

# Growing Up Wild

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## *Looking at Leaves*

**Grade Level:** K-2

**Classroom Time:** 45 minutes

**Materials:**

Leaf samples

*Leaf Margins*

*Falling Leaves* score

*Fan-Folded Leaves*

Leaf memory Game

*Leaf wreath instructions*

**Objectives:**

1. Given instruction and materials, students will become familiar with the structure of leaves and some of the associated terminology.
2. Given instruction and materials, students will name the margin style of a leaf presented.

**Teacher's introduction to the material:**

There are almost 1,000 tree species in North America, and their leaves may help to identify them. The shape and color of leaves, their margins, and the way they are arranged on the stalk have been classified by scientists. Children can become aware of some of these differences by simple observation and the presentation of terminology. Some insects lay eggs on leaves, and the plant reacts by growing over the eggs, forming a bump called a ***gall***. The eggs can still hatch and insects emerge. If the season prevents students from collecting leaves, preserve some in airtight laminate. The Fan folded Leaves activity combines art and science by explaining the change in color of fall leaves, then creating a model of the colors of fall leaves.

**Instruction:**

1. If weather permits, have the students collect leaves outdoors. Ask them to collect leaves that look somewhat different.
2. Ask students to hold a leaf. What shape is it? What color and texture. Point out the veins, margin, the stalk (petiole) and the arrangement of the leaves on the petiole.
3. Use chalk or pencils and make a leaf rubbing.
4. Collect all the leaves in a bag and shake the bag.
5. Dump all the leaves in the center of the room, and ask students sort the leaves by color.
6. Introduce the 5 types of leaf margins, and find leaf examples of each type.
7. Complete the leaf margin labelling activity.
8. Tell students that leaves are often arranged on the petiole in different manners. Present the 4 terms and examples of leaf structure on the petiole. Ask students to find examples of the types.
9. Make a leaf wreath, or a leaf design for a card from the leaves collected.
10. Play the leaf memory game.
11. Place all the leaf in a bag again and toss the leaves high. Sing the Falling Leaves song as the leaves fall.
12. Complete the fan-folded leaves activity.

**Skills:** Botany, Chemistry, Life Science, Memorization, Matching, Writing

**Vocabulary:** Autumn, Compound leaf, Crenate, Fungus, Gall, Lobed, Midrib, Petiole, Palmate, Pinnate, Serrate, Simple leaf

## Fan-Folded Leaves



### Materials:

Paint brushes  
Leaf template  
Chenille stems  
Paper, 11 x 8½"

Tape  
Scissors  
Acrylic paints, Yellow, Orange, Red, Rust or  
Colored paper (both sides colored)

### Instructions:

1. Cut out the leaf pattern on cardstock.
2. Using painted or colored paper, accordion fold using the long side. (Figure 1)
3. Open up paper and fold width wise. (Figure 2)
4. Place the leaf pattern on the fold and trace unto the folded paper.
5. Cut out the pattern.
6. Recrease the folds.
7. Place a chenille stem in the center, and with the long side up, bring the halves to the center and tape. (Figure 3)

