



## TU B'SHEVAT: TREE OF LIFE, MULTI-LESSON UNIT

Submitted by: WREN SIEGEL

**Subject areas:** Holidays, Hebrew, Jewish history and culture, Values, Jewish living and identity

**Target Age Groups:** Very adaptable to any grade, K-6

**Unit Central Question:** How do the science and spirituality of trees intersect in Judaism?

### Lesson Objectives

Students will practice and use the following **skills**: observing, sketching and labeling, identifying, predicting, measuring, classifying, comparing and contrasting, researching, recording data, drawing conclusions, and applying new knowledge.

- Students will connect all lessons to Judaism, aided by relevant pieces of text
- Students will be able to identify six plant parts, and the parts of a tree
- Students will use their senses to observe trees
- Students will develop a relationship with an adopted tree that allows them to track changes through the seasons
- Students will learn the four abiotic ingredients for life as well as B'rachas for these 'ingredients'
- Students will predict, measure, test hypotheses, conduct experiments, record data and draw conclusions as part of practicing the steps of the scientific process
- Students will investigate different varieties of apples through taste-testing
- Students will learn about photosynthesis and how leaves need sunshine
- Students will classify leaf types and learn about venation patterns
- Students will describe the two main types of trees: conifer and deciduous
- Students will investigate adaptations of plains trees vs. mountain trees of Colorado
- Students will observe the layers of a tree by studying cross-sections and create a "timering" (instead of a timeline) for Jewish history
- Students will compare wood fiber/paper to rag fiber/cotton paper
- Students will research rainforest habitat, and the importance of trees as habitat to birds
- Students will apply tree knowledge by taking part in a Tu B'Shvat seder with traditional fruits
- Students will apply tree knowledge by helping with tree planting
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"Whoever has more wisdom than deeds is like a tree with many branches but few roots, and the wind shall tear him from the ground... Whoever has more deeds than wisdom is like a tree with more roots than branches, and no hurricane will uproot him from the spot."

– Mishnah, Tractate Avot, Ch. 3, Mishnah 17



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- **Unit Summary:** This is an experiential, elementary education, multi-lesson unit that can be used for as few as 2-3 class sessions or for as many as 5-10 class sessions within a period of 2-3 weeks. It is a very flexible unit that the teacher can easily pick and choose lessons from, without needing to feel compelled to follow a particular chronological order of covering certain content. The teacher does not need to cover all of the lessons in order to meet significant learning objectives. The teacher decides what his or her objectives are, and the lessons support these objectives as the teacher chooses. This also allows each teacher to independently gauge each classrooms' unique set of background knowledge, overall maturity, and prior experience. *Tree of Life* is a *scientific, skills-based* unit, meaning the unit focus is more on *how* students learn than on what they are learning, although the content is certainly age appropriate and challenging. There are also modifications included for either 'younger' (generally K-2) and 'older' (generally 3<sup>rd</sup>-5<sup>th</sup>) students. The lessons are listed with the content first and the skills in italics second.
- **\*Materials:** Materials for each lesson are mentioned under that lesson. This is to facilitate the teacher being able to pick and choose which lessons she wants to use.

### Procedures/Lessons

**Lesson 1: "Using our Senses"** - What can be touched, tasted, smelled? **Materials:** blindfolds  
*Skills focus: observing*

**Lesson 2: "Adopt A Tree"** Give a special tree a Hebrew name. Discuss: What is the tree giving life to? Visit the trees throughout the seasons and learn the Hebrew words for each season. Draw it in the fall, winter, spring. Sukkot – How do we need trees for the sukkah? Pesach - How might a tree represent freedom? "For as the days of a tree shall be the days of My people" – Isaiah LXV: 22. **Materials:** Journal and pencils, erasers, colored pencils, watercolor paints  
*Skills focus: observing and recording, art – watercolor paintings*

**Lesson 3: "Six Plant Parts"** Introduce the 6 plant parts: (1) roots, (2) stems, (3) leaves, (4) flowers, (5) fruits, (6) seeds; with song and movement using the song "Six Plant Parts" by the Banana Slug String Band (copyright). Teach plant parts words in Hebrew, B'rachas for fruit, flowers. **Materials:** Examples of each type of plant part, copy of Banana Slug String Band song "Six Plant Parts."  
*Skills focus: Identifying, matching and labeling*



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**Lesson 4: “The Four Magic Ingredients”** Play a song and mystery game for students to figure out the four magic ingredients needed for life: sun, soil, water and air. Use the Banana Slug String Band song: “*Sun, Soil, Water and Air*” (copyright). Ask questions such as “What can I feel but can not see?” (air). Practice b’rachas for sun, earth/soil, water, and air, - Shehechyanu. Discuss: What are “ingredients” for life in the Torah?

*Skills focus: Identifying, drawing conclusions*

**Lesson 5: “Apples and Apple trees”** Taste-test varieties of apples, experiment with baking different recipes for apple pie, make apple sauce, drink apple cider, read a book about the history of Johnny Applesed, investigate the parts of an apple (cross-section). Students can observe apple seeds under a microscope if one is available! Integrate with Rosh Hashanah! **Materials:** red delicious apples, golden delicious apples, crispy apple like pink lady, etc.

