

# Exploring Nano & Society—Tippy Table

## Try this!

1. Balance the blocks on table! Put each one where you think it belongs. Can you create a stable nano world?
2. In addition to the regular blocks for the tippy table, try to find a good spot for the special blocks: delivery truck, speed bump, solar panel, landfill, farm, and space elevator.



## Think about it...

1. How did you decide where to put the blocks?
2. Who would be affected by your decision?
3. Who do you think is involved in this kind of decision in real life?

## What's going on?

Balancing blocks on a tippy table is kind of like the challenge we face as we plan for our future. Technologies are part of bigger systems, which include technological, political, social, and environmental aspects. As we create and adopt technologies, people, companies, and governments all work together to balance a variety of costs, risks, and benefits.

To use a familiar example, lots of people are involved in the decision to install a speed bump, including families in the neighborhood, the police department, and the local planning board. We can't understand speed bumps just by thinking about the actual object—we need to think about it in the context of the people who install and drive over them, and the transportation system they're part of.



With every decision to create or use technologies, there are winners and losers. Speed bumps can be annoying to drivers and can slow down emergency vehicles—but they keep the road quieter and safer for people who live there. The challenge is to find a balance. How can we take advantage of the benefits of technologies while minimizing their negative aspects? And how do we make sure the good and bad aspects of technologies are shared in a fair way?

## How is this nano?



Illustration of space elevator

**Technologies and society influence each other.** Like other technologies, nanotechnologies are part of bigger systems. Many different people are involved in deciding to develop and adopt new technologies. And when people decide to create and use new technologies, those technologies can change their lives in ways that are big and small.

Likewise, when we think about nanotechnologies we need to think about the bigger systems they're part of. Super strong, lightweight carbon nanotubes might allow us to make a cable that can support a space elevator. If it were possible for ordinary people to go into space, it could mean big changes to our lives.

## Learning objectives

1. Technologies and society influence each other.
2. Nanotechnologies work because they're part of systems.

## Materials

- “Balance our Nano Future” component of the *Nano* exhibition, including original set of blocks
- Set of additional blocks: speed bump, solar panel, delivery truck, farm, landfill, and space elevator.

## Notes to the presenter

This activity is designed as an open-ended, conversational experience. There is no right or wrong answer. You can start by asking visitors to explain why they put different blocks in different places on the tippy table, then ask questions to help them think about the kinds of technologies and systems they'll need to support these technologies. For example, you can ask, “Where does your food come from?” and talk about where to place the farm.

Some visitors may not be ready to think about some of the more challenging additional blocks, which is fine. You can start with the blocks already available on the tippy table and encourage visitors to articulate and discuss their placement decisions. Placement of the Nano Lab block, for instance, can raise many of these same issues and questions that the new blocks do.

Encouraging families or groups to ask each other questions is a great way to deepen and enrich conversation. This activity focuses on decision-making and the idea that technologies are part of larger systems, but you can easily add questions and conversation points about how our personal values and social relationships shape and help us make decisions.

## Related educational resources

The NISE Network online catalog ([www.nisenet.org/catalog](http://www.nisenet.org/catalog)) contains additional resources to introduce visitors to the relationship between nanotechnology and society:

- Public programs include *Flying Cars, Nanotech and Consumer Products, Shrinking Robots!*, and *Would You Buy That?*
- NanoDays activities include *Exploring Nano & Society—You Decide, Exploring Nano & Society—Invisibility Cloak, and Exploring Nano & Society—Space Elevator.*
- Forums include *Energy Challenges, Nanotech Solutions?, Nanomedicine in Healthcare, Privacy—Civil Liberties—Nanotechnology, and Risks, Benefits, and Who Decides?*
- Media include *Does Every Silver Lining Have a Cloud?, Is that Robot Real?, Let's Talk About It, Same Sides, Societal and Ethical Implications Posters, and Wonders and Worries of Nanotechnology.*
- Exhibits include *Balance our Nano Future* and *Nanotechnology: Fact or Fiction?*

## Credits and rights

This activity was created as a collaboration of the NISE Network and the Center for Nanotechnology in Society at Arizona State University.



This project was supported by the National Science Foundation under Award No. 0940143 and 0937591. Any opinions, findings, and conclusions or recommendations expressed in this program are those of the author and do not necessarily reflect the views of the Foundation.

Copyright 2012, Sciencenter, Ithaca, NY. Published under a Creative Commons Attribution-Noncommercial-ShareAlike license: <http://creativecommons.org/licenses/by-nc-sa/3.0>