



Map the System Workbook



Purpose of this workbook

This workbook has been created to help guide you through the Map the System competition. It was designed to be a companion to the [Student Guide to Mapping a System](#) (**Guide**) that is longer and more detailed.

The workbook will go through **4 sections**. Across all sections, there are **12 steps**. Throughout the workbook, you will see **action items** which are created to help keep you on track as you prepare your submission.

Examples from past competitions

You are encouraged to review winning submissions from past competitions for ideas on how to structure your key deliverables.

Map the System Canada	Map the System Global
2022 — Map the System Canada	Map the System 2022 Map the System (ox.ac.uk)
2021 — Map the System Canada	Map the System 2021 Map the System (ox.ac.uk)
2020 — Map the System Canada	Map the System 2020 Map the System (ox.ac.uk)
2019 — Map the System Canada	Map the System 2019 Map the System (ox.ac.uk)
2018 — Map the System Canada	Map the System 2018 Map the System (ox.ac.uk)
2017 — Map the System Canada	Map the System 2017 Map the System (ox.ac.uk)

Key deliverables

1. Visual Systems Map
2. Written Summary of Research
3. Detailed Bibliography
4. Verbal Presentation

You will be evaluated based on set criteria developed by the Map the System Global team: <https://mapthesystem.sbs.ox.ac.uk/evaluation-criteria>

Remember: These deliverables should be submitted before the deadline

When to use systems thinking

1. The problem is chronic
2. Stakeholders find it difficult to agree on the best course of action
3. Stakeholders are tackling one part of the system without full context
4. Short-term efforts seem to undermine long-term solutions
5. Stakeholders are simultaneously implementing multiple solutions
6. Choosing one solution comes at the expense of continuous learning

(McGowan, 2021, p. 4)



Section One: Understanding the challenge

(January – February)



Step One:
Understanding
the system

Action Item

Write approximately 200 words about the elements, interconnections, and function or purpose of a system that you are interested in.

Understanding the system

What is a system?

“[A]n interconnected set of elements that is coherently organized in a way that achieves something...a system must consist of three kinds of things: elements, interconnections, and a function or purpose.”

(Meadows, 2008, p. 11)

Where to look:

- ✓ Definitions of elements, interconnections, and function or purpose (page 17)
- ✓ The three characteristics of Systems (page 19)
- ✓ *Models for Solving Systemic Problems and the Systems-led Leadership Roles and Actions* (page 22-23)

Resources

Videos

- [TEDxOxbridge by Marc Ventresca - Don't Be an Entrepreneur, Build Systems, https://www.youtube.com/watch?v=I9T3diyqRPg](https://www.youtube.com/watch?v=I9T3diyqRPg)
- TEDGlobal by Tom Wujec - Got a wicked problem? First, tell me how you make toast, https://www.ted.com/talks/tom_wujec_got_a_wicked_problem_first_tell_me_how_you_make_toast?language=en

Additional Resources

- [Habits of a Systems Thinker, http://systemsthinkersanonymous.com/wp-content/uploads/2017/05/Waters-Foundation-Habits-of-a-Systems-Thinker.pdf](http://systemsthinkersanonymous.com/wp-content/uploads/2017/05/Waters-Foundation-Habits-of-a-Systems-Thinker.pdf)
- Systems Practice Course - Free 8-week course offered by Acumen Academy starting January 25, 2022, <https://acumenacademy.org/course/systems-practice/>
- [Course resource – Systems Thinking Workbook, https://docs.kumu.io/content/Workbook-012617.pdf](https://docs.kumu.io/content/Workbook-012617.pdf)
- An overview of *System Mapping in the Horizons Foresight Method* by Policy Horizon Canada, [Module 4: System Mapping](#)

Step Two: Identifying a challenge

Action Items

Write a 200-word reflection using these guiding questions:

- What are you passionate about?
- Do you want to work on a local problem or a global problem?
- How will you research this problem?
- How can you scope your challenge to make your work meaningful and manageable?

Write a challenge statement using the lessons learned in Step 2. Your challenge statement should be a full sentence that focuses on the what and the where. Remember, you want to focus on the problem, not the solution.