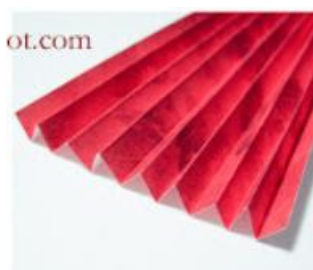


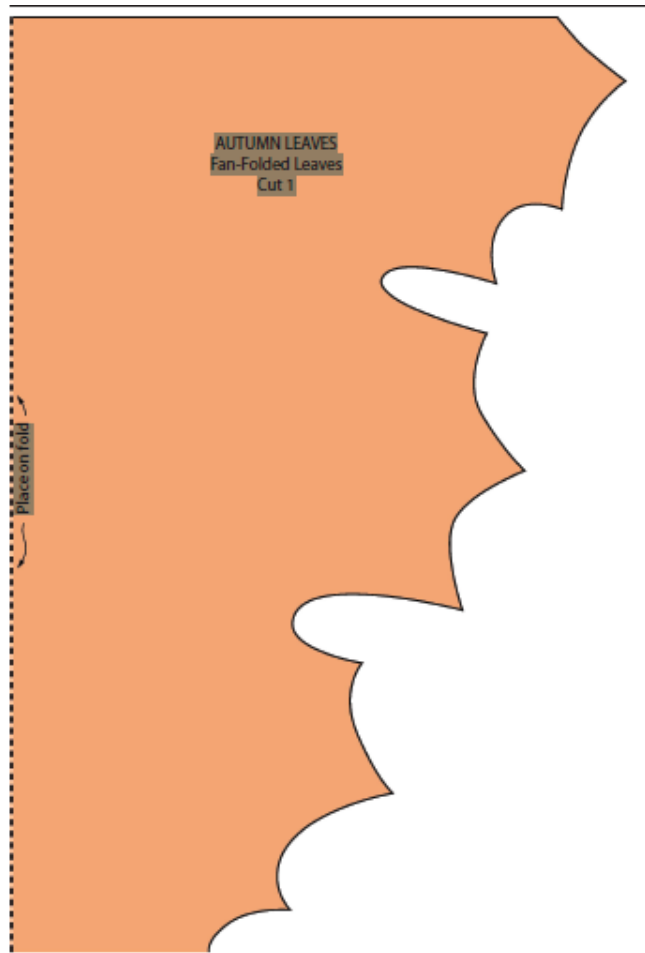
Figure 1



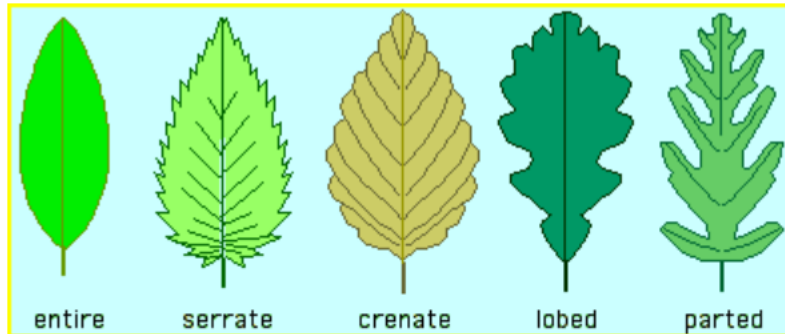
Figure 2



Figure 3



## Leaf Margins



**Crenate** - having rounded teeth

**Entire** - having a smooth edge with neither teeth nor lobes.

**Lobed** - divided into rounded or pointed sections and the incisions (cuts) go less than halfway to the midrib.

**Parted**, or cleft, - the margins between the irregular teeth go more than halfway to the midrib.

**Serrate**, or toothed, having small, pointy teeth that point toward the tip of the leaf.

