Tolerance, Sustainability & Circularity

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R·I·T
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In this workshop, we will discuss **biomimicry** design principles, to **biologize and discover** ideas for your challenge for the Madar competition

Your challenge today!

Take the challenge you selected, and start researching inspiration from nature to propose solutions to your challenge!

Our Aim today!

biologize and discover ideas for your project!

Ministry of Tolerance in UAE

Tolerance

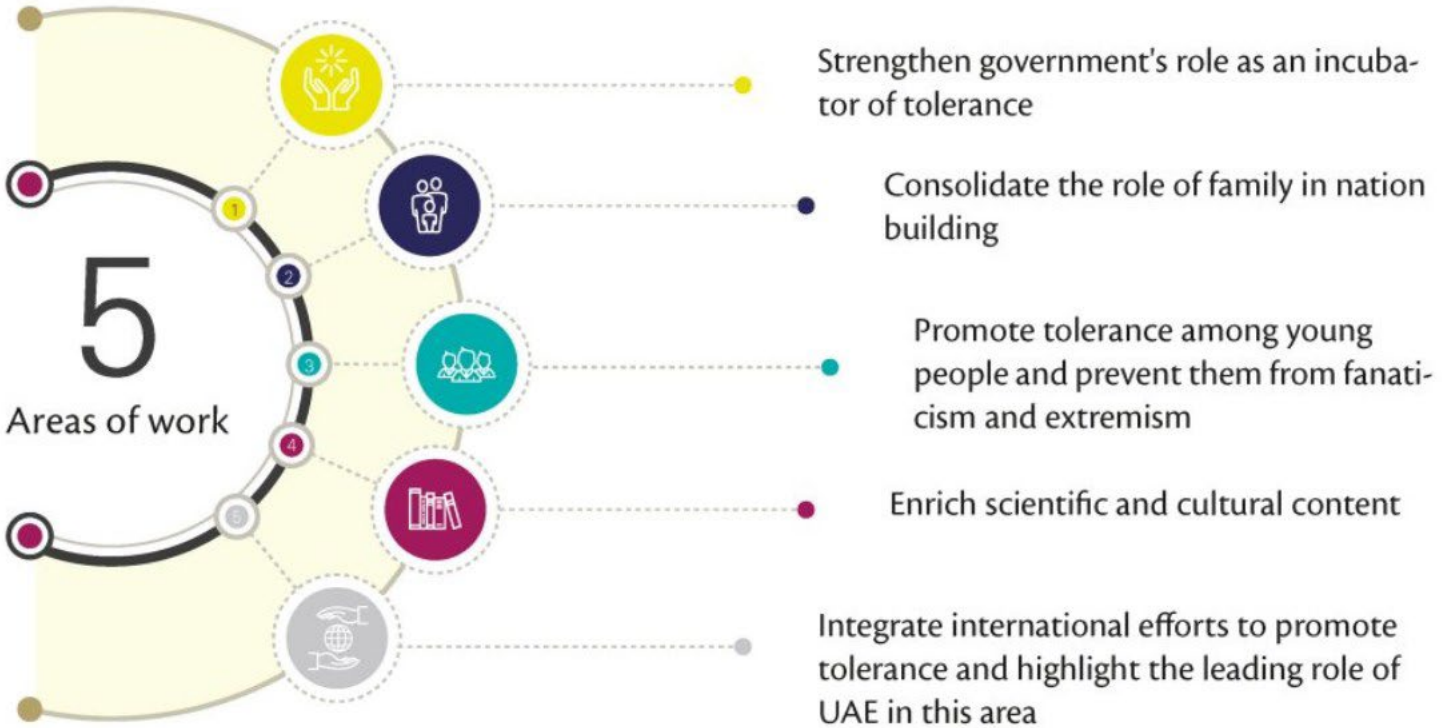
Willingness to [respect and] accept feelings, habits, or beliefs that are different from your own.

Source: Encyclopedia Britannica.

Tolerance in UAE

Source: https://www.tolerance.gov.ae/uaetolerance

Tolerance in UAE



Source: https://www.tolerance.gov.ae/uaetolerance

Tolerance

Coexistence! Living in peace!
Is it only about People?

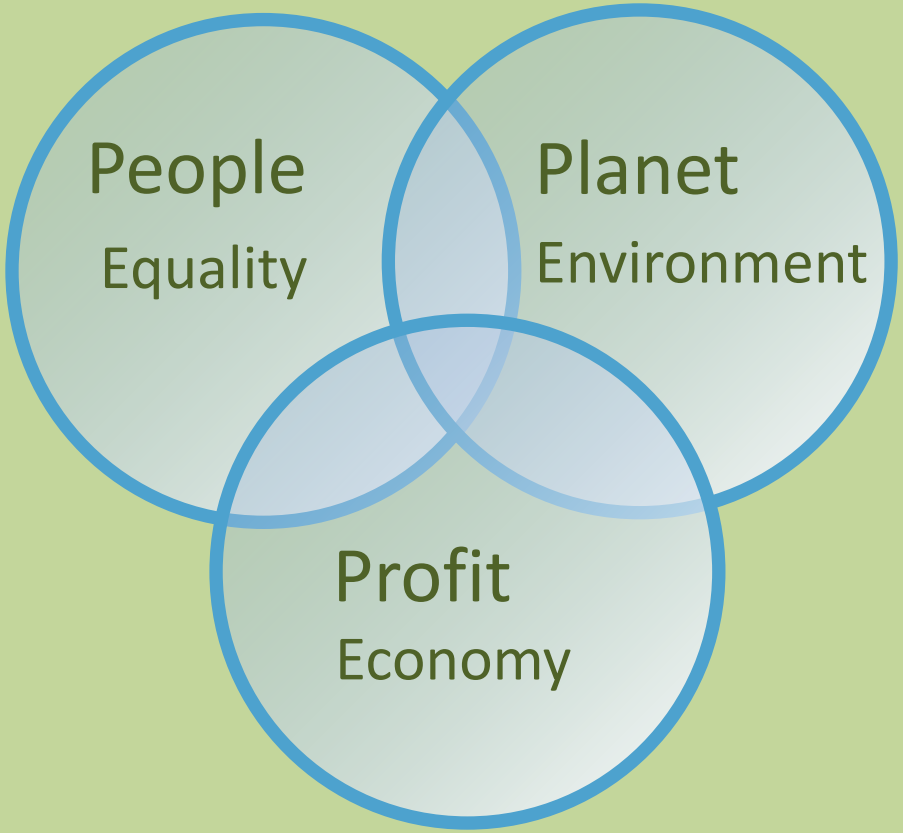
How about Tolerance (coexistence, living in peace) with all forms of life in our planet?

