

Activity 2 – Color Change of Leaves

1) On a branch of your tree mark 4 leaves:

- Select a branch that is large, healthy, on the south edge of the tree and easily accessible and mark it with tape or ribbon.
- Always start from the end of the branch - choose the terminal leaf and mark the branch next to the leaf stem. If possible, select the same leaves as in the spring.
- Locate the three other leaves on this branch closest to this terminal leaf and mark them the same way
- Use permanent marker or tape

2) Observe the leaves twice a week:

- Start two weeks before the expected start of green down and continue until leaf color change has ended or leaves have dropped off.
- For each leaf report:
 - the dominant color estimated using the GLOBE Plant Color Guide. If you don't have the Guide, contact your country coordinator. *For example, if leaf 1 appears colored at 60 percent 5G 7/12 and 40 percent 2.5 Y8/10, record the leaf color as 5G 7/12 for that observation date.*
 - “snow covered”, if the leaf is snow covered
 - “fallen”, if the leaf has fallen



- To record your observation, use GLOBE Green-Down Data Sheet (last page)
- Share the date of the end of green down at the [Discussion forum](#).

Example of Completed Green-Down Data Sheet

Tree, Shrub, and Grass Green-Down

Date YYYY-MM-DD (year-month-day)	Growing season cycle (1, 2 or 3)	Leaf 1 (Color, fallen, snow covered)	Leaf 2 (Color, fallen, snow covered)	Leaf 3 (Color, fallen, snow covered)	Leaf 4 (Color, fallen, snow covered)	Data submitted to GLOBE
2013-09-30	1	5 G 7/4	5 G 7/4	5 G 7/4	5 G 7/4	<input type="checkbox"/>
2013-10-03	1	5 G 7/4	5 G 7/4	5 G 7/4	2.5 Y 8/6	<input type="checkbox"/>
2013-10-07	1	5 G 7/4	2.5 Y 8/6	5 G 7/4	2.5 Y 8/6	<input type="checkbox"/>
2013-10-11	1	5 G 7/4	2.5 Y 8/6	2.5 Y 8/6	2.5 Y 8/6	<input type="checkbox"/>
2013-10-14	1	5 G 7/4	2.5 Y 8/6	2.5 Y 8/6	2.5 Y 8/6	<input type="checkbox"/>
2013-10-16	1	2.5 Y 8/6	2.5 Y 8/6	2.5 Y 8/6	2.5 Y 8/6	<input type="checkbox"/>
2013-10-20	1	2.5 Y 8/6	2.5 Y 8/6	2.5 Y 8/6	7.5 YR 6/4	<input type="checkbox"/>
2013-10-23	1	2.5 Y 8/6	2.5 Y 8/6	2.5 Y 8/6	7.5 YR 6/4	<input type="checkbox"/>
2013-10-27	1	2.5 Y 8/6	2.5 Y 8/6	2.5 Y 8/6	7.5 YR 6/4	<input type="checkbox"/>
2013-10-30	1	2.5 Y 8/6	2.5 Y 8/6	7.5 YR 6/4	7.5 YR 6/4	<input type="checkbox"/>
2013-11-04	1	2.5 Y 8/6	7.5 YR 6/4	7.5 YR 6/4	fallen	<input type="checkbox"/>
2013-11-06	1	2.5 Y 8/6	7.5 YR 6/4	7.5 YR 6/4		<input type="checkbox"/>
2013-11-11	1	7.5 YR 6/4	7.5 YR 6/4	7.5 YR 6/4		<input type="checkbox"/>

3) Track the color change

- At each visit, use [GrowApp](#) to take a **picture of the observed leaves** with the white paper in the background. See, how the color of leaves changes in your **time-lapse animation**
- Using crayons or water colors, **create a palette of leaf colors** that you can see at your branch day by day. You can also create a color palette following this [learning activity](#).
- Share the animation and picture of your color palette at the [Discussion forum](#).



Author: Gymnazium Ceska Trebova, Czech Republic

4) Optional: Record temperature and precipitation

If you have an Atmosphere site nearby, keep recording temperature and precipitation data along with observing the leaves and see if there is any link.

And do not forget to continue taking pictures of the whole tree using [GrowApp](#)!

The activity should be completed up to November 21.



Students can take turns observing a tree near the school or observe their own trees. Use online tools such as [Padlet](#) or [Wakelet](#) to share pictures and results in your team.

Green-down

Tree, Shrub, and Grass Green-Down Data Sheet

School Name: _____ Study Site: _____

Observer Names: _____

Plant Scientific Name: Genus _____ Species: _____

Plant Common Name: _____

Green-Up Cycle: _____ Year: _____

Tree, Shrub and Grass Green-down					
Date (day & month)	Leaf 1 (Color, fallen, or snow covered)	Leaf 2 (Color, fallen, or snow covered)	Leaf 3 (Color, fallen, or snow covered)	Leaf 4 (Color, fallen, or snow covered)	Data entry ✓

Check the last column in the green-up table to keep track of data submitted.

Comments (date each comment): _____
