

## Forests & Water

### EXPERIMENT 1: WORKSHEET RESULTS

#### Typical Results

#### Experiment 1: To investigate transpiration in trees/plants:

| Type of Leaf                              | Species of Tree        | Volume of water in bag * | Why do you think the tree lost this much water?   |
|---|------------------------|--------------------------|---|
| Broadleaved in sunny area                 | <i>e.g. Oak</i><br>Ash | A lot                    | <b>The leaves are big. Broadleaves grow best in places with lots of water.</b>  |
| Coniferous in sunny area                  | <i>e.g. Pine</i>       | A little                 | <b>Conifers have small needle like leaves to prevent water loss. They can grow in places with little available water.</b>   |
| Waxy in sunny area                        | <i>e.g. Holly</i>      | A little                 | <b>Holly keeps its leaves in winter, if they weren't protected with a waxy coat the winds quickly dry out the plant.<br/>Ivy often grows in shady conditions under trees, where there is little available water. They need to retain as much water as possible.</b> |
| Plant in shaded area                      | <i>Any species</i>     | A little or none         | <b>The main causes of Transpiration are sunlight &amp; wind. Shaded plants are not exposed to sun &amp; wind.</b>   |
| Branch with leaves removed in sunny area. | <i>Any species</i>     | None                     | <b>Plants mainly lose water through the stomata in the leaves.</b>  |



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#### Transpiration Worksheet Questions:

1. What is transpiration?

**Transpiration is the loss of water from the leaves of a plant into the air.**

2. **Stomata** are tiny pores on the underside of leaves, which allow water to transpire from the leaf. They also allow gases to enter and exit.

3. Name 3 factors which speed up transpiration?

**Heat**      **Sunlight**      **Wind**

4. Why do coniferous trees have needle like leaves?

**They often grow where there is not a lot of water. Having needle like leaves stops them losing too much water by transpiration. This is known as an adaptation to environmental conditions.**

5. Why do some plants have waxy leaves?

**Having waxy leaves stops them losing too much water by transpiration.**

6. Do deciduous plants transpire in the winter. What evidence have you for this?

**Deciduous plants don't transpire in winter as they lose their leaves and plants transpire through their leaves.**