Source: https://www.tolerance.gov.ae/uaetolerance

Quick Recap
sustainability & circularity
+ possible challenges

What is Sustainability?

Sustain + Ability



Circularity – Design for a Circular Economy

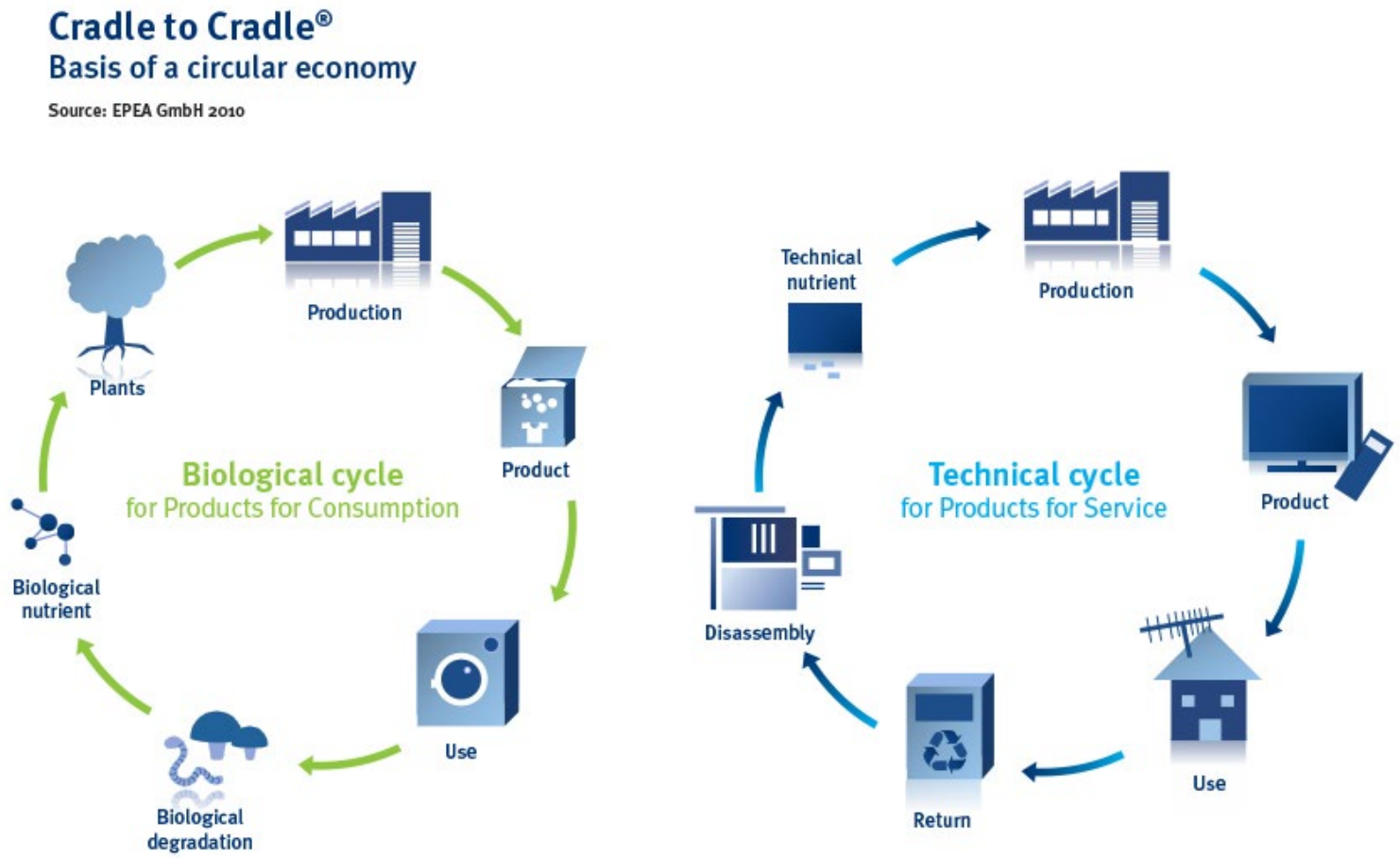
An economy that is restorative and regenerative by design.

