

# 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 Y 8/10, 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](#).



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### 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): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_