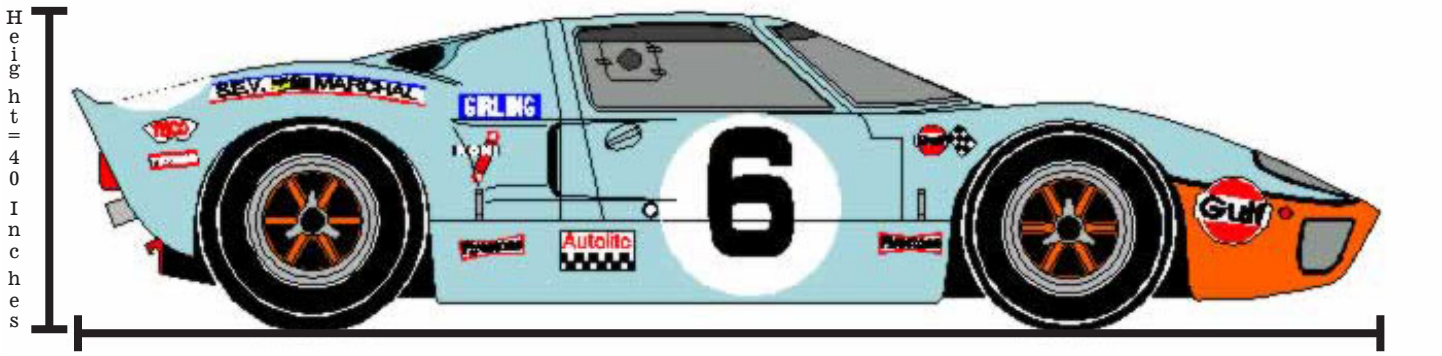
RACING TO THE FUTURE™
MATH LESSON #1 WORKSHEET
SIZE AND SCALE

In this worksheet you will learn about how the size of a slot car is scaled to a real car and how that is used in Racing to the Future™.

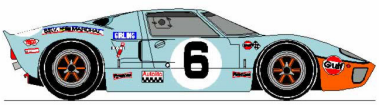
In the Racing to the Future™ program we race *HO Scale* slot cars. *Scale* is how we describe the size of the cars and tracks we race on. There are many scales or sizes of slot cars. They are 1/24th scale, 1/32nd scale, 1/43rd scale, and HO Scale which can be 1/64th scale or 1/87th scale. The numbers let you know what size the cars and tracks are. 1/1 scale is equal to the "real life" size of the car. Let's use the HO scale - 1/64th scale as an example. 1/64th scale means the car is 64 times smaller than the actual car it is modeled from. Let's look at the drawings below and see how scale works..

1/1 Scale - Actual Car



Length= 158.5 Inches

1/24 Scale - Slot Car



Height= 1.6 Inches

Length= 6.6 Inches

1/32 Scale - Slot Car

Height= 1.25 Inches

Length= 4.95 Inches

HO-1/64 Scale - Slot Car

Height= 0.62 Inches

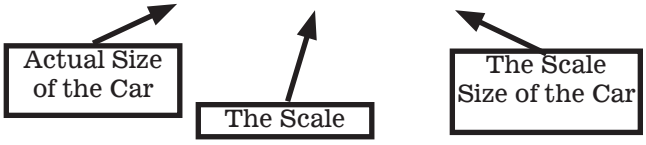
Length= 2.47 Inches

To figure out your scale size, take the actual size of the car, 158.5 inches and divide that number by the *scale size* you are working with.

Example:

For an HO 1/64 scale car the equation would look like this:

158.5 ÷ 64 = 2.47



So the HO scale length of the Ford GT40 would be 2.47 inches.

The Racing to the Future™ drag strip is a scale quarter mile race track. Real dragsters race on quarter (1/4) mile and eighth (1/8) mile drag strips. So just how long is the Racing to the Future™ drag strip? Let's figure this out using our scale rules.

1 mile is equal to 5280 feet.

We race on a scale quarter mile track so let's figure out how long a quarter mile is.

A quarter of a mile is 1/4th of a mile. We ill be working in feet, so we will use the 5280 feet measurement for 1 mile. So to get a quarter mile we divide 5280 by 4.

$$5280 \div 4 = 1320$$

So a quarter mile is equal to 1320 feet. Next we will figure out what the scale distance of a quarter mile will be. We race 1/64 scale, so we need to divide 1320 by 64 to get the scale quarter mile.

$$1320 \div 64 = 20.625$$

So the scale quarter mile, in 1/64 scale, is 20.625 inches. That is a measures out to be 20 feet 7 inches for a 1/64 scale quarter mile.

1 mile of race track is 5280 feet.

1/4 mile of race track is 1320 feet.

A 1/64 scale quarter mile is 20 feet 7 inches

It is important to understand the scale sizes and distances when racing in the competition. By knowing how long the track will be, you will be better prepared to set up your car correctly. And by knowing what scale cars we are racing, you can find the cars and parts easier. This makes sure that everyone is racing the same size of cars and we all know the scale and distances we will compete with.

What Length is the Car?

Using what we learned in this lesson, determine the length of the real car below, in the scales listed below for the slot car's size.

Real Car's Size
Length = 192 Inches

Formula

Real Car Length ÷ Scale Size = Slot Car Size

1.) What is the Slot Car Size of a 1/32 scale car?

2.) What is the Slot Car Size of a 1/64 scale car?

3.) What is the Slot Car Size of a 1/24 scale car?

How Long Is the Track?

Using what we learned in this lesson, determine the length of the tracks below.

A.) Dan and Jessica have decided to build a race track to practice for Racing to the Future™. They want to build the track to match the scale quarter (1/4) mile length that will be used at the event. They know a real quarter (1/4) mile is 1320 feet long. How many feet will the track be, from the Starting line to the Finish Line to make a scale quarter (1/4) mile?

Formula

Real Quarter Mile Length ÷ Scale Size = Scale Quarter Mile Length

B.) Emily and Jill want to practice for Racing to the Future™ but they only have room for a scale eighth (1/8) mile track. They know the real quarter(1/4) mile track is 1320 feet long. How many feet will the track be from the starting line to the finish line, to make a scale eighth (1/8) mile?

Formula

First Step: Determine how many feet are in an eighth (1/8) mile.
Then use the formula below.

Real Eighth Mile Length ÷ Scale Size = Scale Eighth Mile Length

Answer Key - Lesson #3

1.) 6 Inches

2.) 3 Inches

3.) 8 Inches

A.) 20.625 Feet

B.) 10.3125 Feet