It is based on three principles:

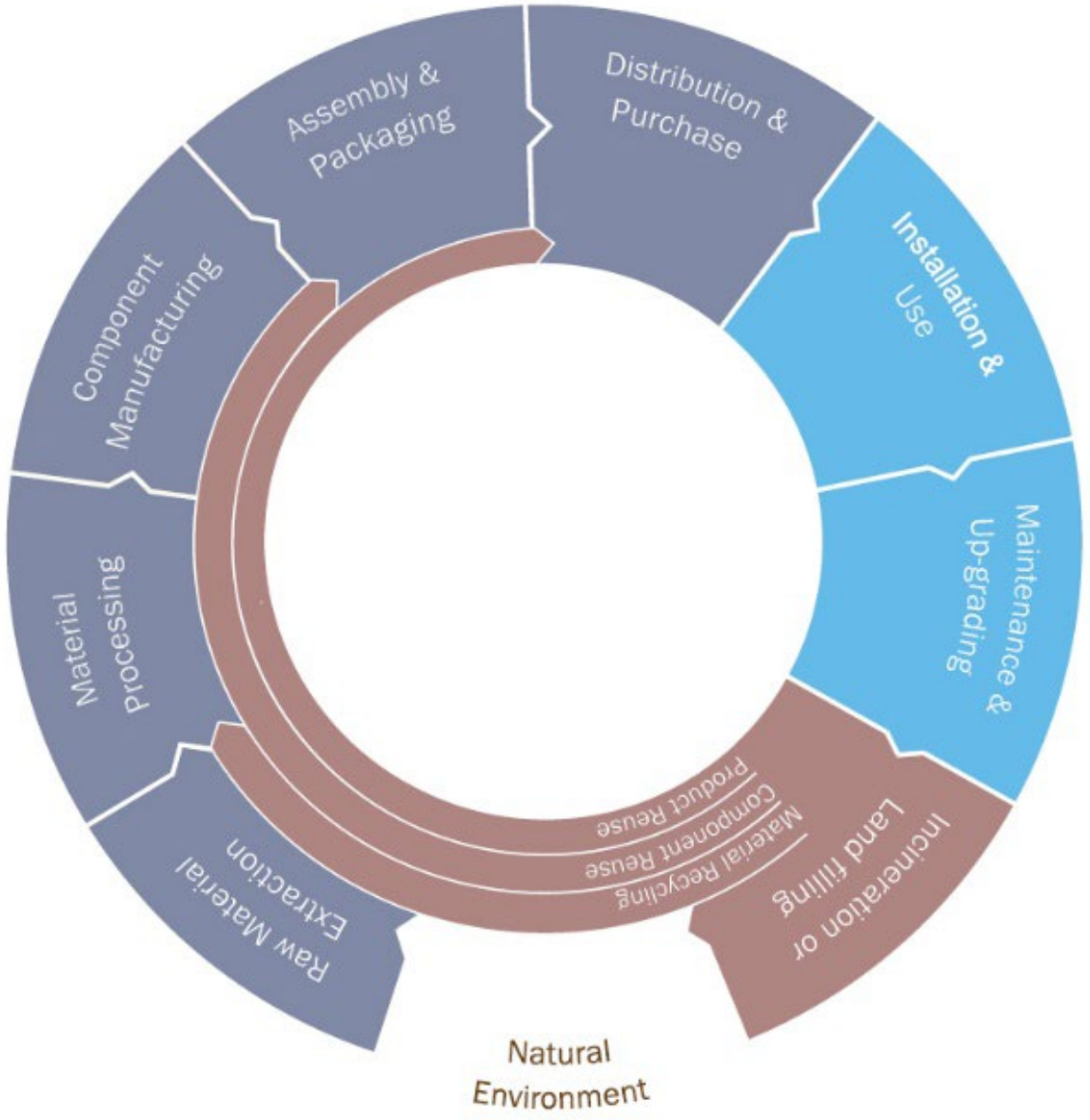
- **Design out waste and pollution**
- **Keep products and materials in use**
- **Regenerate natural systems**

Sources: https://www.ellenmacarthurfoundation.org/circular-economy/what-is-the-circular-economy

Why circular and cyclic?



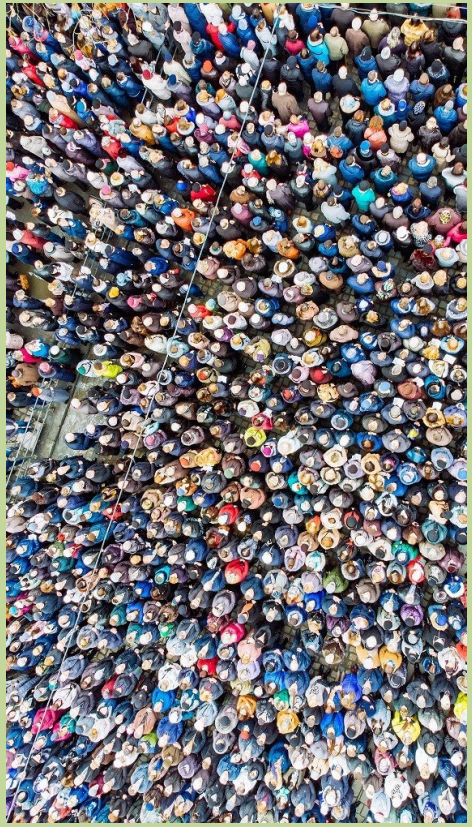
Biomimicry, Industrial Ecology, Cradle to Cradle and Life Cycle Thinking are all tools which imitate cycles and systems in nature.



Life cyclic thinking

Biomimicry, Industrial Ecology, Cradle to Cradle and Life Cycle Thinking are all tools which imitate cycles and systems in nature.

