



PROFESSIONAL LEARNING RESOURCE

DEFAMILIARIZE
THE FAMILIAR

Photos: This page: Julia Kadel/Unsplash. Following pages: National Geographic Society Impact Story Lab

Introduction

This professional learning resource introduces educators to one of the Wonder Learning Strategies: Defamiliarize the Familiar¹. This strategy helps inspire wonder and curiosity around familiar things in new ways by using tools to notice differently, making space to observe, and allowing surprise to inspire questions. This resource is part of the [WonderLab Learning Resources](#): a collection of resources inspired by the work of renowned National Geographic Explorer and photographer Anand Varma. It consists of three parts:

- **Part 1: Engage and Explore**
Learn how learners can display the attitudes of the Explorer Mindset by observing familiar things in new ways allowing surprise to inspire questions.
- **Part 2: Learn by Doing**
Learn how to create the conditions for your learners to defamiliarize familiar things and encourage wonder
- **Part 3: Reflect and Apply**
Use a self-assessment check to reflect on what you are already doing to support your learners, defamiliarize the familiar, and identify an area you want to improve.

Guiding Question

How can you ignite a true sense of wonder in learners as they observe, ask questions and seek answers about familiar things in the world they live in?

¹ Conijn, J., Rietdijk, W., Broekhof, E., Andre, L., & Schinkel, A. (2021). A theoretical framework and questionnaire for wonder-full education. *Journal of Curriculum Studies*, 54(3), 423-444.



A true sense of wonder drives National Geographic Explorers as they ask questions and seek answers about their world. Often, this wonder starts with questions that surface when they take something familiar and start to observe it in new ways. National Geographic Explorer [Anand Varma](#), likes to think about finding “the right balance between presenting something that's familiar along with something that's mysterious.” Through his work with cuttlefish, he has created both the physical and the intellectual space to observe familiar behaviors, like mating and eating, in new and awe-inspiring ways.

Watch the video, [I Wonder: Defamiliarize the Familiar](#), and pay attention to how Anand and his team display the attitudes, skills, and knowledge of the Explorer Mindset to see cuttlefish behavior in new ways. Use the following prompts to reflect on the video:

- What are some cuttlefish behaviors Anand and his team are curious about? How might these curiosities lead Anand and his team to learn something more about cuttlefish behaviors in their natural environments?
- How do Anand and his team use various tools and resources in the WonderLab to problem-solve new ways to explore cuttlefish behaviors?
- What are different ways you see Anand collaborate with his team members to explore their questions?
- How do Anand and his team members communicate with each other to share what excites them about what they notice or what they continue to wonder about?



Vocabulary

Wonder (noun) the mental state of openness, questioning, curiosity, and embracing mystery that arises out of experiences of awe

Curiosity (noun) a strong desire to learn or know something

Defamiliarize the familiar (verb) helping learners find something strange or mysterious in the everyday world.

Strange (adjective) unusual or surprising because an object or event has not previously visited, seen, or encountered.

Mysterious (adjective) difficult or impossible to understand, explain or identify.

Unique (adjective) one of a kind.

Familiar (adjective) easy to recognize because of being heard, seen, or met before.

Explorer Mindset (concept) a series of attributes, shared values, and commitments that define what it means to be a National Geographic Explorer such as curiosity, empathy, empowerment, collaboration, storytelling, communication and problem-solving.

Teaching Tips

1. Introduce new vocabulary to your students. If necessary, find or think about other examples to illustrate the new terms.
2. Use the video and prompts to introduce students to the Explorer Mindset attributes, such as curiosity, empathy, empowerment, communication and storytelling.
3. Discuss how these attributes are embodied in the way that National Geographic Explorers do their work.



Part 2: Learn by Doing

Next, you need to think about how you create the conditions for your learners to defamiliarize familiar things and encourage wonder, learn how to observe familiar things in new ways by using tools to notice differently, making space to observe, and allowing surprise to inspire questions.

In the video [I Wonder: Defamiliarize the Familiar](#), Anand says, "I'm always trying to find some new way to present this subject, some way to surprise people, because to me, that's...the first step to curiosity." To be able to present the familiar in unfamiliar and surprising ways, Anand needs to engage in his own exploration of the phenomenon to uncover the questions that might be worth investigating. Using the physical space and tools in the WonderLab,

making space for reflection, and allowing awe to motivate inquiry are three practices Anand and his team members use to defamiliarize the familiar.

There are three practices that educators should think about when designing or redesigning their lessons to present familiar things in unfamiliar surprising ways:

Practice #1: Using Tools to Notice Differently

Practice #2: Making Space to Observe

Practice #3: Allowing surprise to Inspire Questions

The next few pages will address these three practices.



