

School Yard Report Card

- How does trash make it to the bay?
- How do we evaluate our local environment?
- What is run off and erosion?
- How can we improve the schoolyard environment?

Objective

Students will evaluate the yard around their classrooms and identify some problems and start to develop solutions to make their school more environmentally friendly.

Preparation

Students should have completed the Life of a Raindrop lesson, or have an understanding of watersheds and the fact that water that falls onto the school ends up in the bay.

Delivery

Tell the students that today they'll get the chance to give their school a grade! Review with students what a watershed is and what happens to the rain that falls onto their school or their homes. Each student gets a copy of the *Schoolyard Report Card*. Students will work in small groups. All points can be tallied and an average score for each category can be calculated. Depending on the size and layout of your school yard you may want to split up students into different areas or release them out to the yard at different times. Some questions require students to talk to school employees (principal, or maintenance people). Plan a good time to send one student from each group to talk to these "consultants" or have them come to your class. Once everyone has completed the report card have student groups brainstorm improvements. Discuss improvements as a class.

Extension—Writing: Taking into account all you know about healthy environments, design the ideal schoolyard. Think about biodiversity, habitat, runoff, water quality, and recreational/educational values. Write a description or draw your ideal school yard.

Extension—Homework: Have students use the Schoolyard Report Card as a guide to evaluate the area surrounding their own home.

Extension—Engineering: Once you've determined what improvements your schoolyard needs to be environmentally friendly, design and build a model of the ideal schoolyard.

Debrief

When we think of environmental challenges we think of the cutting down trees in the rainforest, or melting polar ice caps, but there are environmental challenges that are close to home and we can solve them!

- What challenges would we face in the implementation of our improvements? (funding, different opinions or values)
- What other environmental challenges can tackle in our daily lives? (energy consumption)



Theme

Human Impact

Age

3-5th 6-8th

Duration

45-60 mins

Materials

Schoolyard Report Card Packet,
writing utensils

Standards

NGSS: 3-ESS3-1 ; 5-ESS3

3-5-ETS1

EP&C's: P2-CA,C, D P4-CA, B, C

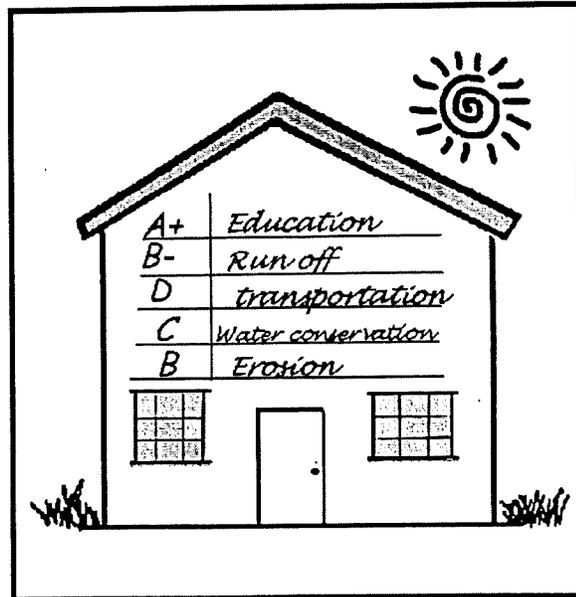
Schoolyard Report Card

Student

Pages

INTRODUCTION

You have learned quite a lot about run-off, groundwater, erosion, and many other factors that affect water quality. In fact, you could probably already say a lot about the environmental quality of your own schoolyard! This activity will give you a chance to give a grade to your schoolyard. You will go outside with your classmates and answer the questions in this activity, based on what you see around your school. Depending on what you find, you may choose to make some improvements, with your school's permission, that will benefit your schoolyard and your local waterways.



Tara Reinertson

MATERIALS

Your group will need:

- a copy of "Schoolyard Report Card"

PROCEDURE

1. Before you go outside, assign someone in your group to record your answers on the report card.
2. Your teacher will set boundaries for you. Stay in them!
3. If you decide that a question is not relevant to your school, circle the N/A (not applicable) option and explain your choice.
4. Some of the questions may require you to talk with school faculty members (someone in the maintenance department, for example). Be sure to get permission from your teacher to do this.
5. Go to it!

Section I: Runoff and Erosion

1. What type of surface receives the water from your school's roof downspouts?

- a) a patch of rocks or small concrete block on top of vegetation or mulch 10 points
- b) directly onto mulch or vegetation 7 points
- c) pavement or ground that is eroding 3 points
- d) into the ground, sending runoff directly to a waterway without being filtered 0 points
- e) N/A _____

2. Looking at your schoolyard, estimate what percentage of the ground contains land surfaces that are unable to slow and absorb rainwater.