Challenges: water, food,wellbeing



Tolerance,Sustainability & Biomimicry

Water

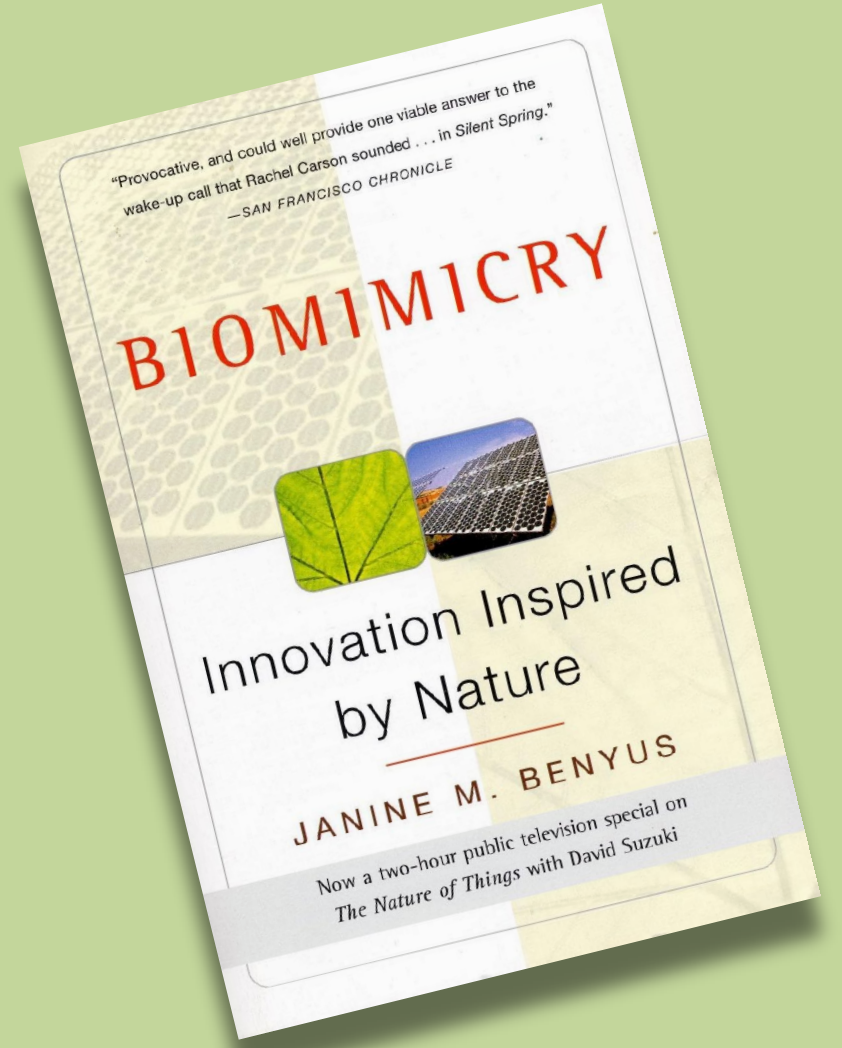
Food

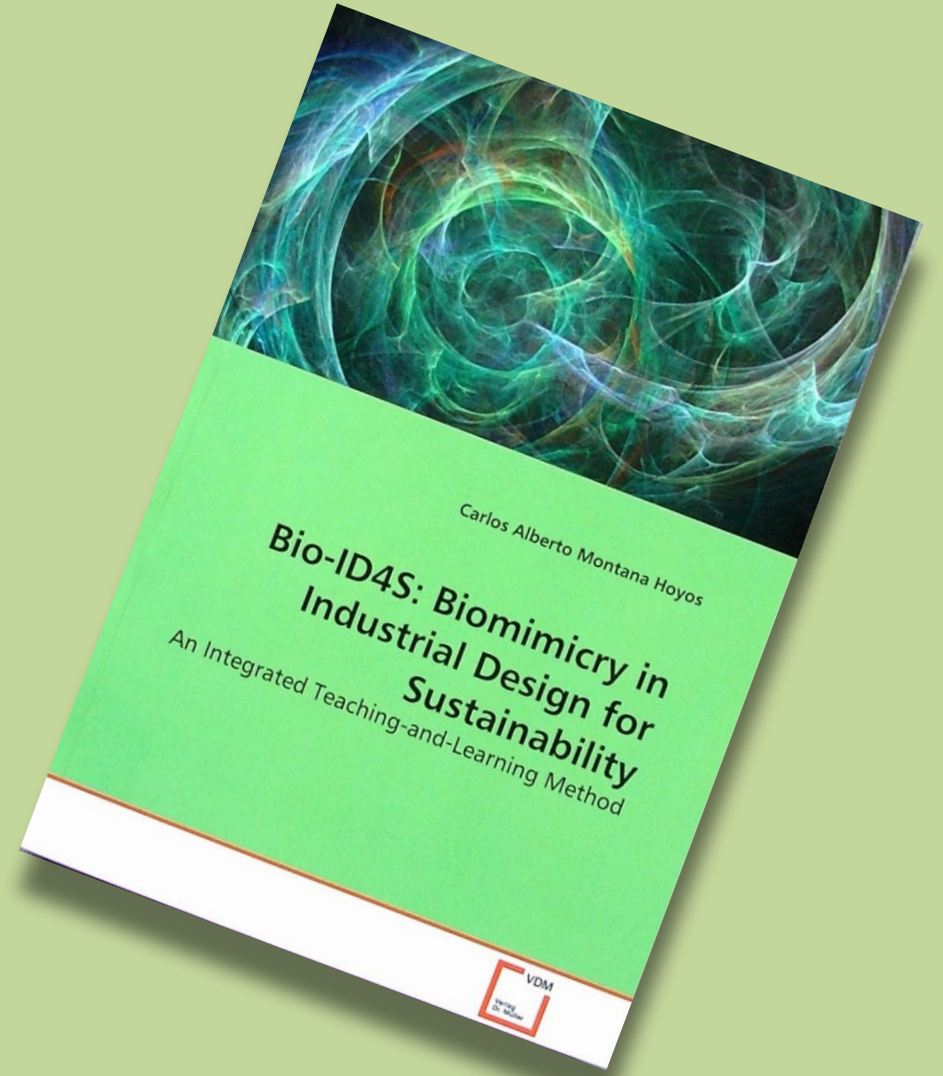
Wellbeing

Tolerance & Sustainable Development Goals

Inspiration in Nature for Sustainability & Circularity

What is Biomimicry?
Innovation Inspired by Nature





from the Greek *bios*, life & *mimesis*, imitation. Janine Benyus, 1997.

