2013MY Scion FR-S Long Lead Press Presentation Outline

Apr. 18, 12

I. SCION FR-S

A. FR-S History and Heritage

1. Toyota Sports 800 (1965-1969)

a. Toyota's first production sports car

b. 2-cylinder, front-packaged boxer (horizontally opposed) engine with rear-wheel drive (FR layout)

1) 790cc

2) 45 bhp @ 5400

c. Low center of gravity

d. Light-weight, compact body

1) Height: 46.3 in

2) Width: 57.7 in

3) Length: 140.9 in

4) Curb weight: 1279 lb

e. Superb aerodynamics

f. Excellent fuel efficiency

g. Achieved great success in endurance races

2. Toyota 2000GT (1967-1970)
   a. Toyota's first 6-cylinder twin cam engine
      1) 2.0L inline
      2) 150 bhp @ 6600 rpm
   b. Resulted from Toyota/Yamaha collaboration
      1) New double overhead camshaft heads (DOHC)
      2) Limited slip differential
      3) All-round power-assisted disc brakes
         a) First for a Japanese car
      4) Emergency brake gripped rear disc directly
   c. The first Toyota/Yamaha collaboration
   d. The first Toyota model to gain recognition within the sports car world
      1) 3rd – 1966 Japanese Grand Prix
      2) 1st – 1967 Fuji 24-Hour Race
      3) Set several FIA world records in 72-hour test
         a) Speed
         b) Endurance
   e. Screen appearance in James Bond – *You Only Live Twice*
      1) Two convertibles were made especially for the film but never commercially available
   f. Parked next to the FR-S clay model as it was developed by the designers
      1) Spirit of the Toyota 2000GT infused into the FR-S

3. Toyota AE86 (1983-1987)
   a. North American AE86 specifications
      1) 1.6L 4-cylinder twin cam engine
         a) GT-S model
            (i) 112 hp @ 6600 rpm
            (ii) 97 lb-ft @ 4800 rpm
            (iii) Compression ratio: 9.4:1
      2) Mass-production engine in a compact FR body
         a) Height: 52.6 in
         b) Width: 64.0 in
         c) Length: 165.5 in
         d) Curb weight: 2200-2400 lb
         e) Drag coefficient: 0.39
      3) Moderately-priced sports car
         a) Widely purchased, loved by drivers, and refined by owners, shops and parts-makers
            (i) FR-S shares this "world view"

B. FR-S Design Story

1. Akio Toyoda: "Where is the passion in our lineup? I want to build a sports car."
2. FR-S's chief engineer, Tetsuya Tada: "Sports cars have become boring. They are over-powered and expensive, only for the wealthy."
3. The answer: Build a sports car – not by committee, but by passion – that is light, compact, agile, and intuitive, delivering true sports car performance at an affordable price
4. "Built by passion, not by committee" became the rallying cry during development of the FR-S
5. Toyota partnered with Subaru's parent company, Fuji Heavy Industries, to develop the car
   a. Toyota developed a "proof of concept" prototype
   b. Toyota designed the exterior and interior
   c. Subaru and Toyota shared duties on engineering
   d. Toyota's D-4S direct injection head design incorporated into Subaru's boxer engine
6. The end result:
   a. A front-mid-engine, rear-wheel drive design
   b. A naturally aspirated engine
   c. Lightweight design
   d. Purpose-built aerodynamic control
   e. Nimble steering
   f. Low center of gravity
      1) Helps contribute to exceptional handling
      2) Nearly matches Lexus LF-A and Porsche 911 GT3
      3) Lower than Porsche Cayman, Nissan GT-R, Subaru Impreza STI, and Mitsubishi Lancer EVO
7. Akio Toyoda insisted: "This car is not about numbers! It's about passion!"

C. FR-S Moniker

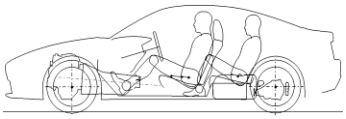
1. Name consists of three uppercase letters
   a. Scion models are traditionally named with one lowercase and one uppercase letter
   b. Underscores its uniqueness
   c. Designates status as the flagship model
      1) Driving
      2) Performance
      3) Customization
2. Name derived from:
   a. FR configuration (front-engine, rear-drive)
   b. "Fast Running – Scion" (Sports)
   c. "Future Racing – Scion"
3. Appeal
   a. Generation Y
      1) Under 30
      2) High interest in sports cars and motorsports
      3) Fun to drive
      4) Ability to tune and customize to personal liking
      5) Reasonable price
   b. Baby Boomers
      1) Secondary vehicle
      2) Fun to drive
4. Build Scion community
   a. Participation in owner clubs
   b. Racing and customization

D. Five Reasons to Buy FR-S

1. "Built By Passion, Not By Committee "
   a. A lightweight 2+2 sports car, FR-S was developed with a front-mid-engine and rear-wheel drive layout. It is light-weight, agile, has a low center of gravity, and nearly ideal front/rear weight distribution which is rarely seen in contemporary sports cars.
2. High-performance made efficient
   a. At the heart of FR-S is a powertrain that is light, compact, responsive, and is comprised of a naturally aspirated 4-cylinder engine that produces 200 hp and151 lb-ft torque, Toyota's D-4S injection system, a choice of six-speed transmissions, and a Torsen® limited-slip differential.

3. Intuitive handling
   a. FR-S combines light weight and a low center of gravity with MacPherson strut front suspension, double-wishbone rear suspension, a brilliantly engineered steering system, and unique tuning of Brake Assist and Vehicle Stability Control to create a sports car with incredible handling performance.
4. Sports car interior
   a. Unlike sports cars that compromise roominess to achieve performance goals, FR-S combines classic sports car features with "driver-in-mind" comfort & convenience items such as a large analog tachometer, digital speedometer, seats with pronounced hip and shoulder bolsters, a small, simple and light steering wheel, a one-piece folding rear seatback, and generous room for the driver and front passenger.

5. Sports car-influenced aerodynamics
   a. Key to FR-S's handling and performance capabilities is an engineering philosophy of aerodynamic control, which trims and manages airflow on all sides of the car to create a balance of stability, slippery aerodynamics, and fuel efficiency.



