




Rubric: Wonderful Leaves

Key APS Mathematics Performance Standards: Kindergarten

-  **Describes, records, and reports** comparisons in length, weight, and capacity.
-  **Compares and orders** objects by length, weight, and capacity.
-  **Records** numerical information using pictures, words, and/or numbers.

Level	Understanding	Strategies, Reasoning, & Procedures	Communication
Novice	<ul style="list-style-type: none"> ❖ The student understands: <ul style="list-style-type: none"> • That s/he must measure the leaf and may only use one strategy to measure the leaf. ❖ The student does not understand: <ul style="list-style-type: none"> • That the leaf can be measured in multiple ways (length, width, vertically, horizontally, etc.). • That s/he must explain how they measured the leaf. 	<ul style="list-style-type: none"> ❖ The student has started the task using nonstandard measurement manipulatives, but does not use an effective strategy to measure the leaf. ❖ The student needs to develop their concept of measurement. The student does not see a connection between the measurement manipulatives and ways to measure the leaf. <p>Sample Strategy: The student uses manipulatives to measure the leaf but will only take one measurement. The student does not have the vocabulary to describe their measurements and will not make any observations about their measurement techniques.</p>	<ul style="list-style-type: none"> ❖ There is little or no communication, the student did not label the work, and/or their thinking is difficult to follow. ❖ Summary: The student cannot write/verbalize his/her final answer; and uses little or no math language and symbols to explain (verbally or in writing) how s/he measured the leaf. ❖ Representations: The student cannot trace the leaf and uses no system (charts/t-tables/graphs) to record the measurements of the leaf.
Apprentice	<ul style="list-style-type: none"> ❖ The student understands: <ul style="list-style-type: none"> • That s/he must measure the leaf and will choose more than one way to measure the leaf. • That s/he should explain how they measured their leaf. ❖ The student may not understand: <ul style="list-style-type: none"> • How to record their measurement information. • How to compare the size of the leaf to the nonstandard measurement units. 	<ul style="list-style-type: none"> ❖ The student has started the task using nonstandard measurement manipulatives, has chosen a strategy to measure the leaf, but does not achieve a correct solution. ❖ The student is developing their concept of measurement. The student may be able to measure the leaf using many different strategies but will not be able to organize the information, and will not be able to make measurement comparisons. ❖ The student may make errors in counting their nonstandard measurement units. ❖ Sample Strategy: The student uses nonstandard measurement manipulatives to measure the leaf in multiple ways but cannot organize their measurement information and cannot explain what the measurements really represent (i.e., compare length to width of the leaf). 	<ul style="list-style-type: none"> ❖ The student has communicated his/her understanding of the task by labeling their work, but the task is not clearly organized and the student's thinking is hard to follow. ❖ Summary: The student states his/her final answer and uses some math language and symbols to explain (verbally or in writing) how s/he measured the leaf. ❖ Representations: The student may not be able to trace the leaf but can use the measurement manipulatives to measure the leaf, however the student has not established an accurate system (charts/t-tables/graphs) to record the measurements of the leaf.

<p>Practitioner</p>	<p>Proficiency</p> <p>❖ The student understands:</p> <ul style="list-style-type: none"> • That s/he must measure the leaf and will choose more than one way to measure the leaf. • That s/he should explain how they measured their leaf. • How to record their measurement information. • How to compare the size of the leaf to the nonstandard measurement units. 	<p>Proficiency</p> <p>❖ The student starts the task using nonstandard measurement manipulatives, has made several different measurements of the leaf, and has made accurate comparisons describing the length/width of the leaf.</p> <p>❖ The student can accurately record their measurement information.</p> <p>Sample Strategy: The student measures the widest & longest points of the leaf and can accurately represent the measurement information. (The length of the leaf is 10 cubes and the width of the leaf is 6 cubes.)</p>	<p>Proficiency</p> <p>❖ The student can represent his/her work in a clear, organized manner.</p> <p>❖ Summary: The student states his/her final answer and uses appropriate math language and symbols to explain (verbally or in writing) how s/he measured the leaf.</p> <p>❖ Representations: The student can trace the leaf, uses the measurement manipulatives, and creates an efficient system (charts/t-tables/graphs) to record the measurements of the leaf.</p>
<p>Expert</p>	<p>❖ The student understands that s/he:</p> <ul style="list-style-type: none"> • That s/he must measure the leaf and will choose more than one way to measure the leaf. • That s/he should explain how they measured their leaf. • How to record their measurement information. • How to compare the size of the leaf to the nonstandard measurement units. <p>❖ Task Extension: The student includes a rule, equation, generalization, and/or observation (verbal or written) about their understanding of the size of the leaf and measurement.</p>	<p>❖ The student starts the task using nonstandard measurement manipulatives, has made several different measurements of the leaf, and has made accurate comparisons describing the length/width of the leaf.</p> <p>❖ The student can accurately record their measurement information.</p> <p>❖ The expert will show more understanding in their comparisons (i.e. length, width, stem, and vertical measurements) and have a more developed vocabulary for describing their measurements.</p> <p>Sample Strategy: The student measures the length, width, stem, vertical measurements and describes their observations.</p> <p>Task Extension: The student may use the nonstandard measurement units to measure the perimeter of the leaf (but may not use the terms). The leaf is 22 cubes around.</p>	<p>❖ The student can represent his/her work in a clear, organized manner.</p> <p>❖ Summary: The student states his/her final answer and uses appropriate math language and symbols to explain (verbally or in writing) how s/he measured the leaf.</p> <p>❖ Representations: The student can trace the leaf, uses the measurement manipulatives, and creates an efficient system (charts/t-tables/graphs) to record the measurements of the leaf.</p> <p>❖ Task Extension: The student includes a rule, equation, generalization, and/or observation (verbal or written) about their understanding of the size of the leaf and measurement.</p>