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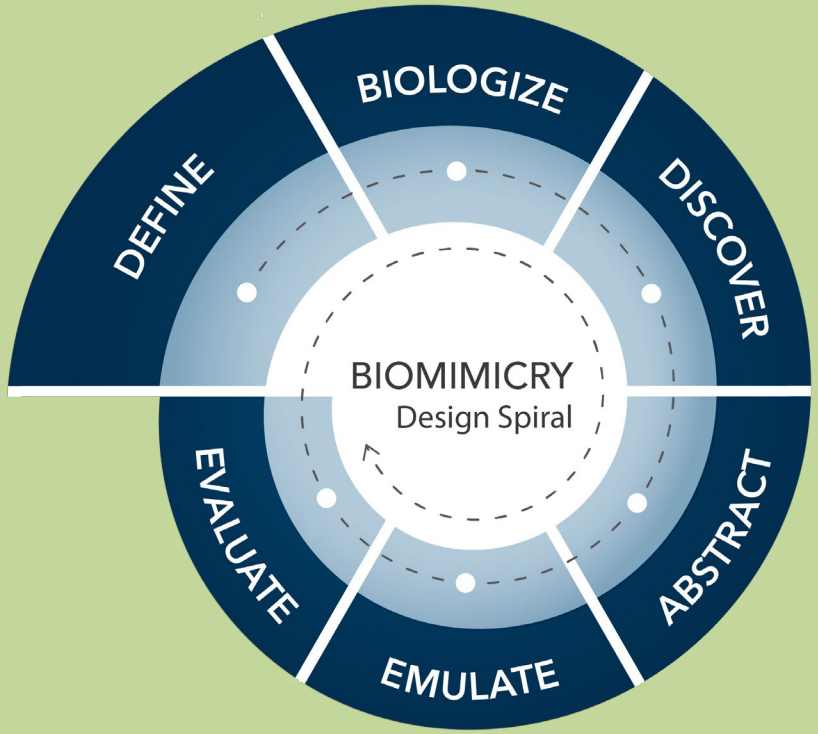
Biomimicry design spiral process

Following a design process can be extremely helpful when setting out to solve a design challenge. The Biomimicry Design Spiral provides a succinct description of the essential elements of a design process that uses nature as a guide for creating solutions.



Resource: https://toolbox.biomimicry.org/methods/process/

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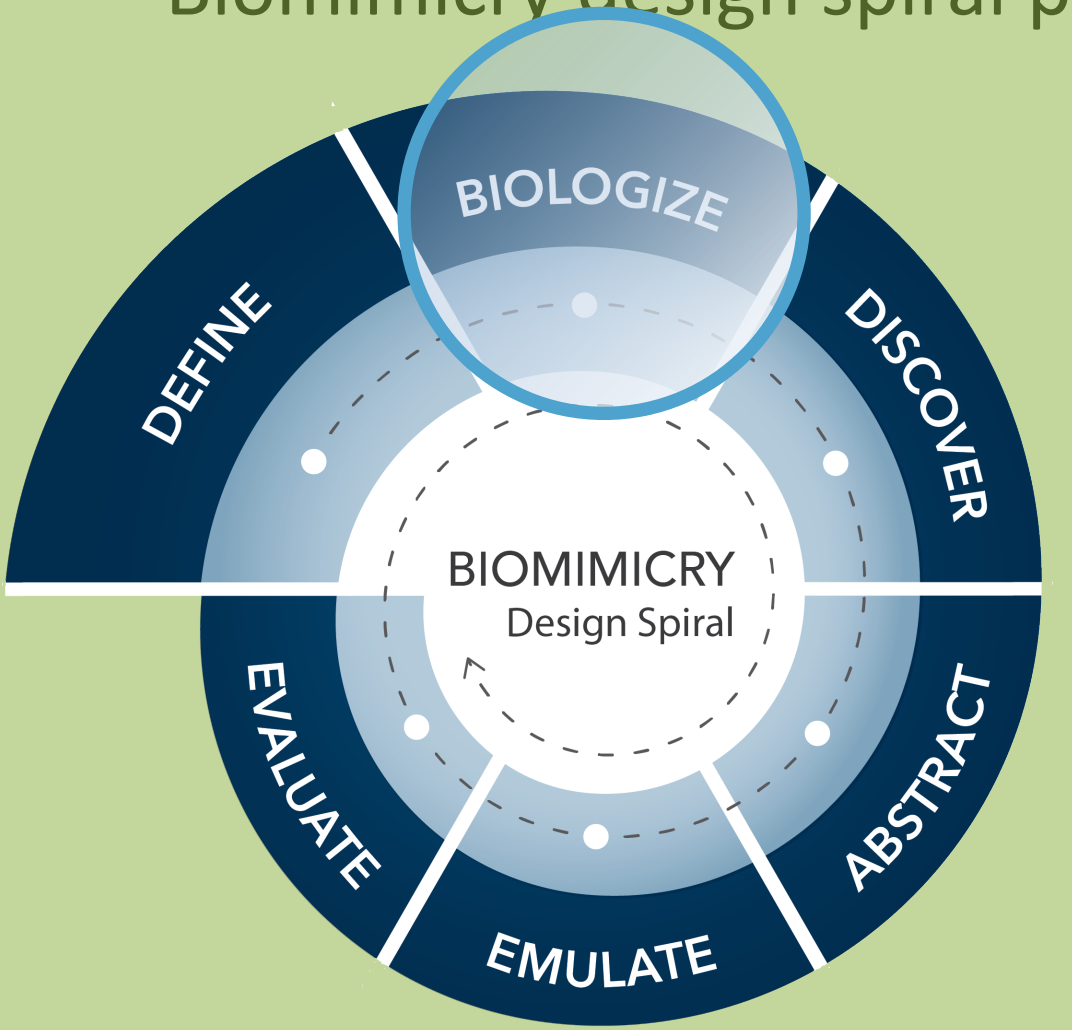
Biomimicry design spiral process: Step 2: Biologize



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Analyze the essential functions and context your design solution must address. Reframe them in biological terms, so that you can “ask nature” for advice.

