

Biodiversity Action Plan

Wendy Baker Hawaii Academy Arts and Science PCS

Class: Integrated Science (6th- 8th)

Unit: Biodiversity

Objectives:

Students will design an action plan that promotes biodiversity.

Students will analyze elements of biodiversity

Students will make observations and conduct research to create an action plan that supports biodiversity

Essential Question:

What role does biodiversity play in maintaining a healthy ecosystem and why is that relevant to us?

Standards

(Next Generation)

MS. Interdependent Relationships in Ecosystems

MS-LS2-2 Construct an explanation that predicts patterns

MS-LS2-5 Evaluate competing design solutions for maintaining biodiversity

Materials:

Photos of example healthy/unhealthy ecosystems as exemplars

Drawing paper, colored pencils

iNat, plant keys, vocabulary for ecosystems/biodiversity, how to calculate biodiversity resource

Duration:

Two 40 minute periods:

Show example photos of healthy ecosystems, hold class discussions on observations, group or independent practice on essential question: Create, draw diagram picture of a healthy ecosystem.

Design an action plan to support diversity in an ecosystem

Anticipatory Set:

- 1st day: Examine photos of ecosystems. Name and discuss elements of healthy ecosystem. Essential question diagram 'What does a healthy ecosystem look like? Draw an elaborate picture of a healthy forest ecosystem
- 2nd day: Student gallery walk and share out: contrast drawings. Based on rubric, rate, characterize and name elements of a healthy ecosystem
- Action plans: How does human impact affect the health of an ecosystem? Can we measure whether we have a positive impact on biodiversity? Think/pair/share: make an action plan to promote biodiversity
Independent work: design an action plan to promote biodiversity

Resources:

- Rubric for healthy ecosystem
- Criteria for action plan
- Center for Biological Diversity: <http://www.biologicaldiversity.org/>
- http://www.amnh.org/learn/biodiversity_counts/class_prep/biodiversity_index.htm

Teacher Actions:

- Pose essential questions, guide artistic endeavors
- Post drawings, guide discussion on healthy forests types
- Rate drawings based on rubric
- Recall previous class and personal experiences in controlling invasive species in an ecosystem –highlight how invasive species limit diversity
- Design an action plan to support biodiversity and a healthy ecosystem

Check for Understanding:

- Student work on healthy forest ecosystems: see rubric
- Student contributions to class discussion
- Designs for action plan

Closure:

- Review drawings
- Review and evaluate action plans, make a measurable goal statement for a class action plan to manage and maintain a healthy ecosystem
- To extend learning, relate healthy ecosystem to other systems
- Remind each individual to apply their unique talents and contribute to the diversity of the larger group. Express gratitude for different contributions.

Name: _____

Date: _____

Directions:

Review drawing of ecosystem and rate based on the criteria below.

Circle the box that best describes each element in drawing.

Sum points for each column and record and interpret results.

Healthy Ecosystem Drawing				
Element	1 point	2 points	3 points	4 points
Insects	No insects present	Few of same insect present	Many insects present	Diverse types of insects throughout forest
Animals & birds	No animals or birds present	Few of same animal present	Many animals and birds present	Diverse types and ages of animals throughout forest
Plants	No plants present	Few of same plant present	Many plants present	Diverse types and ages of plants throughout forest
Trees	No trees present	Few of same tree present	Many trees present	Diverse types and ages of trees throughout forest
Total points				
0-3	Poor health in this limited ecosystem. Add more varied elements to increase health			
4-8	A good start, diversify to increase health of ecosystem			
9-13	Well done! Some diversity and healthy populations			
14-16	Excellent plan! High level of diversity shows a healthy ecosystem			

Name: _____

Date: _____

Directions:

Review action plans to contribute to health of an ecosystem and rate based on the criteria below.

Criteria	Points
Action plan includes: <ul style="list-style-type: none"><li data-bbox="302 646 1057 716">• A goal statement that describes an intended change, specific action and measurable result<li data-bbox="302 758 1122 827">• Detailed explanation of all the elements: why, who, what, where, how often<li data-bbox="302 869 1040 905">• Cited sources from research, well written, effective	10 10 10
Total	