



IGNITE IMAGINATION

2024



INSPIRING THE NEXT GENERATION SINCE 1959

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From the children of the Space Race to the children of today, Estes has been igniting the imagination of kids for more than 66 years. But Estes can't do it alone – it relies on teachers, mentors, parents, and grandparents to share the joy of flight with the children in their lives. Estes's theme for the year is "Inspiring The Next Generation" and our goal is to launch new products that will excite rocketeers of all ages and skill levels. For the experienced builder, we have some awesome scale kits in the works. For those looking to introduce rockets to the kids in their life, we have developed exciting STEM starter sets complete with the ability to conduct experiments just like real engineers and scientists to bring important educational concepts to life.

It has been a pleasure over the past few years introducing Estes to my own son, Jack (4). He and his Papa have spent hours in the workshop test building Estes kits and preparing them for launch at our local NAR club. His first launch was a Der Big Red Max, which was almost as tall as he was at that time. Watching that spark of wonder as the rocket lifted off the pad on an F15-4 is something that, as a parent, I will never forget.

I invite each of you to embrace this year's theme and get involved in bringing rocketry to someone new in each of your lives, and I look forward to your feedback over the coming year.

*Mallory*

Mallory Langford | President | Estes Industries



### OUR VISION:

To ignite the imagination of every generation by being the most trusted source for model rocketry.

### OUR MISSION:

To create safe, successful rocketry experiences for customers everywhere, from their backyards and school yards to worlds beyond.

### THE FOUNDATIONS OF ROCKETRY

Estes was established by Vern and Gleda Estes 66 years ago, and it has carried a proud tradition of safe, exciting, and reliable launches. They established the best practices for motor manufacturing, model rocket design, and safe rocket flight. We use those same principles today and they have led model rocketry to an outstanding safety record. Millions remember the moment they first pressed launch and we're proud to be a part of your journey.



# NAVIGATE OUR CATALOG WITH EASE!

The information found on this page will assist you on your journey through Estes 2024 Catalog! Here you will find how the product information is presented, what it means, as well as the skill level and product number. We hope a quick understanding will help you make an informed decision to find the right product for you. *Let's launch right in!*

For pricing & purchase visit [EstesRockets.com](https://EstesRockets.com)

*This is our example rocket. It is also featured on page 34.*

Rocket Name	Mini Arcas™
Rocket Specs	Length: 14.5 in. (36.8 cm) Diameter: 0.74 in. (19 mm) Recovery: Streamer
Recovery Type	Projected Altitude: 550 ft. (167 m)
Projected Altitude	Recommended Engines: 1/2 A3-2T, A3-4T, A3-6T, A10-3T
Recommended Engines	#002441
Product Number	



### SKILL KEY

- B** **BEGINNER**  
Perfect for the first time flyer or quick weekend fun. Little to no build experience required. Some kits have snap together, pre-colored parts and easy to apply decals. Some glue may be required. **Build Time: Under 1 hour**
- I** **INTERMEDIATE**  
Here's is your first model rocketry challenge. Kits may include laser cut balsa or card stock fins and/or parts. Some sanding and gluing is required as well as finishing of your rocket with primer/paint and applying the rockets decals. **Build Time: 1-4 hours**
- A** **ADVANCED**  
You have knowledge of intermediate builds under your belt and are ready for the next step! Builds are usually more involved with multiple parts. Finishing is more complex and may require multiple paints and/or masking. **Build Time: 4-8 hours**
- E** **EXPERT**  
You're a pro and ready for more! Kits in this category may require lengthy or complex building steps. These kits will test your skills and require an advanced knowledge of rocket building. Advanced finishing knowledge required. **Build Time: 6+ hours**
- M** **MASTER**  
You are ready for the ultimate challenge! You have expert knowledge with complex kit builds as well as working with multiple materials. A keen eye for detail and precision will be required as these kits test all of your skills! **Build Time: 8+ hours**