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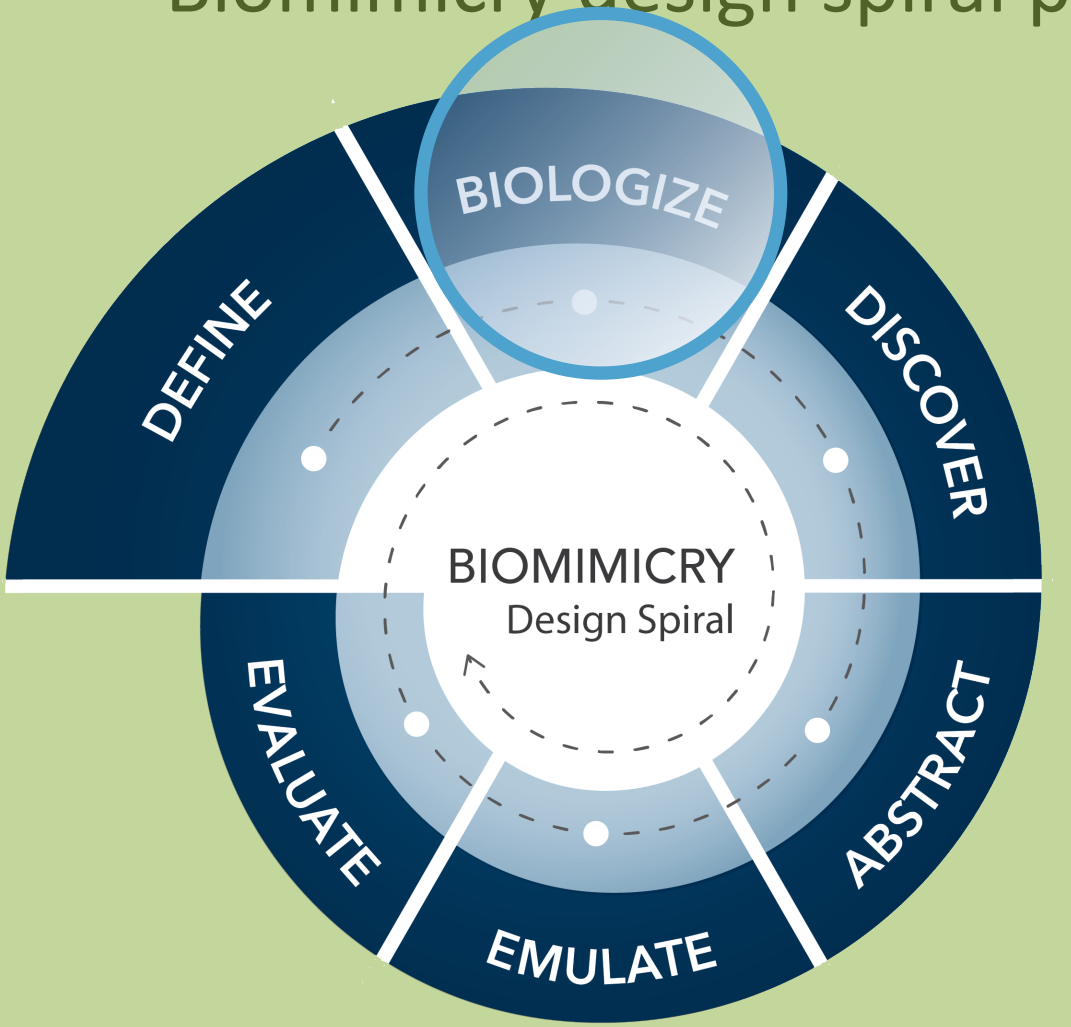
Biomimicry design spiral process: Step 2: Biologize



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Ask “How does nature?” questions.
Think about analogous life functions and contexts in nature.
Consider multiple possibilities.
Flip the question.
Don’t rush!

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Biomimicry design spiral process: Step 2: Biologize

Biologize Function and Context

"Biologizing" translates a design question into search terms that can be used to look for biological models. Use this worksheet to help you extract or translate the function(s) your design needs to accomplish, and the context in which those functions occur, into biology-relevant terms.

Design question:
Write down the design question your team developed using the Define the Challenge worksheet:

How might we _____?

Identify related biological functions:
Think critically about the functions at the heart of the outcome/impact your design question is getting at. Consider including relevant opposites or tangential functions that may be worth exploring. Hint: Refer to the **Biomimicry Taxonomy** for more examples of biological functions.

Define relevant contextual factors:
How can you use biologically-relevant terms to describe the context in which your design must function?

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Biomimicry design process

Source: https://www.youtube.com/watch?v=6WjBvFwQpYU

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Biomimicry design spiral process: Step 2: Biologize

Sample biologized questions

"Biologizing" translates a design question into search terms that can be used to look for biological models. Consider these examples:

Design Question:
How might we keep buildings cool in the summer?

Biologized Question:
How does nature regulate temperature in hot climates?

Design Question:
How might we reduce stormwater runoff and flooding in cities?

Biologized Question:
How does nature manage excess water?

Design Question:
How might we reduce the use of toxic substances in paints?

Biologized Question:
How does nature create color?

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Biomimicry design spiral process: Step 2: Biologize

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Now you further refine your challenge using the worksheet.