Identifying a challenge

What are complex challenges?

“Complex, adaptive challenges are characterized by complexity, uniqueness, and ambiguity. They are often multifaceted, confusing, and hard to define. It is also hard to define the exact boundaries of a complex system, as outside context continually influences the system’s results.” (**Guide**, p.26)

Where to look:

- ✓ Types of challenges and the [Stacey Matrix](#) (page 26-27)
- ✓ The value of lived experience (page 28-29)
- ✓ Tips for identifying a challenge (page 29-31)
- ✓ How to avoid presenting a ‘solution in disguise’ and narrowing your topic to scope your challenge (page 32-33)

Resources

Videos

- The Five Whys: Jefferson Memorial <https://www.youtube.com/watch?v=BEQvq99PZwo>

Step Three: Teamwork & Bibliography

Action Items

Consider how your team will work together throughout the competition.

Create a bibliography list and start reading the literature. It is helpful to track your literature using a spreadsheet or a table in Word. See the template on the following page.

Teamwork & Bibliography

What makes teams effective?

If you are working as a team, take some time to determine how you will share work, how you will communicate, and how you will celebrate your hard work. Having these conversations at the outset of the competition can go a long way!

Where to look:

- ✓ Benefits of working collaboratively and some tips on how to form a team (page 36-37)

Resources

Map the System Research – Annotated Bibliography

Note: It is suggested that you gather approximately 30 articles/papers (combination of academic literature and grey literature). It is helpful to separate the literature into two different categories: challenges and solutions.

Challenges

Full Reference (i.e., APA style)	Objective of the article/paper or the problem addressed	Sample and location of study	Key results/findings and conclusions	Additional notes

Solutions

Full Reference (i.e., APA style)	Objective of the article/paper or the problem addressed	Sample and location of study	Key results/findings and conclusions	Additional notes

Step Four: Research

Action Item

Determine how you will go about researching your project.

Consider:

- Where will you find relevant literature?
- Will you conduct primary research?
If **yes**, what do you need to do to enable this?
If **no**, how will you gather your data?

Do I need ethics approval to do research for Map the System?
Check out our [FAQ page](#) to learn more.

Research

Getting started with research

Research is an integral part of a strong submission. You can choose to work solely with secondary research (through your literature review) or integrate some primary research.

Map the System seeks to collaborate across disciplines to address societal problems, you are encouraged to draw your research from multiple sources and journals.

Where to look:

- ✓ Research tips for systems mapping (page 40-43)
- ✓ Tips for conducting interviews (page 44-46)
- ✓ General research best practices (page 46)

Step Five: Understanding the challenge

Action Items

Complete the Impact Gaps Canvas for your challenge – click [here](#) for the template and additional resources.

Complete an Iceberg Model for your challenge – click [here](#) for additional resources.

Understanding the challenge

Continuing your research

Your research should cover three key categories found in the Impact Gaps Canvas:

1. Challenge
2. Solutions
3. Impact gaps

Where to look:

- ✓ Impact Gaps Canvas tool (page 48-51)
- ✓ Iceberg Model (page 51-52)
- ✓ Causes Diagram (page 52)

Step Six: Map the system

Action Item

Draw a draft system map for your challenge – you can do this by hand or with a mapping tool (for example, [Kumu](#)).

Map the system

Visualizing your research

“Systems mapping is a visualisation technique used by change agents to make sense of complexity. Systems maps help describe and diagnose a current state of a given system and identify gaps and opportunities for improvement” (Johnson et al., 2019, p. 23).