E. Exterior Dimensions

1. Height: 50.6 in
2. Width: 69.9 in
3. Length: 166.7 in
4. Wheelbase: 101.2 in
5. Track:
   a. Front: 59.8 in
   b. Rear: 60.6 in
6. Weight distribution:
   a. Front: 53%
   b. Rear: 47%

F. Interior Dimensions

1. Head room
   a. Front: 37.1 in
   b. Rear: 35.0 in
2. Shoulder room
   a. Front: 54.5 in
   b. Rear: 51.7 in
3. Hip room
   a. Front: 53.1 in
   b. Rear: 45.3 in
4. Leg room
   a. Front: 41.9 in
   b. Rear: 29.9 in
5. Front-to-rear couple distance: 27.5 in

II. **EXTERIOR**

A. Design Keyword: Neo Functionalism

1. The perspective that all current integration is the result of past integration (i.e., Sports 800, 2000GT, AE86)
2. The minority moves into the mainstream (i.e., a reasonably priced, mass-produced sports car)

B. Low, Fun, Beautiful

1. A low center of gravity through boxer engine and FR layout
2. Creates driving pleasure through aerodynamic advantages (i.e., low drag resistance) and handling stability
3. A combination of functional performance elements and personal design touches create an appealing and sleek look

C. Front Design

1. Focus on three-dimensional elements that hint at aerodynamic control
2. "Keen look"
   a. Low and flat hood (signaling presence of the boxer engine found underneath)
   b. Three-dimensional concave movement of the entire hood
   c. Contrast of geometric surfaces above the headlamps
   d. Large, low-set grille opening contributes to aerodynamics and cooling.
3. Front Lamps
   a. Sporty, sharp, unique, and functional housing design
      1) Low beam
      2) Side reflex reflector
      3) High beam (with DRL function)
      4) Turn signal & clearance lamps
   b. Halogen headlamps with auto off feature
   c. Daytime running lights (DRL)
4. Wipers and Washers
   a. Wiper arms and blades have been mounted beneath the engine hood creating a clean appearance while contributing to reduced wind noise
      1) High wiping performance and attractive design
      2) Offer excellent coverage through optimizing positions, shapes, blade length, etc.
   b. Washer nozzles are located beneath the engine hood (on the surface of the cowl panel)
      1) Creates a clean appearance
      2) Minimizes the influence of airflow on spray performance
      3) Wide spray washer nozzles enable washer fluid to be sprayed over the entire windshield
      4) Spray nozzle angle can be adjusted

D. Side Design

1. Beautiful, modern, timeless
   a. Spirit of Toyota's sports car heritage
   b. 2000GT styling infused, but not imitated
      1) Side window shape
      2) Wheel flares
   c. Modern, crisp lines and surfaces
      1) Intended to create lasting appeal
2. Silhouette suggests rear tires are gaining traction
   a. Symbolizes agility
   b. Horizontal posture with low-set front nose helps express low center of gravity
   c. Raised front and rear wheel flares help establish position of the tires
   d. Low-set front bumper and side rocker help contribute to handling stability
   e. Upturned rear diffuser assists aerodynamics
3. Outer mirrors
   a. Foldable, compact, lightweight and stylish
      1) Helps ensure excellent rear visibility
      2) Door-mounted position helps contribute to enhanced visibility of the area around the front pillars
      3) Compact design contributes to low drag coefficient
   b. Power mirror adjustment

E. Rear Design

1. Beauty of racing sports cars
   a. Condensed, compact cabin
   b. Trapezoid-shaped rear
      1) Wide, firmly planted stance
         a) Tires positioned at the edges
   c. Raised rear diffuser
   d. Dual oval exhaust tips
2. Rear lamps
   a. Rear combination lamps with 12-element LED
      1) LED (Light Emitting Diode) lamps for modern styling as well as reduced power consumption
         a) Tail/Stop lamp
         b) Turn signal lamp
         c) Side marker lamp
      2) Reflex reflector
      3) Side reflex reflector
      4) Aero stabilizing fin
   b. High-mount stop lamp
      1) Four-element LED
      2) Height has been raised to help improve rear visibility
   c. Back up lamp
      1) Added to the rear bumper

F. Windows

1. UV cut glass for the side windows, rear window and rear quarter windows
2. Front windshield has ceramic visor in the upper center section to reduce glare
   a. Includes round holes arranged on a black background to allow visibility, such as when checking traffic lights
3. Front windshield molding is located behind the glass instead of in front
   a. Helps contribute to a clean exterior look
4. Exterior visibility of the side window molding is minimized, contributing to a sports car-like side design
5. Gapless construction of the molding that extends from the side windows to the rear quarter glass
   a. Provides a one-piece appearance, which emphasizes the sports car-like design
6. Rear window design maximizes rear visibility without compromising appearance
7. Tempered glass, which is thinner and lightweight, used for the rear window and rear quarter windows

G. Branding

1. Front

a. Scion badge on grill

2. Front fender side

a. Opposed pistons

1) Signifying boxer engine

b. "86"

1) Evokes thoughts of AE86 nostalgia

a) Four-wheel drifting

2) Symbolizes 86 x 86 mm bore and stroke

a) Tradition of sports cars deriving names from hardware specifications

3) Represents inner diameter of exhaust tip (86mm)

3. Rear

a. Scion badge on trunk lid

b. Vehicle logo – "FR-S" on lower right corner of trunk lid

4. T-mesh pattern on front bumper grill

a. Subtle tie-back to Toyota heritage

b. Pattern is found throughout exterior and interior

H. Color and Trim

1. Colors based on qualities expected for a sports car

a. Timeless

b. Stimulating

2. Seven exterior colors

a. Four basic monotone sporty colors

1) Whiteout (37J)

2) Asphalt (61K)

3) Raven (D4S)

4) Argento (D6S)

b. Three stimulating sporty character colors

1) Firestorm (C7P)

2) Ultramarine (E8H)

3) Hot Lava (H8R)

III. **INTERIOR**

A. Neo Functionalism Design Philosophy Applied

1. Focus is to anticipate and meet the needs of the driver
   a. Shape
   b. Layout
   c. Usability
2. Cockpit design, low-set console, and intuitive controls helps occupants feel connected with the driving experience

B. Functional Driving Control Elements

1. Steering wheel
   a. Toyota's smallest steering wheel
   b. Circular with 14.37" diameter
   c. Optimized grip for performance driving

2. Instrument panel/dash
   a. Intuitive compact layout
   b. Symmetrical design helps driver identify centerline and thus be aware of any changes in vehicle stance
   c. Top section composed of low-gloss texture for reduced window reflection/glare

3. Gauges
   a. Positioned and designed for reading at a glance
      1) Digital speedometer incorporated at bottom center of tachometer

