

It All Comes Down to Dirt.

Learning while Playing with the *Healthy Chickens, Healthy Pastures* Playkit

by Linda Booth Sweeney

Not long ago, our local elementary school hosted a “Getting to Green” community event. My job was to work with my friend, Edie, an Audubon educator and farmer, to entertain the little ones while their parents listened to a variety of speakers talk about “sustainable” consumerism.

Edie, in her 80’s and more nimble than folks half her age, brought one of her chickens for the children to touch and hold. I brought a *Healthy Chickens, Healthy Pastures* playkit.

The *Healthy Chickens, Healthy Pastures* playkit and its companion curriculum guide has been created to help students think deliberately about living systems in a farm setting and to give students an organizing framework (informed by system dynamics) to take home and apply in other settings. Through the discussions, interactive system mapping activities, and games, students explore the hidden interconnections and dynamics within a sustainable chicken farm. Concepts such as *feedback loops, time horizon, stocks/flows* and *waste=food* are illustrated through a study of the relationships between elements of a farm pasture: chickens, cows, soil, plants, manure, etc. Students answer the question: “What’s the connection between the Egg Mobile and a healthy pasture?” The unit can include outdoor exploration if you have access to Drumlin Farm or another local farm that raises chickens, or you can bring the farm into your classroom using photos, videos and the Internet. This unit can be used to encourage students to see the people, land and wildlife in and around farms, not as a set of interesting but disconnected parts, but as components of vibrant, living systems. To purchase *The Healthy Chickens, Healthy Farms* playkit, and to download the free curriculum guide, see: www.clexchange.org.

“Clucky”, Edie’s barnyard bantam, was a huge success. The children, ranging in age from 3 to 9, sat cross-legged in a circle, listening intently as she explained why a chicken has this part and that, what they eat, what color eggs they lay.

Thoreaucana, a breed Edie developed, lays greenish-blue eggs. Dr. Seuss would approve.

Each child had a chance to feed and hold the chicken on their lap. To their great delight, they all received a white feather to stroke and tuck into their pockets to take home. When Edie finished, one of the monitors arrived to give the group a choice: “You can play basketball in the gym, or you can play a ‘systems game’ with Mrs. Sweeney.” No surprise. Most of the children bolted to the gym! (Note to self: *Drop the word “systems” next time.*) The few who remained gathered into a small circle on the floor. I showed them pictures of a chicken coop at Drumlin Farm, a local Audubon site. We laid out playing cards with pictures of chickens, cows, grass, manure, insects, decomposing soil, eggs, people, the sun, and more, and gave everyone a handful of wikki stix, bend-able sticks made from hand-knitting yarn enhanced with non-toxic wax. We were ready to play.

When they looked closely at the mobile coop they could see that there was something different about this coop: It had wheels!

“Now, why would that be?” we wondered. Lilly, a bright and curious first-grader, had been to Drumlin Farm. She’d seen the chickens scratching the grass near the mobile chicken coop. “I know, I know!” she said. “The chickens eat the bugs in the grass!” Lilly grabbed a green wikki stix and connected *chicken* card to the *grass card*.

I asked more questions: *What happens to the chicken manure when it’s left in the field? How are the chickens, the pasture and people connected?*

Then the group set to work, adding and taking away links. When they were done, they had “connected the dots,” and had put together a tightly linked “map” of causes and effects. They discovered that the more the soil was fed the chicken manure and decaying plants, the healthier it was. With a little help, they also saw the positive influence the chickens had on the health of cows (eating the harmful

insect larvae in the cow's manure), people (an omnivore's diet improved the quality of the chicken's eggs) and the climate (less fossil fuel needed to produce chicken feed).