Where to look:

- ✓ General information about mapping a system (page 54-55)
- ✓ 5Rs model (page 55-59)
- ✓ Systems change from a theoretical perspective (page 59-60)
- ✓ Feedback loops (page 60-62)

Resources

Videos:

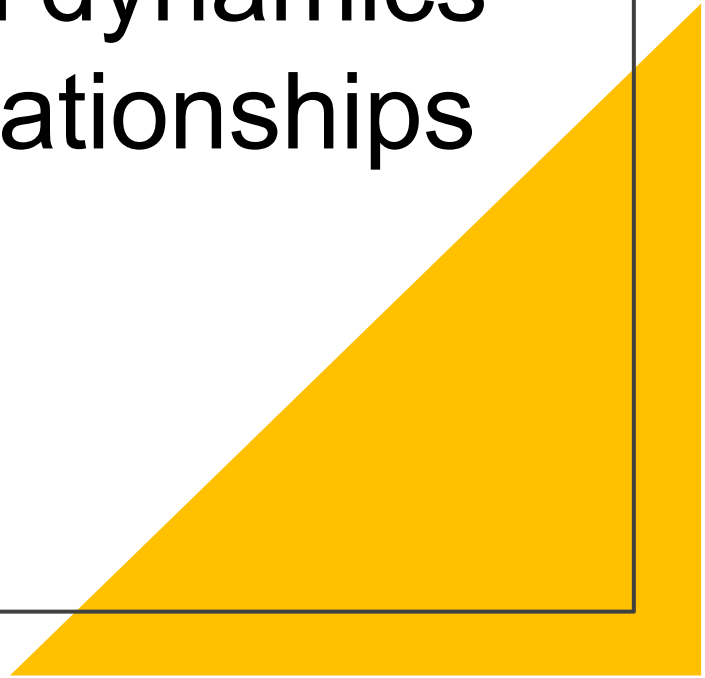
- *In A World of Systems* by David Macaulay, https://www.youtube.com/watch?v=A_BtS008J0k
- *Describing Systems-causal Flow Diagrams* by Dan McCarthy (Director of [WISIR](#)), <https://vimeo.com/117111950>
- *Describing systems-feedback loops* by WISIR, <https://vimeo.com/124574774>

Additional Resources:

- Read about the different types of maps that can be developed to address systemic challenges, [Tools for Supporting Systems Thinking and Change](#)



Section Two:
Understanding
system dynamics
and relationships
(February)



Step Seven: Considering power

Action Item

Write approximately 200 words about the power dynamics that exist within the system that you are mapping. Use the following prompts:

- Who benefits from the system?
- Who does not benefit from the system?
- Who has the power to intervene and impact change in the system?

Considering power

Why is power important?

When considering the power dynamics of a system, the Guide poses an important question for you to consider “[w]ho benefits from the way things are, who does not, and who has the power to change that?” (p. 66).

Where to look:

- ✓ Power dynamics (page 66-67)
- ✓ Force field analysis tool (page 68)

Resources

Video

- Watch Eric Liu's TED Talk - How to Understand Power, [https://www.ted.com/talks/eric liu how to understand power?language=en](https://www.ted.com/talks/eric_liu_how_to_understand_power?language=en)

Step Eight: Solutions landscape

Action Item

Review your Impacts Gaps Canvas and make any necessary updates based on new information that you have learned in Step 7 and Step 8.

Solutions landscape

Examine existing solutions

You will be taking a deeper dive into the solutions landscape. It is important to keep in mind that you are not presenting solutions at this stage. Instead, you are examining existing solutions to the challenge that you are focused on.

Where to look:

- ✓ Considerations when reading literature on existing solutions (page 70-72)
- ✓ Asset mapping (page 73-74)
- ✓ Importance of evidence (page 74-76)



Section Three:
Identifying
impact gaps and
levers of change
(February - March)

Step Nine: Impact gaps and levers of change

Action Items

Review your Impact Gaps Canvas and make any necessary updates based on new information that you have learned.

Review your systems map to identify leverage points for change. For each leverage point identified, write approximately 50-100 words about what type of leverage point it is.

Impact Gaps and Levers of Change

Focus on the impact gaps

“Folks who do systems analysis have a great belief in ‘leverage points’. These are places within a complex system where a small shift in one thing can produce big changes in everything” (Meadows, 1999, p. 1).