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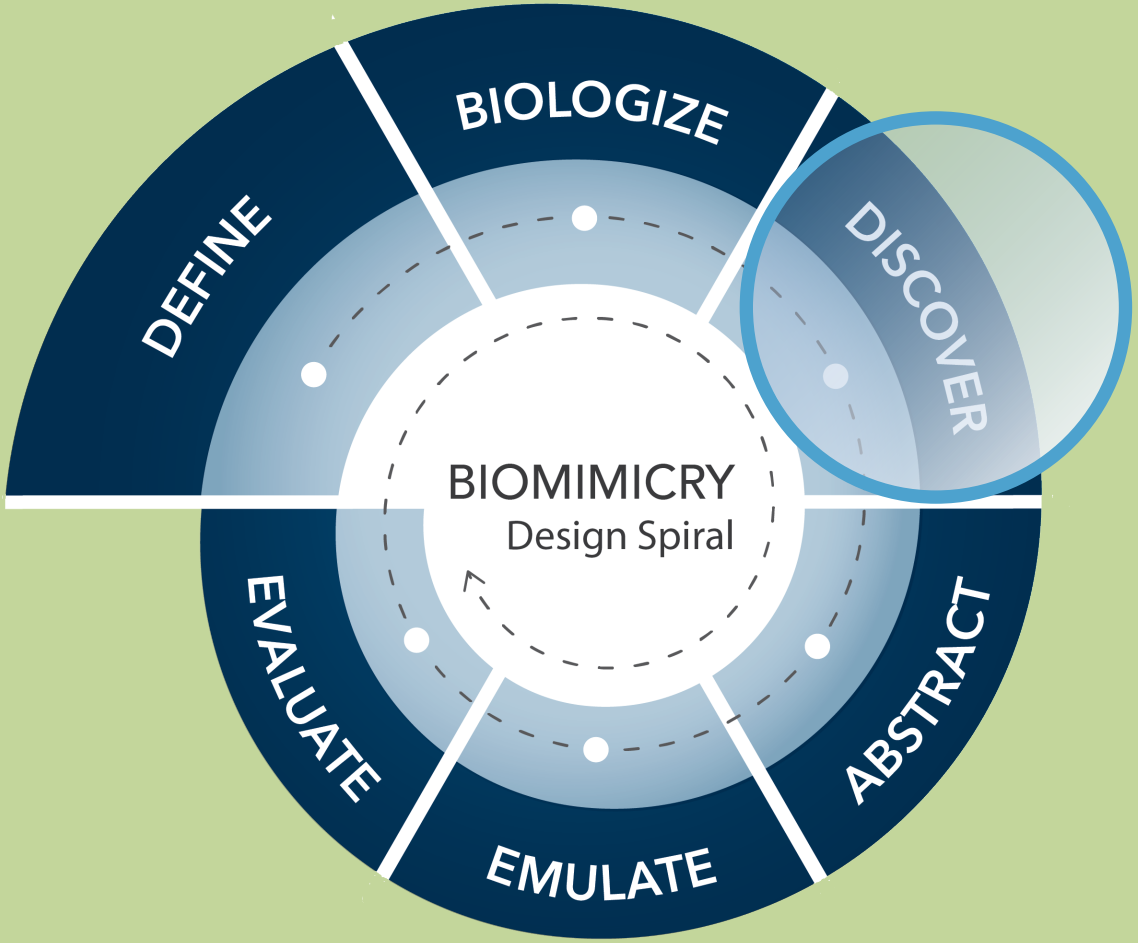
Biomimicry design spiral process: Step 3: Discover



Resource: https://toolbox.biomimicry.org/methods/process/

Look for natural models (organisms and ecosystems) that need to address the same functions and context as your design solution. Identify the strategies used that support their survival and success.

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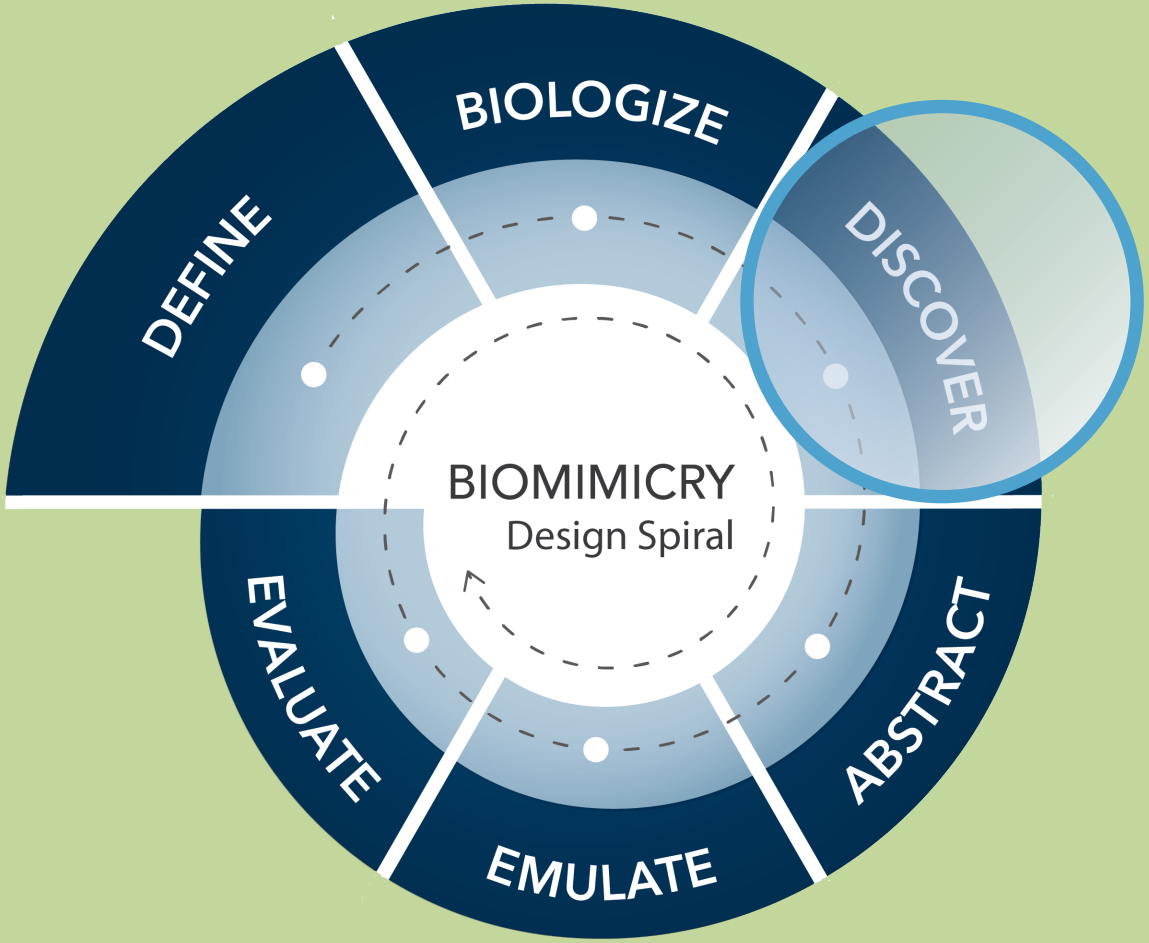
Biomimicry design spiral process: Step 3: Discover



