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16. Abstract <p>The goal of this project was to team with the Advancement Via Individual Determination (AVID) program in local schools to stimulate student awareness of transportation and engineering careers and to encourage interest in the science, technology, engineering, and mathematics (STEM) fields. AVID is an in-school academic support program for grades 4–12 that prepares underserved students (predominantly minority and economically disadvantaged) in the academic middle for college eligibility and success. The team developed and conducted four half-day workshops and a field trip for AVID students from four schools in Texas. Approximately 150 students participated in the half-day workshops and approximately 40 students attended the field trip. These events offered students an opportunity to gain hands-on experience and insight into transportation and engineering careers. The events also provided exposure and mentoring from role models that currently work in the transportation field.</p>					
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**PARTNERING WITH AVID TO CREATE  
TRANSPORTATION SCHOLARS**

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TEXAS TRANSPORTATION INSTITUTE  
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## EXECUTIVE SUMMARY

The current and future success of the transportation infrastructure and its diverse array of components depend on developing a large cadre of individuals, both male and female, to design, plan, manage, operate, and maintain the vast infrastructure in place. One opportunity to stimulate student awareness in transportation careers and employment opportunities is creating partnerships with existing programs that target students with interests in attending college. One such program is Advancement Via Individual Determination (AVID). AVID is an in-school academic support program for grades 4–12 that prepares underserved students (predominantly minority and economically disadvantaged) in the academic middle for college eligibility and success.

The team developed and conducted four half-day workshops for approximately 150 AVID students at two middle schools in the Killeen Independent School District and a field trip to the Texas Transportation Institute (TTI) facilities at the Texas A&M University campus for approximately 40 AVID students from two intermediate schools in the College Station Independent School District. These events offered students an opportunity to gain hands-on experience and insight into transportation, engineering, and technology careers. It also provided exposure and mentoring from role models that currently work in the transportation field. Thereby, encouraging AVID students to attend college and choose a career in transportation or engineering.

Unfortunately, funding, travel, and time constraints limit the ability of school districts and transportation professionals to conduct these types of in-person events, as well as develop more in-depth events (e.g., further details regarding certain topics, group projects, etc.). Thus, research into additional education modules and new methods for conducting educational outreach programs would benefit academic programs. The use of webinar technology provides an opportunity to reach more students regardless of their location or proximity to a major university in a more cost and time efficient manner. Evaluation of webinar technology would provide insight regarding its feasibility and effectiveness in this type of environment.



## **DISCLAIMER**

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## INTRODUCTION

The transportation industry, like every other profession that relies heavily on the science, technology, engineering, and mathematics (STEM) fields, faces a challenging future. According to a 2008 *USA Today* article (1), the high-profile goal of U.S. business groups to double the number of bachelor's degrees awarded in the STEM fields by 2015 was falling way behind target. While the number of degrees in these fields increased slightly earlier in the decade, the number of degrees had flattened out at around 225,000 a year. In short, the current and future success of the transportation infrastructure and its diverse array of components depend on developing a large cadre of individuals, both male and female, to design, plan, manage, operate, and maintain the vast infrastructure in place.

One opportunity to stimulate student awareness in transportation careers and employment opportunities is creating partnerships with existing programs that target students with interests in attending college. One such program is Advancement Via Individual Determination (AVID). AVID is an in-school academic support program for grades 4–12 that prepares underserved students (predominantly minority and economically disadvantaged) in the academic middle for college eligibility and success. Over the past decade in Texas, more than 300 schools, spanning 59 school districts, have implemented AVID, making Texas' statewide implementation of AVID the second largest in the nation.

The team developed and conducted four half-day workshops for AVID students at two middle schools in the Killeen Independent School District and a field trip to the Texas Transportation Institute (TTI) facilities at the Texas A&M University campus for AVID students from two intermediate schools in the College Station Independent School District. These events offered students an opportunity to gain hands-on experience and insight into transportation, engineering, and technology careers. It also provided exposure and mentoring from role models that currently work in the transportation field. The following chapters document the activities included and assessment of both types of events (half-day workshops and field trip).