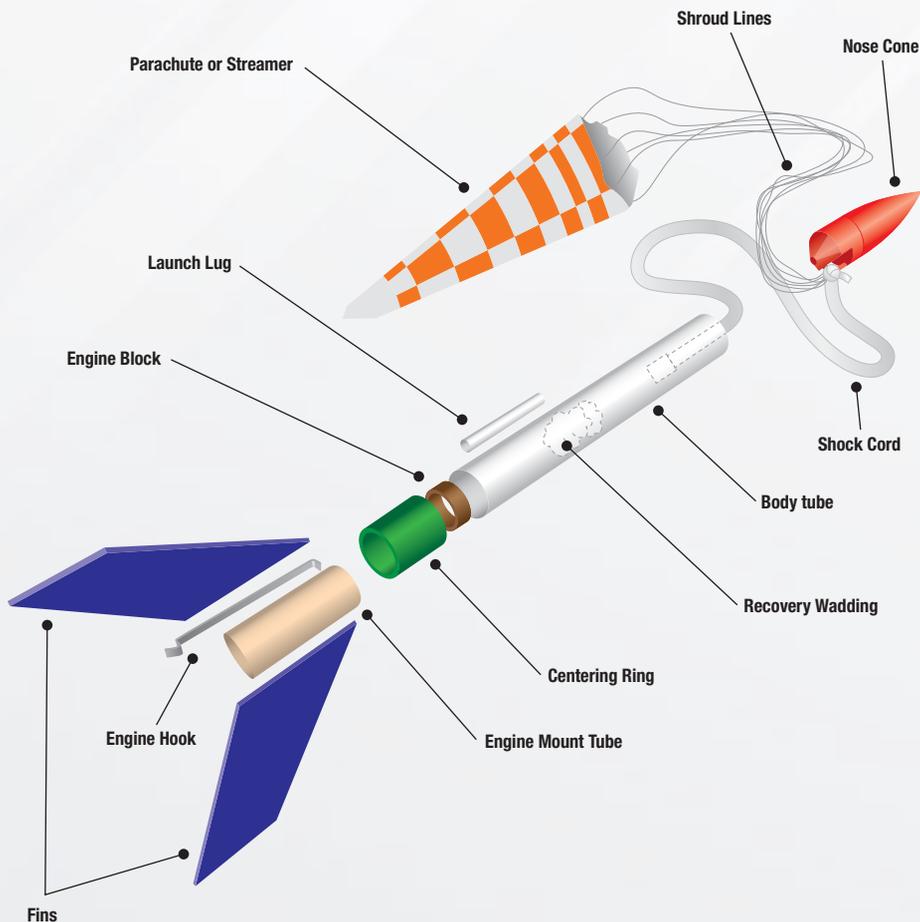
## MODEL ROCKET BASICS

### What is a Flying Model Rocket?

Estes flying model rockets are safe activity kits made of lightweight materials such as paper tubing, balsa wood, and plastic. Fins attached to the body tube help provide guidance and stability. An engine mount assembly holds the engine in place during rocket flight in most models.

### How Does a Model Rocket Work?

The Estes model rocket is propelled into the air safely by an electrically ignited model rocket engine. After its acceleration, the rocket continues upward emitting tracking smoke as it coasts. At the rocket's peak altitude (also called apogee), a recovery device, such as a parachute or streamer, is deployed to return the rocket gently to earth. The rocket can then be prepared for another flight.



*This diagram shows the basic components found in most model rocket kits. Model rocketry is recommended for ages 10 to adult. Adult supervision is suggested for those under 12 years of age.*

