Table 1. Percentage correct on Pre-test and Post-tests, by site (teacher)

School Location	Pre-test		Post-test		Difference
	n	Average	n	Average	
Holton, KS	27	33	30	39	5
Westminster, MA	31	33	35	42	10
Elbert, CO	1	35	3	47	12
Rye, NY	46	46	65	54	8
Guelph, ON	37	30	50	34	4
Montrose, NY	14	30	17	51	21
Victoria, BC	8	30	11	41	11
Longwood, FL	162	42	84	38	-4
Saskatoon, SA	24	25	38	56	30
Quincy, IL	115	27	106	32	5
Parker, CO	28	31	79	46	15
Baton Rouge, LA	80	35	105	40	5
Overland Park, KS	20	48	16	38	-10
Burnaby, BC	24	31	19	26	-4
Peyton, CO	21	39	17	40	0
Groton, CT	18	40	16	66	26
Middlebury, CT	21	27	13	32	5
Sterling, KS	38	30	34	51	21
Buhler, KS	57	26	48	62	36
Westerville, OH	42	36	34	35	-1
Burnaby, BC	25	30	17	42	13
Overall	***839***	***33***	***837***	***44***	***10***

Table 2. Percentage correct by site (teacher) and by item: Pre-test

PRE-TEST

ID	Location	n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Avg.
1	Holton, KS	27	74	74	48	0	7	11	15	26	30	26	30	56	22	63	48	33	33	48	4	19	33
2	Westminster, MA	31	55	48	55	13	13	13	35	32	16	13	58	58	35	68	19	23	35	48	13	6	33
3	Elbert, CO	1	100	100	100	0	0	0	0	0	0	0	0	100	0	100	0	100	0	100	0	0	35
4	Rye, NY	46	63	91	78	52	28	9	41	37	20	22	46	80	54	78	28	41	57	61	13	11	46
5	Guelph, ON	37	51	57	46	11	22	14	16	30	24	14	30	30	35	43	19	27	30	59	22	27	30
6	Montrose, NY	14	57	64	57	14	7	36	29	21	7	43	21	29	7	29	29	36	21	57	21	21	30
8	Victoria, BC	8	50	50	50	0	50	0	63	25	13	0	50	50	25	38	13	38	38	50	0	0	30
9	Longwood, FL	162	78	86	61	49	17	11	38	32	15	25	51	67	44	65	27	30	44	65	18	20	42
10	Saskatoon, SA	24	67	33	25	13	21	21	21	17	17	25	25	33	17	33	17	8	38	38	17	21	25
11	Quincy, IL	115	53	52	27	21	23	10	20	24	12	26	29	33	24	35	18	21	31	32	23	17	27
12	Parker, CO	28	50	68	36	43	7	21	29	18	18	32	39	36	29	25	39	21	29	46	14	18	31
13	Baton Rouge, LA	80	61	80	56	33	19	18	25	33	25	24	33	56	31	38	34	30	34	35	18	21	35
16	Overland Park, KS	20	90	95	90	55	25	15	40	45	25	5	50	80	20	75	30	40	70	75	15	10	48
17	Burnaby, BC	24	79	46	38	25	8	21	38	33	13	8	17	63	25	54	8	29	33	29	25	21	31
19	Petyton, CO	21	100	71	38	24	24	14	38	38	33	10	48	43	38	81	29	29	38	67	10	14	39
20	Groton, CT	18	50	61	44	17	11	6	67	28	17	17	17	67	56	89	28	50	50	94	11	11	40
22	Middlebury, CT	21	57	43	33	14	19	14	29	38	29	19	33	24	19	24	33	24	19	24	10	29	27
28	Sterling, KS	38	58	66	37	16	26	8	21	18	24	18	39	47	16	39	32	24	34	50	16	16	30
29	Buhler, KS	57	56	49	18	18	21	14	21	25	12	25	33	32	19	39	18	23	26	42	16	21	26
30	Westerville, OH	42	55	83	60	26	26	5	31	29	14	17	26	33	33	62	33	38	50	52	17	26	36
31	Burnaby, BC	25	48	76	20	12	20	12	44	40	28	12	44	32	28	24	28	28	28	32	20	16	30
Total		**839**	**65**	**66**	**48**	**21**	**19**	**13**	**32**	**28**	**18**	**18**	**34**	**50**	**27**	**53**	**25**	**33**	**35**	**54**	**14**	**16**	**33**

