Connection Circle: Name your elements, drawing connecting lines from cause to effect. Note increasing and decreasing effects in the BOTG (behavior over time graph)

Prickly Pear (opuntia) Cactus, Cholla, Saguaro, Barrel, Mammalaria, nest, hole, scat, footprint, bobcat, snake, lizard, coyote, bird, ants, insects, scar on cactus, rocks, puddle, animal nibbling, fruits, flowers, seeds, new pad, roots, ribs
Connection Circle Notes

We are using the tool to explore our Sonoran Desert Ecosystem at Pima Prickly Park. The simplicity of the connection circle we are using in our STEMAZing workshop is an introduction to the Systems Thinking workshop you find offered through the Pima County Schools Regional Office.

For more information http://watersfoundation.org/professional-development-events/events/

The Connection Circle Is a Thinking Tool: The goal of using this tool isn’t to find one specific connection circle that will correctly describe a given topic or article. Rather, the circle is designed to generate ideas and connections, and to clarify our thinking about the underlying causes of complex issues. Connection circles help us brainstorm about what is changing and to trace webs of causal relationships within systems to understand those changes.

A connection circle is a handy graphic organizer that helps students understand the main ideas in their reading. In Systems Thinking, however, the connection circle has a much broader purpose in our endeavor to heighten students’ awareness of the causes of change all around them. We’d like to expand our original explanation to make our purpose more clear.

The purpose of a connection circle is to uncover the causal loops that could be causing the problem we have observed. That means that there are two essential elements: a problem behavior pattern and the causal loops driving it.

The first is simply a circle. Students select elements from the dynamic system, write them around the circle, look for connections and eventually identify feedback loops.

The second includes several Behavior over time graphs (BOTGs) drawn around the circle. On this template students not only list the important elements, but also record the change over time of each. The graphs provide information that the student can refer to when deciding what connections to make.

Mental Models: Everybody needs a way to make sense of the world. You could say that we build “mental models” of the way things work. Reading comprehension strategies are often tools to help build mental models of the author’s message and the ideas presented. A connection circle works in this way by constructing pathways of causality. We reason out how and why things changed – this increased, causing a second thing to increase, which caused the first thing to decrease, and so on. Lots of elements can be changing at one time or in some sequence that isn’t linear, and the connection circle can represent that.

Guidelines for working with Connection Circles: Choose elements (nouns or phrases) that are important to setting/habitat. Choose elements that may increase or decrease over time. No more than 5-10 elements.

As our “Meet Prickly Park” lead by our Pima County Native Plants Nursery manager, Jessie Byrd field trip/story moves along draw connections between elements. Look for causal relationships. Draw an arrow from the cause to the effect. Look for feedback loops. This page Adapted from The Shape of Change. Quaden, Rob & Ticotsky, Alan. 2005

For more information visit the web page:
http://watersfoundation.org/index.cfm?fuseaction=content.display &id=163