

**Grade Level:** K-12

**Lesson Overview:** Students will learn about wasting energy, conserving energy, energy crisis and what to do about this by doing a hands-on, minds-on, classroom activity throughout the week.

**TEKS:**

**Math:** 1.10(A,B), 1.13, 2.11(A,B), 2.14, 3.14(A,B,C), 3.15(A,B), 4.13(C), 4.14(A,B), 5.13(B), 6.10(D), 6.11(A), 7.12(A), 7.13(A), 8.12(C), 8.14(A)

**Science:** K.1(B), K.3(A,B,C), 1.1(B), 1.3(A,B,C), 2.1B, 2.3(A,B,C), 3.1(B), 3.3(C), 4.1(B), 4.3(C), 5.1(B), 5.3(C), 6.1(B), 6.3(C), 7.1(B), 7.3(C), 8.1(B), 8.3(C)

**Social Studies:** K.13(a,B0), K.14(A,B), K.17(A,B), 1.7(A,B), 1.8(A,B), 1.16(A,B,C), 1.19(A,B), 2.7(B), 2.8(A,D), 2.16(A,B), 2.19(A,B), 3.7(A,B,C), 3.11(A,B), 3.18(A,B), 4.14(B), 4.21(B,C), 4.24(A,B), 5.13(A), 5.24(C,E), 5.27(A,B), 6.20(C), 6.23(A,B), 7.23(A,B), 8.32(A,B)

**ELA:** 1.2(A), 2.1(A), 3.2(A), 4.4(A), 4.5(B), 5.4(A), 6.4(A), 7.4(A), 8.4(A)

**IPC:** 1(A), 2(A,B,C,D), 6(D)

**Biology:** 1(A), 2(A,B,C,D), 11(C)

**Environmental Systems:** 1(A), 2(A,B,C,D), 3(B), 5(C,E)

**GMO:** 1(A), 2(A,B,C,D), 9(B,C)

**US History:** 22(B,C), 23(A,B)

**US Government:** 20(A,B)

**World Geography:** 2(B), 19(A,B)

**Sociology:** 17(A,B), 18(A,B)

**Management:** 6(A,B,C)

**Interior Design:** 1(F)

**Engineering Principles:** 11(B)

**Energy, Power, Transportation Systems:** 11(B), 12(A,B,C,D)

**Time:** 5 days on-going during class periods

**Materials:** 15 energy trip tickets per student

**Additional Materials Needed for HS**

**Extension:** pedometers

**Vocabulary:** conserve, waste, crisis, strategies

# Energy Trip Ticket

## Background Information:

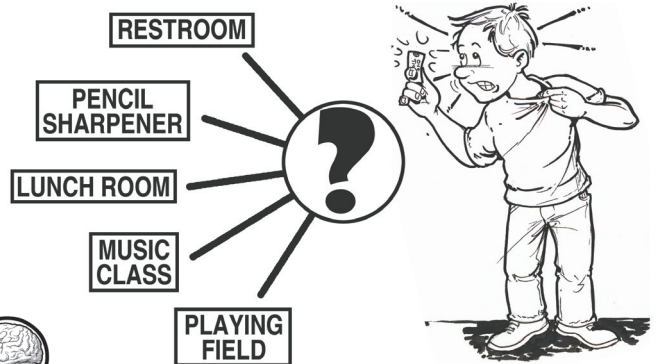
Students use energy every day without thinking about where it comes from, how it arrives, or even that they are using it. This activity will help to make students aware of their energy usage by making them “pay” for each energy trip they make throughout the day. This activity will also get students thinking about ways they can conserve or eliminate energy use by making them look at their day.

## Setting the Stage:

On the board or the overhead have the students make a list of all their school trips: to the pencil sharpener, the lunchroom, the rest rooms, music class, and so on.

## Activity - Energy Trip Ticket Game:

Give each student 15 “energy tickets” and announce that for the next five days, every trip will cost one ticket. At the end of each day, record the number of tickets each student has left on a large chart for all to see. Who’s wasting energy? Conserving it? How are they doing it? Discuss energy-saving strategies such as combining several errands on one ticket and “pencil pooling” (rotating the task of pencil sharpening within a small group of students). By the third day, the room will be a-buzz with talk of the impending “energy crisis.”



You will need to modify the “rules” for your particular class situation. You may decide that if the entire class is going somewhere, they do not need to pay an energy ticket. If your students switch rooms or you only see them for part of the day you may want to reduce the number of energy tickets you give them to start with.

**Extension:**

Have students write down their energy trip conservation goals at the end of the week. Have them keep track of their own energy trips for the next week and see how they did and what modifications were necessary to meet those goals.

**High School Extension:**

Have your students write down every place they went in one 24 hour period. Then write how they got there. Once they have created a list of where they go and how they get there, send it and a pedometer home with the students. Have them record the distances moved in the chart. They should also include other movements they may have missed such as trips to the office or from

**Discussion:**

Ask your students what effect the crisis is having on their standard of living. Now they are ready to devise some real-life conservation strategies. Developing conservation strategies can be fun, especially when your students know the priceless reward of their knowledge of energy conservation.

**Additional High School Discussions:**

Discuss the energy associated with driving (manufacture of the car, gasoline, road creation) and ways to conserve energy (www.fueleconomy.gov has tips, alternate modes of transportation, car pooling, and errand planning information). How has technology changed the way we use energy, get around, and work? How had the use of cars changed our daily habits?

Discuss walking as using energy as well. What form of energy is burned through walking and how do you get it? You can bring in nutrition through good energy sources vs. fast empty energy sources.

Where?	How?	How far?
Bed to bathroom	Walk	15 steps
Bathroom to kitchen	Walk	62 steps
Kitchen to car	Walk	102 steps
Home to school	Drive	5.2 miles
Car to locker	Walk	483 steps
Locker to Mrs. Smith’s room	Walk	728 steps

Where?	How?	How far?

As a back-up plan or to have distances listed for students unable to complete the pedometer portion of the lesson, have one group of students gather data on distances around the school using a school map. They can add distances down each hallway or from one teacher’s room to another teacher’s room. This information can then be put together to get the distances needed to fill out the chart. To convert steps to miles, you can use a pedometer converter like the one found at [http://www.walk4life.com/customerservice/forms\\_stepstomiles.aspx](http://www.walk4life.com/customerservice/forms_stepstomiles.aspx)



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