

BIG IDEA #4

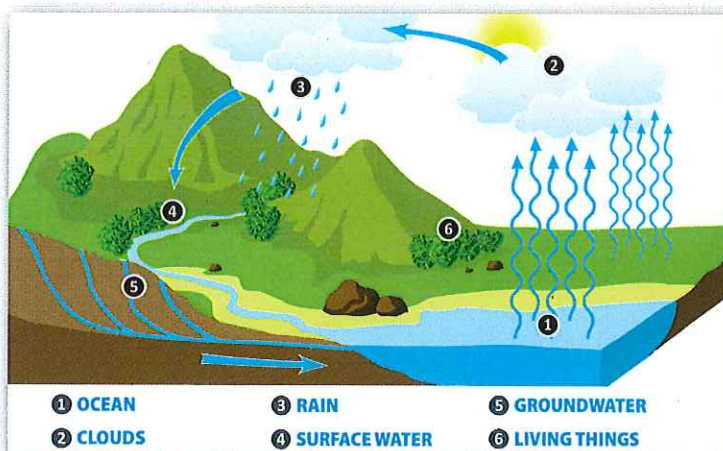
A place is a living, dynamic system and is part of other systems.

**A place is ever changing and the changes in a place affect other places.
Everything is connected.**

Our places are systems and are made up of systems – sets of interacting parts working together to form a whole. Places have natural systems, like water and carbon cycles, energy flows, and food webs. Places also include human systems and built systems – the ways we connect with our families, neighbors, and the global community to exchange ideas, travel, grow and gather food, and trade goods.

In a system, the whole is more than the sum of its parts. Working together, the system does more than could its individual parts. For example, a car can move people and goods around in a self-propelled fashion under the control of a driver; none of the individual parts of a car – tires, engine, chassis, etc. – can do this on its own. The car's sub-systems, such as the engine, have sub-systems of their own. And the car operates in a larger system, the transportation system, which has roads, signs, vehicles, etc. as its components.

By looking at the whole system first, we see both its parts and how its parts are connected. And often, the relationships among individual parts are more important than the parts. For example, an ecosystem is not just a group of animals, but is a community of living things interacting with nonliving things. Without each other to rely on for food or protection, they would not survive.



Because parts of a system are connected, disruptions or changes in one part changes the system – how it behaves, its results, and its sustainability or ability to survive in the future. When a system changes, its parts need to adapt to continue.

ONLY TRADE FOR LIVING SYSTEMS.

REPHRASE

Water cycle as a dynamic system

Photo credit: Taborosi, D. & Allen, E. (2014). *The Water Cycle*. Palikir, Pohnpei: Island Research & Education Initiative. Available at <http://pcep.prel.org/resources/the-water-cycle/>

Reflect again on the prompt: Think about a place that was special to you as a child.

Use the following questions to guide your reflection.

Essential questions

1. How would you describe your community as a system?

Notes

2. How are natural and human systems connected?

Notes

3. How do systems change?

4. How do things in a system adapt to change?

Notes

What do you want to know about your students' learning?

Here is space for you to develop **guiding questions** to use with in your teaching. A guiding question is a more specific question that supports inquiry into the essential questions and big idea.

Example: How are students identifying disruptions and changes in systems?

Standards

Identify which of your standards apply to this idea about place.

Notes