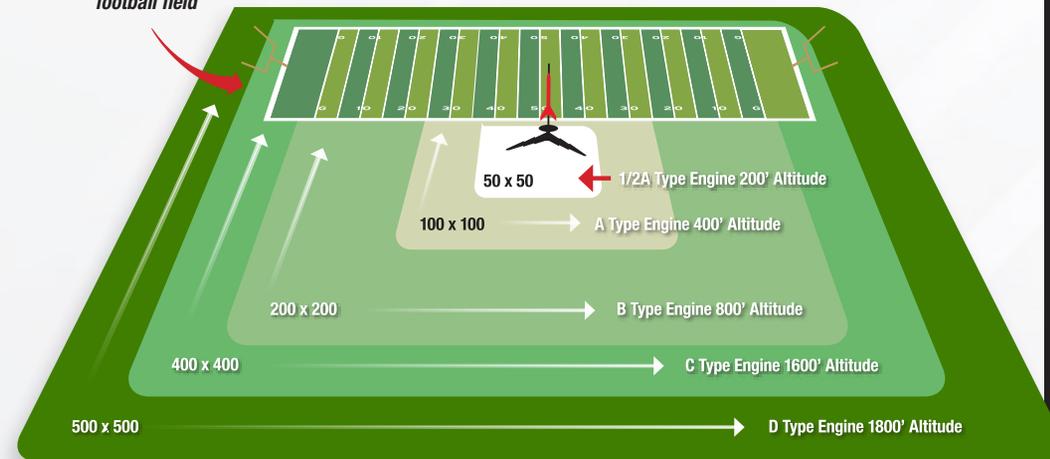
## LAUNCH SITE BASICS

### Where to Safely Launch Model Rockets

The chart below tells you what size field to use for each size engine. For launch information, look at the "NAR Model Rocket Safety Code" (Pg. 92). You should always check with your local city government for any special regulations that may apply to your area. Generally speaking, you can fly most Estes model rockets in a clear area the size of a football field or soccer field. Launch in little or no wind, and make sure there is no dry grass close to the launch pad or in the flying field. Each engine size is designated by a letter and is up to twice as powerful as the letter before it. See the engine section (Pgs. 84-87) of this catalog for more information.

LAUNCH SITE DIMENSIONS		
Installed Total Impulse (N-sec)	Equivalent Motor Type	Minimum Site Dimensions (ft.)
0.00 – 1.25	1/4 A, 1/2 A	50 X 50
1.26 – 2.50	A	100 X 100
2.51 – 5.00	B	200 X 200
5.01 – 10.00	C	400 X 400
10.01 – 20.00	D	500 X 500
20.01 – 40.00	E	1000 X 1000
40.01 – 80.00	F	1000 X 1000

Size of an American football field



### Recommended Launch Site Area

Minimum launch site dimension for circular area is diameter in feet, and for rectangular area is shortest side in feet. Choose a large field away from power lines, buildings, tall trees and low flying aircraft. The larger the launch area, the better your chance of recovering your rocket. Make sure the launch area is free of obstructions, dry weeds, brown grass or highly flammable materials. Football fields, parks and playgrounds are great. Launch only during calm weather with little or no wind and good visibility. The diagram above shows the smallest recommended launch areas.

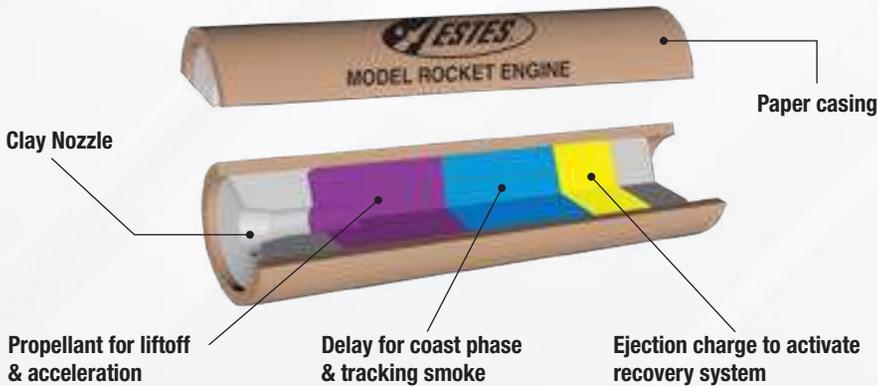
# ENGINE BASICS

## What is a Model Rocket Engine?

Estes model rocket engines are used to safely launch a model rocket into the air. They are factory-assembled and comply with the safety requirements of the National Association of Rocketry. They are single use and range in power from A to F sizes. The engine is started using an electrical launch system that is powered by alkaline batteries.