4. Seats
   a. Ideal shape, construction, and materials
   b. Substantial bolstering contributes to sporty appearance and track-ready design

C. Information Displays

1. Three-ring orientation for visibility and readability at a glance
   a. Tachometer centrally located
      1) Includes digital speedometer to view engine and vehicle speeds quickly
         a) REV indicator
            (i) Audible and visual indicator that the engine has reached a certain rpm (r/min)
            (ii) Controlled using the "DISP" button
            (iii) Specific engine speed can be set through the multi-information display in increments of 100r/min from 2000 to 7400 rpm (r/min)
            (iv) Audible indicator can be toggled on/off
         b) Red zone indicator
            (i) Flashes red when engine speed exceeds 7400 rpm (*cannot be turned off)
      2) Multi-information display
   b. Speedometer on the left
   c. Gas/Oil level and warning lights on the right
      1) VSC Sport indicator
      2) Sport/Snow mode indicator

D. Air Conditioning

1. Manual air conditioning system
   a. Compact and lightweight design to fit vehicle
      1) Condenser mounted diagonally
   b. Microscopic dust clean air filter for more comfortable cabin environment
2. Controls
   a. Three adjustable dials
      1) Temperature control
      2) Fan control
      3) Mode switches
   b. Easy to operate
   c. Intuitive placement
      1) Switches are brightly illuminated for nighttime visibility

E. Branding

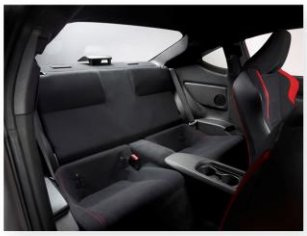
1. Piston ring interior accents subtly communicate high performance and precision
   a. Shift lever base
   b. Side air vents
   c. Gauge ring
2. T-mesh pattern throughout interior
   a. Subtle tie-back to Toyota heritage
   b. Instrument panel ornamentation
   c. Meter
   d. Door switch base
   e. Climate control panel

F. Color and Trim

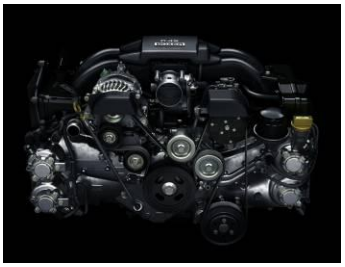
1. Colors and textures based on expected sports car qualities
   a. Functionality
   b. High quality

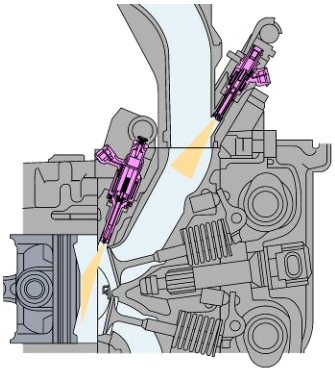
2. Interior color
   a. Black cabin
      1) Includes all items in driver's field of view for cockpit-like atmosphere
         a) Steering wheel
         b) Instrument panel
         c) Ceiling

   b. Contrasting material dispersed throughout cabin
      1) Creates sense of high quality craftsmanship, sensuality, and sportiness
         a) Red accent stitching
         b) Red shoulder supports on front seats
         c) Red seat belt release button
         d) Silver ornamentation



3. Seat trim
   a. Black fabric
      1) Lightweight
      2) Strength/Durability
      3) Breathability
      4) Non-slip material
4. Interior/Door trim
   a. Switch panels angled towards occupants
   b. Easy-to-use door assist grips (front/rear)
   c. Side sill trim includes non-slip pad
   d. Ability to adjust to racing or show needs
      1) Easy-to-remove shoulder pads
      2) Door handle position
         a) Allows for roll cage installation





IV. **EFFICIENT, RELIABLE PERFORMANCE**

A. Two Goals for Engine Development

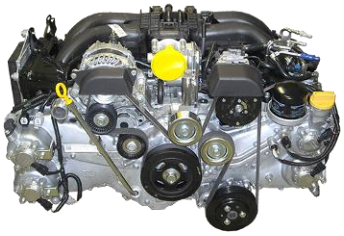
1. "Linear power delivery up to redline speeds"
2. "Environmental sensitivity"

B. Engine is the Result of a "First Time" Combination of Toyota and Subaru Technologies

1. Subaru's traditional boxer (horizontally opposed) 4-cylinder engine
   a. Naturally balanced
      1) Force and vibration of pistons on one side are naturally opposed by their counterparts on the other side
      2) No need for balance shafts or crankshaft counterweights (i.e., eliminate unnecessary weight)
   b. Quicker response to accelerator inputs and easier powerband control versus a turbocharged engine
2. First application of Toyota's unique next-generation D-4S technology in a boxer engine
   a. Enables cylinder cooling and air/fuel mixture optimization that allows the high compression ratio (12.5:1) needed to produce power cleanly and efficiently
      1) High-pressure direct injectors supply fuel directly into the combustion chamber
      2) Conventional port injectors inject fuel into the intake ports
   b. Direct injectors work independently or in combination with port injectors to optimize combustion efficiency in response to driving conditions

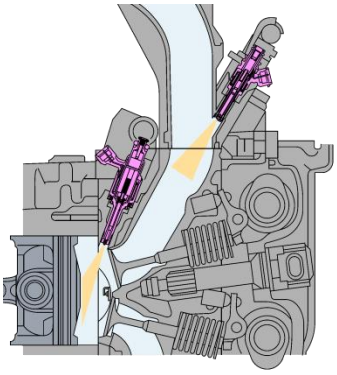
C. FA20 2.0-Liter 4-cylinder Boxer Engine

1. Approach inspired by the Toyota Sports 800 boxer engine
   a. Also front-engine, rear-wheel-drive configuration
   b. Won many endurance races with its efficient and compact size, enabling it to outperform more powerful competitors that required more pit stops for fuel



2. Flat design contributes to excellent dynamic performance
   a. One of lowest centers of gravity heights ever offered by a mass production vehicle
      1) Lower CoG = lower gravitational forces
         a) Better stability and control
            (i) Body pitch
            (ii) Roll
            (iii) Yaw
3. DOHC, 16-valve, dual variable valve timing
   a. 200 hp @ 7000 rpm*
   b. 151 lb-ft @ 6400 - 6600 rpm*

