

PhD Science® Family Night | **ACTIVITIES**

You will want to familiarize yourself and your team working the event with you with the following activities before the event.

Consider having a person at each of the six stations assist with the activities. Note that we have a Levels K-2 path and a Levels 3-5 path with three activities each. You may want to save much of the introduction for the end so that all family members will have aha moments throughout. This is closer to how scientific learning will be experienced by students in the classroom.

Be sure to make note of any materials (writing utensil, paper) that you may want to provide families for the event.

You likely will want to **print these station cards** and may consider laminating them for the individual stations. Consider what information is provided to the families and what information you and your team will provide to them (do this before printing). Determine how you want the stations to flow before the event.

Additionally, consider how you want to wrap up the night after the stations have been conducted. You may share out additional resources for parents at that time and have Levels K-2 and Levels 3-5 compare their station experiences.

LEVELS K–2: Introduction

Throughout this Level 1 module on light, students study the anchor phenomenon of wayang shadow puppetry as they build their knowledge on light to answer to the Essential Question:

How do puppeteers use light to tell stories during wayang shows?

As students learn about each new concept, they revisit and refine a model that shows how light interacts with the parts of a wayang show. At the end of the module, students use their knowledge of light interactions to explain the anchor phenomenon, and they apply these concepts to a new context in an End-of-Module Assessment.

With these stations, you will get a sneak peek into some of the initial investigations students engage with, and through these experiences students develop an enduring understanding that the way light interacts with objects affects what people see.

K-2 Station 1: *Notice and Wonder*

Take a look at the image below.

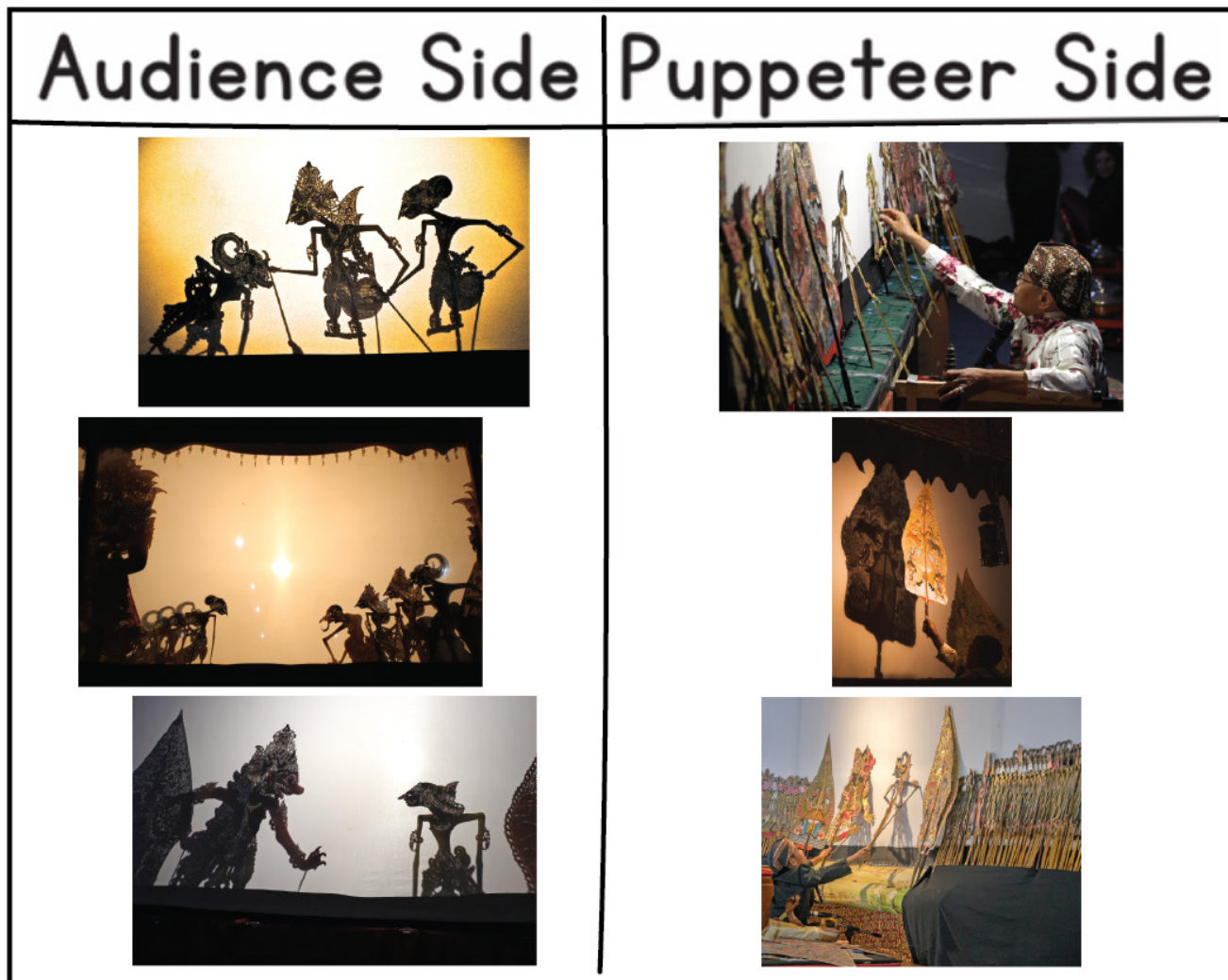


What do you notice? Your notices are your observations.

What do you wonder? Your wonders are questions you have.

Write down one notice and one wonder.

K-2 Station 2: *Compare and Contrast*



Compare the audience side to the puppeteer side.

Name the similarities and differences you see.

K-2 Station 3: *Model*

Create (draw) a model of a wayang show that shows the audience and puppeteer side. Include only one puppet in the model. Parents or guardians draw one side, and students draw the other side.



LEVELS 3–5: Introduction

Throughout this Level 3 module on survival, students study the anchor phenomenon of butterfly survival as they build their knowledge on the topic to answer the Essential Question: **How do butterflies survive over time in a changing environment?**

As students learn about each new concept, they revisit and refine a model to represent how butterflies survive in their environment over time. At the end of the module, students use their knowledge of fossil evidence, suitability, and changing environments to explain the anchor phenomenon and apply these concepts in new contexts.

In these stations, you will get a sneak peek into some of the initial investigations students engage with, and through these experiences students begin to develop an enduring understanding that organisms have characteristics that help them survive over time in changing environments.

After the Notice and Wonder (Station 2), explain to students that the image is of a fossil. (Definition: *Fossils are the remains or impressions of an organism that lived long ago.*)

3–5 Station 1: *Sketch*

Sketch a butterfly, and compare it to a real butterfly.

Add as many details as you can to your sketch.



3–5 Station 2: *Notice and Wonder*

Take a look at the image below.



What do you notice? Your notices are your observations.

What do you wonder? Your wonders are questions you have.

Write down one notice and one wonder.

3–5 Station 3: *Driving Questions*

What questions do you have about the butterfly fossil and butterflies in general?

Write down two questions you have about butterflies or butterfly fossils?

Discuss your questions with your family and Station 3 friends.