**Practice #1" Using Tools to Notice Differently**
(Time code 2:29-3:36, 8:39-9:02)

Watch the video, [I Wonder: Defamiliarize the Familiar](#). In the video, Anand and his team designed space in the WonderLab to observe everyday cuttlefish behavior - like laying eggs and nighttime behavior - in new, surprising ways. For six months, Anand and his team had cuttlefish in their lab. The daily behaviors of the cuttlefish became a "normal, familiar part" of the WonderLab team's lives. Anand then used an infrared modified camera to record these "normal, familiar" behaviors to provide a new perspective that inspires awe and wonder around the cuttlefish (TIME STAMP 2:29-3:36). "As soon as we turned on the camera and kind of zoomed in on them, it was almost like we were seeing them with fresh eyes. It's like, whoa, I'd forgotten how cool these animals are." (TIME STAMP 8:39-9:02) In Anand's WonderLab, the camera allowed the team to zoom in and see the cuttlefish more closely, to slow down to explore movement, interactions, cuttlefish behavior, and rewind to watch things they might have missed.

Your Turn: Using Tools to Notice Differently

As an educator, take the opportunity to help your students slow down their observation. Take everyday, familiar objects and have students explore them by holding them, talking about them, or drawing them, like in [An Artist's Notebook](#) (activity for learners). Then provide tools like magnifying glasses, magnets, and water (to see if they sink or float), or allow students to use phone cameras to learn more about these objects in new ways.

- How did the tools help you notice differently?
- What questions emerged when you explored the objects - before and after using the tools?
- What other tools might help you explore differently?

Another great way to notice differently is to place two seemingly similar objects side-by-side and compare them. What starts to emerge through careful observation is subtle differences. Perhaps learners notice details in the object that were not noticed previously. Paying attention to details is part of noticing things differently. A great tool for learners to practice attending to and communicating to others the details that one sees is [Which One Is Unique](#).



**Practice #2: Making Space to Observe**
(Time code 8:10-9:01)

There are multiple times in the video where Anand and his team members step back and just look at the cuttlefish on the computer screen or through the tank. There is also one time when one team member asks if he wants to change something and Anand says, "I don't want to do anything right now. I just want to watch this. This is crazy" (TIME STAMP 8:10-9:01). Anand sits quietly staring at the wonder of the cuttlefish. It's important to not rush observations.

Your Turn: Making Space to Observe

Find a space that is relatively quiet, but has something familiar worth watching for a few minutes: an ant walking up a tree; the clouds moving over the sky; a goldfish in its bowl; cookies baking in an oven.

- As you watch these familiar things over time, how do they change?
- What do you notice about these changes that you might have taken for granted?

Practice #3 Allowing Surprise to Inspire Questions
(Time codes: Cuttlefish eating: 4:36-6:36;
Cuttlefish mating: 9:49-10:27)

Sometimes things happen so quickly or so slowly that we miss noticing them in real time. For example, when Anand's team put the shrimp in the tank with the cuttlefish, the cuttlefish grabbed the shrimp before anyone noticed (TIME STAMP 5:00-5:08). Anand noticed the antennae sticking out of the cuttlefish and started asking questions about what happened, if they missed it, and how it happened so quickly. Similarly, when the two cuttlefish mated, the moment was surprising and quick (TIME STAMP 9:49-10:27). The surprising quickness of these moments inspired Anand to revisit them through the recording to answer some of his questions and explore more carefully how the cuttlefish ate and mated.

Your Turn: Allowing Surprise to Inspire Questions

When something unexpected happens, it is surprising to us. It's important to step back in these moments and ask:

- What were you expecting to happen?
- Why did the expected event not happen?
- What are all the possible reasons the unexpected was able to happen?

Unexpected moments become moments that can lead to multiple lines of inquiry. Think about a surprising event that recently happened. Reflect on this moment and start asking questions around that moment.

Teaching Tips

1. Select a lesson or activity that explores something very familiar to your learners.
2. Explore the three practices listed above. Look for opportunities to present familiar things in unfamiliar surprising ways.
3. Think about which of the practices has the potential for learners to engage in new ways that will inspire awe and wonder even in something that is most familiar to them.
4. Have learners document their observations, share and discuss using the questions suggested in each one of the practices. Ask learners what other questions and/or surprising moments they experience.
5. Make sure to align this new lesson to the standards you teach.
6. Discuss and reflect on the experience with your learners.



Part 3: Reflect and Apply

Defamiliarize the familiar is a learning strategy that can be used to cultivate wonder in young learners. To support this wondering strategy, educators can create learning environments that include physical spaces with tools to examine familiar things in new ways, provide intellectual spaces that prioritize making space for observation and reflection, and allow surprising events to lead to questions that can be explored. Collecting a bunch of familiar items and having students draw or write about them, like in [An Artist's Notebook](#) (activity for learners), can help learners slow down their observations and notice them in different ways.

Think About

Take some time to reflect on the questions below. Consider what you are already doing with respect to supporting learners around defamiliarizing the familiar and identify one area where you want to improve. The questions below are extensions of the self-assessment check that you did earlier in this professional learning resource.

- How do I make physical space for learners to observe the familiar?
- How do I make intellectual space for learners to communicate their observations about the familiar?
- How do I support my learners in defamiliarizing the familiar?
- When do I encourage learners to defamiliarize the familiar?

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