Table 3. Percentage correct by site (teacher) and by item: Post-test

POST-TEST

ID		n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Avg.
1	Holton, KS	30	87	70	70	13	10	10	40	33	0	20	57	57	50	80	37	30	27	53	7	23	39
2	Westminster, MA	35	77	77	54	46	31	17	37	31	11	9	29	74	40	63	34	37	51	71	37	23	42
3	Elbert, CO	3	100	100	33	0	67	33	67	67	0	0	100	33	0	100	67	33	0	100	0	33	47
4	Rye, NY	65	68	95	83	77	22	17	51	42	23	42	48	82	45	92	34	46	46	85	29	48	54
5	Guelph, ON	50	56	40	50	30	28	6	36	36	22	26	20	38	44	44	26	26	40	56	40	18	34
6	Montrose, NY	17	53	100	100	53	6	47	24	41	35	35	59	35	41	53	29	53	76	71	59	53	51
8	Victoria, BC	11	45	36	64	27	18	9	27	45	36	0	27	73	73	91	36	36	55	64	18	36	41
9	Longwood, FL	84	75	76	68	31	29	18	20	35	23	23	42	52	31	52	27	20	31	57	33	25	38
10	Saskatoon, SA	38	29	89	54	93	75	11	64	43	64	11	50	79	4	93	96	4	68	68	57	61	56
11	Quincy, IL	106	53	53	49	14	30	21	23	30	25	24	33	32	38	34	24	22	25	42	34	25	32
12	Parker, CO	79	71	75	71	85	16	34	37	34	18	25	52	65	24	53	34	46	49	58	33	42	46
13	Baton Rouge, LA	104	75	76	61	52	19	10	27	24	28	24	46	61	32	57	20	27	31	53	43	32	40
16	Overland Park, KS	16	56	94	75	19	19	6	25	31	6	13	44	63	56	56	31	31	44	63	19	6	38
17	Burnaby, BC	19	58	53	21	5	11	11	32	11	11	5	37	16	32	37	53	5	42	37	32	21	26
19	Petyton, CO	17	82	76	53	35	18	12	18	18	6	24	47	82	47	65	24	41	35	59	29	24	40
20	Groton, CT	16	81	63	100	56	0	75	100	69	0	88	63	100	31	94	6	81	88	100	69	56	66
22	Middlebury, CT	13	46	69	62	15	15	8	8	15	23	38	31	62	15	46	38	23	23	38	31	31	32
28	Sterling, KS	34	91	68	56	44	29	29	38	62	21	18	47	68	38	56	76	74	44	68	68	29	51
29	Buhler, KS	48	79	73	69	83	54	52	50	65	40	25	83	81	50	54	54	73	71	56	88	48	62
30	Westerville, OH	34	71	68	44	21	18	18	24	32	26	24	41	35	29	59	18	50	29	56	18	26	35
31	Burnaby, BC	17	94	88	53	82	47	0	35	35	18	35	35	47	24	47	41	18	29	59	29	29	42
Total		**837**	**69**	**73**	**61**	**42**	**27**	**22**	**38**	**39**	**20**	**24**	**47**	**59**	**36**	**63**	**39**	**37**	**44**	**63**	**36**	**33**	**44**

Table 4. Post-test item-level results: Percent of students selecting options

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
A	27%	8%	9%	18%	**27%**	**22%**	21%	17%	**23%**	36%	10%	14%	**36%**	7%	**36%**	10%	20%	12%	19%	**33%**
B	**67%**	**71%**	12%	14%	32%	20%	21%	**38%**	39%	20%	**45%**	12%	30%	8%	28%	22%	14%	11%	38%	25%
C	3%	16%	17%	22%	28%	43%	**35%**	34%	22%	**25%**	27%	**58%**	15%	**58%**	22%	30%	**43%**	**60%**	23%	25%
D	2%	5%	**63%**	**45%**	13%	14%	22%	11%	17%	19%	18%	16%	19%	27%	15%	**37%**	23%	16%	**20%**	17%

Bolded cell is the key.

Table 5. Pre-test and Post-test attitudinal item results

Pre-test Results							**Post-test Results**					
	21	22	23	24	25			21	22	23	24	25
A	17%	11%	12%	15%	17%		**A**	15%	13%	15%	13%	17%
B	17%	23%	25%	19%	32%		**B**	21%	21%	23%	21%	33%
C	21%	38%	45%	30%	29%		**C**	21%	35%	43%	30%	26%
D	45%	28%	18%	36%	22%		**D**	42%	30%	19%	36%	24%

Foundation for Teaching Economics
Assessment: The Environment and the Economy

Version A

(1) When is a resource scarce?
a. When the amount available in nature is finite.
b. When humans desire more than is available in nature.
c. When it is too expensive to use in production.
d. When people in poorer countries cannot afford the resource.

