



# IDENTIFY: Forming a Design Question

Biomimicry and Science:  
Applying Nature's Strategies

# How might we... ?





How  
might  
we...

...improve education  
and expand learning  
opportunities for  
refugees around the  
world?

...make urban slum  
communities more  
resilient to the  
effects of climate  
change?

...improve the  
livelihoods of small-  
scale farmers by  
reducing food waste  
and spoilage?

# Not too broad, not too narrow



A good design question focuses on **impact**, addresses **context**, and allows for a **variety of possible solutions**.



# Sample Design Problem:

**Corn is a major U.S. crop that is grown on 91.6 million acres of farmland, primarily in the Upper Midwest.** Current agricultural methods used in this region depend heavily on the use of natural and synthetic fertilizers to boost corn crop yields. Despite efficient application methods, many nutrients from these fertilizers enter the surrounding water system through runoff. This process leads to nutrient accumulation in nearby lakes and streams which then concentrates in rivers like the Mississippi, and is deposited in the Gulf of Mexico and other estuaries, harming these ecosystems.

*Problem statement from Biomimicry Global Design Challenge Finalist in 2015*

# Sample Design Questions:

## How might we...

- help corn farmers reduce their dependency on fertilizers?
- prevent nutrient runoff from corn fields?



# Try it!

**Cycling as a form of transportation is a growing alternative to fossil-fuel powered vehicles in the U.S.** As cycling grows more popular each year, cities like Long Beach are implementing initiatives to develop their infrastructure in order to accommodate this exploding demographic. While these changes often address accessibility issues for cyclists, they do not necessarily make bicycle riding safer, and in some cases, give cyclists a dangerous false sense of security. By interviewing various members of the Long Beach bicycle community, we were able to determine three main concerns: communication of a bicyclist's intentions, increased visibility both day and night, and proper allocation of space when sharing the road.

*Problem statement from a Biomimicry Student Design Challenge winner in 2013*



Try it!

How might we...





# Try it!

## How might we...

- ...make urban cyclists more visible to drivers?
- ...help cyclists communicate with drivers on the road?
- ...encourage better sharing of road space between cars and bikes.