Measuring Soluble Solids Content

°Brix values are a measure of the **soluble solids content** of a solution. Sugars are the most abundant soluble solid in fruit and vegetable juices. A Brix refractometer is used to measure °Brix. The higher the sugar content, the higher the refractive index. When light enters a liquid at an angle, it changes direction; this is called refraction. Light will refract more when traveling through a liquid with dissolved solids. Degrees Brix (°Bx) is a measurement of the sugar content of the solution.

1 degree Brix (°Bx) = 1g of sucrose / 100g of solution

Station 1: Peppers

Do you think all peppers have the same sugar content?

Which color pepper do you think is the sweetest? Least sweet? Create a hypothesis.

Measure the °Brix of each color pepper and record below.

Pepper Color	°Brix

Did your results support your hypothesis?

Station 2: Grapes

Do you think all grapes have the same sugar content?

Which color grape do you think is the sweetest? Least sweet? Create a hypothesis.

Measure the °Brix of each color grape and record below.

Grape Color	°Brix

Did your results support your hypothesis?

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Station 3: Measures of Central Tendency

Measure the °Brix of at least 5 different grapes of the same color. Find the mean, median, mode and range of Brix.

Grape	°Brix

Mean _____

Median _____

Mode _____

Range _____

Are there any outliers?

_____

_____

_____

Station 4: Quality of Fruit or Vegetable

The quality of a fruit or vegetable can be determined by °Brix. Measure the Brix score for each crop and use the chart to determine the quality of each crop.

Data Collection		Quality Assessment			
Crop	°Brix	Excellent	Good	Fair	Poor

How do you think this technology could be used to help improve the taste of fruits and vegetables?

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