***Read the following! Use a highlighter to highlight information that helps answer questions listed at end of readings. You may discuss responses with peers.***

**The Tree of Life**

For many First Nations along the coast of British Columbia, the cedar is the heart of the culture and often referred to as the tree of life. For the Coast Salish, the cedar is one of the most important resources used. The green boughs (“bows”) act as a filter for clean air. The boughs are also used in ceremonies for cleansing and medicines. Cedar not only provides wood for homes and warmth, but the inner bark is used for weaving baskets and clothing. The tree can be transformed into a welcome post, canoe, and paddles. Caring for the cedar is a way in which we can show respect to Mother Earth. In return, the cedar will care for us.

There is evidence in plant fossils that a type of tree like red cedar has been growing around the northwest for as long as 50 million years! The species that we have here has probably been around for 4,000 to 5,000 years, which is long after humans had arrived in the region, so the people and tree have grown and evolved together.

There are two types of cedar trees that grow in BC - Western red and yellow. The yellow cedar has dark green boughs and droopy branches compared to the red. Both are used traditionally along the Coast. The tree that was gifted to Delview last school year is a Western Red Cedar.

The red cedar, in particular, is revered as the “tree of life” because nearly every part is of value to coastal Indigenous cultures - wood, bark, pitch, branches, and roots. Cedar trees provided materials for shelter, clothing, bedding, food gathering and [preparation](https://www.ictinc.ca/blog/a-brief-history-of-the-haida-bentwood-box), transportation, and cultural and spiritual activities. The wood, which is relatively soft, lightweight, and splits cleanly and readily along the grain, was ideal for the stone and bone cutting and carving tools used prior to European contact.

Prepared by Morgan McGrath, Delview Secondary, 2021

**Information on Cedar – From Cedar Furniture Outlet Website**

**Introduction**

Native to western North America, Western Red Cedar is a most remarkable natural product and one of the most highly-prized softwoods, renowned for its natural beauty and outstanding physical properties.

The continuing popularity of cedar is due to its striking natural beauty, durability, and affordable price.  Because of its durability in an exterior environment and its extremely low maintenance, cedar is an ideal choice for long-lasting, affordable outdoor patio, deck, and lawn furniture.  Cedar furniture has also found popularity as an indoor furniture, desired for its sturdy rustic look.

Cedar's unique properties and characteristics have been recognized and appreciated throughout history.  The Western Red Cedar has great cultural, economic, and spiritual significance to the Native American peoples of the Pacific Northwest.  They used every part of the tree in every aspect of their life.

**Cedar Science**

The Western Red cedar species is an evergreen conifer in the cypress family.

**Western Red Cedar**  (Thuja plicata)

Western Red Cedar is found in the coastal forests along the upper Pacific coast of North America, from southern Alaska to northern California.  The principal supplying region is the coastal forest area of British Columbia  (where the Western Red Cedar is the official tree). Cedar naturally grows in mixed softwood forests intermingled with other species such as Douglas Fir, Pacific Coast Hemlock, and Sitka Spruce.  Western Red Cedar forests are largely managed forests.  In a managed forest environment, natural regeneration, controlled harvests, and a planned reforestation program try to ensure a perpetual harvest with good forest conservancy practices.

Western Red Cedar grows in low to mid elevations, along the coast and in a wet belt of the interior.  It prefers cool, moist locations, and a slightly acidic soil.  The tree can be described as large to very large, with a tapering trunk that often spreads widely at the base.  A mature tree can attain a height of 180 feet with a trunk diameter of 8 feet.  The Western Red Cedar is slow-growing and long-lived.  A specimen can live upwards of 1000 years, and has one of the longest lifespans of any North American softwood.  Cedar has a low density of 22 lbs. per cubic foot, with a low specific gravity of 0.33.  This makes it one of the lightest softwoods available, but also soft, and prone to indentation.  The low density also gives cedar it's excellent thermal insulation properties.