*Skills focus: Observing, sketching and labeling, identifying, predicting, measuring, comparing and contrasting, recording data, drawing conclusions*

**Lesson 6: “Experiment: Blackout”** Students discover and investigate photosynthesis, leaves as ‘kitchens’ that ‘bake’ the sunshine by covering one leaf of a plant with black paper. They predict and make a hypothesis about what is going to happen. Older - Do young Jewish people get enough ‘sunlight’ so they can grow strong and healthy? How could your Judaism use more sunlight to be stronger, more alive? When in Jewish history was a dark time without ‘sunlight?’ Did the Jews survive? How? Younger – What are manna leaves? What did the Jews eat in the desert for 40 years? How do leaves help people? (Provide shade, carbon dioxide) **Materials:** black paper, plant with medium to large leaves, science journal  
“...but the righteous shall flourish like foliage” – Proverbs XI: 28

*Skills focus: Observing, predicting, recording data, drawing conclusions*

**Lesson 7: “Classification of leaves”** Students sort shapes, colors, sizes, texture. If older - (venation patterns) Discuss: How many ‘kinds’ of religions are there? How many kinds of Jews are there? How would you classify different types of Jewish people? What makes all Jews Jewish? **Materials:** Collect lots of types of leaves on a leaf walk, ziplock bags.

*Skills focus: Observing, classifying, comparing and contrasting*

**Lesson 8: “Adaptations of Colorado Trees”:** Focus on Cottonwood, Ponderosa Pine, and Aspen trees while integrating the geography of plains and mountains. Each has unique adaptations, for example, the Ponderosa’s ‘puzzle piece’ bark that pops off when heated by fire, or the Aspen’s leaves that quake allowing them to receive



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maximum sunlight. How have we as Jews **adapted** to survive as a people? “The Torah is a tree of life to those who hold to it” – Morning Prayer. **Materials:** Handlenses, Examples of each type of tree is best, or parts of those trees, photos of the trees, etc.

*Skills focus: Observing, sketching and labeling, identifying, classifying, comparing and contrasting, researching, drawing conclusions*

**Lesson 9: “Conifers/Evergreens vs. Deciduous”** (Pines, Spruce, and Fir vs. Cottonwood, Oak, etc.)

Older students - Are there two main categories of Jewish people? If you think so, what are they and why? Younger – Are Jews more like Conifers or Deciduous trees and why?

**Materials:** Handlenses, Examples of each type of tree is best, or parts of those trees, photos of the trees, etc.

*Skills focus: Observing, sketching and labeling, identifying, measuring, classifying, comparing and contrasting*

**Lesson 10: “Tree cross-sections”** Slices of a small branch are tree “cookies” which show the layers of the tree. The tree cookies make it easy to discuss each layer’s functions (bark, heartwood, plus Hebrew words for the layers, etc.). Students can also draw rings on a paper plate to represent a personal timeline. Create a tree cross-section mural (together as a class) for the history of the Jews from 5,000 years ago. Older: different pairs or groups label different periods of Jewish history. Younger: have important events pre-labeled and guide students as to where they should go.

**Materials:** One slice of a small branch per child

*Skills focus: Identifying, comparing and contrasting, recording data, drawing conclusions*

**Lesson 11: “Tree/wood products”** Students make paper as an experiment (a classic activity made innovative by the experimentation of using wood cellulose vs. rag or cotton fibers to make different types of paper). History of Jews and making paper, first printing press in the Middle East (in Israel), how is paper different from Torah parchment? **Materials:** there is a long list of materials easily provided by any of the many web pages devoted to ‘how to make paper’

*Skills focus: Observing (looking through a microscope if available at fibers), predicting, drawing conclusions*

**Lesson 12: “Importance of Trees as Habitat”** Read ‘The Kapok Tree’, about a tree in the rainforest, take a field trip (see below for field trip ideas). Create a large mural of a tree, each student contributes one animal. Significance of birds in the Torah,



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B'racha for birds, how do we as Jews need the "Tree of Life" to sustain us? "And the righteous shall be like a tree planted by streams of water" – Psalms 1:3 *Skills focus: Researching*

**Lesson 13: "Grocery shopping"** Focus on food from trees: have a Tu B'Shvat seder! Serve 15 types of fruits to symbolize the 15th of Shvat, including: figs, dates, olives, grapes, pomegranate, apples (symbolizing Eretz Israel). Have treats made with carob, and pictures of a Carob tree. Read the following at the seder: "The fruit of the righteous is the tree of life" – Proverbs XI:30 "For the Lord Gd will lead you into the good land, ... A land of fig and pomegranate, the land of the olive and honey." – Dvarim 8; 7-8 Teach 'orla': the law forbidding picking fruits of trees under 3 years old, discuss why? *Skills focus: Applying*

**Lesson 14: "Tree-planting"** "And when you shall enter this land, you shall plant fruit-bearing trees..." – Vayikra 19.23 Plant a tree in Eretz Israel in honor of someone, plant a tree in the school yard, or both! Ask students why planting trees is so important. Create a tree bulletin board with leaves that are quotes of their words. *Skills focus: Applying*

### "Tree of Life" Field Trip extensions:

Botanic Gardens (Rainforest habitat, food that comes from trees)	Tree farm
Lookout Mountain (Ponderosa Pine habitat) habitat)	Barr Lake (Wetlands)
Golden Gate State Park (Aspen habitat, great in the fall!)	Rocky Mt. National Park
Mt. Evans: Bristlecone Pines, some of the oldest trees in the world!!	
Butterfly Pavilions (great Cottonwood Tree habitat trail)	

### Hebrew Vocabulary:

young trees – אילן	young tree – אילן	leaves- עלים	leaf – עלה
trees – עצים	tree- עץ	flowers – פרחים	flower – פרח
roots- שורשים	root – שורש	fruits- פירות	fruit – פרי
stems- עוקץ	stem – עוקץ	seeds- זרעים	seed- זרע