

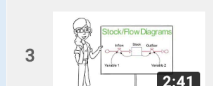

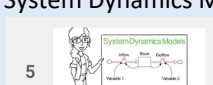


## Micro-Lesson: Making Thinking Visible - A Video Collection

Sometimes it can be difficult to decide where to start learning yourself or how to introduce students to systems concepts, such as change over time, interdependence (aka feedback), or accumulations. Of course, many possibilities exist, and using these short videos, available both on the Creative Learning Exchange [website](http://www.clexchange.org)<sup>1</sup> and on its YouTube [channel](https://www.youtube.com/playlist?list=PLCr1xN-aRPac5KHRSJUY7A4JSXjzK0mVn)<sup>2</sup>, is just one way to do this. Each video introduces one system dynamics tool, which correlates to one or more key system dynamics concepts.

### INSTRUCTIONS

1. Watch the videos yourself. They are listed in a recommended order, however since all of these tools are interrelated in some way, you can choose to start anywhere.
2. Choose a tool that connects most strongly to something you are studying in a subject, in life, etc. Of course, more than one may apply, but think of where you'd want students to begin their exploration.
3. Watch the video together<sup>3</sup>, possibly pausing as a way to have students practice. For example, the connection circle video shows a real-world story about an attempt to reduce malaria incidence. If you pause at key points during that video, you can guide students through the process of creating their own connection circles. When done, they can compare their creations to the one shown in the video as a way to talk about differing perspectives on the same system.
4. Have students now use the same tool to explore the system of interest you're interested in. Keep in mind that many additional resources are available on the CLE website under the "Getting Started" section. For example,

<b>Video Series with Associated Systems Concepts</b>	
Tool/Video	Concept(s)
1 	<ul style="list-style-type: none"> <li>• Dynamics</li> </ul>
2 	<ul style="list-style-type: none"> <li>• Cause &amp; effect</li> <li>• Feedback</li> </ul>
3 	<ul style="list-style-type: none"> <li>• Cause &amp; effect</li> <li>• Feedback</li> <li>• Accumulation</li> <li>• Rates of change</li> </ul>
4 	<ul style="list-style-type: none"> <li>• Cause &amp; effect</li> <li>• Feedback</li> <li>• Loop Dominance</li> </ul>
5 	<ul style="list-style-type: none"> <li>• Dynamics</li> <li>• Cause &amp; effect</li> <li>• Feedback</li> <li>• Accumulation</li> <li>• Rates of change</li> <li>• Loop Dominance</li> </ul>

additional resources are available on the CLE website under the "Getting Started" section. For example, [BOTGs](#), [Stocks & Flows](#), [Connection Circles](#), and [Causal Loops](#)<sup>4</sup>.

<sup>1</sup> <http://www.clexchange.org/resources/videos.aspx>

<sup>2</sup> <https://www.youtube.com/playlist?list=PLCr1xN-aRPac5KHRSJUY7A4JSXjzK0mVn>

<sup>3</sup> Videos are aimed at students in upper elementary grades and above. For primary students (age ≈5-9), teachers may use the videos for their own learning and then translate the concepts into language and visuals that their students can understand.

<sup>4</sup> <http://www.clexchange.org/gettingstarted/botg.asp>, <http://www.clexchange.org/gettingstarted/stockflow.asp>, <http://www.clexchange.org/gettingstarted/connectioncircles.asp>, <http://www.clexchange.org/gettingstarted/causalloops.asp>