## HALF-DAY WORKSHOP OUTREACH EVENTS

A four-member team conducted four half-day workshops (two at each school) for 7<sup>th</sup> and 8<sup>th</sup> grade AVID students at Union Grove Middle School and Eastern Hills Middle School in Harker Heights, Texas, on May 12–13, 2009. The workshops lasted approximately 3 hours each and were held before and after lunch. Approximately 150 students attended the workshops. Table 1 contains a summary of the four half-day workshop events. Appendix A contains the workshop agendas for each school.

**Table 1. Half-Day Workshop Events.**

School	Date	Time	Grade	Number of Students
Union Grove Middle School	May 12, 2009	8:00 am to 10:40 am	8 <sup>th</sup>	26
		11:30 am to 2:40 pm	7 <sup>th</sup>	38
Eastern Hills Middle School	May 13, 2009	8:00 am to 11:05 am	8 <sup>th</sup>	50
		12:57 pm to 3:35 pm	7 <sup>th</sup>	35

### ACTIVITIES

During each workshop, students attended a transportation and engineering career awareness session and the following break-out activities:

- Transportation in the news,
- Up close with the world of transportation gadgets,
- What’s my sign, and
- Zoom mobile.

For the break-out activities, team members divided students into four groups. The break-out activities were conducted simultaneously, with students rotating to a different activity every 30 minutes. The following sections describe the workshop activities.

### Transportation and Engineering Career Awareness

Every workshop started with a TTI researcher making a 20–minute presentation to the entire group about the transportation industry and careers in engineering. The presentation was designed to promote interaction between the researcher and students. Specifically, the presentation included information about the following:

- What is transportation;
- Transportation modes (interactive);
- Transportation system (interactive);
- Texas transportation facts;
- Current transportation issues;
- Transportation careers;
- What is engineering;
- Why you would want to be an engineer;
- Engineering in transportation;
- Transportation engineering careers;
- Classes needed in high school; and
- Engineering college degrees, additional training, and professional licensure.

Figure 1 shows a TTI researcher presenting this material to AVID students. Appendix B contains the slides from the presentation.



**Figure 1. Researcher Presenting Transportation and Engineering Career Information to AVID Students.**

## Transportation in the News

For this activity, team members placed students into small groups (two to four students per group). A TTI researcher then provided each group with newspapers and supplies (scissors, glue, highlighters, markers, and 14-inch by 17-inch drawing pads) to create “Transportation in the News” posters. Students were instructed to find as many articles as they could that involved any aspect of transportation, clip each article, and glue the clippings on the paper provided. Students were also encouraged to use highlighters to underline words and phrases in each clipping that were about transportation and to use markers to decorate their poster. At the end of this activity, the TTI researcher reviewed and discussed each groups’ findings. Figure 2 shows AVID students identifying transportation related articles in newspapers, and one group’s poster. Appendix C contains the instructions for Transportation in the News activity.



**Figure 2. Transportation in the News Activity.**

## Up Close with the World of Transportation Gadgets

For this activity, a TTI researcher discussed how the human eye works, driver visual needs at night, and retroreflectivity (the ability of an object to redirect light back to its source). The students then used hand-held microscopes and flashlights to examine:

- Beads used in pavement markings,
- Retroreflective sign material,
- Retroreflective pavement markings,
- Retroreflective raised pavement markings (RPMs), and
- A retroreflective construction worker vest.

Students also looked at a traffic cone, warning light, and portable rumble strip. The TTI researcher also explained how traffic and pedestrian signals work. Figure 3 shows AVID students during the Up Close with the World of Transportation Gadgets activity.



