**GirlTREC 2019 | Lesson Plans**

**Objectives:**

* Stimulate thinking about roadway design, communication devices, and traffic management strategies
* Teach signal operation methodology and appropriate usages
* Introduce four-way intersections and related design components based on variables including traffic flows and crash occurrence
* Encourage students in transportation- related studies and introduce how dynamic the career is

**Items Needed:**

* Copies of GirlTREC Packet (x 32)
* Pencils with erasers (x 32)
* Slide Notes (2)
* Black Paper for Roadway
* Yellow, White Masking Tape
* Traffic Light Simulator
* Table Number Holders
* Road Signs: Stop, Yield, Roundabout Ahead, Do Not Enter, Traffic Signal Ahead X2 (4 each)
* Posters: Types of Four-Way Intersections, Key
* Flipchart Paper
* Markers
* Poster Stands

1. **PRESENTATION & PACKETS (2:30) -- Dr. Hernandez**

*This portion of the workshop will include* ***slides 1-15******of the PowerPoint*** *and* ***pages 1-2 of the GirlTREC Packet.*** *Please familiarize yourself with these parts. The PowerPoint includes notes below the slides with questions to ask and tips on where the conversations should lead. These slides also contain animations that will make the presentation more engaging for the students and help guide their attention.*

*Before beginning the presentation, ensure each student has received a packet and a pencil so that they may take notes during the lecture.*

1. **TRANSIT TROUBLE COMPUTER GAME (2:47) – Karla**

*This portion of the workshop will include* ***slides 16-26******of the PowerPoint.*** *Please familiarize yourself with this part. The PowerPoint includes notes below the slides with questions to ask and tips on where the conversations should lead. These slides also contain animations that will make the presentation more engaging for the students and help guide their attention.*

Please familiarize yourself with the Transit Trouble game and prepare yourself to explain:

* The frustration meter
* The traffic lights
* The timer
* The stages
* Different views of the intersection
* How to get help

1. **LIVE SIMULATION (3:28) – Mariah & Taslima**

*This portion of the workshop will include* ***slide 26******of the PowerPoint*** *and* ***pages 3-4 of the GirlTREC Packet.*** *Please familiarize yourself with these parts. The PowerPoint includes notes below the slides with questions to ask and tips on where the conversations should lead. These slides also contain animations that will make the presentation more engaging for the students and help guide their attention.*

*Before the live simulation, place the two posters on a stand.*

Live Simulation:

1. Establish Rules:
   1. Each student has a traffic route assigned; They must obey the route given to them on their notecard
   2. There will be two volunteers from the opposite group that will be police officers; The police officers can ask them to step out of the activity for pushing, shoving, yelling, honking at inappropriate times, speeding, or driving erratically
   3. If you are pulled over/out of the activity, you must count to 100 before returning; Our activity will not wait for you
   4. No honking unless you are stopped at the traffic light
2. Present the poster with the Standard Four-Way Intersection. Explain different methods of controlling traffic (i.e. Stop signs, traffic lights).
3. Standard Four-Way Intersection (Traffic Light, Manual Traffic Control)
   1. Have the roadway and lines in place
   2. Have street signs spread out on a nearby table already in the table number holders
   3. Select one student at a time to choose a road sign and find an appropriate section of road for it
   4. The following signs should have been used: Speed Limit, Traffic Signal Ahead
   5. Have Group 1 line up for a simulation at the approaches according to their notecards
   6. Personally operate the traffic light based on perceived demand
   7. Leave the road signs in place
4. Standard Four-Way Intersection (Traffic Light, Fixed-Time Control)
   1. Have the roadway, lines, and road signs in place
   2. Set the traffic signal to automatic
   3. Allow time for students to copy intersection in their packet
   4. Have Group 2 line up for a simulation at the approaches according to their notecards
   5. Start the traffic light and allow it to run while all the students cycle through their approach prompts
   6. Have students put all street signs back on the table
5. Roundabout Intersection
   1. Replace the standard four-way intersection with the roundabout intersection that was prepared in advance; Remove the traffic light
   2. Have street signs spread out on a nearby table already in the table number holders
   3. Select one student at a time to choose a road sign and find an appropriate section of road for it
   4. The following signs should have been used: Yield, Roundabout Ahead, Do Not Enter, Speed Limit
   5. Allow time for students to copy intersection in their packet
   6. Have Groups 1 and 2 line up for simulation at the approaches according to their notecards
   7. Have students put all street signs back on the table
   8. Ask students what some good things about roundabouts are. Help them figure out all the benefits using the notes below **Slide 27** of the PowerPoint
6. **TRANSPORTATION CONVERSATION (3:45) – Beth**

*This portion of the workshop will include* ***page 5******of the GirlTREC Packet.*** *Please familiarize yourself with this part.*

*Before beginning, place markers out on the table and stick 4 pieces of flipchart paper up around the classroom.* Each one should have a single question on it:

1. Why is traffic signal timing important?
2. Why might it be necessary to consider different sizes of vehicles when planning traffic signal timing phases?
3. Why is it important to use the same color for the same thing on every road?
4. If you have an intersection that has lots of traffic and high crash rates, what type of intersection might you want to consider? Why?

Divide the students up in random groups of four and have them turn to page 5 in their packets. Instruct the students to read each question carefully and to take turns writing the answers to the questions in colorful markers on the appropriate flipchart paper. They need to answer all of the questions and write an answer on every sheet -- they only have a few minutes!!

With 5 minutes left in the class time, gather the flipchart paper and present their findings to the class. Allow them to take notes in their packets.