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Go outside and look around.
Keep a nature journal.
Explore Ask Nature.
Read scientific literature.
Talk to biologists, naturalists and ecologists.
Track your sources.

Task for next session

Bring biological inspirations and start developing ideas

Biologize Function and Context

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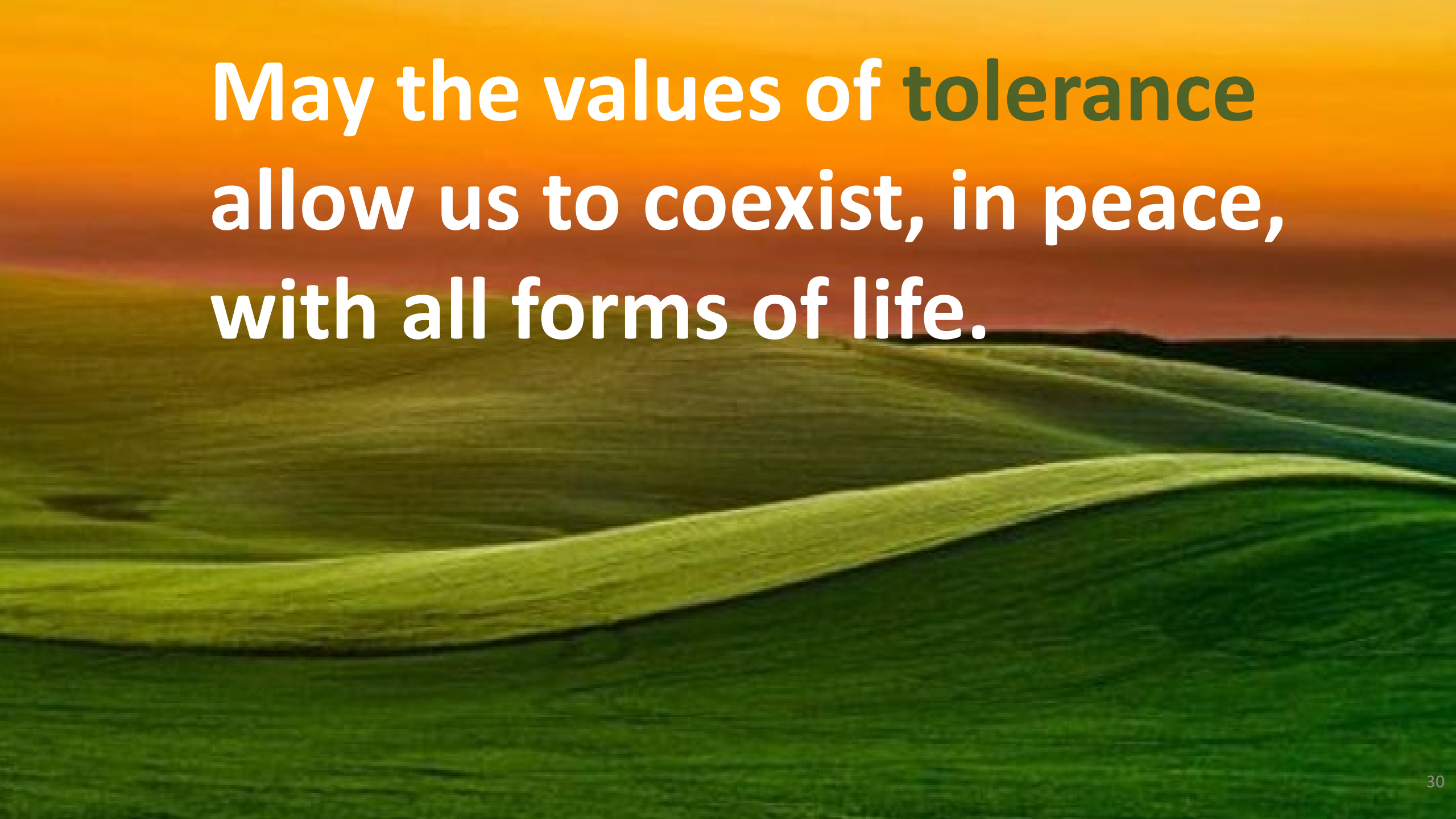
Define relevant contextual factors:
How can you use biologically-relevant terms to describe the context in which your design must function?

Upload your worksheet, and in groups, create a one-minute video of a real-life exploration of a natural element, and what you can learn from it.
Upload in youtube or vimeo, and place link in Figjam.


May the values of tolerance
allow us to coexist, in peace,
with all forms of life.

Resources

https://www.ellenmacarthurfoundation.org/our-work/activities/circular-economy-in-cities

https://www.circulardesignguide.com/methods

https://www.ellenmacarthurfoundation.org/circular-economy/concept/infographic

http://www.conservationeconomy.net/pattern_map/noflash/index.html

https://toolbox.biomimicry.org/methods/process/