



E-LEARNING

STORYBOARD

Course Title – Traveling Long-Distance with your Electric Vehicle

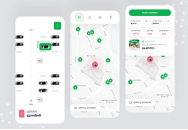
Scene 1 – Introduction: Traveling Long-Distance with your Electric Vehicle

Title (Slide Type)	On-screen	Narration	Notes
Introduction Title/Section	- Header: Traveling Long Distance with an Electric Vehicle - Sub-header: Preparing for Public Charging Stations - Button: Start	None	N/A
Welcome/Instructions Text and image	- Header: Welcome to the Course!  - Image: - Sub-header: Navigation - Body Text: Click the Next button to move to the next slide and the Previous button to return to the previous slide. - Sub-header: Sequence - This course will move in sequential order that will build your knowledge of Electric Vehicles and Public Charging Stations. Button: Next Button: Previous	Welcome to Traveling Long Distance with an Electric Vehicle. This course is designed to prepare you to conduct long distance commutes and troubleshoot various issues you may encounter at a public charging station.	Narration will start at the beginning of the slide's timeline.
Introduction Scenario	- Header: Scenario 1 - Sub-Headers: Anna (character) 	This is Anna. Anna is an EV owner living in Orange County, California. She is preparing for her first long-distance trip to visit her sister Sarah in Sedona, Arizona. Anna typically charges her car at home and has never relied on public charging stations. She estimates this trip will take her about 7.5 hours of driving and 3 to 4 charging stops to complete.	Narration will start at the beginning of the slide's timeline.

	Image: image of a map with an EV, a road, and an end destination. Button: Next Button: Previous		
Objectives Text and image	- Header: Learning Objectives - Character: Anna (thinking pensively on the side of the screen looking at a board with listed objectives)  - Body Text: - After completing the instruction, you will be able to conduct the following: Objective 1: pre-locate a minimum of three go-to charging stations within 5-miles of the departure point before the long-distance trip. Objective 2: EV drivers will be able to operate a minimum of three different charging system phone applications and payment methods. Objective 3: EV drivers will be able to identify 4 different levels of charging wattage outputs and their estimated time to complete a full charge. Objective 4: EV drivers will be able to calculate their arrival time to their destination within a margin of accuracy. Learning Objective 5: EV drivers will be able to generate a long-distance travel plan requiring multiple charging stops that includes a minimum of three possible travel scenario issues and their workarounds.	In order for Anna to confidently conduct her trip, there are a few fundamental basics that she must know about EV's and public charging stations. Covered in this course are 5 main learning objectives that will equip any new or experienced EV driver with the necessary knowledge and skills to generate a long-distance travel plan requiring multiple charging stop.	Narration will start at the beginning of the slide's timeline.

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Scene 2 – Module 1: Charging Stations Overview

Title (Slide Type)	On-screen Text	Narration	Notes
Introduction to Module 1 Title/Section	Header: Module 1 Sub-Header: Charging Stations Overview Button: Start Button: Previous	In this first module, we will cover a basic overview of public charging stations and how to operate the charging port.	Narration will start at the beginning of the slide's timeline.
The Charging System Pt. I Text and image	Header: Charging Station Character: Anna standing cluelessly next to a charging station  Image: Arrows: Depicting each part of the station ● Cable Plug ● Screen ● Payment system ● Level Button: Next Button: Previous	A generic charging station has the following parts: a plug which transfers the electricity, a screen to begin and end your charging session, and a payment system to conduct the transaction. Since the entire transactional process is contactless, there are no facilitators you can speak to at the charging site. To locate a charging station, initiate a charging session, and conduct payment, you will need to download the app associated with the charger on your phone.	Narration will start at the beginning of the slide's timeline.
The Charging System Pt. II Text and image	Header: The Application Character: Anna holding a phone Image: A generic charging phone application  Arrows: Depicting each part of the phone application ● Map of stations	Each charging station has their own designated phone application. For this reason, it is recommended that EV owners have at least 3 charging station applications on their phone with account and payment setup. The three most common apps are Electrify America, ChargePoint, and Plugshare. However, this will also depend on your geographic location. Through the application, you will be able to locate nearby charging stations, the charging level speeds offered at the station, and how many ports are available at the site.	Narration will start at the beginning of the slide's timeline.

	● Chargers Available ● Charging Speed ● Price / kWh Ending Text: Tip#1: The payment system is one of the most common mechanical issues you may run into at a charging station, to counteract this problem it is recommended to use the application to complete payment. Button: Next Button: Previous		
Locating a charging station via the app Text and image	Header: Locating a charging station Image: a map of charging stations Arrows: ● Availability ● Charging Speed ● Distance to station Button: Next Button: Previous	To locate a charging station, open the charging application and navigate to the map. The map will show all the nearby stations in your area. Select a pin on the map and check how many spots are available	Narration will start at the beginning of the slide's timeline.
Knowledge Check Quiz	Header: Multiple Choice Quiz Body Text: Test your knowledge so far with this short multiple-choice quiz. 1. The most reliable payment method for charging stations is _____. a. Credit card b. Cash c. Phone application d. All of the above 2. Each charging station has an on-site facilitator to manage charging transactions. a. True b. False 3. Every EV owner should have a minimum of ____ charging apps and payments set up on their phone.	N/A	N/A

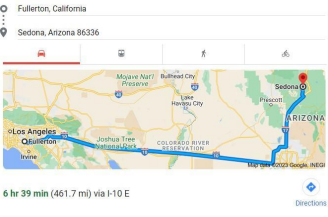
	a. 1 b. 2 c. 3 d. 4 4. The three most common EV Charging Companies are: a. Electrify America b. ChargePoint c. Plugshare d. All of the above Button: Next Button: Previous		
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Scene 3 – Module 2: Charging levels, speeds, and time to full charge.