**Figure 3. Up Close with the World of Transportation Gadgets Activity.**

### **What's My Sign**

For this activity, team members placed students into small groups (two to four students per group). First, the students answered some fun questions regarding traffic signs (Appendix D). A TTI researcher then discussed the design of traffic signs, including background color, shape, and the use of symbols versus text. The TTI researcher then provided each group with supplies (markers and 14-inch by 17-inch drawing pads) to create a sign for one of the following situations considering the information previously discussed (i.e., sign color, shape, etc.):

- Your classmate trips and falls while walking; during the fall they spill their lunch.
- The school wants to create an area where iPods cannot be used.
- Your school mascot wants to cross the street.
- Your class is taking a trip to another planet and you need to understand that in this new world you can't walk to the left side of a tree.

At the end of this activity, the TTI researcher reviewed and discussed each group's sign. Appendix E contains an outline of this activity. Figure 4 shows AVID students creating their signs, and several groups' signs.



**Figure 4. What's My Sign Activity.**

### **Zoom Mobile**

The zoom or puff mobile is an activity that the American Society of Civil Engineers created for Public Broadcasting System (PBS) Kids activities during National Engineers Week (Appendix E). The activity encourages students to be creative and to work as a team in designing a vehicle that can travel the farthest distance possible when a team member puffs or blows on it. A TTI researcher gave each team three straws, four lifesavers, one piece of paper, two paper clips, a roll of tape, and scissors. In order for the vehicle to work properly, the group must design a vehicle that functions well mechanically (i.e., the wheels move freely, and aerodynamically). At the end of this activity, the teams race their vehicles and discuss the advantages and disadvantages of the vehicles' designs. Figure 5 shows AVID students building and racing their zoom mobiles.

### **ASSESSMENT OF EVENT**

The team evaluated the effectiveness of the workshops based on discussions with the AVID teachers, as well as informal feedback from the team. Both AVID teachers thought the workshops provided information to the students that would not be accessible without the expertise of the team members. In addition, they thought the workshop format kept the students engaged, and the enthusiasm of the team members really brought the world of transportation to life.



**Figure 5. Zoom Mobile Activity.**

Team members felt that the duration of the workshops was appropriate and liked the simultaneous format of the break-out activities. Due to space restrictions at one school, the break-out activities contained a larger number of students (17 to 26 students versus six to ten). The team members felt they could direct and interact more effectively with the smaller groups.

## **FIELD TRIP OUTREACH EVENT**

On May 7, 2010, approximately 40 6<sup>th</sup> and 7<sup>th</sup> grade AVID students from Cypress Grove Intermediate School and Oakwood Intermediate School in College Station, Texas, visited the TTI facilities at the Texas A&M University campus. The field trip lasted approximately 4.5 hours. Appendix G contains the field trip agenda.

### **ACTIVITIES**

During the field trip, students attended a transportation and engineering career awareness session, a crash test session, and the following break-out sessions:

- Up close with the world of transportation gadgets,
- TransLink® Research Center,
- Transportation and the environment, and
- An open discussion with Texas A&M University students.

For the break-out activities, team members divided students into four groups. The break-out activities were conducted simultaneously, with students rotating to a different activity every 30 minutes. The following sections describe the field trip activities.

### **Transportation and Engineering Career Awareness and Crash Test Sessions**

Similar to the half-day workshops, the field trip began with a TTI researcher making a 30-minute presentation to the entire group about the transportation industry and careers in engineering (see Appendix B). The field trip ended with a crash test presentation. This 30-minute presentation included video from the numerous crash tests performed by TTI and allowed TTI team members to discuss with students the science behind crash testing.

### **Up Close with the World of Transportation Gadgets**

Similar to the half-day workshops, a TTI researcher discussed how the human eye works, driver visual needs at night, and retroreflectivity (the ability of an object to redirect light back to its source). The students then used hand-held microscopes and flashlights to examine:

- Beads used in pavement markings,
- Retroreflective sign material,

- Retroreflective pavement markings,
- Retroreflective RPMs, and
- A retroreflective construction worker vest.

The students also toured the TTI Traffic Control Device Visibility Research Laboratory.

Figure 6 shows AVID students during the Up Close with the World of Transportation Gadgets activity.