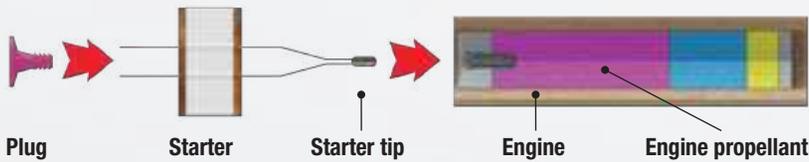


## Components of a Model Rocket Engine

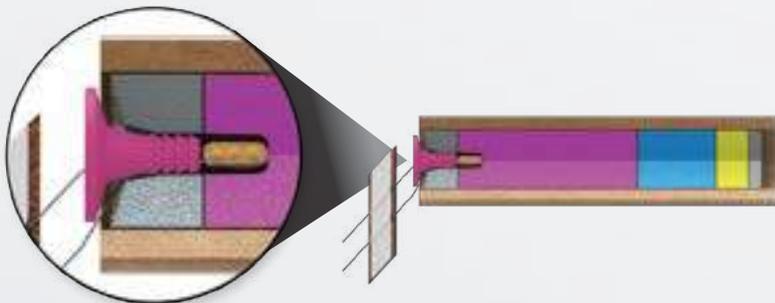


## How to Prepare Your Rocket Engine for a Safe Launch

- 1 Use the plug to secure the starter into the engine nozzle of your rocket engine.

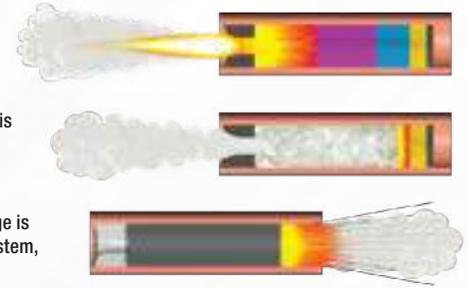


- 2 Make sure the starter is inserted into the engine nozzle and touches the propellant, then insert the plug.