(2) Why is it necessary to allocate natural resources?
a. because many people do not have property rights
b. because resources are scarce
c. because of over-population
d. because of the gap between rich and poor

(3) Economists say that people economize when they choose the alternative which they perceive to have the greatest excess of benefits over costs. What is the result of economizing in decisions affecting environmental quality?
a. Economizing on the environment is not useful because environmental benefits always outweigh costs.
b. Economizing does not apply to environmental policy because many people don't know the value of the environment.
c. Economizing on environmental quality is important in countries where people have very low incomes.
d. Economizing helps us evaluate the necessary trade-offs between environmental quality and other production.

(4) Smelly and polluted, Green Lake lies in the center of your community. You head the "Clean Green" Lake Committee of citizens responsible for using community resources to clean up the lake. What level of cleanliness will you recommend to create the greatest benefit for the community?
a. Benefits to the community are maximized when the lake is 100% clean.
b. Spend only the amount needed to make the lake clean enough for human use.
c. Continue to clean the lake as long as funding is available.
d. Clean the lake until the marginal costs and benefits of cleaning are equal.

(5) Is it beneficial to society to allow market price to settle competition for water by agriculture, industry, and households?
a. Yes. Market price signals will direct limited water resources to their most highly valued uses.
b. Yes. Market prices will force users to compare the total value and the average cost of the water they use.
c. No. Market competition will allow the wealthy to over-allocate water to their preferred uses without considering the needs of others.
d. No. Water is such a scarce resource that government must allocate its use for efficiency.

(6) Under what conditions can unregulated markets be an efficient mechanism for allocating natural resources?
a. When property rights are well defined.
b. When income is equally distributed
c. When a resource has low relative scarcity
d. When public ownership is not possible.

(7) Which of the following has the greatest incentive to prevent soil erosion and degradation?

a. Government agencies that own crop land and lease it for production.
b. Farmers who must lease land from the government in order to farm.
c. Private corporations and individual proprietors who own crop land.
d. Farmers who grow crops on land owned by the community in common.

(8) Why do fishermen continue to over-fish when they know that declining fish stocks are reducing their income and threatening their livelihood?

a. Fishermen are irrational. They are putting themselves out of business by increasing fishing effort and reducing fish stocks.
b. Fishermen are rational. They know that if they catch fewer fish, it just leaves more for someone else to catch.
c. Fishermen are rational. Like other businessmen, they are interested in short-term profits only, not long-term.
d. Fishermen are irrational. They are resisting the end of their industry and investing in equipment that may be of little value in the future.

(9) When is a producer most likely to realize the full environmental impact of its production process?

a. When property rights to resources are clearly defined and firms must internalize all costs of production.
b. When government instigates strict emission standards and the firm cannot buy emission permits.
c. When government instigates strict emission standards and the firm can buy emission permits.
d. When property rights to resources are government owned and production costs are subsidized by taxes.

(10) What is the likely outcome of creating a system of tradable emission permits?

a. Pollution will increase because companies will buy the right to pollute. Emissions will increase because polluters will be able to buy the right to pollute.
b. Pollution will decrease because pollution clean-up will be less expensive.
c. Pollution reduction will be realized at a lower cost than under strict regulation alone.
d. Pollution reduction will be realized at a higher cost than under strict regulation alone.

(11) Which of the following is the most likely result of giving African villages clearly defined and protected property rights to the elephants living near their village?

a. The villagers have a stronger incentive to kill the elephants to keep them from trampling the village crops.
b. The villagers have an incentive to protect the elephants as a long-term source of income from Western tourists who want to see and photograph elephants.
c. The herds will be destroyed; Western big game hunters typically pay several hundred times the poor villagers' yearly income for the privilege of hunting an elephant.
d. Because the village owns the elephants in common, there would be strong incentives for each hunter to "harvest" (kill) elephants before someone else does.

