

## Guidelines for Introducing the Iceberg Visual

### The iceberg can help people see how:

1. moving among all the levels in a system (events, patterns, structures, and mental models) can increase learning and leverage.
2. using various systems thinking strategies can be helpful in looking at those deeper levels and seeing the bigger picture.
3. revealing and considering peoples' mental models can influence the structures created within a system and those structures can influence the patterns/events seen in the system over time.

### Example for Introducing the Iceberg:

#### Overview:

1. Ask how many people know of the ship "Titanic."
2. Ask what key event happened that changed everything for all the passengers on the ship. Desired answer: the ship hit an iceberg.
3. Ask why the ship hit the iceberg. There could be many specific factors, but most can be generalized to the idea that they did not see the iceberg soon enough to stop or turn.
4. Explain why Titanic was special – i.e. considered unsinkable; result can be overconfidence that can lead to crashes/surprises.
5. Ask how much of an iceberg can usually be seen above the water. Possible answers: Not very much, about one-tenth.
6. Show a photograph or poster of an iceberg (optional) and point out the water level and that the majority of the iceberg is unseen under the water
7. Show the graphic of the iceberg visual.
8. Explain how the graphic is similar to an actual iceberg in that only a small part can be seen. Point out the water line on the graphic and explain how most of the iceberg is hidden below the surface of the water.
9. Explain that as with an iceberg, the part that you see is not the powerful part of a system or an iceberg. The powerful part lies in what's below the surface of the water or the system.
10. Point out and explain the arrows relating to learning and leverage.

#### Event Level:

- Explain that the event level shows what happened in a system. Give an example: A girl gets into a fight with her little sister.
- Starting with the events, have people brainstorm some of the events in the system that they are studying (e.g. events in a story, events from a historical era).
- Explain that if only the events are considered, then only the "tip" of the iceberg is seen.

### **Patterns of Behavior Level:**

- To achieve a more complete understanding of the system, moving deeper to the pattern level can help us see how the system has changed over time. Seeing the patterns can show us more of a “movie” of what happened compared to just one snapshot. Give an example: The number of fights the girl had with her sister had been low until two months ago when they started steadily increasing.
- In order to move “deeper” in the iceberg, a different set of tools is needed. At the pattern level, a tool called a behavior-over-time graph (BOTG) can help illustrate what has been happening over time.
- If desired, have people graph changes in a number of variables of the system over time.

### **Structures Level:**

- To help see the structures as a whole and how they might be influencing the patterns being seen, people need to look deeper to the structure level.
- Explain that structures are the policies, laws, and/or physical structures in a system. Give an example: Starting two months ago, the girl and her little sister had to share a room.
- Point out the arrow showing how leverage increases when moving to the structure and/or mental model levels. To affect lasting change in a system, mental models and/or structures must be changed.
- If desired, have people consider what structures generated/influenced the patterns over time in the system. Have people use various tools to do this including causal loop diagrams, stock/flow maps, and computer models.

### **Mental Models Level:**

- Explain that in order to understand why various structures exist in a system, mental models, i.e. beliefs/assumptions/values about the system, must be explored. Give an example: The girl’s parents strongly believed that caring for her suddenly ill grandmother in their home was more important than each girl having her own bedroom.
- If desired, have people consider what mental models are held in the system and how these mental models have affected the structures created.

### **General Notes:**

- The iceberg looks very linear in nature, but in reality, is not. For example, a specific event that occurs in a system could directly affect a mental model.
- The above introduction is only an example. Start a dialog at any level of the iceberg depending on the purpose. For example, in a situation in which people want to enact change in a system, it may be useful to start with patterns being generated in the system given the current structures. Then depending on whether or not the patterns are desirable, consider change to the structures in the system.