## Leaf Structure on the Petiole

**Simple** - Leaf blade is one continuous unit (cherry, maple, and elm)



**Compound** – Several leaflets arise from the same petiole

**Pinnately compound** – Leaflets arranged on both sides of a common **rachis**

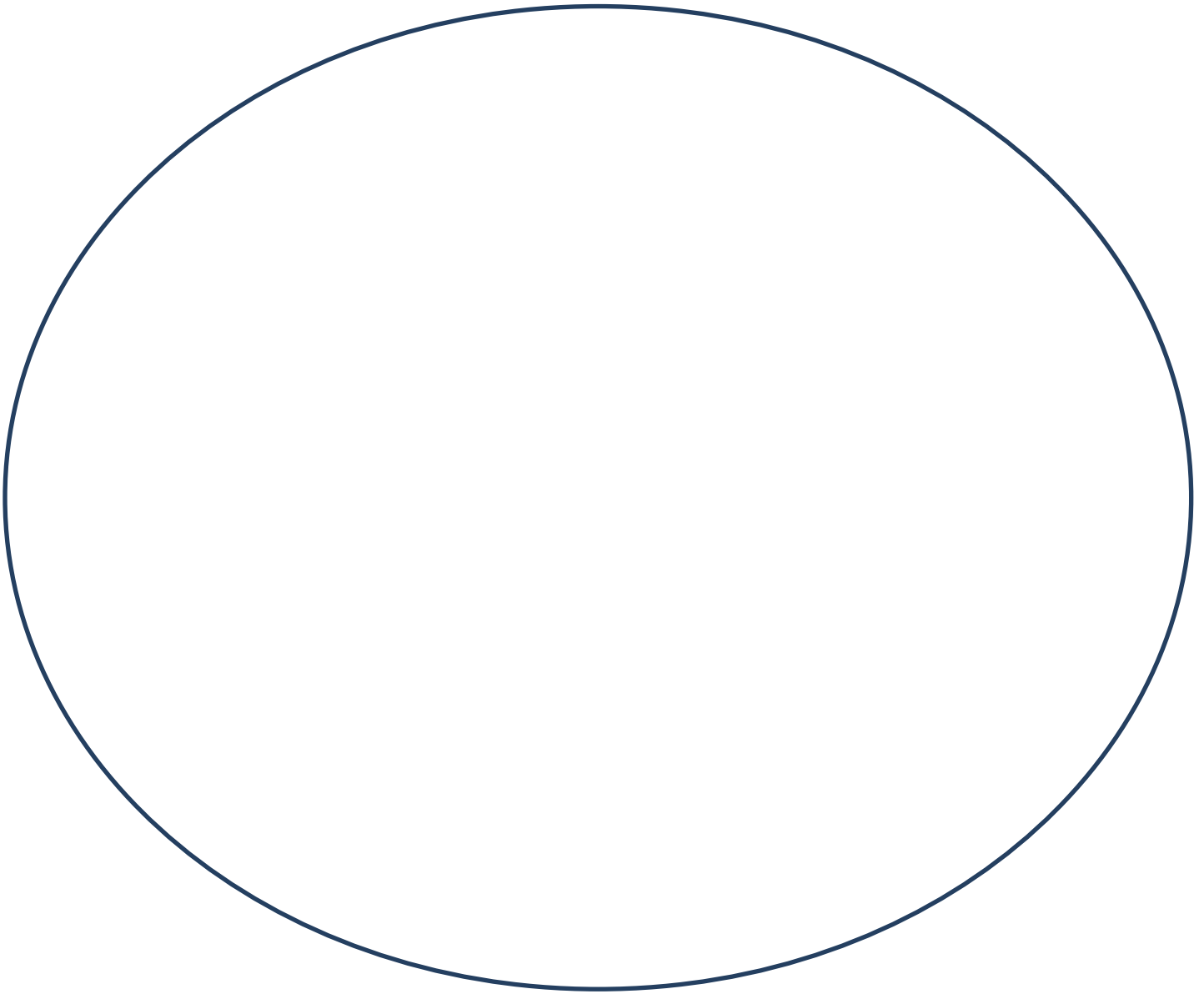


**Palmately compound** - Leaflets radiate from one central point

## Leaf Wreath

### **Instruction:**

1. Collect various types of leaves.
2. Provide a door wreath size circle.
3. Ask each student to choose a leaf to add to the circle.
4. Trace around the leaf on a piece of construction paper of similar color.
5. Draw on the leaf to show veins, etc.
6. Cut out the paper leaf.
7. Glue each leaf to the circle, forming a wreath.



