

## **How to Navigate Across America Using Highways**

Even in our age of smartphones and GPS systems, being prepared to navigate without a map is an important skill. As the grid system of Manhattan demonstrates, a well-ordered system can be very helpful once users understand its logic. By learning and applying a few simple rules about America's two major highway systems, you can simultaneously identify roughly where you are in the United States and head onward towards any destination of your choosing.

Main Objective (Students will be able to): Apply the numbering rules of Interstates and Federal Highways to locate their relative position within in the United States and proceed in the direction of their choosing.

Sub-Objectives (Students will be able to):

1. Identify the direction and relative location of a US Interstate Highway based off of its number.
2. Identify the direction and relative location of a US Federal Highway based off of its number.
3. Identify which direction they are heading based off of exit numbers.



### **I. Interstate Highways**

A. Info: Established in the 1950s with rise of the nuclear family's automobile. The interstate also assisted with mass transport of goods in an expanding economic landscape, as well as providing all sorts of strategic military advantages. These roads have at least two lanes each way. They are a massive system that include approximately 50,000 miles of roadway. Each Interstate features a divided median. Identified with an "I" or an "Interstate" and usually have a red, white, and blue color scheme.

B. Numbers:

1. Even numbers go east-west.
2. Odd numbers go north-south.

3. Lowest numbers start in the west (Interstate 5) and the south (Interstate 10).
4. Highways ending in 5 or 0 go all the way through the country. Highways ending in any other number are regional Interstates.
5. Exits: Exits get higher in number using the same system that is used to number the interstates; numbers get higher from west to east and south to north.

C. Exceptions:

1. Beltways are usually located around major cities. They are 3 digit numbers, with the latter two numbers indicating the parent Interstate.
2. E.g., Interstate 495 outside of Washington D.C., where the phrase “inside the beltway” comes from.
3. There are Three Interstates in Hawaii (H-1, H-2, H-3). Four in Alaska (A 1, A-2, A-3, A-4). Three in Puerto Rico. (PRI-1, PRI-2, PRI-3).



II. Federal Highways (United States Numbered Highways)

A. Info: Initially designated in 1926, these roads run for over a collective 150,000 miles. They are sometimes but not always 2 lanes per direction, and they usually but do not always have a median dividing them.

B. Numbers:

1. Even numbers go east-west. (Think: Route 66)
2. Odd numbers go north-south. (E.g., the 101 (PCH!))
3. Lowest numbers start in the East (Route 1 along the east coast) and the north (Route 2 from Washington to Maine).
4. Highways ending in 0 or 1 are, generally speaking, longer routes that often go all the way through to the edge of the

country. Highways ending in any other number are generally shorter. (Notable exceptions exist, such as Route 66).

5. \*\*\* There **are** a few exceptions to this, but they are very rare and common sense will make them obvious.

#### C. Exceptions:

1. With the sole exception of highway 101 in California, three digit Federal Highways are offshoots of parent highways, which is designated by the latter two of the three numbers.
2. Federal highways sometimes have offshoot routes. These routes can be indicated with letters or numbers.
  - a) Letters: These letters often indicate direction (E.g., 9W in NYS, which is **West** of route 9).
  - b) Numbers: Comprised of a third digit added before the parent number. (e.g., Route 219 in NYS). Often used for beltways, similar to the Interstate

### III. Applications in context.

A. You know you are somewhere in Colorado on Interstate 70. As you travel down the road, you notice a sign that Denver is approaching ahead. You also notice the exit numbers are getting smaller. You are trying to get to Colorado Springs, which you know to be due south of Denver. As you near Denver, you see upcoming exit signs for three roads: Federal Highway 6, Interstate 25, and Interstate 270.

1. Which direction were you heading initially? (**South**)
2. Which of the three roads would take you in the correct direction towards Colorado Springs (south)? (**Interstate 25**)

B. You find yourself on Interstate 15 in Utah. As you travel, you notice that the exit numbers are getting larger. As you approach the outskirts of Salt Lake City, you are forced on a detour due to a massive sinkhole on the interstate. You are rerouted onto Federal Highway 89.

1. Will Federal Highway 89 take you in the same direction as Interstate 15? If so, which direction should you head? (**Yes, South**)

2. Your ultimate destination is San Francisco (on the west coast). As you proceed on your way, you see a sign announcing upcoming junctions. These roads include Interstate 15, Interstate 215, and Interstate 80. Which of these roads will help you go in the direction of San Francisco (west)? (**Interstate 80**)

C. After a relaxing vacation upstate in Lake Placid, you are returning home to the city and unfortunately find you have forgotten your map. Luckily, you stumble upon Federal Highway 9, which you know can take you south. Outside of Albany, you see a sign notifying you of upcoming junctions. The roads listed include: Federal Highway 9W, Federal Highway 20, Interstate 87, and Interstate 90.

1. To reach NYC (which you know to be south of you) should you stay on Federal Highway 9 or take one of these other routes? (**Semi-Trick question: You can stay or go**)
2. If you decide to take one of these other routes, which one should you take? (**Another semi-trick: You can take 9, 9W, or I-87**)

D. Practice and future lessons:

1. Practice: Students will be provided with matching exercise on numbers of Interstate Highway routes to take home and complete for practice.
2. Possible topics for future lessons:
  - a) Varieties of ways in which states number their highway exits (number of exits vs. miles).
  - b) The few exceptions to the Federal Highway numbering scheme and why they exist.
  - c) Canadian and Mexican highway systems and how they connect with those in the US.
  - d) The varieties of route numbering systems used by various states, counties, and cities.