

# Scientific Inquiry

## Comparing Chromatography in Tomato Plants

Group Name: \_\_\_\_\_ Date: \_\_\_\_\_

Congratulations! Your group has been selected for a NASA summer internship. Your group is assigned to work in the chemistry lab. The goal is the following: use chromatography to study different pigments in tomato plants. Complete the following steps to collect the data successfully.

**Step 1:** Scientists and engineers begin scientific inquiry by asking testable questions. With your group, watch the following video about asking and writing testable questions:

[https://www.youtube.com/watch?time\\_continue=32&v=qsSFahitCug&feature=emb\\_logo](https://www.youtube.com/watch?time_continue=32&v=qsSFahitCug&feature=emb_logo)

**Step 2:** Write a testable question comparing pigments from two tomato leaf samples (e.g. Which tomato plant has the most flavonoids?)

Testable Question:

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**Step 3:** With your group, review the 3 different pigments discussed in the explore section. Use the following website:

<http://tomatosphere.letstalkscience.ca/Resources/library/ArticleId/4661/plant-pigments.aspx>

**Step 4:** Create a hypothesis or a prediction of what you think will happen when you compare the two tomato leaf samples with chromatography.

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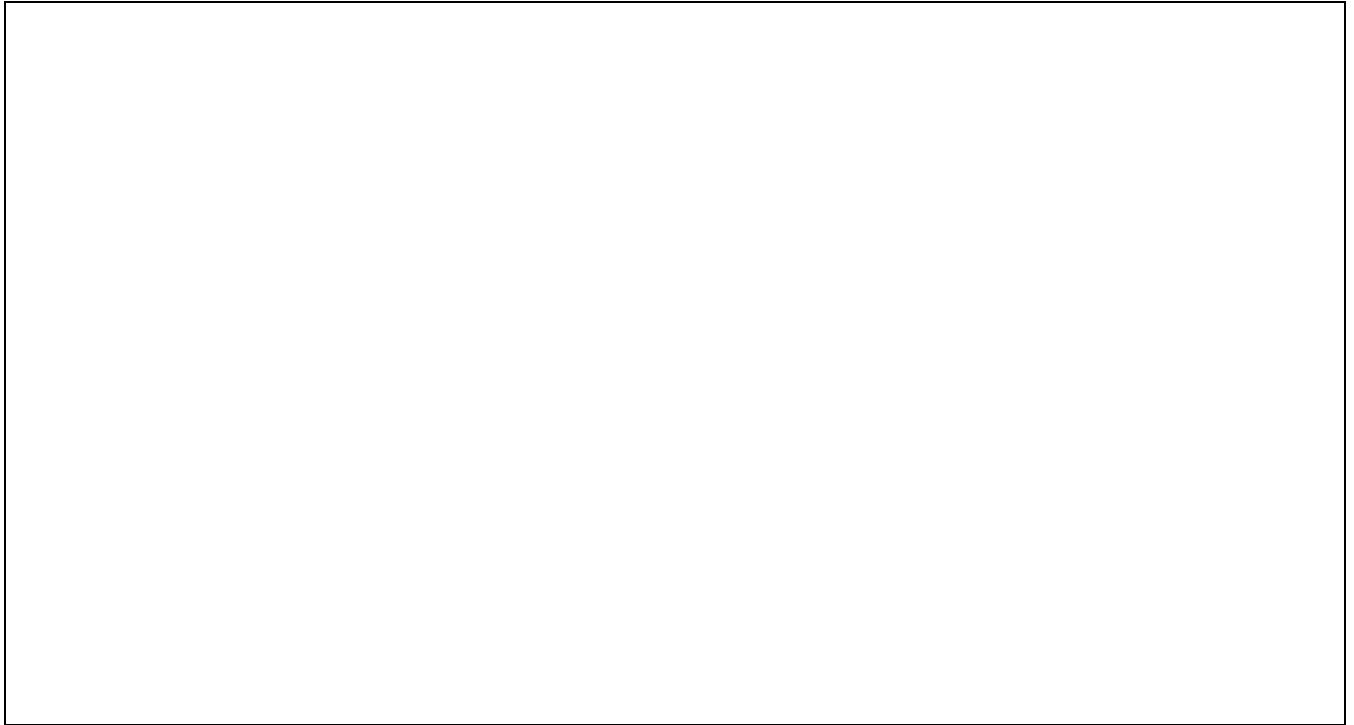
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**Step 5:** Make Observations

Place the paper strips here. Beside each strip, label the origin, chlorophyll *a*, chlorophyll *b*, the xanthophylls and the solvent front for each chromatogram. Tape the strips to this sheet once they are dry.



<http://tomatosphere.letstalkscience.ca/Resources/library/ArticleId/5771/how-do-plant-pigments-vary-between-leaves.aspx>

**Step 6: Conclusion**

Indicate if your hypothesis was correct or not. Explain evidence to support why your hypothesis was correct or not. Use your results to write a conclusion to this experiment.

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