Outdoor Science! Week 1

Day 1: Investigating Natural and Disturbed Environments

Teacher/Parent Background:

- In this activity, In this activity, students will perform an investigation comparing two environmental sites, one in a natural setting, and one that has been disturbed or disrupted. You will collect data comparing biotic and abiotic factors such as: air, water, and soil quality, percentage of producers, evidence of animal life, invasive species, and pollution.

Related Standards:

- Use evidence to construct an argument regarding the impact of human activities on the environment and how they positively and negatively affect the competition for energy and resources in ecosystems.

Key Terms:

Pollution
Climate
Long Term vs. Short Term Environmental Change
Biodiversity

Materials List:

- Thermometer
- Tape Measure
- Hand lens
- Graph Paper
- Paper
- Pen/Pencil

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Never stop wondering.
Never stop imagining.

Activity Description:

Choose two sites of approximately equal area, one natural and one disturbed from which to collect data. A state or county park could be a great place to start!

1. Map out the natural area site. Draw and label water sources, plants and other features that impact the ecosystem.
2. Take digital photographs to document your investigation.
3. Make observations and complete the data table attached to this activity.
4. Repeat the steps for the disturbed area site.

Water	Natural Site	Disturbed Site
Source		
Temperature		
Clarity		

Soil	Natural Site	Disturbed Site
Temperature		
Percent Exposed		
Other Observations		

Plants	Natural Site	Disturbed Site
Percent Ground Cover		
Percent Grasses		
Percent Shrubs		
Percent Trees		
Percent Invasive Species		

Animals and Insects	Natural Site	Disturbed Site
Number of Animals and Plants Observed		
Other Observations		

General	Natural Site	Disturbed Site
Estimated Biodiversity		
Estimated Pollution and Litter		
Other Observations		

Closure:

Students should choose a way to graphically represent their data and then use their data to answer the following questions:

- What are the biggest differences you observed between the two environmental test sites? *Answers will vary. Some examples of large differences would be the presence of man-made structures (i.e. concrete) or evidence of short or long-term changes (i.e. flooding) in the disturbed sites.*
- Based on your data, did you see evidence of a short- or long-term environmental change? *Answers will vary. Evidence of short-term changes can be large pools of water from flooding. Evidence of wind erosion would be an example of long-term environmental changes.*

Extension:

- Watch & Play!
  -TED ED: Invasive Species
  - Bioman: Ecological Degradation