(12) John paid Maria $100 to hold a family reunion picnic on the banks of the beautiful lake on her farm. Which of the following statements is true with regard to this transaction?

a. Since the family could have picnicked and fished free in the National Park close by, it's clear that John was ripped off by Maria.
b. Allowing people like Maria to profit from the environment keeps poor people from enjoying part of our natural heritage.
c. John valued being able to use Maria's land more than $100, and Maria valued the clean-up time and her peace and quiet less than $100.
d. If the government controlled the stream access, the cost of using the stream bank, to John, Maria, *and* all citizens, would have been free.

(13) In a market economy, suppose the production of a product has the side effect of polluting a river. If there are many firms producing the product and polluting the river, why is any specific firm unlikely to voluntarily stop polluting the river?

a. Reducing pollution is costly, and consumers are less likely to buy more expensive products.
b. Businesses are profit-motivated and don't care about the quality of the river environment.
c. Consumers are self-interested and most don't see the quality of the river environment.
d. It's dangerous for one firm to decide to pollute less, because its competitors will undersell it by polluting more.

(14) Which of the following statements is true regarding the fact that during the 19th century whalers hunted whales and sold whale oil and whale meat in ports around the world?

a. Whalers benefited from selling the whale products, but buyers of the product did not.
b. Buyers of whale products benefited from buying the products, but the whalers did not.
c. If both buyers and sellers of whale products hadn't benefited, there would not have been a whaling industry.
d. Whale populations are endangered today because whalers killed many more whales than they were able to sell.

(15) Fish and cattle are both useful resources used as food and in the production of a variety of products. What is a major reason that some ocean species of fish are nearly extinct while cows are still extremely abundant?

a. Ranchers can own live cattle but ocean fishermen don't own fish until they kill them.
b. Baby cows on ranches are protected from predators; baby fish in the ocean are not.
c. People and businesses can have property rights to cows but not to fish.
d. Cows are more useful to people than fish, so there is an incentive to raise them.

(16) Why did buffalo nearly become extinct in late 19th century America and cattle didn't, even though more people ate beef than buffalo?

a. Because cattle can be herded, they bear twin calves more often than buffalo do.
b. Westward expansion destroyed the Indian way of life centered around the buffalo.
c. Property rights to land destroyed the open prairies buffalo needed for food.
d. Cattle were owned by someone and buffalo were not owned by anyone.

(17) Suppose we decide that we need to reduce carbon emissions in order to combat climate change. Which is the least costly way to accomplish that objective?

a. have government require emitters of carbon to use the latest and cleanest technology
b. keep the government out of the picture; private businesses will solve the problem on their own
c. have the government use market incentives and price signals to change people's behavior
d. have the government cap the emissions of greenhouse gases from all current emitters of greenhouse gases at their current levels

(18) A town that paid for trash collection out of general tax revenues now imposes a fee on each bag of trash left on the curb. Which of the following behaviors would we NOT expect to result from the changed policy?

a. people stuffing more garbage into each trash bag.
b. people putting their trash into dumpsters behind their offices
c. people putting out more trash bags than they used to
d. people cutting back on the amount of garbage they generate each week

(19) Which of the following is the most likely result of a nationwide government requirement to recycle 100% of all used paper?

a. There will be fewer trees because land would be used for purposes other than growing trees.
b. There will be more trees, since forests would not have to be cut down for paper pulp.
c. The price of paper will fall, since recycled paper is cheaper than new paper
d. Because they know that paper will be recycled, people won't worry about wasting it.

(20) What is the likely outcome of government policies to protect endangered species by banning any use of the land inhabited by the endangered species?

a. The owner of the land has no economic incentive to protect the species or its habitat.
b. Taxes will increase because it is more expensive to ban development than to simply buy the land.
c. The owner of the land can increase its value by developing habitat to attract endangered species.
d. The owner of the land can benefit by selling the land at a higher price to someone else.

(21) Our goal should be a 100%-clean environment.

a. strongly disagree
b. disagree
c. neutral
d. agree
e. strongly agree

(22) Government can protect the environment at lower cost than private firms and organizations.

a. strongly disagree
b. disagree
c. neutral
d. agree
e. strongly agree

(23) Voluntary trade reduces wealth and environmental quality.

a. strongly disagree
b. disagree
c. don t know
d. agree
e. strongly agree

(24) Protected endangered species habitat is the most valuable use of land found to be occupied by endangered species.

a. strongly disagree
b. disagree
c. don t know
d. agree
e. strongly agree

(25) Pollution is a sign that markets have failed, which means the government cannot use market forces to help reduce pollution.

a. strongly disagree
b. disagree
c. don t know
d. agree
e. strongly agree