

A design question is a concise statement that captures the essence of a design problem or challenge at the beginning of the design process. Design questions typically begin with “How might we...?” and the designer uses these questions to avoid jumping to conclusions about what the design will **be** and instead focus on what the design needs to **do**. This presentation uses several examples to support students’ understanding of how to define a design challenge as a “design question.”

**Presentation Objective:**

- Define the term “design question” and explain its value.
- Review and discuss examples of effective design questions.
- Demonstrate how to form an effective design question to suit an identified design challenge.

**CREDITS:**

*Resource:* Biomimicry Institute. (2015). Biomimicry Toolbox. Retrieved from [toolbox.biomimicry.org](http://toolbox.biomimicry.org)

*Image:* Getty Images 520087760: stellalevi: Wall covered with sticky notes

**Objective:**

- Define the term “design question” and explain its value.

**Suggested Teaching Strategy:**

Ask students: What is a design question? Accept all reasonable answers, but explain that in order to keep a design team from jumping to conclusions about what they will design, it can be helpful to state a design challenge as a question that begins with “How might we...?”

So a design question is a concise statement that captures the essence of a design problem or challenge.

**CREDITS:***Resources:*

Biomimicry Institute. (2015). Biomimicry Toolbox. Retrieved from [toolbox.biomimicry.org](http://toolbox.biomimicry.org)

Design Kit. (n.d.). Frame your design challenge. Retrieved from <http://www.designkit.org/methods/60>

*Image:* Getty Images 512366639: Roberto Westbrook: Young man holding digital tablet with arms out



## Objective:

- Review and discuss examples of effective design questions.

## Suggested Teaching Strategy:

Tell students: Good design questions address the intended context (e.g., stakeholders, location, etc.) and impact of a design. Here are some examples from the collaborative design website, OpenIDEO. Do you see how these examples include the context and the desired impact? Ask students to identify the context and impact in the examples shown here.

*Right top context:* Refugees / *Impact:* Expanding learning

*Left bottom context:* Urban slums / *Impact:* Increased resilience to climate change

*Right bottom context:* Small scale farmers / *Impact:* Reducing food waste and improving livelihoods

Tell students that identifying context is important because it provides specificity and constraints with which to work. Context can include many factors, but it is especially helpful to identify stakeholders (who is impacted) and/or location. Without context, a design challenge is often too broad to be meaningfully addressed with one design. On the other hand, be careful not to define the context too narrowly. Applying too many constraints before beginning the design process can limit the number and variety of potential solutions. Asking the right question at the beginning of your project will guide you in your research and give you a better chance of arriving at an innovative and impactful solution.

## CREDITS:

### Resources:

Biomimicry Institute. (2015). Biomimicry Toolbox. Retrieved from [toolbox.biomimicry.org](http://toolbox.biomimicry.org)

Design Kit. (n.d.). Frame your design challenge. Retrieved from <http://www.designkit.org/methods/60>

Text examples on sticky notes taken from open innovation challenges posted on OpenIDEO. (n.d.). [Home page]. Retrieved from <http://openideo.com>

*Image:* Getty Images 173691969: stockcam: Post-it Note



### Objective:

- Review and discuss examples of effective design questions.

### Suggested Teaching Strategy:

Tell students: A good design question is neither too broad nor too narrow. Ask students: Do you think the design question on the left is an effective one? Explain. *(No, because it is too broad.)* What about the one on the right? *(No, because it is too narrow.)* How about the one in the middle? *(It's just right because it is not too broad or too narrow.)*

Explain that using “How might we end hunger” as a design question is way too broad because hunger is a huge multifaceted problem and this statement doesn’t target a specific population or area of intervention.

“How might we design an app to help food pantries” provides a lot more direction, but it’s narrowly focused. How do we know an app is the right solution? This question focuses too much on WHAT the design IS versus what it will do. It doesn’t leave enough room for innovation.

The middle statement is much better. It provides enough specificity (we are focusing on distributing farm surpluses) while remaining open to a variety of possible solutions for how that might be done.

### CREDITS:

Resource: Biomimicry Institute. (2015). Biomimicry Toolbox. Retrieved from [toolbox.biomimicry.org](http://toolbox.biomimicry.org)

Image: Getty Images 494704058: TheCrimsonRibbon: Three Sticky Notes

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**Suggested Teaching Strategy:**

Tell students: Design questions should be based on an understanding of a specific problem or opportunity. Here's an example—this is a problem statement from a team that entered the Biomimicry Global Design Challenge in 2015. This team was interested in the problem of excess fertilizer getting into waterways and harming aquatic ecosystems.

Call on a student volunteer to read the problem statement aloud.

**CREDITS:**

*Resource:* Biomimicry Institute. (2015). Biomimicry Global Design Challenge: The living filtration system. Retrieved from <http://challenge.biomimicry.org/en/custom/gallery/view/2526>

*Image:* Getty Images 160524258: Wataru Yanagida: Field of corn



**Objective:**

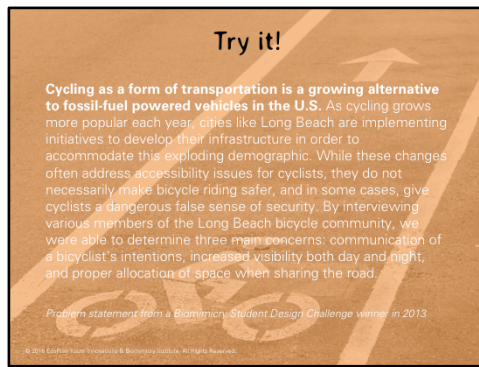
- Review and discuss examples of effective design questions.

**Suggested Teaching Strategy:**

Tell students: Here are a couple ways we could define a design question based on the problem described on the previous slide. Ask: What do you think of these questions? Are they suitable for a design challenge? *(Yes! Both of these statements define a desired impact and would give the team enough specificity to begin innovating.)*

**CREDIT:**

Getty Images 160524258: Wataru Yanagida: Field of corn



### **Objective:**

- Demonstrate how to form an effective design question to suit an identified design challenge.

### **Suggested Teaching Strategy:**

Tell students: Now let's try one together—here's another problem statement. Call on a student volunteer to read the question aloud.

Ask: What design questions can you come up with based on the problem described here? Pause to allow students to write their ideas on a piece of paper.

### **CREDITS:**

*Resource:* Biomimicry Institute. (2016). Biomimicry Student Design Challenge. Retrieved from <https://biomimicry.org>

*Image:* Getty Images 181872096: GibsonPictures: Bike Lane in San Francisco



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**Suggested Teaching Strategy:**

Ask students: How did you frame this challenge as a design question? Call on volunteers to share their design questions with the class.

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*Image:* Getty Images 181872096: GibsonPictures: Bike Lane in San Francisco