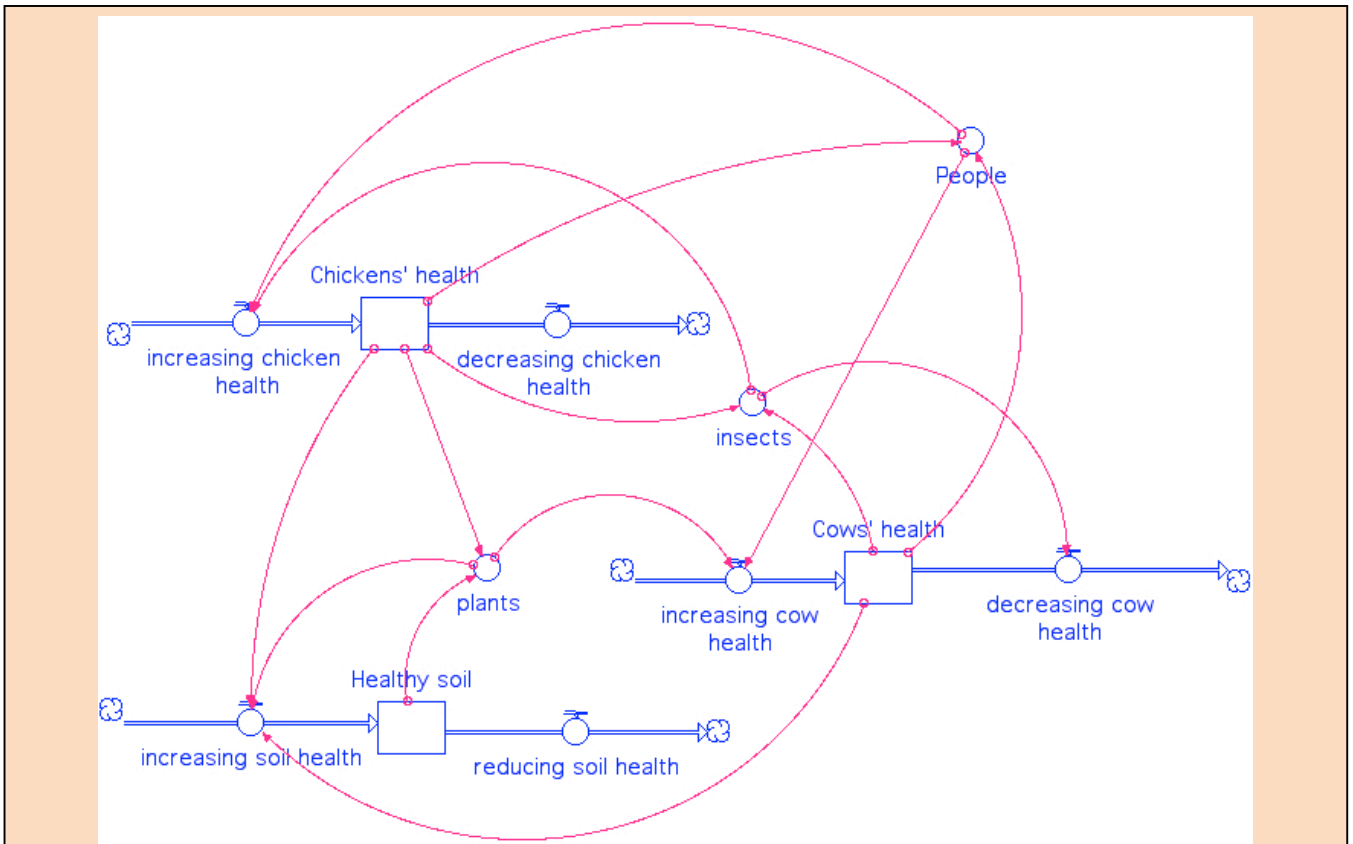
When the last wikki stix was pressed into place, Lilly paused to study the map. Then she exclaimed: ***"It all comes down to dirt!"***

For very young students (PreK-K), have the children, as a group, use stamps in the form of a barn, cow, chicken, tractor, etc., to create, on a large piece of butcher paper, the main components of the healthy pasture system (Egg Mobile, chickens, eggs, bugs, cows, grasses, soil, manure, people, etc.). The teacher can draw a simple picture of the Egg Mobile and add stamps of a chicken (drawing in dirt at its feet) and the cow (with a bit of manure). Encourage students to look for connections between the elements of the drawing and to draw lines, or tape on yarn, between elements in the picture that are connected in some way. Use guiding questions to ask children to explain those connections:

- *What about the soil/dirt around the Egg Mobile? What's in it?*
- *How does the Egg Mobile help other animals on the farm?*
- *How are people a part of our picture?*
- *Was the sun out today? Was it rainy? What does the weather "do" for the chickens and pasture?*

(For more activity ideas, see the "Making Connections" curriculum guide: www.clexchange.org)

If you read the newspapers, you know that this statement is both timely and profound. Loss of topsoil and soil erosion due to over-farming and over-grazing of fragile soils is, according to **The Worldwatch Institute**, "A quiet crisis in the world economy." The causes of soil erosion (expanding demand for food, short-cut farming practices) and consequences (silt-laden rivers, desertification) are complex. Said simply though, the more the soil erodes, the less productive it is. Without good topsoil, plants cannot grow.



For older students: The above Stock-Flow diagram (from the *Healthy Chickens, Healthy Pastures* curriculum guide), can be created to explore the impact of humans on the farm system. This stock-flow diagram show how people may be positively connected to animal and pasture health: People always want healthy livestock like chickens and cows, so connecting arrows go from each stock to *people*. To produce healthy chickens and cows, people must practice prudent environmental stewardship, so connecting arrows travel from *people* to *increasing chickens' health* and *increasing cows' health*. (Diagram created by Alan Ticotsky).

Figure 2: Healthy Pastures Stock/Flow Diagram
(*Making Connections* Curriculum Guide, 2011)

Systems Playkits, like the one I used with Lilly and her friends, have been used on farms, in public workshops, with a local girl scout troop (helping them earn their eco-explorer badge), and most recently with a group of 50 graduate students, studying sustainable development and education in Brazil.

People, whether they're eight or eighty-eight, like to touch, build, discover, explore, imagine and play. Using all their senses and interacting with the real world increases the depth and breadth of learning. As our children begin to

understand the critical issues that shape our interdependent world, let them become true “systems citizens” with their hands in the dirt and a chicken feather in their pocket. I think Confucius had it right when he said:

*When I hear, I forget,
When I see, I remember,
When I do, I understand.*

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