

Tip-It Game: Observations from Class

As you learn more about the science of abrupt climate change, keep your eyes on these characteristics. Are they also exhibited by the climate system? Are these fundamental attributes and characteristics of complex systems like the climate, or are they simply properties of the Tip-It Game?

- Tip-It shows a mix of stability and tipping (instability). Tip-It resists being tipped.
- The Tip-It game corrects its balance, by itself, by wobbling and waving – it can self-regulate.
- Big changes and pushes by players result in big wobbles – the Tip-It must wobble more than normal to regain its balance. It might tip if it is pushed too much.
- Tip It has its own "waves" and wiggles. When you touch the game to move discs, the waves that are present initially can get bigger.
- The clown on top is dependent on the system below (the lower balancing point) and therefore is easier to tip off.
- The system is more stable when balanced (all arms, or even 2 arms, have same weight).
- There is more than one tipping region– tipping the clown and the stick near the base.
- After the clown falls, it is hard to tip the stick.
- The small game had a ring connected to the three legs that protected against tipping. The larger game had less protection, though it was still protected when a leg hit the center post.
- Removing the disks was a gradual change. Gradual changes can lead to tipping.
- Abrupt and larger changes might lead to tipping easier than gradual or smaller changes.