Title (Slide Type)	On-screen Text	Narration	Notes
Introduction Title/Section	Header: Module 2 Sub-Header: Charging Levels Button: Start Button: Previous	In this module we will cover the different charging levels that public charging stations currently offer, their wattage output, and how long it will take each level to complete a full charge.	Narration will start at the beginning of the slide’s timeline.
Charging Levels Text and image	Header: Charging Levels  Image sample: Body Text: 1. Time Required: a. Level 1 = 40+ hrs b. Level 2 = 2 hrs c. Level 3 = 30 mins	There are currently 3 main levels of charging that are offered at public charging stations. Level 1 is best for at-home charging emitting between 1.3 to 2.4 kWh per hour. This means that level 1 charging can take up to 50+ hours for a full charge to complete. Level 2 charging is best for close commuting to work or chores around your city emitting between 3 to 19.2 kWh per hour. This means that Level 2 charging takes up to 2 hours for a full charge to complete.	Narration will start at the beginning of the slide’s timeline.

	Button: Next Button: Previous	For long distance commutes, Level 3 chargers are ideal and are often located at specified charging sites, in retail plazas and near business complexes. Level 3 chargers, also called DC Fast Charging, emit from 350 to 400 kWh per hour which takes around 30 mins to complete a charge up to 80%. It is not recommended for the health and longevity of your battery to charge past 80% on a level 3 charger. Lastly, a level 4 charger, also called a Hyper Fast Charger, emits up to 350 kWh per hour. Regular usage, as it is a large amount of power surging through the battery, is not recommended.	
Matching Activity Interaction	Header: Match the Level to the correct Time for a full charge - In-Graphic: - Level 1 - Level 2 - Level 3 - Isolated options (body text) 1-2 hours 30-45 minutes 40+ hours Button: Next Button: Previous	Test your understanding of charging levels by matching the levels to their charging times.	Narration will start at the beginning of the slide's timeline.
Calculating Arrival Times Text and image	Header: Calculating Your Arrival Time Character: Anna thinking pensively  Sub-Header: Let's get Anna on the road. Button: Next Button: Previous	Now that we've covered Charging Levels and their estimated time, let's help Anna plan her trip to Arizona!	Narration will start at the beginning of the slide's timeline.

Scene 4 – Calculating Your Arrival Time: Anna’s trip to Arizona Pt I.

Title (Slide Type)	On-screen Text	Narration	Notes
Calculating Arrival Times Title/Section	Header: Calculating Your Arrival Time Character: Anna thinking pensively  Image: A map from OC, CA to Sedona, AZ.  Button: Next Button: Previous	Now that you are aware of how public charging stations operate, how to navigate the phone application to locate a charging station, and the level of kWh speeds each station offers; we can now generate a long-distance travel plan with pre-planned charging stops. Let’s check in on Anna and help her plan her trip to see her sister.	Text
Anna’s Trip Scenario	Header: Anna’s trip Sub-header: Order her steps to generate a plan. Body Text: How much time is needed for this charging session? Button: Next Button: Previous	Let’s plan a trip for Anna’s sister using an interactive tool. Match the steps to help Anna plan her trip: The drive will take her about 7.5 hours of driving and 3 to 4 charging stops to complete. Step 1: Locate a charging station and estimate the time required for this charging stop.	1
Anna’s Trip Interaction	Header: Order Anna’s thinking process. Image: Character – Anna with a notebook planning her trip. 1. In-Graphic: a. Locate a charging station b. Check Available spots c. Distance to station d. Charging Level/Speed offered e. Estimate time to complete the charge	N/A	Text

	f. Pre-plan the next charging stop 2. Isolated Graphic: ● Blank Slot ● Blank Slot ● Blank Slot ● Blank Slot ● Blank Slot Button: Next Button: Previous		
Calculating Arrival Time Text and image	Header: Calculate Anna’s Arrival Time Sub-Header: How much time should Anna factor into her total trip? 1. 7.5 hours of driving + 3-4 charging stops 2. If each stop offers a level 3 charger, and each charging session takes approximately 30mins to complete, Anna should factor in a minimum of an additional 1.5hrs to her 7.5hr drive. She can estimate her total trip will take about 9hrs to complete. Button: Next Button: Previous		Text
Summary Text and image	Header: Summary ● Locate a Charging Station ● Identify Charging Speed ● Time designated for the Charging Session Button: Next Button: Previous		Text

Scene 5 – Conclusion: Long Distance Commuting Summary and Recap

Title (Slide Type)	On-screen Text	Narration	Notes
Final Title/Section	Header: Summary Recap Sub-Header: The 3 main charging speeds and how long each level takes, and how to locate and operate a nearby charging station utilizing the stations' phone application. Button: Next Button: Previous	In this module, you have identified the 3 main charging speeds and how long each level takes. Now you should be able to locate a nearby charging station that is available and offers level 3 charging. Additionally, you can now determine how much time should be allocated to complete your charging session.	Text
Title Video	Header: Watch this video which explains some of the issues with charging stations. Video: The Wall Street Journal: How Bad Are Public EV Chargers? Button: Next Button: Previous	Take a quick peak at this video which explains some of the technical issues one might run into at a charging station.	Text
Conclusion Text and image	Header: Reminder Sub-Header: Key Takeaways 1. 3 Levels of Charging 2. Locate charging stations with your app 3. Have a minimum of 3 different EV charging apps with payment setup 4. Allocate enough time to complete your charge and factor additional time into your trip. Button: Next Button: Previous	Here are some key takeaways from this course that will help you generate your first long-distance EV trip.	Text
Conclusion Title/Section	Header: Thank you! Sub-Header: You have completed the course modules. Click Next to complete the course. Button: Next	Text	Text

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