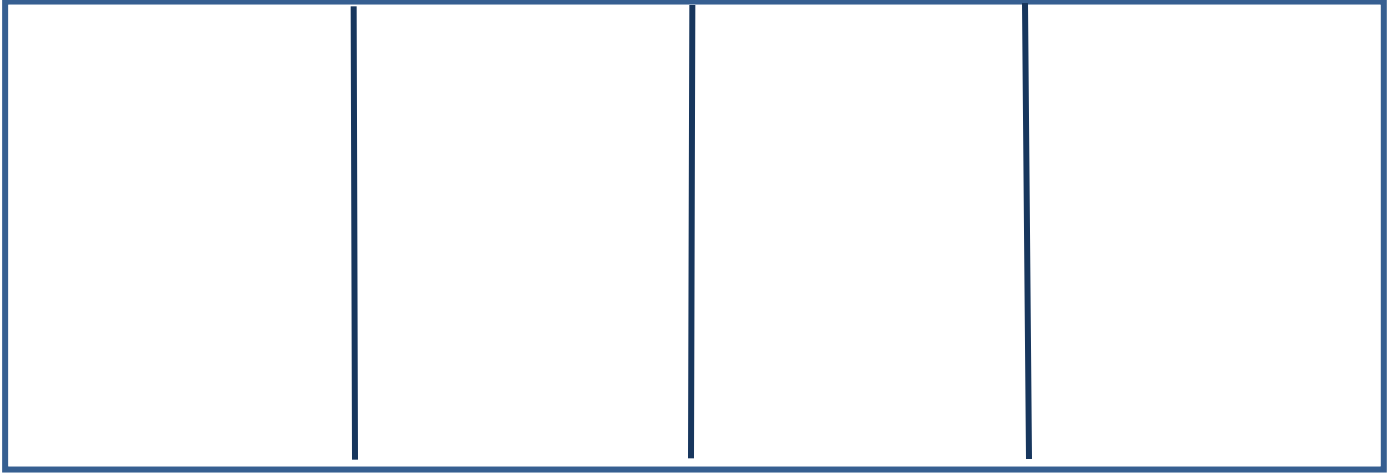
# Leaf Margins

Entire

Parted

Lobed

Serrate



Carotenoids. *Linus Pauling Institute*. Retrieved from:

<http://lpi.oregonstate.edu/infocenter/phytochemicals/carotenoids/>

Learn Simple Plant Anatomy. (2012, July 19). *Joan White Howell Environmental Education Center*. Retrieved from:

<http://www.clayhillforest.org/jwheec/leafmargins.htm>

Looking at Leaves. (2013). *Growing Up Wild*. Houston, TX: Council for Environmental Education. 16-17.

Plant Structures: Leaves. *Colorado State University Extension*. Retrieved from:

<http://www.ext.colostate.edu/mg/gardennotes/134.html#onstem>

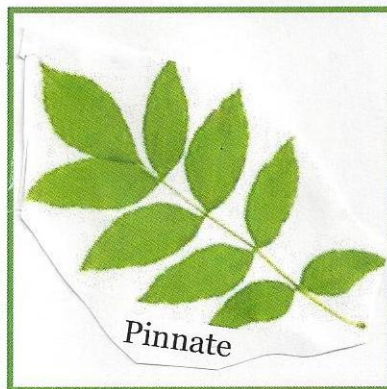
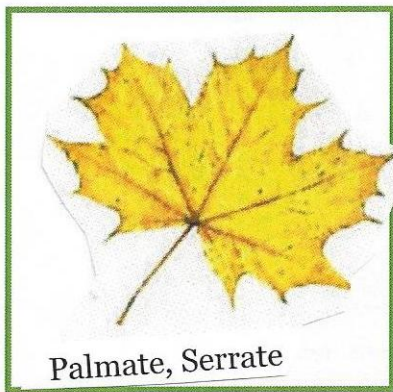
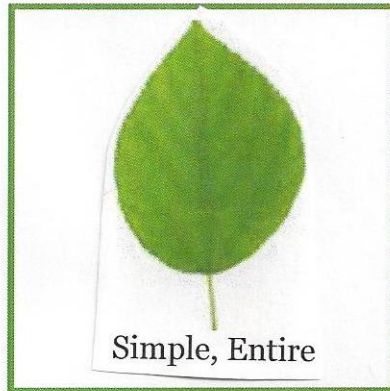
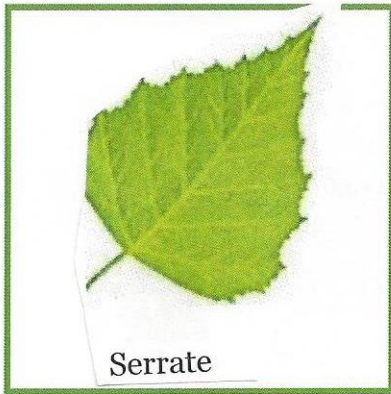
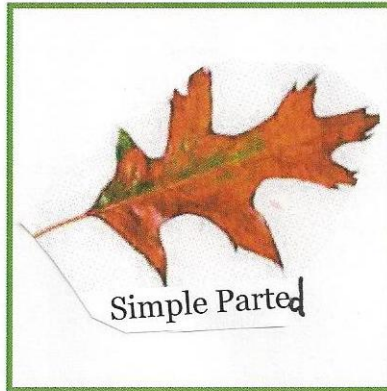
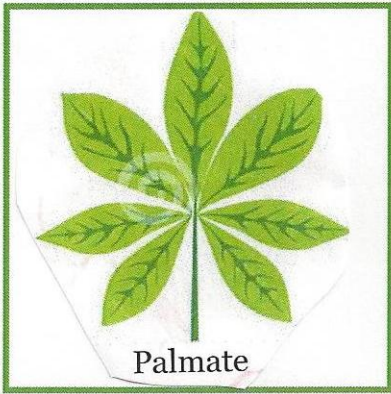
Wrolstad, Ronald. Possible Health Benefits of Anthocyanin Pigments and Polyphenolics. *Oregon State University*.

Retrieved from: <http://lpi.oregonstate.edu/ss01/anthocyanin.html>

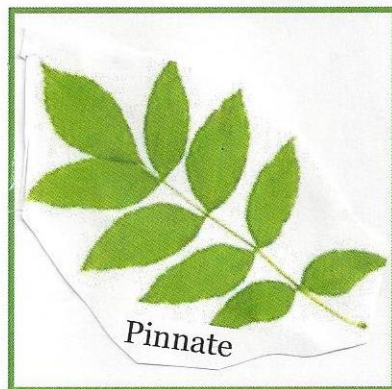
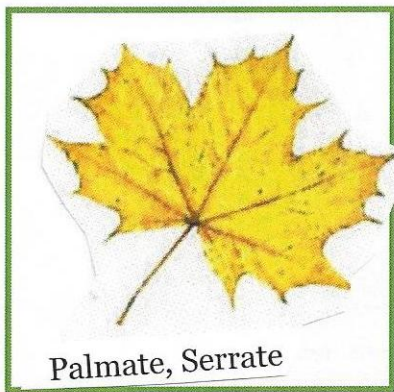
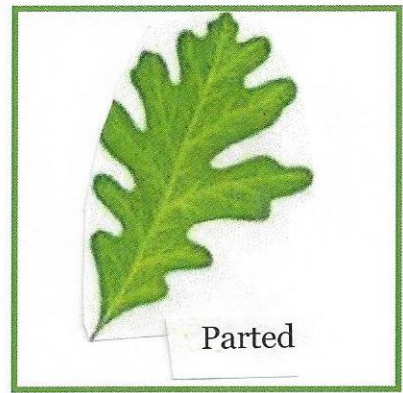
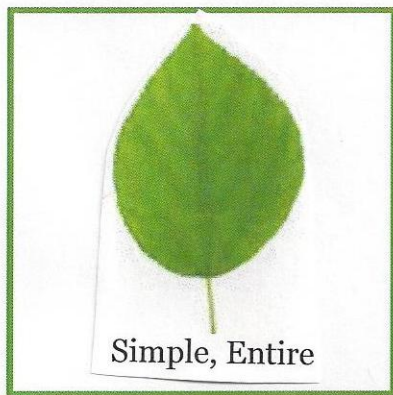
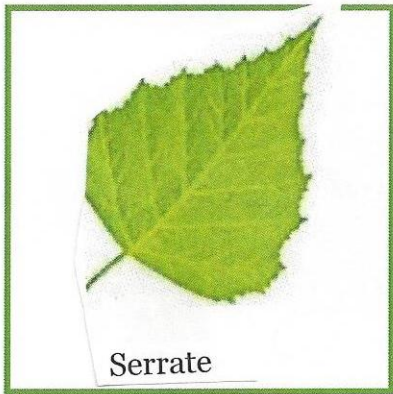
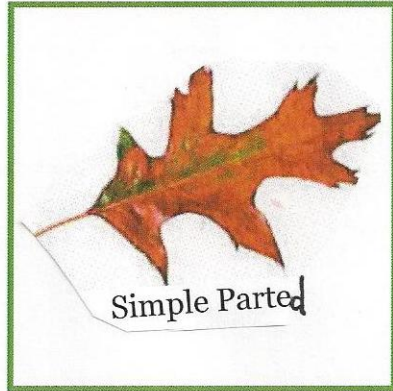
## Memory Game Rules