- a) less than 10% 10 points
- b) between 10% and 25% 5 points
- c) greater than 25% 0 points
- d) N/A _____

3. Pathways and heavily trafficked areas where vegetation cannot grow are:

- a) covered with a surface that can filter or absorb 10 points
- b) covered with an impervious surface such as cement or asphalt 5 points
- c) bare, exposed soil 0 points
- d) N/A _____

4. Look for patches of bare soil and signs of erosion such as areas where rainwater has carved out ditches or windows and walls with soil splashed on them. The schoolyard has:

- a) very little erosion and few patches of bare soil 10 points
- b) several patches of bare soil or areas where soil is eroding 5 points
- c) large patches of bare soil and extensive erosion 0 points
- d) N/A _____

Section 2: Vegetation

1. How much of the grass and vegetated areas in your school is mowed?

- a) less than 50% 10 points
- b) between 50% and 80% 5 points
- c) over 80% 0 points
- d) N/A _____

2. The land surrounding places where water drains and collects such as storm drains, drainage ditches, and streams is:

- a) well vegetated with trees and shrubs 10 points
- b) vegetated with unmowed grass 7 points
- c) mowed grass 3 points
- d) bare soil, pavement, or concrete 0 points
- e) N/A _____

3. Ask your school's lawn service or school maintenance people how the mowed grass on the school's grounds are fertilized.

- a) grass clippings are left on the grounds as natural fertilizer 10 points
- b) lawn fertilizers are used according to a formula derived from soil tests 7 points
- c) lawn fertilizers are used according to instructions 3 points
- d) lawn fertilizers are applied randomly 0 points
- e) N/A _____

4. Generally, how well is the schoolyard vegetated with trees and bushes?

- a) trees and bushes cover a significant part of the schoolyard 10 points
- b) trees and bushes dot the landscape of the schoolyard 5 points
- c) there are few or no trees on the schoolyard 0 points
- d) N/A _____

Section 3: Education

1. How many storm drains are labeled, "Don't Dump, Drains To Bay" to let people know that substances that enter them go into local waterways?

- a) all storm drains are labeled 10 points
- b) a few storm drains are labeled 5 points
- c) no storm drains are labeled 0 points
- d) N/A _____

2. How many different ways are there at your school to learn about local water quality or the environment? (Different ways to educate might include posters, literature, classes, clubs, plays, assemblies, etc.)

- a) 3 or more 10 points
- b) 1 or 2 5 points
- c) no education about the environment 0 points
- d) N/A _____

3. Look for candy wrappers, soda cans, and other litter in the schoolyard that could wash into storm drains or streams when it rains.

- a) there is no litter in the schoolyard 10 points
- b) some litter 5 points
- c) a lot of litter 0 points
- d) N/A _____

Section 4: Transportation

1. Determine the number of people employed at your school (teachers, maintenance staff, food service staff, administrators, etc.) by asking you principal or looking in a yearbook. Look at the school parking lot and determine the number of vehicles relative to the number of employees.

- a) there are 50% fewer cars in the parking lot than employees 10 points
- b) there are 25% fewer cars in the parking lot than employees 5 points
- c) there is about one car per employee in the parking lot 0 points
- d) N/A _____

2. Are there bicycle racks at your school and do people use them?
- | | |
|---|-----------|
| a) bike rack is full of bikes | 10 points |
| b) school has a bike rack but there are very few bikes in it | 5 points |
| c) school has no bike rack and there are no bikes in the schoolyard | 0 points |
| d) N/A _____ | |
3. Is there any reward or encouragement for teachers or students who walk to school, ride their bikes, carpool, or take public transportation?
- | | |
|--------------|-----------|
| a) yes | 10 points |
| b) no | 0 points |
| c) N/A _____ | |

Section 5: Water Conservation

1. Does your school use any water-saving devices such as faucet aerators, toilet dams, low-flow showerheads, or garden hose nozzles?
- | | |
|--|-----------|
| a) there are two or more different types of water-saving devices | 10 points |
| b) there is one type | 5 points |
| c) there are no water-saving devices | 0 points |
| d) N/A _____ | |

Survey at least 10 people at your school about their water conservation practices at home.

2. At least half of these people have installed:
- | | |
|--|-----------|
| a) two or more water-saving devices at their residence | 10 points |
| b) at least one water-saving device | 7 points |
| c) no water-saving devices | 0 points |
| d) N/A _____ | |
3. Find out how many ways each person conserves water, such as turning off the water while brushing their teeth, collecting water from their showers to water plants taking 5-minute or shorter showers, or putting drinking water in the refrigerator to cool instead of letting the faucet run.
- | | |
|--|-----------|
| a) at least half of the people do two or more of these things | 10 points |
| b) at least half of the people practice 1 water conservation technique | 5 points |
| c) at least half of these people do not conserve water | 0 points |
| d) N/A _____ | |

- **Bonus**** Are there any projects completed or in progress at the school that are aimed at reducing pollution?
- | | |
|---|-----------|
| a) 3 or more projects on school grounds | 10 points |
| b) at least 1 project | 5 points |
| c) there are no projects at the school | 0 points |

SUMMARY

Add up the points and use the key below to determine the grade for the area(s) you surveyed at your school. If you marked several questions as "not applicable", adjust the grading scale as necessary.

A=100 and above

B=80-99

C=55-79

D=30-54

F=below 30

How did your school rate in its land use practices? Grade: _____

CONCLUSION

1. If your school did not score an A, why not? Which of the five sections had the poorest results?
2. List below three areas or conditions that could be improved to give your school a better report card.
3. Think about what you would do to make these improvements if you could. In your small groups brainstorm solutions to problems that you have identified in this activity. Use the chart on the next page to list all of your ideas. You will be sharing these ideas with the rest of your class.

PROBLEM		SOLUTION
		