**Figure 6. Up Close with the World of Transportation Gadgets Session.**

### **TransLink® Research Center**

The students also toured the TTI TransLink® Research Center, which is a national, multi-modal, multi-agency public-private program of research, development, and professional education. During the tour, a TTI researcher discussed how traffic signals and intelligent transportation systems (ITS) work. Figure 7 shows AVID students during the TransLink® Research Center tour.



**Figure 7. TransLink® Research Center Tour.**

### **Transportation and the Environment**

For this session, TTI team members discussed the connection between transportation and the environment. Students watched a video about landscape architecture and the beautification of roads. Students then discussed erosion and the need for mitigation actions during road construction and maintenance operations. TTI researchers passed around samples of various materials used to prevent erosion and capture silt and other pollutants during storm water runoff. Students also discussed the need for wise decisions during construction in environmentally sensitive areas, such as wetlands. Figure 8 shows AVID students during the Transportation and the Environment session.

### **Open Discussion with Texas A&M University Students**

During this session, AVID students openly discussed with current Texas A&M University students what it is like to be in college. Items covered included:

- College life,
- Classes,
- Studying,
- On-campus jobs for students,
- Classes to take in high school,

- Challenging things about going to college,
- Moving away from home, post-graduate degrees, and
- Beginning salaries.



**Figure 8. Transportation and the Environment Session.**



**Figure 9. Open Discussion with Texas A&M University Students.**

## **ASSESSMENT OF EVENT**

The team evaluated the effectiveness of the workshops based on discussions with the AVID teachers, as well as informal feedback from the team. Both AVID teachers thought the field trip was a great opportunity for the AVID students to see how professionals use science and math in their jobs. To encourage interaction, the teachers recommended that the students generate questions for each session in advance of the field trip. This would allow the students to be more prepared and less reserved about interacting with the professionals.

Team members felt that the duration of the field trip was appropriate and liked the simultaneous format of the break-out activities. Also, the team members thought that the sessions with more interactive aspects were better received.



## **SUMMARY AND CONCLUSIONS**

The goal of this project was to team with AVID to stimulate student awareness of transportation and engineering careers and to encourage interest in the STEM fields. AVID is an in-school academic support program for grades 4–12 that prepares underserved students (predominantly minority and economically disadvantaged) in the academic middle for college eligibility and success. The team developed and conducted four half-day workshops and a field trip for AVID students from four schools. Approximately 150 students participated in the half-day workshops and approximately 40 students attended the field trip.

These events offered students an opportunity to gain hands-on experience and insight into transportation and engineering careers. It also provided exposure and mentoring from role models that currently work in the transportation field. However, funding, travel, and time constraints limit the ability of school districts and transportation professionals to conduct these types of in-person events, as well as develop more in-depth events (e.g., further details regarding certain topics, group projects, etc.). Thus, research into additional education modules and new methods for conducting educational outreach programs would benefit academic programs. The use of webinar technology provides an opportunity to reach more students regardless of their location or proximity to a major university in a more cost and time efficient manner. Evaluation of webinar technology would provide insight regarding its feasibility and effectiveness in this type of environment.

Overall, the events designed and conducted during this project emphasized the STEM fields and introduced students to the transportation field. Thereby, encouraging AVID students to attend college and choose a career in transportation or engineering.



## REFERENCES

1. Pope, Justin. *Push to Produce Science Grads Falls Behind*. USA TODAY, Tuesday, July 15, 2008.



## APPENDIX A: WORKSHOP AGENDAS

### Union Grove Middle School AVID Student Program Agenda

**May 12, 2009**

1<sup>st</sup> session – 8<sup>th</sup> graders – 8:00 am to 10:40 am (2 hrs 40 min)

2<sup>nd</sup> session – 7<sup>th</sup> graders – 11:30 am to 2:40 pm (3 hrs 10 min)