      *SAE Net
   c. 7,400 rpm redline
   d. Naturally aspirated for acceleration response
4. High output and fuel economy ratings/emissions considerations
   a. Direct and conventional port injectors
   b. Square stroke ratio: 86 mm bore x 86 mm stroke
      1) Remains faithful to Toyota's long 2.0-liter sport engine history
         a) Square bore/stroke of 75mm (inline six-cylinder)
            (i) 3M engine in the 2000GT
            (ii) 1G-G engine in the Supra
         b) Square bore/stroke of 86mm (inline four-cylinder)
            (i) 3S-G engine in the Celica/MR2
      2) Longer stroke configuration couldn't meet high rpm targets
   c. High compression ratio: 12.5:1
5. Fuel efficiency ratings
   a. EPA Fuel Economy. Actual mileage will vary.
   b. Manual transmission
      1) City: 22
      2) HWY: 30
      3) Comb: 25
   c. Automatic transmission
      1) City: 25
      2) HWY: 34
      3) Comb: 28



D. D-4S injection system (Direct Injection 4-stroke gasoline engine Superior version)

1. Enables cylinder cooling and air/fuel mixture optimization that allows the high compression ratio (12.5:1) needed to produce power cleanly and efficiently
   a. High-pressure direct injectors supply fuel directly into the combustion chamber
   b. Conventional port injectors inject fuel into the intake ports
2. Direct injectors work independently or in combination with port injectors to optimize combustion efficiency in response to driving conditions
3. Front intake layout
   a. Lowers the engine position
   b. Promotes efficient air intake
4. Intake manifold
   a. Low overall height
   b. Contributes to low center of gravity
5. Port changes
   a. Length reduced for higher engine response
   b. Diameter increased to enhance air intake efficiency
6. Air cleaner element
   a. Less ventilation resistance with the same filtration performance

E. Performance-enhancing features

1. Engine components

a. Piston

1) Length and mass designed to help increase redline engine speed threshold
2) Crest shape optimized for direct injection and a high compression ratio

b. Crankshaft

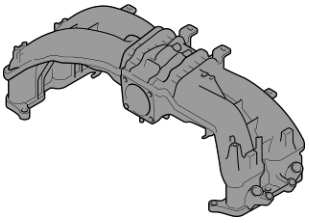
1) Crank pin with a diameter of 50 mm designed to help increase rigidity at high engine speeds

c. Connecting rod

1) Shape designed to help increase redline engine speed threshold
2) Other specifications (e.g., bolt size) designed to help ensure reliability at high engine speeds

d. Intake system

1) Front intake layout
   a) Lowers the engine position
   b) Promotes efficient air intake
2) Intake manifold
   a) Low overall height
      (i) Contributes to low center of gravity



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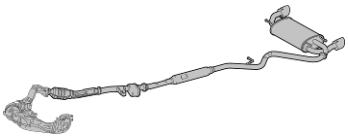
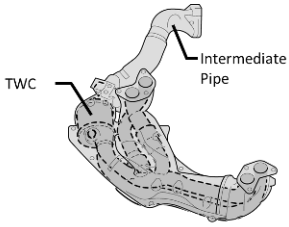


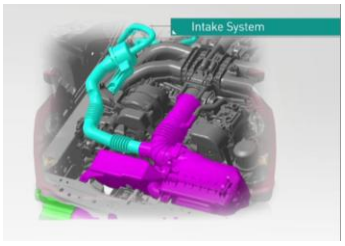


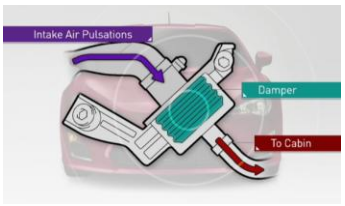
Exhaust Manifold

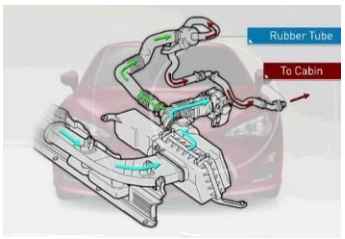
e. Exhaust system

1) Low-profile exhaust pipe layout supports low engine position
   a) Intermediate pipe located above the front suspension crossmember
2) Exhaust manifold layout reduces exhaust pressure losses
3) Dual exhaust pipe and muffler
   a) Supports excellent exhaust efficiency
   b) Large diameter pipe reduces exhaust pressure losses
4) Dual catalytic converters for quick warm-up and improved emissions immediately after startup
   a) Hexagonal cell converter for the front
   b) Low pressure loss converter for the rear

f. Sound Creator







1) Channels the sound from the engine's air intake tract into the cabin in response to accelerator operation
   a) Driving around city/slowly accelerating
      (i) Softer intake sound is produced
   b) Wide open throttle acceleration
      (i) Throaty, rich, and sharp engine sound exudes a pure sports car vibe
      (ii) Sound is particularly rich above 4000 rpm
2) Intake pulsations hit the sound creator and a damper resonates at certain frequencies to optimize the intake sound
   a) Similar to hitting a drum head
3) Intake sound is channeled directly into the cabin via a narrow rubber tube that connects to the passenger footwell, just ahead of the passenger's feet.

F. RA62 6-speed Manual Transmission

1. Newly developed
   a. Crisp movement
   b. Firm, exhilarating shift feel
2. 1st, 2nd, and 3rd gears
   a. Shorter shift stroke
   b. Triple-cone synchros
      1) Gear changes are quick and smooth and at a higher rpm
3. An optimized gear ratio combines driving and environmental performance

Gear	Ratio
1st	3.626
2nd	2.188
3rd	1.541
4th	1.213
5th	1.000
6th	0.767
Reverse	3.437

G. A960E 6-speed Automatic Transmission

1. Highly responsive 6-speed automatic transmission
   a. "Handling enjoyment"
      1) Agile and highly responsive gear changes
   b. "Driving pleasure"
      1) Sports-car-like gear change feel in an automatic transmission package
   c. "Environmental performance"
      1) Excellent fuel economy ratings without sacrificing "handling enjoyment" or "driving pleasure"
2. Dynamic Rev Management
   a. Raises ("blips") engine revs slightly when downshifting
      1) Limits driveline shock
      2) Adds to the visceral experience of driving the car
3. Automatic transmission fluid warmer
   a. Quickly warms the fluid, reducing friction when the transmission is operating cold
   b. Helps reduce fuel injection volume
4. Wide gear ratio range
   a. Allows crisp acceleration from low speeds and excellent fuel economy ratings at high speeds

