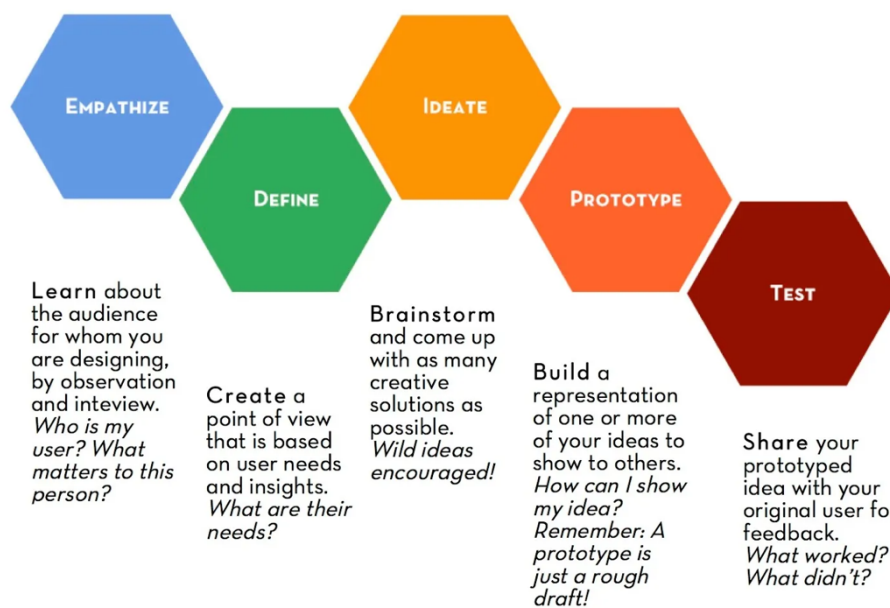


Climate-Resilient Housing Design Challenge brief

Learning Target

I can collaboratively design and construct a prototype using the design process to improve housing resilience and watershed protection in the face of climate change.

We are all DESIGNERS!



A design brief is a document used by professional designers and their clients to communicate information, goals, and requirements of a creative project. This design brief describes your challenge: to design and build a **climate-resilient housing prototype** that can help communities adapt to the effects of climate change.

The Opportunity

Many communities are facing flooding, heatwaves, rising sea levels, and extreme weather events that can damage or destroy homes. In many places, especially near creeks and rivers, these problems are made worse by how we've built our cities, such as covering land with impervious surfaces (like concrete or asphalt), removing natural buffers, and interrupting the water cycle. When water can't soak into the ground, it rushes into urban streams and watersheds, causing pollution, erosion, and flash floods that hurt both people and ecosystems like Douglas Creek or Bowker Creek in Victoria, BC. *We need smarter homes and neighbourhoods that are:*

- Connected to the SDGs: Goal 11: Sustainable Cities and Communities, Goal 13: Climate Action, and one other goal of your choice.
- Safe and resilient in extreme weather.
- Designed to protect people and reduce the impact on streams, wetlands, and riparian zones.
- Energy-efficient and environmentally responsible.

You are challenged to:

Use the design thinking process to plan and build a prototype of a climate-resilient house or shelter that supports both people and the watershed where it's built.

Your team's design should:

- Respond to a climate-related challenge in a local or global watershed (e.g., urban flooding, heat, landslides, poor drainage).
- Incorporate stormwater solutions such as rain gardens, green roofs, swales, or permeable surfaces.
- Use passive cooling/heating or renewable energy.
- Reduce runoff and protect local streams and biodiversity.
- Be affordable, adaptable, and rooted in community needs.

Follow the Design Thinking Process:

1. **Empathize** – Who will live in this house? What climate and watershed challenges do they face?
2. **Define** – What's the core problem (e.g., flood risk, overheating, erosion, runoff)?
3. **Ideate** – Brainstorm creative ideas! Think of housing as part of a **living watershed system**.
4. **Prototype** – Build your model using recycled or classroom materials.
5. **Test & Improve** – Share your idea, explain your choices, and reflect on how to make it even better.

Your group will:

- Present your prototype to the class.
- Explain your design process, watershed context, climate solution, SDG connections.
- Reflect on what you learned and how your design could make a difference.



This resource is part of the BC Urban Streams & Watersheds lesson plans, assembled in 2025. Learn more and download additional resources at www.engagewithnbs.ca/for-schools

This material is available to reuse and adapt in your classroom.