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	1 <sup>st</sup> Session	2 <sup>nd</sup> Session
1. Introductions (Melisa Finley)	8:00 am	11:30 am
2. Introduction to Transportation (Melisa Finley)	8:05 am	11:35 am
3. Breakout Activities	8:30 am	noon
- Transportation in the News (LuAnn Theiss)		
- Up Close with the World of Transportation Gadgets (Melisa Finley)		
- What's My Sign (Brooke Ullman)		
- Zoom Mobile (Debbie Jasek)		
<i>(We will break the students into four groups and run these activities simultaneously. Each presentation should be about 25 minutes long. Every 30 minutes the groups will rotate to a different activity.)</i>		
4. Wrap Up & Questions (Melisa Finley)	10:30 am	2:00 pm
<i>(In the afternoon session, we will take more time to go over the students' creations.)</i>		
5. AVID Students Depart	10:40 am	2:40 pm

---

#### Bell Schedule:

1st	8:00-8:50 am	
2nd	8:55-9:45 am	
3rd	9:50-10:40 am	
4th	10:45-11:25 am (7 <sup>th</sup> grade lunch)	10:45-11:35 am (8 <sup>th</sup> grade)
5th	11:30-12:20 pm (7 <sup>th</sup> grade)	11:40-12:30 pm (8 <sup>th</sup> grade)
6th	12:25-1:15 pm (7 <sup>th</sup> grade)	12:35-1:15 pm (8 <sup>th</sup> grade lunch)
7th	1:20-2:40 pm	
8th	2:45-3:35 pm	

## Eastern Hills Middle School AVID Student Program Agenda

May 13, 2009

1<sup>st</sup> session – 8<sup>th</sup> graders – 8:00 am to 11:05 am (3 hrs 5 min)

2<sup>nd</sup> session – 7<sup>th</sup> graders – 12:57 pm to 3:35 pm (2 hrs 38 min)

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	1 <sup>st</sup> Session	2 <sup>nd</sup> Session
1. Introductions (Melisa Finley)	8:00 am	12:57 pm
2. Introduction to Transportation (Melisa Finley)	8:05 am	1:00 pm
3. Breakout Activities	8:30 am	1:25 pm
- Transportation in the News (LuAnn Theiss)		
- Up Close with the World of Transportation Gadgets (Melisa Finley)		
- What's My Sign (Brooke Ullman)		
- Zoom Mobile (Debbie Jasek)		
<i>(We will break the students into four groups and run these activities simultaneously. Each presentation should be about 25 minutes long. Every 30 minutes the groups will rotate to a different activity.)</i>		
4. Wrap Up & Questions (Melisa Finley)	10:30 am	3:25 pm
<i>(In the morning session, we will take more time to go over the students' creations.)</i>		
5. AVID Students Depart	11:05 am	3:35 pm

---

### Bell Schedule:

1st	8:00-8:23 am
2nd	8:27-9:17 am
3rd	9:21-10:11 am
4th	10:15-11:05 am
5th	11:09-11:59 am
6th	12:03-12:53 pm (7 <sup>th</sup> grade lunch)
7th	12:57-1:47 pm (8 <sup>th</sup> grade lunch)
8th	1:51-2:41 pm
9th	2:45-3:35 pm

# APPENDIX B: TRANSPORTATION AND ENGINEERING CAREER AWARENESS PRESENTATION

## Transportation...



**There is more to it than just getting your drivers license**

Melisa Finley  
Texas Transportation Institute

## Who am I?

- Aggie
- Civil engineer
  - Transportation
- Researcher
  - Work zones





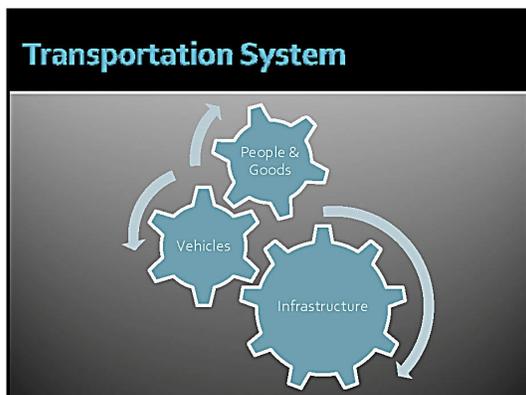

## What is Transportation?

The *safe* and *efficient* movement of *people* and *goods*.



