

E.T. - A LOCAL WAY OF LEARNING

Title: AUTOMOBILES

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Grade Level: 6-8

Concepts:	Disciplines:
1. The Sun	1. Social Studies
3. Carrying Capacity	2. Math
5. Clean Air	
7. Land Use	
8. Values & Attitudes	
11. Individual Acts	

Objective:
Student shall gain a heightened awareness of the automobiles, buses and trucks that pass the schoolyard and the safety factors involved with regard to speed and the emission of hydrocarbons.

Rationale:
We have all come to pay more attention to the gasoline powered vehicles with the world's high oil prices, the success of the compact and energy conserving imported cars and the grave problems of the American auto industry. Students can do their personal research of those vehicles that pass their school.

Materials Needed:
Note pad and pencil.
Item No.9 requires a stopwatch and measuring tape.

Directions/Activities:
This activity is good for small group sessions with each group addressing a different parameter. i.e., too much is going on to be recorded by looking at the project as a whole. Divide up the observations such as how many cars, which direction traveling, speed limit, makes of cars, etc.

1. Stand at the corner of the school ground for a specified time (15 minutes?). Count the number of vehicles passing through the intersection traveling in each direction: North_____ South_____ East_____ West_____

2. Record the change of direction of travel at the intersection.

Coming from the south and turning east _____

Coming from the south and turning west _____

Coming from the north and turning east _____

Coming from the north and turning west _____

Coming from the east and turning north _____

Coming from the east and turning south _____

Coming from the west and turning north _____

Coming from the west and turning south _____

3. What is the legal speed limit for vehicles passing the school? _____ miles per hour. Observe for about five minutes the vehicles passing your school. How many were there? _____ How many do you think were traveling faster than the speed limit? _____

4. Observe the number and kinds of trucks passing the school. How many of each of the following kinds passed by in five minutes? Pick-up trucks: _____

Trucks: _____ Semi-trailer trucks: _____ How many of the trucks passing the school were "service trucks"? _____ What kinds of services do these trucks and their companies provide for people living in this community?

5. Observe for about 10 minutes the automobiles passing by. How many of each of the following can you identify? Ford: _____ Chevrolet: _____ BMW: _____

Volkswagon: _____ Honda: _____ Toyota: _____ Datsun: _____

Oldsmobile: _____ Cadillac: _____ Foreign Sports Car: _____ Other: _____

How many of each of the above automobiles were driven by men? _____

How many were driven by women: _____

6. How many of the automobiles were made excessive noise? _____

How many were showing a cloud of exhaust? _____

How many were going faster than the legal speed limit? _____

How many were occupied by only one person - the driver? _____

How many carried two or more persons? _____

7. If there is no traffic light at your school corner, do you think there should be one based on your observations of the traffic? _____

Is there a predictable pattern of traffic, for example, traffic flowing to the highway, or industry, or town? _____

Does it reverse at the end of the day? _____

What about other hours?

8. Gasoline-powered vehicles in our society have made life vastly different from the way it would have been without them. Write an essay about what life in your community was like before such vehicles.

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9. Using a stopwatch, find out how many seconds it takes for a vehicle to pass from one corner of the school campus to another. Measure in feet the distance traveled, and compute the speed in miles per hour. Does this rate of speed create safety hazards for pupils? If so, what should be done to reduce or remove the hazard?

TODAY - AIR POLLUTION IS ONE OF AMERICA'S GREATEST PROBLEMS

SOURCES

90 MILLION MOTOR VEHICLES

99% burn gasoline, with pollution from exhaust pipe, crank case, carburetor and gas tank

FACTORIES AND FUEL USE

Especially pulp and paper mills, iron and steel mills, refineries, smelters and chemical plants. Over 90% of power plants in 1969 burned coal and oil containing sulphur to generate electricity.

REFUSE DISPOSAL AND MISCELLANEOUS

Each person creates about 1800 lbs. of waste per year.

THE BOX SCORE				
MILLION TONS POLLUTION				
CARBON MONOXIDE	SULPHUR AND NITROGEN GASES	HYDRO-CARBONS	PARTI-CULATES	TOTALS
112	12	20	1	145
14	42	6	22	84
26	3	11	14	54
152	57	37	37	283

TOTAL MILLION TONS AIR POLLUTION PER YEAR