Gear	Ratio
1st	3.538
2nd	2.060
3rd	1.404
4th	1.000
5th	0.713
6th	0.582
Reverse	3.168

H. Selectable driving modes

1. Multi-mode automatic transmission

a. Manual mode (M position)

1) Allows driver to manually change gears up or down via the shift lever and/or paddle shifters on the steering wheel

2) Engine braking is controlled in accordance with the shift position selected

b. Temporary manual mode

1) Selected by operating the paddle shift switches when in D position

c. Sport/Snow mode

1) Switch is positioned at the base of the shift lever

2) Sport mode

a) For sporty driving or when driving in mountainous regions with lots of curves

b) Lower gears are used and gears change at higher engine speed

c) When in M mode, gears shift very quickly

d) Deactivated when cruise control is engaged

3) Snow mode

a) For accelerating and driving on slippery road surfaces

b) Adjusts the throttle opening angle to control acceleration characteristics on snow covered roads and other slippery surfaces

2. Multi-mode automatic transmission and 6-speed manual transmission

a. TRAC OFF (press for 1 sec.)

b. TRAC & VSC OFF (press and hold for 3 sec.)

c. VSC SPORT (press for 1 sec.)

1) TRAC OFF, VSC ON (with less restrictive intervention)

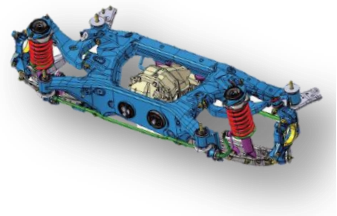
V. **SUSPENSION AND CHASSIS**

A. Design Goal

1. FR vehicle with a Boxer engine
   a. Low center of gravity and low inertial properties
   b. Direct handling feel
   c. Sharp response
   d. Superb controllability

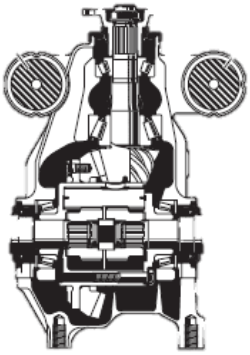
B. MacPherson Strut Front Suspension

1. L-shaped lower arm has been reverse positioned (front/rear reversal) to allow the engine to be mounted as low as possible and close to the vehicle's center
2. Suspension layout allows for low hood position, which visibly promotes the vehicle's lightweight design, low center of gravity, and superb aerodynamics
   a. Shocks and springs inboard mounted
   b. Steering gear box positioned behind the cross member
   c. Cross member specially designed to fit in the limited space between the oil pan and the exhaust pipe

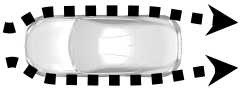


C. Double Wishbone Rear Suspension

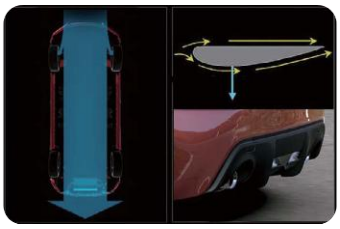
1. Contributes to enjoyable driving feel
   a. "Agile stability"
   b. "Reassuring rear grip that gives a feeling of oneness with the vehicle"
2. Subframe's differential opening enlarged for lightweight design
3. Differential opening's cross sections enlarged for rigidity
   a. Reinforced subframe/body attachment points minimize weight increases while improving grip and stability performance
   b. Roll axis tuned to compliment the front suspension
      1) Low body roll in turns
4. Limited Slip Differential (LSD)
   a. Torsen® LSD achieves sharp response and stability, increasing performance when cornering
   b. 4.100 gear ratio for sporty driving

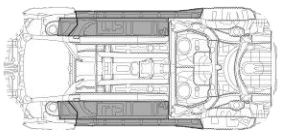


D. Aerodynamic Stability



1. Goals for aerodynamic design
   a. Agile handling at low to mid speeds
   b. Excellent straight-line stability at mid to high speeds
2. "Aerodynamic control" concept
   a. The vehicle is stabilized by airflow above, below, and to the sides of the body
      1) Prevents unnecessary down force that can reduce fuel economy ratings
      2) Stabilizes the vehicle by enveloping it with air
3. Coefficient of drag (Cd)
   a. 0.27





4. Pagoda roof
   a. Has a relief that widens towards the rear to not only lower the roof, but also help enhance handling stability
5. Front bumper lower cover
   a. Enables air to smoothly flow from the engine compartment to the outside, reducing drag
   b. Center section shape stabilizes the underfloor airflow speed, contributing to handling stability
   c. Aero stabilizing fins, shaped like small fish, help handling stability
6. Lower grille
   a. Opening area and position improves cooling performance efficiency
7. Side silhouette
   a. Gently curved hood surface reduces drag and lift
   b. Dynamically shaped bottom edge of low-set front bumper to bottom edge of side rocker contributes to handling stability
8. Underbody and rear diffuser
   a. Contributes to smooth underbody airflow and enhanced downforce
9. Aerodynamically shaped rear bumper
   a. Controls the flow of air, which promotes handling stability
   b. Helps prevent air turbulence, which reduces drag and contributes to handling stability
10. Aero stabilizing fins on taillights
    a. Enhance handling stability by creating air vortices that pull airflow toward the body's sides

E. Column-Assist Electric Power Steering

1. "Handling enjoyment"
   a. Focused on steering feel rather than analytical data
   b. Minimum assist force provides steering feel that directly communicates inputs from the road
2. "In line with the driver's will"
   a. High level of rigidity, directness, and responsiveness
   b. Ample assist force is provided, even under high load conditions such as circuit driving and when maneuvering the vehicle into a garage
3. Low steering gear ratio
   a. 13:1
   b. Contributes to highly responsive steering
   c. On par with that of racing cars
4. Lock to lock
   a. 2.48 : 1
5. Manual tilt and telescopic mechanism
   a. Allows adjustment of the steering wheel position
      1) Tilt (vertical) adjustment range is 1.18 in.
      2) Telescopic (longitudinal) adjustment range is 1.57 in.
   b. Provides comfortable driving position for driver

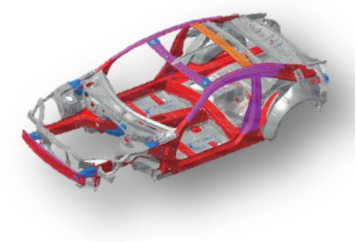
F. Wheels and Tires

1. 17-inch aluminum wheels
   a. Toyota's lightest
   b. Small center badging emphasizes spoke length
   c. Machine-finished twin spokes are offset with a thin, dark accent spoke
   d. 215/45/R17 87W tires
      1) Combines great balance of handling performance and comfort
      2) Michelin Primacy HP (summer tires)
   e. Compact spare tire - T135/80D16