The heartwood of Western Red Cedar contains extractives that are toxic to the decay-causing fungi.  Two principle agents responsible for this decay resistance are Thujaplicans (taken from the scientific name for Western Red Cedar) [**Chemical formula**](https://www.google.com/search?safe=active&rlz=1C1SQJL_enCA957CA957&q=thujaplicin+chemical+formula&sa=X&ved=2ahUKEwjXrq_IoaDzAhULqJ4KHdO8CssQ6BMoAHoECEcQAg)**:**C10H12O2 and water soluble phenolics.  The tree's ability to produce these agents increases with age, making the outer layers of the heartwood the most resistant.  (In general, sapwood, in all species, has a low resistance to decay)  These naturally occurring substances repel moths, insects, termites, carpenter ants and bees, and ambrosia beetles - the bugs just don't like cedar and prefer to eat elsewhere.

Western Red Cedar has very distinctive heartwood and sapwood.  The sapwood is whitish-cream in color, seldom greater than 1" wide in mature trees, and is clearly delineated from the heartwood.  The heartwood color varies considerably more, and is not consistent in color at all.  Freshly cut Western Red Cedar can vary from a dark chocolate brown color to a salmon pink, and can be variegated.  The color ages to the more familiar reddish-brown, and eventually to a silver-gray with exposure to the elements.

**Properties of Cedar**

Cedar wood is typically straight and even-grained.  Because of its height and growth habit he Western Red Cedar tree in particular produces a trunk that is usually free from side branches for many feet up, leaving the outer layers of the tree knot free and clear.  This feature makes the timber especially suited for quality joinery and woodworking (such as furniture).  Cedar, although lightweight and not dense, has 80% of the strength of oak.  It is light, yet strong - a rare combination  (An example is the use in ladder poles because of its light weight, strength, straight grain, and freedom from knots)

The low density of cedar accounts for its outstanding dimensional stability.  Density is directly related to dimensional stability.  The less dense a wood is, the less it tends to shrink and swell in response to changes in moisture content.  Cedar's low density allows it to be stable, even in humid environments.  This same low density gives cedar a high thermal co-efficient.  It is an excellent insulator.  For furniture, this means that even on hot summer days the furniture is comfortable to sit upon.

Perhaps the most famous of cedar's properties is its resistance to rot, decay, and insects.
The naturally occurring oils produced by the tree discourage most wood-eating insects.  The death rate for termites consuming cedar varies with the source and the termite species - from 100% in several days to 40% in several weeks.  Termites prefer other food than cedar, but some species will consume cedar if no other food source is present.  If you live in termite-prone areas, and you plan to allow your cedar furniture ground contact, you might wish to treat the furniture with a quality wood preservative.  Consult professionals in your area to determine the severity of the problem, and to ascertain what products they recommend.  The same chemicals that deter insects from eating cedar are what give it the distinctive cedar aroma that most people find so pleasant, and why cedar is used to line clothes closets and to make cedar chests for clothes storage.

The insect resistant quality of cedar makes it a good choice if you are looking for an alternative to chemically treated wood.  Much of the outdoor furniture that you find today achieves it's exterior durability through a toxic chemical treatment.  These chemical preservatives require warning labels for those who handle and work the wood.  The three major ingredients of some pressure-treated wood are copper, chromium, and arsenic (CCA). If you have small children or are chemically sensitive yourself - you do not want outdoor or indoor furniture made from these materials.

<http://www.cedarfurnitureoutlet.biz/cedar.htm>

**Respond to the following Questions:**

Why are Cedar trees important?

|  |  |
| --- | --- |
| Indigenous Importance and Uses | Modern Use and Significance |

What are Thujaplican’s role for Cedar trees?

What are some chemicals and elements found in oils and tannins that can be extracted from Cedar plant parts such as bark, wood, branches, needles etc? **(Use internet)**