## Transportation Modes

- Surface
- Water
- Air
- Pipeline

## Shoe Trek




## Shoe Trek



## Shoe Trek



## Texas Transportation Facts

- > 303,000 miles of public roads
  - > 1 million signs & markers
- 44 operating railroads
  - 10,386 rail miles
  - 384.4 million rail tons
- 13 deep water ports
- 285 public-use airports



## Current Transportation Issues

- Rehabilitation, reconstruction, & expansion
- Congestion
- Safety -- human factors
- Environment
- Proper integration of technology
- Planning



## Transportation Careers

- 3.5% of total workers age 16 & over are directly employed in transportation
- 10.8 million people work in the transportation industry
- 1 of every 7 jobs is transportation related



## Career Opportunities

- Vehicle operation
- Passenger assistance
- Vehicle assembly & maintenance
- Planning, engineering, & construction
- Safety & the environment



## What is an Engineer?

[en-juh-need], noun: A person trained and skilled in the design, construction, and use of engines or machines, or in any of various branches of engineering.

**Engineers solve problems!**

## Why Engineering?

- Change the world
- Be creative
- Never be bored
- Solve problems
- Work with great people
- Make a big salary
- Travel
- Enjoy job flexibility



## Engineering in Transportation

- Aeronautical - aircraft
- Chemical - fuel
- Mechanical - vehicles
- Electrical - communications, control systems
- Civil - planning, design, construction, operation, & maintenance of facilities



## Where Do We Work?

- 50% government
  - Federal, state, county, & city organizations
- 40% consulting
  - Firms of all sizes (you can even start your own)
- 5% research & teaching
  - Universities
- 5% other private corporations
  - Rail, trucking firms, etc.



## What You Need in High School

- 4 years of language arts
  - English, speech, & communications
- 4 years of math
  - Algebra I & II, geometry, trigonometry, & calculus
- 4 years of science
  - Biology, chemistry, & physics
- 3 years of a second language
- Other courses
  - Computer, drafting/CAD, geography, history

**AP/Honors**

**SAT**

## What Else You Need

- Bachelor's degree in civil engineering
  - More than 200 accredited university programs
- Consider additional training
  - Master's degree in specialty area
- Obtain a professional engineer's license
  - Typically requires 4 years of experience & passing an examination









## APPENDIX D: FUN WITH SIGNS



- A. No Thumb Sucking Allowed
- B. No Hitching
- C. No Aggies



- A. Men Feeding Killer Whales Ahead
- B. Excalibur zone
- C. Workers ahead



- A. Restaurant Out of Spoons
- B. Knife and Fork in the Road Ahead
- C. Food



- A. Dead Skunk in the Middle of the Road Ahead
- B. Blind Driver Ahead
- C. Slippery When Wet



- A. This Way to Only, TX
- B. Two-way Left Turn Lane
- C. Left-Handed and Right-Handed People Allowed



- A. No Crossing
- B. No Walking with Swinging Arms
- C. Women Only



- A. Handicapped
- B. Beanbag Chairs for Sale
- C. Rocking Chairs for Sale



- A. We don't know where you are either
- B. You'll never guess what's up ahead
- C. Information



- A. Fresh Milk for Sale
- B. Cows for Sale
- C. Livestock Ahead



- A. No Bikes Sold Here
- B. No Bicycles
- C. Unicycles Only



- A. High Tides Flood Road
- B. Swimming
- C. Swim Suits Sold Here



- A. Flood Zone
- B. Camping
- C. Pyramid Tours



## APPENDIX E: WHAT'S MY SIGN OUTLINE

**Intro** (5 minutes) – We are going to talk about why road signs look the way they do.

- Human factors note – why are signs important?
  - Know what you can do.
  - Know where to go.
- Fun with Signs – To get started we are going to answer some fun questions.
- What signs do you remember seeing most often when you are driving with your parents?
  - Why do you think that sign looks the way it does (color/shape)?

