

Five Points Traffic Jam (Tips & Timeline)

Source: Jackson, Mia, David Heil, Joan Chadde, and Neil Hutzler. (2011). *Family Engineering: An Activity Guide & Event Planning Guide*. Foundation for Family Science & Engineering and Michigan Technological University. <http://www.familyengineering.org/>

Grade: Grades 2-6

Topic: transportation planning

Lesson Overview

Families become transportation engineers with the challenge of designing an intersection that is safe for children walking, riding bicycles, and driving to school, home, the park and the store.

Learning Objectives

1. What is the job of a transportation engineer? *Design and manage the safe and efficient movement of people and goods by boats, planes, trucks, cars, trains, bicycles, and walking!*
2. Ask students to list some things that transportation engineers have designed to help vehicle traffic flow more smoothly? (*Traffic lights, crosswalks, one-way streets, traffic signs, roundabouts, bike lanes, etc.*)
3. What are the five steps of the engineering design process?

PROCEDURE

Introduce yourselves---name, major, university, types of jobs people with your degree can do. **(2 min)**

Attention Getter (2 min.)

- Who can tell us what an *engineer* is? Do you know any engineers? What do they do?
Engineers design things that help people, improve products and make life easier.
- Today we are going to learn about **Transportation Engineers**. On the board, write “Transportation.” What does “transportation” mean? (*movement of people and goods by boats, planes, trucks, cars, trains, etc.*)
What do you think a Transportation Engineer does? (*Transportation engineers design and manage the safe and efficient movement of people and goods*).

Walking Game (in the hallway, or open area in the classroom) (4 min.)

- Line up ½ of the group (parents, too) shoulder to shoulder facing the other ½ of the group.
- Ask each group to move to the opposite side of the room (no running or pushing) when you say go (or “green light”). I participate, muttering “oh, this is so confusing”/ Oh, I’m going to run into someone”, etc.
- At the other side, turn around and face each other again. What went wrong? Why was this not smooth? What can be done to make this trip better? How do we keep “order” in our halls and stairways? (Nudge them until someone remembers the rule about walking on the right side of the hall.) Try again with our new rule “walk on the right side.” Did it go better this time? (Let’s sit down.)

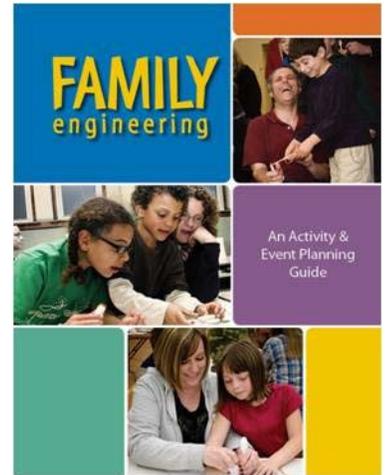
Activity Steps #1-8 (see *Family Engineering* book p.117-118)

Ask & Imagine (5 min.) – Steps #2-5

Plan (5 min.) – Step #6

Create (12 min.) – Steps #6-7

Improve (3 min.) – Step #7-8



FAMILY
engineering

Learning Assessment

1. Ask students to list some things that transportation engineers have designed to help traffic flow more smoothly? (*Traffic lights, crosswalks, one-way streets, traffic signs, roundabouts, etc.*)
2. What is the job of a transportation engineer? *Design and manage the safe and efficient movement of people and goods by boats, planes, trucks, cars, trains, etc., even walking!*

Clean up (1 min.)

- Families may take home all the paper; paperclip to hold papers together.
- Put the four markers, scissors, and glue sticks back in the resealable bag, so it can be reused.
- Put all paper scraps in the trash.