G. Tire Pressure Monitor System

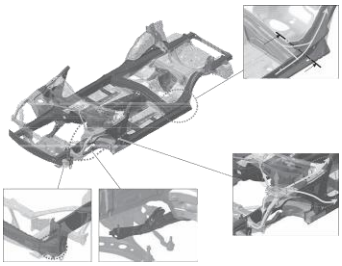
1. Warns the driver of critical drops in tire pressure, contributing to fuel economy ratings and safety
   a. Pressure sensor on each wheel directly measures critical drops in tire pressure
   b. Warning light illuminates if critical tire pressure drop occurs

VI. **HIGH-RIGIDITY BODY**



A. A Lightweight and Rigid Body Promotes Handling Stability Demanded of a Sports Car

1. High tensile strength sheet steel has been widely utilized
2. Pagoda roof
   a. Design uses thinner sheet steel and fewer braces
   b. Extremely high tensile strength sheet steel supports a low center of gravity
      1) 1500 MPa grade hot-pressed sheet steel for the roof center reinforcement
      2) 980 MPa high tensile strength sheet steel for areas such as the roof side rails, front header, and center pillar reinforcement
3. Lightweight front design for nearly-ideal weight distribution
   a. Sheet aluminum for the hood
   b. Innovative front fender construction utilizes thinner sheet metal than usual



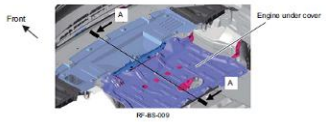
4. Vehicle frame rigidity strengthened
   a. Newly developed lightweight, rigid-feeling chassis
   b. Aluminum contact-warning cover under the engine
   c. Strut tower bar
   d. Reinforced points where load is transmitted from the suspension to the vehicle including:
      1) Front side members
      2) Rear floor side members

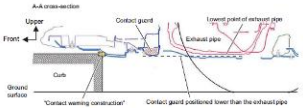
B. Low Noise & Low Vibration Measures

1. Development of noise and vibration reduction materials tailored to meet the needs of a sports car
2. Optimal sound insulating for everyday driving, which add to lightweight design
3. Innovative door-surround seal construction reduces wind noise
   a. Minimizes rattling of the glass when the door is closed
   b. Improves seal performance when driving at high speeds

C. Window Indexing

1. Slightly opens or closes the window .79 in. when a door is opened or closed
   a. Improves ease of closing door
      1) Reduces pressure against the weather-strips
      2) Allows air to be release from vehicle interior
2. Indexing is not performed if the window is already opened more than .79 in.
   a. However, if the index control causes the window to open more than .79 in., then it will still automatically fully shut the window when the door is closed
   b. For example, if the window is already opened .34 in., and the index control opens it another .79 in. when the door was opened, it would then close the window completely (1.13 in.) when the door is closed





D. Rust Resistant Body

1. Rust-resistant sheet steel used in areas of the underfloor that are especially prone to rusting
2. Undercoat applied to areas prone to chipping, helping to enhance rust resistance performance
3. Sealer applied over a larger area for models sold in regions where vehicles are especially prone to rust
4. Anti-rust wax applied to:
   a. Front edge of the engine hood
   b. Bottom edge of the doors
   c. Closed-in cross section of the frame
5. Chipping analysis performed in consideration of sports driving (such as rallying)
   a. Anti-chip tape applied to parts subject to chipping (rear area of door partition)
6. ACC (Anti-Chip Coating) applied to the front edge of the engine hood, roof front edge, and front pillars

E. Damage Prevention

1. Aluminum contact warning cover
   a. Positioned beneath the engine
      1) Enables driver to feel when the underbody contacts the road surface
      2) If underbody makes further contact with road surface, a contact guard positioned lower than the exhaust pipes prevents damage to the pipes

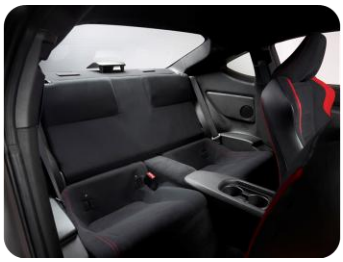
VII. **COMFORT AND CONVENIENCE**

A. Front Seats

1. Thin seatback design
   a. Contributes to weight-savings
   b. Provides additional rear seat legroom
2. Substantial bolstering
   a. Firmly holds the driver in place
   b. Adds to performance driving feel
   c. Seat cushion length ensures ample thigh support
   d. Front end has been rounded to enable free leg movement

3. Manual adjustments
   a. 2-way headrest (up/down)
   b. 6-way driver seat (forward/back seat position, reclining seat back, up/down seat height adjustment)
      1) Seatback fold strap located on back of seat near outboard side allows rear seat passengers to move the driver's seat forward for egress
   c. 4-way passenger seat (forward/back seat position, reclining seat back)
      1) Seatback fold strap located on back of seat near outboard side allows rear seat passengers to move the driver's seat forward for egress
      2) Walk-in feature incorporated on front passenger seat for ease of rear seat passenger ingress/egress

4. Whiplash Injury Lessening (WIL) construction
   a. Rearward pressure of the body simultaneously supports head and chest



B. Rear Seats

1. Can accommodate two occupants
2. Rear seat ingress and egress
   a. Seatback fold straps on back of driver and passenger seat
   b. Walk-in mechanism on passenger seat only
3. Thin front seatbacks to help ensure rear seat knee space
4. Self-standing seatbelt buckles enable seatbelts to be fastened single-handedly
5. Rear visibility
   a. Sedan-level seatback height maintains the maximum amount of rear visibility
6. Trunk-through access
   a. Single-piece seatback folded down by pulling straps on the seatback
      1) Accessed via the trunk
   b. Trunk opener on/off switch
   c. Cargo area (with seatback folded flat) intentionally built to accommodate various lifestyles
      1) Four standard racing tires for track enthusiasts
      2) Two golf bags for recreational/functional activities

C. Steering Wheel

1. Leather wrapped 3-spoke
   a. 14.4 in. diameter for quick steering changes
      1) Smallest diameter in the Toyota lineup
   b. Grooved thumbrests provided on inner circumference
      1) Verified by test drivers for thumb stability
   c. Rim thickness and horn pad size engineered for maximum gauge visibility
   d. Spoke thickness and horn pad designed with weight-savings in mind
2. Paddle shift switches
   a. Perform upshifts (+) and downshifts (-) without taking hands off the steering wheel
   b. Automatic transmission only

