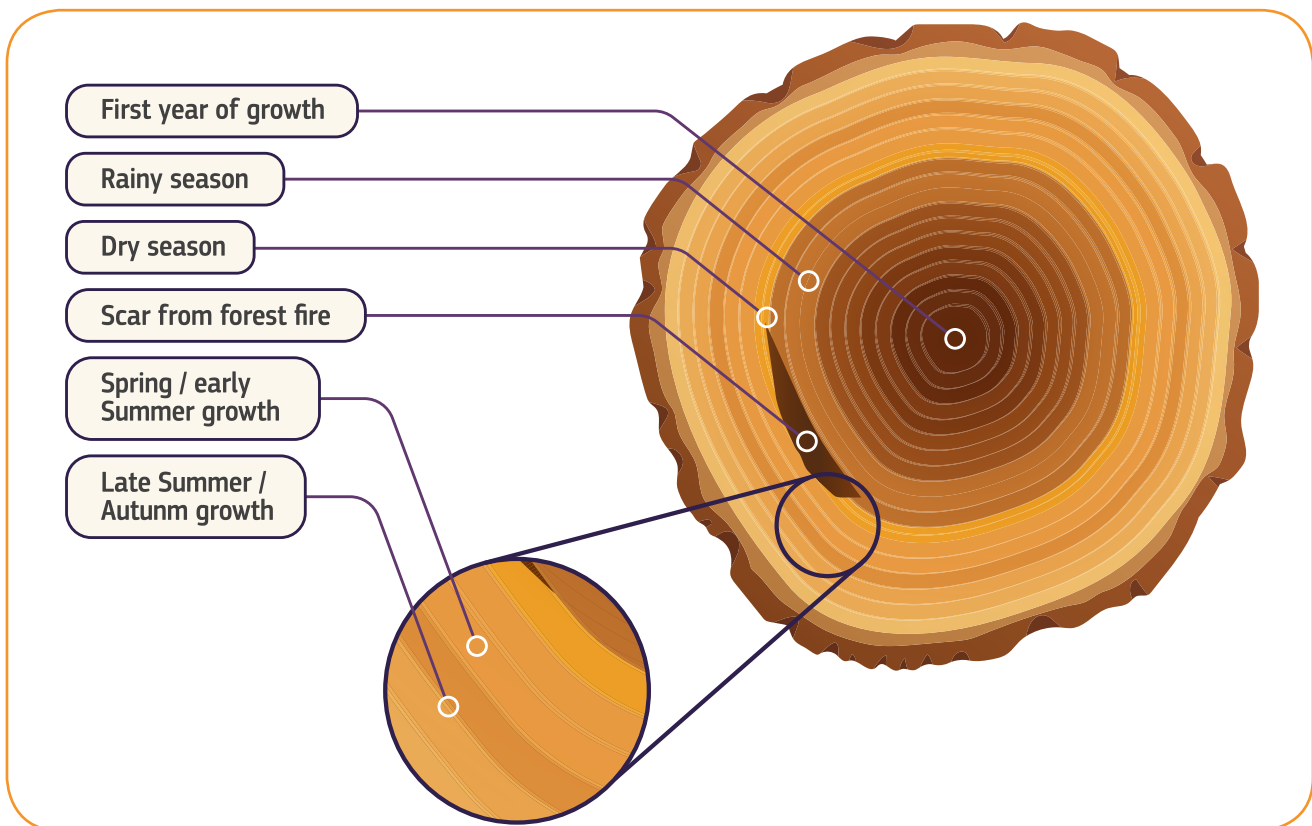


MEASURING CHANGE

1. The picture below shows a cross-section of a tree trunk. As trees age, they grow in height and width and develop growth rings. You can tell the age of a tree by counting these rings. The width of the rings varies, depending on a variety of things like rainfall, light, and length of the growing season.

Each year, a new layer of wood is added to the trunk and branches of the tree. There are two parts to an annual ring – a light portion and a darker portion. The light section is called springwood. This part of the ring is usually widest because the tree does most of its growing during the spring, when there is lots of moisture. The darker part, summerwood, is thinner. The tree's growth slows down, hence a thinner band.

Because trees are sensitive to local climate conditions, such as rain and temperature, they give scientists some information about that area's climate in the past, before official records began. Rings from warm, wet years usually grow wider, whereas cold, dry years produce thinner ones. If the tree has experienced extreme conditions, like a drought, the tree might hardly grow at all in those years.



a. What is the scientific term used to describe the study of tree rings?

DONDRECHONOLOGY

DENDROCHRONOLOGY

DODECHRONOLOGY

DRENDOCHONOLOGY

MEASURING CHANGE

- b. Look at the cross-section of the tree stump and count the rings. How old is this tree? Why do you think it has a scar?

Three horizontal yellow bars for writing.

2. Measuring tree rings is just one way of assessing the impacts of climate change over the years. The Mauna Loa Observatory in Hawaii has been observing atmospheric CO₂ levels since 1958.

In pairs, discuss the following questions:

- Why is it important to measure levels of CO₂ in the air?
- Why does Mauna Loa's location make it a reliable source of information?
- Why is it important to have an idea of historic changes in our climate and atmospheric composition?

Eight horizontal yellow bars for writing.



Five horizontal yellow bars for writing.