

Name: \_\_\_\_\_  
Date: \_\_\_\_\_  
Birth Date: \_\_\_\_\_  
School: \_\_\_\_\_  
Zip Code: \_\_\_\_\_

## Thinking Outside the Box

### Lesson 1. Brainstorm

Now that you've spent some time working with the planter box and participated in different investigations, you will work with a group to create and conduct your own investigation. Begin by brainstorming different topics that interest you. You may use the space below to write down notes or add drawings as you organize your thoughts.



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## **Lesson 2. Choose a Topic**

Using the previous activity, you will choose one topic that interests you most. You will then meet with your group and organize your different ideas. Try to think of possible investigations you could do for each topic. After reviewing everyone's ideas, vote on which one you would like to focus on for this investigation.

**Topic #1:**

**Possible Investigation:**

**Topic #2:**

**Possible Investigation:**

**Topic #3:**

**Possible Investigation:**

**Topic #4:**

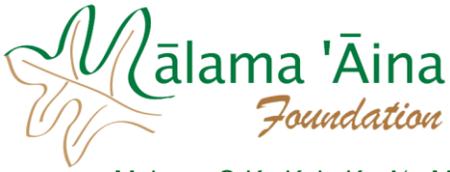
**Possible Investigation:**

**Topic #5:**

**Possible Investigation:**

**Topic #6:**

**Possible Investigation:**



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### Lesson 3. Develop an Investigation

Use this form to plan out your investigation. Begin with a question relating to your chosen topic. This question will be answered in your investigation.

#### Question:

<b>Our Hypothesis</b> (The answer to your question. Your investigation will determine if it is correct.)

<b>Independent Variable</b> (Which trait are you changing?)	
<b>Dependent Variable</b> (What will change as a result of the independent variable?)	
<b>Control</b> (Variable that will stay the same for all tests)	

<b>Necessary Tools</b>

<b>How will data be collected/presented?</b>	<b>How much data will need to be collected?</b>



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## **Conduct Investigation and Collect Data**

Use this page to organize and collect data.

How does the data collected support or disprove your claim?



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**You may use this page if you need additional space for notes, drawings, etc.**

### Lesson 4. Presentation

Answer the prompts below to help you plan out how you will present the findings of your experiment.

**Which details of your experiment are most important to share in your presentation?**

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**How do you plan on displaying the data you collected?**

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**What type of presentation will you create and what materials are needed to create it?**

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**What tasks need to be done to complete your presentation? If working in a group, divide the work fairly.**

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## Lesson 5. Improving Investigations

After conducting scientific investigations, researchers will often reflect on the process. No investigation is perfect and there is always room for improvements. Reflect on the following questions and brainstorm some possible changes you can make to improve your investigation.

Were you able to prove your hypothesis? Explain how you arrived at that conclusion.

Would you make any changes to your process? If yes, list the features you would alter and explain why you would make these changes. If no, explain why you would not make any changes.

Reflect on your presentation. What worked well for your group? What did not work well? How will you improve next time? Explain your answers.

Reflect on your group's performance. Did you work well together? Was the work divided equally? Did everyone contribute to the final product? Explain your answers.

## Lesson 6. Self-Confidence

Giving presentations takes self-confidence. Self-confidence is believing in your abilities. Many people struggle with feeling confident. Most times we struggle with feeling confident because we are comparing ourselves to others. If someone is more skilled than we are, we tend to feel inadequate. One of the ways you can avoid comparing yourself to others is to set personal goals. You can shift focus from aiming to be better than others and instead focus on being the best version of yourself. When setting personal goals, they should be fluid, meaning that it is okay if they change overtime. You may use the process below to begin.

1. Identify an area that you would like to improve in.
2. Set some small, manageable goals you can focus on.
3. Monitor your progress.  
(Keep in mind that mistakes are part of the process)
4. Allow your goals to change as you change.
5. Reflect after accomplishments and mistakes.

Area of Improvement:

Goal #1:

Goal #2:

Goal #3:

## Lesson 7. 'Ōlelo No'eau

**E noho iho I ke օpū weuweu, mai ho'oki'eki'e.**

*Remain among the clumps of grasses and do not elevate yourself.*

Ōlelo No'eau 361

Mary Kawena Pūku'i

'Ōlelo no'eau are Native Hawaiian proverbs and sayings. They are rooted in Hawaiian traditions and values. The one above encourages individuals to not elevate themselves above others in an arrogant way, but rather remain humble. Many people confuse being humble with thinking less of yourself, however, it really means that you think of yourself less. In other words, you do not see yourself as better or worse than those around you. It also means putting another person's interests before your own.

Reflect on a time when you acted humbly towards another person. What did you do for them and how did it feel to do so?

Reflect on a time when another person humbled themselves for you. What did this person do for you and how did you feel?

How can you continue to act humbly towards others?



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## **Lesson 8. Looking to the Future**

Reflect on the following questions.

How can teachers make the planter box fun and engaging for their students?

Have your opinions of agriculture and gardening changed since you began using the planter box?

How can the planter box be used to help build a person's confidence?