Where to look:

- ✓ Impact gaps (page 79-80)
- ✓ Levers for change (page 80-82)
- ✓ Scaling impact, theory of change, and mistakes to avoid (page 82-84)

Resources

Videos:

- Watch How Wolves Change Rivers → <https://www.youtube.com/watch?v=ysa5OBhXz-Q>
- Watch A Systems Approach to Ending Homelessness by David Stroh → <https://youtu.be/khFnWMZGcuM>

Additional Resource:

- [Read about levers for change Leverage Points: Places to Intervene in a System by Donella Meadows](#)

Step Ten: Lessons learned

Action Item

Write a 200-word reflection using the following prompts:

- How have your assumptions been challenged?
- What do we still not know?
- What else would we need to learn to really understand this challenge?

Lessons Learned

Engaging in Complexity

“[T]he entire point of Map the System is...to engage in complexity, which is by nature, complex! It is likely that the more you research about a topic, the more you will realise you don't know” (Johnson et al., 2019, p. 88).

Where to look:

- ✓ What we learned from taking a systems approach (page 87-89)
- ✓ Complexity and unanswered questions (page 89)

Resources

Videos:

- Otto Scharmer on the four levels of listening →
<https://www.youtube.com/watch?v=eLfXpRkVZaI>

Additional Resources:

- Taking a second look at Habits of a Systems Thinker →
<http://systemsthinkersanonymous.com/wp-content/uploads/2017/05/Waters-Foundation-Habits-of-a-Systems-Thinker.pdf>



Section Four: Putting Learning into Action

(March)



Step Eleven: Presenting your learnings

Action Items

- Update your visual map
- Finalize your written summary and bibliography
- Finalize your presentation

Presenting your Learnings

Shift your focus

Now is the time to start thinking about how you will present the findings from your research.

Submission guidelines can be found here:

<https://www.mapthesystem.ca/submission-guidelines>

Prepare to join the campus final event and answer questions from judges.

Where to look:

- ✓ Visual map and links to online mapping tools (page 94-95)
- ✓ Written summary (page 96)
- ✓ Flow of presentation (page 96-99)
- ✓ Speaking tips (99-100)

Resources

Videos:

- TED Talk by Nancy Duarte: The secret structure of great talks →
https://www.ted.com/talks/nancy_duarte_the_secret_structure_of_great_talks?referrer=playlist-how_to_make_a_great_presentation#t-2005

Additional Resources:

- Learn about Pecha Kucha, an innovative way to tell your story →
<https://www.pechakucha.com/>
- Creating a bibliography can be challenging, check out Zotero for assistance →
<https://www.zotero.org/>
- Looking to improve your public speaking skills? Check out this course by Coursera →
<https://www.coursera.org/specializations/public-speaking>

Step Twelve: What's next?

Action Item

Celebrate your hard work and take time to reflect on the lessons that you learned by participating in Map the System.



What's Next?

Congratulations!

You have made it to the end of the Map the System process. You might be wondering: what can I do with my research beyond the competition? Step 12 sheds light on what comes next.

Where to look:

- ✓ Share your learnings (page 102-103)
- ✓ Receiving feedback (page 103-104)
- ✓ Leveraging your experience (page 105-106)
- ✓ Rest and reflection (page 106-107)

Closing Comments

We hope that you have found this workbook useful. If you have any questions, please be sure to check out our website

<https://uwaterloo.ca/centre-peace-advancement/student-engagement/map-system>

or reach out by email to our Campus Lead
mapthesystem@uwaterloo.ca

References

Johnson, A., Papi-Thornton, D., & Stauch, J. (2019). *Student Guide to Mapping a System*.

https://www.mtroyal.ca/nonprofit/InstituteForCommunityProsperity/_pdfs/ssdata_icp_mts_2020.pdf

McGowan, K. (2021, February). *What's your system?*

<https://static1.squarespace.com/static/5f2342b2a374436dd8ee5dac/t/60342d79662f492f050f30ab/1614032251258/Feb+12+-+MTS+-+WhatsYourSystem.pdf>

Meadows, D. H. (1999). *Places to intervene in a system: In increasing order of effectiveness*. http://www.donellameadows.org/wp-content/userfiles/Leverage_Points.pdf

Meadows, D. H. (2008). *Thinking in systems: A primer* (D. Wright, Ed.). Chelsea Green Pub.