D. Cruise Control

1. Helps keeps the vehicle at a constant speed using the steering-wheel mounted cruise control lever
   a. Includes set, resume, cancel, and speed adjustment functionality on the stalk

E. Storage

1. No traditional console box
   a. Passenger side dash-mounted glove box serves as covered storage in the cabin
   b. Includes 12V power supply
2. Removable cup holder for various usage scenarios
   a. Driving mode
      1) Cup holder placed in rear position to avoid shifting interference from the driver's elbow
   b. Rest mode
      1) Cup holder placed in easy to reach forward position when vehicle is not being driven aggressively
   c. Tray mode
      1) Cup holder removed, creating a large, open console space
   d. Holds up to two cups
3. Bottle holders
   a. One in each door panel
   b. Holds up to .5 Liter bottles

F. Accessory Sockets (12V/120W)

1. Two locations
   a. Inside the open console space
   b. Inside the glove box

G. Remote Keyless Entry

1. Wireless transmitter
   a. Lock and unlock
   b. Trunk
   c. Panic

H. Engine immobilizer system

1. Engine cannot be started without the correct key
2. Helps prevents vehicle theft

VIII. **MULTIMEDIA**

A. Pioneer™ Standard Audio

1. Display
   a. Three-line OLED display showing song information, station, iPod® track, artist and album
   b. "Welcome screen" can be personalized by owner
2. Rich sound quality
   a. 300 watts, total
   b. 160 watts of maximum power through head unit
   c. 140 watt external amplifier
   d. Automatic Sound Levelizer (ASL)
      1) Adjusts volume according to vehicle speed
   e. Scion Sound Processing® (SSP) pre-sets
      1) Natural—produces smooth, even, natural sound
      2) Hear—gives powerful, energetic, live sound
      3) Feel—provides deep, clear, enhanced bass and mid-range sound
3. Features
   a. AM/FM/CD
   b. HD Radio™ for rich sound quality
      1) Access to additional multicast channels
      2) On-screen text information
         a) Station name, song title, album and artist
      3) iTunes® tagging with HD Radio™
         a) Send details via USB to an iPod®/iPhone®
         b) Purchase info appears in iTunes®
   c. USB connectivity
      1) Allows owners listen to personal music collections
         a) iPod®/iPhone®
         b) USB device
         c) Located in center console
   d. Auxiliary port
      1) Accommodates older-generation digital audio players and MP3, WMA™ and AAC capability

4. Bluetooth compatibility
   a. Helps keep hands on the wheel and eyes on the road
   b. Streaming audio lets driver pair compatible phone/media device to hear audio through vehicle's sound system
5. Two RCA outputs
   a. For optional subwoofer or amplifier
6. Available options
   a. XM® Satellite Radio
      1) Six available packages

B. BeSpoke Premium Audio System

1. Display
   a. 5.8-inch LCD Thin Film Transistor (TFT) touch-screen display
      1) Sleek touch-control panel that allows drivers to change controls with a touch of a finger
      2) Displays track, song title, artist and album cover
2. Rich sound quality
   a. 340 watts, total
   b. 200 watts of maximum power through head unit
   c. 140 watt external amplifier
   d. Automatic Sound Levelizer (ASL)
      1) Adjusts volume according to vehicle speed
   e. Scion Sound Processing® (SSP) pre-sets
      1) Natural—produces smooth, even, natural sound
      2) Hear—gives powerful, energetic, live sound
      3) Feel—provides deep, clear, enhanced bass and mid-range sound
3. Features (*In addition to all Pioneer™ Standard Audio features)
   a. PANDORA® Internet radio
      1) Connected through iPhone
      2) Streams personalized stations from this free music service, which customizes playlists to match owners' personal tastes

b. BeSpoke powered by Zypr

1) App-based multi-media system

a) Facebook (view "Wall")

b) Twitter (view "Tweets," send "Tweets," and see friends' locations on map)

c) Local POI search (e.g., Yelp)

d) Routing

e) Internet radio (e.g., Tuner2, Radio17)

f) Voice recognition

4. Bluetooth compatibility

a. Helps keep hands on the wheel and eyes on the road

b. Streaming audio lets driver pair compatible phone/media device to hear audio through vehicle's sound system

5. Six 2.4-volt RCA outputs

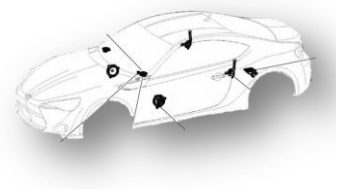
a. For front, rear and sub-speakers, allowing owners to add external amps to boost power and expand the sound field for a truly custom speaker system

6. Available options

a. XM® Satellite Radio

1) Six available packages

b. Back-up camera capability



C. 8 Speakers with a 2-channel, 140 watt external amplifier

1. Speaker layout supports high quality acoustic environment

a. One on each side of the vehicle

1) 1.0-in. instrument panel tweeter

2) 3.4-in. instrument panel speaker

3) 6.3-in. front door woofer

4) 3.4-in. rear quarter speaker

2. AUX/USB audio inputs

3. Roof-mounted pole-type antenna

IX. **SAFETY SYSTEMS**

A. Active

1. Star Safety System™

a. ABS (Anti-lock Brake System)

b. EBD (Electric Brake force Distribution)

c. BA (Brake Assist)

d. TRAC (Traction Control)

e. VSC (Vehicle Stability Control)

1) Five VSC modes to suit driver's preferences and driving conditions

	Mode	VSC OFF switch	VSC SPORT switch	VSC function	TRAC function	LSD function
1	Normal driving	OFF	OFF (NORMAL)	NORMAL VSC	ON	ON
2	Starting off on rough roads, freeing the vehicle when stuck	ON			OFF*1	
3	Sports driving (with VSC support)	OFF	ON (SPORT)	SPORT VSC	ON	
4	Starting off/accelerating during sports driving	ON			OFF*1	
5	Sports driving (no VSC support, TRAC function OFF)	Long press OFF	---	OFF	OFF	

*1: When the TRAC function is off and the vehicle exceeds 50 km/h (31.1 mph), the TRAC function will automatically turn on.

f. SST (Smart Stop Technology)

