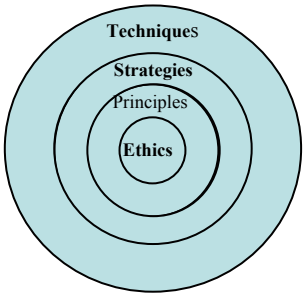
Lesson Four
What are some principles of permaculture?

In this lesson you will learn:

- What a permaculture principle is
- Seven principles of permaculture

Permaculture principles

Permaculture principles are derived from observing nature. They are things we see happening in natural ecosystems that we want to copy. We observe nature and try to mimic what it does. The principles can be viewed as guidelines to follow when we apply permaculture.



Permaculture practitioners have identified many principles, but we are going to focus on seven basic principles which will give you an understanding of the function and importance of permaculture principles.

Seven principles of permaculture

1. **Conservation** - Use only what is needed.

   For example, a family uses a hand pump, pictured right, for water on their homestead. The hand pump encourages them to conserve water and makes them very conscious of how much they are using so they only use what they actually need. Another example of conserving water is showering instead of taking a bath.

2. **Stacking functions** - In permaculture we speak about getting many yields (outputs) from one element (thing) in your system.

   For example, a tree might be an element in your system. A tree can provide shade, shelter wildlife, produce mulch and building materials, be a wind break, fertilize the soil, prevent erosion, raise the water table, etc. A tree can do a lot of different work for us in our system, and that's what we mean by stacking functions.


A tree provides many yields.

3. **Repeating functions** - We meet every need in multiple ways.

   For example, one family meets their household need for water in two ways. They have a spring, but in very dry years the spring dries up so they need a backup. They also have a rooftop water catchment system so they can catch the rainwater running off their roof for domestic purposes.

Water catchment System

Spring

4. **Reciprocity** - Utilize the yields of each element to meet the needs of other elements in the system.

   This means there is a give and a take between elements. The output from one element can be an input for another element. A good example of this is composting. Kitchen scraps could be an output from our kitchen where we have left over organic matter and we use that as an input to our compost pile and when it's in the compost pile it will turn into valuable fertilizer which we can then put on our garden. And then an output of our garden is food which would again be an input into the kitchen. So, you can see that the inputs and the outputs are circulating within our system.

Composting

kitchen scraps - **to -** compost pile **- to -** fertilizer for garden - **to** - food from garden - **to** - kitchen scraps

5. **Appropriate scale** - What we design should be on a human scale and doable with the available time, skills, and money that we have

   A good example of appropriate scale would be looking at a massive hydroelectric dam which can severely disrupt the patterns of flow of a river or a stream and also cause flooding and loss of habitat compared to a small hydroelectric generator which could be used to generate electricity from a small stream without diverting the flow, without causing flooding or disruption. So using a micro hydroelectric generator is probably much more of an "appropriate scale" than creating a large dam.

Micro hydroelectric generator

6. **Diversity** - We want to create resilience by utilizing many elements.

   We can contrast a garden which has a variety of plants in it with a field containing only wheat (monocropping). If you have a drought year or a wet year or if you have a certain kind of pest, all the wheat will probably be susceptible to the same condition or pest and you might lose your whole crop. But if you have a system that's mixed, with a variety of crops or plants, they might not all be susceptible. You might have some plants that are drought tolerant, others that do better in wetter conditions - if you have a drought year you'll just lose some of your plants, but you'll still have others that will do well. So, the idea is that the way to create a resilient system that can survive and get through difficulties is by having many different elements.

7. **Give away the surplus** - Create systems that are abundant and share the abundance rather than hoarding it for ourselves.

   An example of this is the perennial plant nursery at Port Street in Baltimore, MD. When plant nurseries in the local area have extra stock they donate it to this nursery and the Port Street nursery gives it away for free to community groups that are doing improvement work in downtown neighborhoods. That's a really nice way of sharing the abundance.

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Perennial plant nursery
Port Street
Baltimore, MD

Activities

1. Think of something in your life that illustrates each of the seven principles.
2. If you can't think of something you are already doing that illustrates each principle, think of something you could do.