

Promising Practices: STEM Gamifying For Comprehension



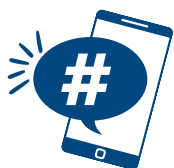
What is it?

Systems thinking is an important concept in both the physical and social sciences. It requires an understanding of the various parts and subparts of a system in order to understand the relationships within the whole.

In UCAR's The Systems Game, students either are part of a system or serve as scientists tasked with observing and making sense of the system's motion rule that its "parts" are following. (UCAR, 2020)

Impact?

- Computational Thinking
- Dynamic Interdisciplinary Teaming
- Systems Thinking



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About



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Promising Practices: STEM

Gamifying For Comprehension



Sample



Grade Level

5-12

Additional Resources



[The Systems Game](#)



How to do it:

1

Intro Concept: Present and survey students' knowledge about systems and systems thinking through class discussion. System examples could include: a body's circulatory system, nervous system, etc.; a car; a family; a highway...

2

Intro Game: Assign 1/5 of the students to be "scientists". The remaining students will comprise the system that will be studied by the scientists. Separate the scientists from the remaining students so that they are unable to hear the instructions given to the system group.

3

Play The Game: Designate an area within which the scientists will observe the system and a separate area nearby in which the system will operate/move. Begin the activity with a gentle push of a few of the parts within the system in order to set it in motion. A complete description of how to play the game can be found at <https://scied.ucar.edu/activity/systems-game>

4

Reflection and Assessment: Ask the students in the system reflective questions about collaboration and their focus on the individual parts or the system as a whole. Ask the student scientists how hard it was to remember that the parts were simply following a motion rule and were not in fact a defined system.