**Colors** (5 minutes) – Each color has a different meaning and is used for a specific purpose.

- Regulatory – white and red
- Warning – yellow
- Construction - orange
- Guidance – green
- Recreational – brown
- Service – blue
- Incident management – pink

**Shapes** (2 minutes)

- Some very specialized – only one use.
- Others more general – relate to same 3 categories as we talked about with colors.

**Symbol Signs** (2 minutes)

- Easier – why?
  - No English
  - Don't read
  - See faster

**Create a Sign** (10 minutes)

- Assign each group 1 of 4 topics to create a sign for.
- Imaginary ideas so be as creative as you can while still thinking about all of the information we have talked about in the last few minutes.

**Share** (5 minutes) – Groups explain the signs they created.

- Why did you choose the elements you did for the sign?
- What category does it fit into (regulatory, warning, guidance)?



# APPENDIX F: ZOOM MOBILE ACTIVITY





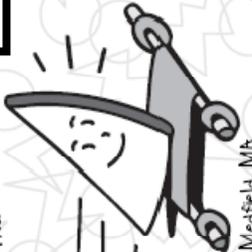
**Redesign** your car so that it will travel the same distance with **fewer** puffs. What happens if you change the **size** of the car? What happens if you use **fewer materials**? Or, what happens if you add a **new material** like thread spools? Choose one thing to change (that's the **variable**) and make a **prediction**. Then **test it** and send your results to ZOOM.



# Puff Mobile

**1 Make a car** using only the materials on the list. Here's the catch: to make your car move, you can only **blow** on it!

**2 Test it out!** How far does your car go when you **blow once**? How many puffs does it take to make the car travel **6 feet**?



**What You Need**

- 3 non-bendable, plastic drinking straws
- 4 Lifeguards™
- 1 piece of paper
- 2 paper clips
- tape
- scissors

**Engineering Scoop**

When you blow, you create **moving air**, or wind. When wind pushes against an object, it can make the object **move**. Think about a sailboat. Wind pushes against the sail and makes the boat move. So a sail is one part of your car that can help it move. Wheels can also help your car move. Maybe you have a **bike** at home. What would happen if you took the wheels off and tried to move it? (It takes a lot of force to move something that's rubbing along the ground.) What **other parts** did you design to help your car move!

Sent in by: Rebo C. and Lee Anne F. of Medfield, MA

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## APPENDIX G: FIELD TRIP AGENDA

### CSISD Middle School AVID Student Visit Agenda

May 7, 2010

1. AVID Students Arrive (Gilchrist Building) 9:00 am
2. Welcome to TTI (Melisa Finley & Debbie Jasek, 103 Gilchrist) 9:15 am
3. Introduction to the World of Transportation & Engineering 9:30 am  
(Melisa Finley, 103 Gilchrist)
4. Restroom Break & Break-up into Groups (103 Gilchrist) 10:00 am
5. TTI Breakout Presentations 10:15 am
  - TransLink® Gilchrist Laboratory (Srinivasa Sunkari, 101 Gilchrist)
  - Up Close with Transportation Gadgets (Jeff Miles, Photometric Lab SHRB)
  - Transportation and the Environment (Beverly Storey, 103 Gilchrist)
  - Open Discussion with TAMU Students (Adam Kaliszewski, 102 Gilchrist)

*(Each presentation should be 25 minutes long. Every 30 minutes the groups will rotate to a different activity.)*
6. Lunch and Restroom Break (103 Gilchrist) 12:15 pm
7. Crash Test Presentation (Gene Buth, 103 Gilchrist) 12:45 pm
8. Restroom Break, Load Buses, and Handout “Goodie” Bags 1:15 pm
9. AVID Students Depart 1:30 pm