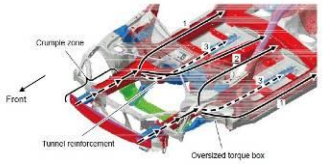
2. New LSD (Limited Slip Differential) function enhances stability when starting off the line and accelerating

a. If a difference in rotation speed is detected between the right and left rear wheels, TRAC applies braking power to the wheel that is rotating faster to slow it down and match the speed of the other

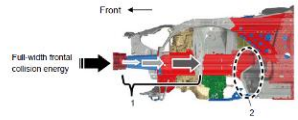
3. Front ventilated disc brakes
   a. 11.65 in
4. Rear ventilated disc brakes
   a. 11.46 in

B. Passive

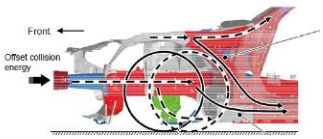
1. Impact absorbing body structure
   a. Frontal collision
      1) Collision energy is efficiently transmitted in a "Y" shape to the side sill, which enables reduced thickness of the panel and under-floor frame cross-section for a lower floor height
         a) Through an oversized torque box
         b) Through the tunnel reinforcement to the floor center side

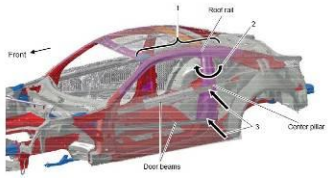


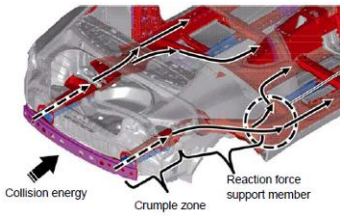
   b. Full-width frontal collision
      1) Front frame increases in strength towards the rear for stable crumpling in the event of a collision
      2) Front frame has an oversized torque box, tunnel reinforcement, and lower support members, which helps ensure high support strength and rigidity



   c. Offset collision
      1) Impact absorbing materials and reaction force support members absorb impact energy, limiting cabin deformation
         a) Upper frame absorbs impact energy through an oversized gusset
         b) Rearward moving power unit and suspension cross-member helps transmit collision energy to the lower member
         c) Tire impact load absorbed by front edge of side sill





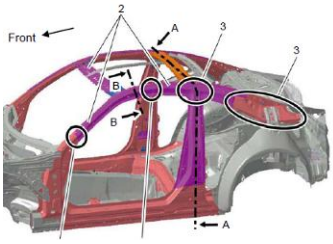


d. Side collision

1) Cabin strength increased to support the low, two-door body
   a) Support for low body height
      (i) Roof rails strengthened to help protect the cabin
   b) Support for two-door body
      (i) Center rail top and bottom attachment points strengthened to help protect the cabin
      (ii) Location of center pillar reinforcement materials help protect the cabin
   c) Door trim
      (i) Impact absorbing material incorporated

e. Rear collision

1) Compliance with North America's rear offset collision test (the strictest)
   a) Optimized frame layout
      (i) Gusset designed to connect the cross member and rear frame
   b) Appropriate frame resistance
      (i) Frame resistance changes from rear to front of vehicle to help absorb rear impact
      (ii) Resistance ratio between crumple zone and reaction force support members is designed to help protect fuel tank in a rear end collision

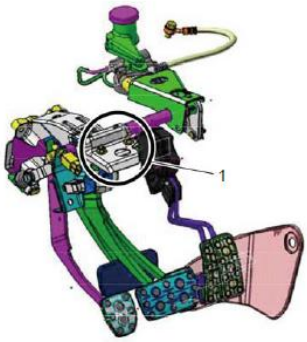


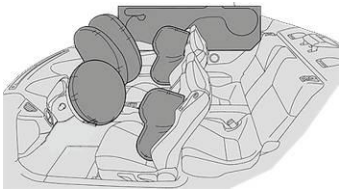
f. Roof strength

1) Strong pillars and frames help protect cabin
   a) High tensile strength sheet steel
   b) Strengthened attachment points
2) Pagoda roof and vertical brace help increase rigidity and realize light vehicle weight

g. Steering column

1) Impact absorbing construction
   a) Absorbed by the dual-structure tube connecting the steering wheel and column
   b) Utilizes telescopic lock construction
   c) Intermediate shaft helps absorb impact load from the steering gear box to help reduce intrusion of the steering column inside the cabin





h. Pedal system

1) Brake and clutch pedals' rearward movement reduced to help minimize lower leg injuries

a) Break away from the attachment point on the cowl-side bulkhead

2. Six standard Supplemental Restraint System (SRS) airbags

a. Dual-stage advanced driver and front passenger airbags

b. Front seat-mounted side airbags

c. Front and rear side curtain airbags

3. Passenger seat occupant detection system

a. Load sensor in the front passenger seat helps detect weight of occupant and if seat belt is fastened

b. Helps judge if occupant is an adult or child

c. Based on the detected body weight, the passenger side airbag is enabled or disabled

4. Seatbelt

a. Front

1) 3-point

a) ELR (Emergency Locking Retractor)

b) ALR (Automatic Locking Retractor) – passenger front seat only

2) Seatbelt pretensioners

3) Force limiters

b. Rear

1) 3-point ELR/ALR

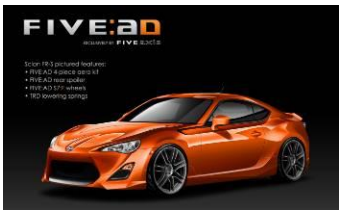
X. **ACCESSORIES (PLANNED)**

A. At Launch

1. Exterior
   - a. Wheel locks
   - b. Mud guards
   - c. Paint protection film
     - 1) Hood and fenders
     - 2) Front bumper
   - d. Rear bumper applique
2. Interior
   - a. Carpeted floor and trunk mats
   - b. Pioneer™ Standard and Premium head units
   - c. Ashtray kit
   - d. First aid kit

B. Post-launch (*Timing/offering subject to change)

1. Exterior
   - a. Rear spoiler
   - b. Fog lights
   - c. Door edge guards
2. Interior
   - a. Center arm rest
3. Performance (TRD)
   - a. Cold air intake
   - b. Exhaust system
   - c. Air filter
   - d. Oil filler cap
   - e. Lowering springs
   - f. Strut tie brace
   - g. Sway bars
   - h. 18” alloy wheel
   - i. Big brake, front
   - j. Performance brake pads, front



4. Optomize
   a. OEM Audio+
   b. Five:AD aero kit