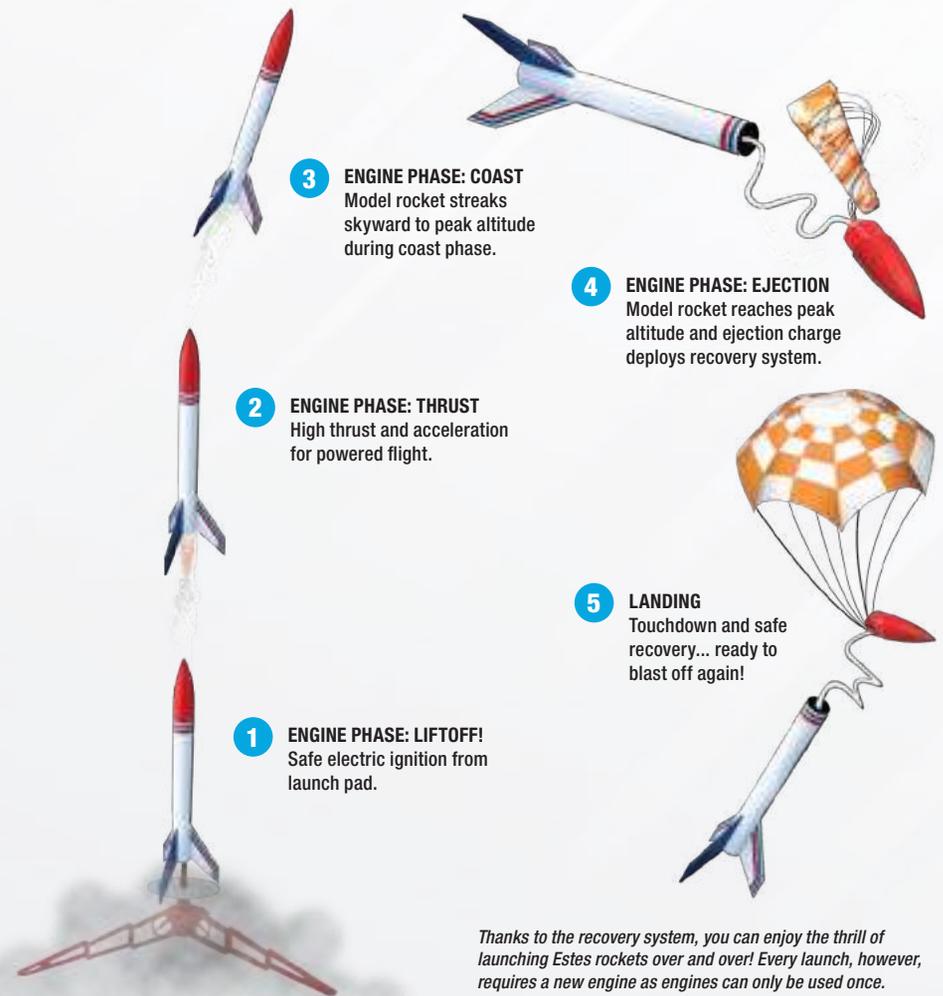


## How Does a Model Rocket Engine Work?

- 1 When the engine is started, it produces thrust and boosts the rocket into the sky.
- 2 After the propellant is used up, the delay is activated, producing tracking smoke and allowing the rocket to coast.
- 3 After the delay is used, the ejection charge is activated, which deploys the recovery system, such as a parachute or streamer.



## Model Rocket Engine Phase & Flight Sequence



Thanks to the recovery system, you can enjoy the thrill of launching Estes rockets over and over! Every launch, however, requires a new engine as engines can only be used once.

I N T R O D U C I N G



# STEM

## Products designed to IGNITE the thrill of learning!

At Estes, we believe in the power of knowledge and using our products to inspire generations to follow their dreams into the industries of science, aerospace technology, engineering, and mathematics. In our current day and age, youth are consumed with time on screens – computers, phones, and video games – and are spending much less time exploring and learning with hands on activities.

With this in mind, the Estes Product Development and Education teams set out to develop a unique spin on our regular starter sets to incorporate more exciting STEM activities. These STEM kits include booklets that outline mission challenges and tasks to get kids engaged in learning science principles while having fun and getting hands on with flying model rockets!



- Everything You Need to Launch INCLUDED!
- Includes Booklet with 5 Unique STEM Activities
- Launch Again & Again for Hours of Fun!
- Quick & Easy to Build

\* Controllers Require 4 - AA Batteries (Not Included). Purchase of additional engines required to launch after the included engines have been used - available at EstesRockets.com

**Exciting Helicopter (RECOVERY)**

**Roto Rocket™**

Height: 24.9 in. (63 cm)  
 Diameter: 0.98 in. (24 mm)  
 Recovery: Parachute (Body tube)  
 Heli-Blades (Nose Cone)  
 Projected Altitude: 500 ft. (152 m)  
 Recommended Engines:  
 C5-3, C6-3

STEM Kit #000648 Rocket Only #001322

**B**

**INCLUDES 2 SETS OF BLADES!**

**CONDUCT FLIGHT EXPERIMENTS WITH 3 DIFFERENT FINS**

**Tri-Flyer™**

Height: 26.1 in. (66 cm)  
 Diameter: 0.98 in. (24 mm)  
 Recovery: Parachute  
 Projected Altitude: 400 ft. (122 m)  
 Recommended Engines:  
 B4-4, B6-2, B6-4, C5-3, C6-3

STEM Kit #000647 Rocket Only #001323

**B**

**3 FIN STYLES INCLUDED!**





## Intermediate Kits

(Only Available at EstesRockets.com)

### Olympus™ Mega STEM Kit

Height: 29.2 in. (74.2 cm)  
Diameter: 1.8 in. (46 mm)  
Recovery: Parachute  
Projected Altitude: 1050 ft. (427 m)  
Recommended Engines:  
W/ Payload: D12-5  
W/O Payload: C11-3

#000642



**Includes Everything You See Here!**



### Green Eggs™ STEM Kit

Height: 23.6 in. (59.9 cm)  
Diameter: 1.8 in. (46 mm)  
Recovery: Parachute  
Projected Altitude: 1050 ft. (320 m)  
Recommended Engines:  
W/ Egg Payload: C11-3, D12-3  
W/O Egg Payload: C11-5, D12-5

#009990



**Includes Everything You See Here!**



# NARAM-65



August 3 - 9  
2024

Hudson Ranch  
Pueblo, CO

[nar.org/contest-flying/  
contest-events](http://nar.org/contest-flying/contest-events)



**FAMILY DAY!  
AUG. 3RD  
10am - 2pm**

Tons of FUN ACTIVITIES  
& GIVEAWAYS for the  
whole family!



The National Association of Rocketry (NAR), the world's oldest and largest sport rocketry association, in association with the Southern Colorado Rocketeers and other Colorado rocket clubs, will be hosting the 2024 NAR Championships.