1. Place the pictures face down in a square format in random order.
2. The first player turns up one card, then a second card. If the player matches two pictures they keep the pictures and take another turn. If the player does not match two pictures their turn ends.
3. Going clockwise, the next player takes a turn.
4. The game continues until all the pictures are matched. The winner has the most pictures.

# Leaf Memory Game

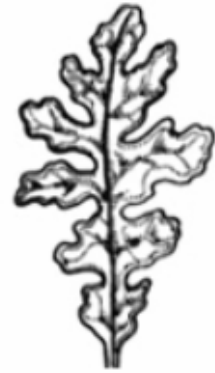
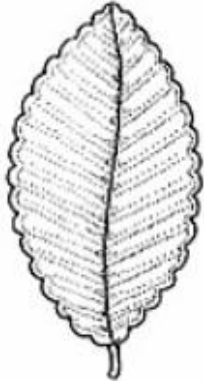






## Leaf Margins Quiz

Label the leaf with the correct margin type.



Leaf margins are:

Entire

Serrate

Crenate

Parted

Lobed

# Falling Leaves

Handwritten musical notation for the first system of the song "Falling Leaves". The music is written on a grand staff with a treble and bass clef. The time signature is 4/4. The melody in the treble clef consists of quarter notes: G4, A4, B4, C5, B4, A4, G4. The lyrics are "All the leaves are falling down". The bass clef accompaniment consists of chords: C (C4, E4, G4), G7 (G3, B3, D4, F4), G7 (G3, B3, D4, F4), and C (C4, E4, G4). The lyrics "Orange yellow red + brown" are written under the second measure.

Handwritten musical notation for the second system of the song "Falling Leaves". The melody in the treble clef consists of quarter notes: G4, A4, B4, C5, B4, A4, G4. The lyrics are "falling softly as they do". The bass clef accompaniment consists of chords: C (C4, E4, G4), G7 (G3, B3, D4, F4), G7 (G3, B3, D4, F4), and C (C4, E4, G4). The lyrics "over me + over you" are written under the second measure.

Handwritten musical notation for the third system of the song "Falling Leaves". The melody in the treble clef consists of quarter notes: G4, A4, B4, C5, B4, A4, G4. The bass clef accompaniment consists of chords: C (C4, E4, G4), G7 (G3, B3, D4, F4), and C (C4, E4, G4).

Falling leaves. *You Tube*. Retrieved from: <https://www.youtube.com/watch?v=uu4ojfxOFXQ>