Estes founders Vern and Gleda Estes will be in attendance for their 60th National Rocketry Championships. Vern and Gleda will be recognized for their support and contributions to the model rocketry community.

# STARTER SETS!



Scan to Shop Now!

Start Your Estes Experience Here!

## Here's what's in the box:

One or two Estes model rockets (either in a parts kit or almost ready to fly), model rocket engines, one launch pad, one launch controller, and required flight supplies. For any additional launches, you will need to purchase additional Estes Engines and flight supplies.

### AstroCam® Starter Set

Length: 20 in. (50.8 cm)  
Diameter: 0.98 in. (25 mm)  
Recovery: Parachute  
Projected Altitude: 900 ft. (274 m)  
Recommended Engines:  
A8-3, B4-4, B6-4, C6-5

#005325



SNAP TOGETHER  
NO GLUE  
REQUIRED



Everything You Need to Launch Included!\*

\*Launch Controller requires 4-AA alkaline batteries sold separately.

BEST  
SELLER!



### Athena X™ Starter Set

2 IN 1

#### Xtreme™

Length: 16.8 in. (42.7 cm)  
Diameter: 0.74 in. (19 mm)  
Recovery: Streamer  
Projected Altitude: 1600 ft. (488 m)  
Recommended Engines:  
1/2 A6-2, A8-3, A8-5,  
B4-4, B6-6, C6-5, C6-7



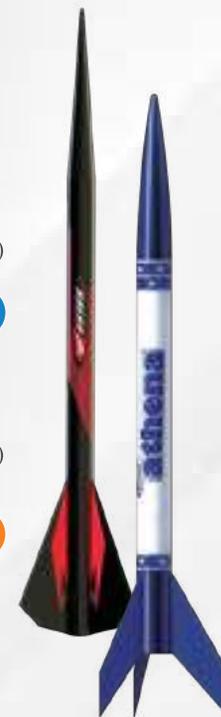
#### Athena™

Length: 17 in. (43.2 cm)  
Diameter: 0.98 in. (25 mm)  
Recovery: Parachute  
Projected Altitude: 1125 ft. (343 m)  
Recommended Engines:  
A8-3, B4-4, B6-4, C6-5

#005304



Includes 2 Engines!



### Rocket Science™ Starter Set\*

Length: 12.6 in. (32 cm)  
Diameter: 0.98 in. (25 mm)  
Recovery: Parachute  
Projected Altitude: 1100 ft. (335 m)  
Recommended Engines:  
1/2 A6-2, A8-3, B4-4, B6-4,  
B6-6, C6-5, C6-7

#005302



Includes 3 Engines  
and an  
Altitude Tracker!



# LAUNCH SETS!



Scan to Shop Now!

## Almost Ready-To-Fly Kits for Easy Weekend Fun for the Entire Family!

### Here's what's in the box:

One or two Estes model rockets (either in a parts kit or almost ready to fly), (1) Estes Electron Beam® Launch Controller, (1) Estes Porta-Pad® II Launch Pad\*, recovery system, and instructions for assembly and use.

\*New Mini Launch Sets use the (2244) Mini Launch Pad & Controller.

### Here's what's not in the box:

Recommended model rocket engines, plugs, starters, recovery wadding, tools, construction and finishing supplies for the rockets, and 4 new AA 1.5V alkaline batteries for the launch controller.

### Riptide™ Launch Set

Length: 18 in. (45.7 cm)  
Diameter: 1.35 in. (34 mm)  
Recovery: Parachute  
Projected Altitude: 675 ft. (206 m)  
Recommended Engines:  
B4-4, B6-4, C6-5

#001403



**Includes everything you see here!**

\*Launch Controller requires 4-AA alkaline batteries sold separately.

## NEW MINI LAUNCH SETS!

Start your rocketry experience with one of our new mini launch sets, available just in time for the beautiful weather of spring and summer 2024! We've reinvented some of our most popular rockets into easy-to-assemble mini versions, complete with a launch pad and controller, for an easy trip to the launch pad. Ideal for smaller launch areas such as parks and school yards and a perfect way to introduce kids and new flyers to this exciting hobby!



**NEW** COMING LATE SPRING 2024!

### Mini Alpha™ Launch Set

Length: 9.2 in. (23.5 cm)  
Diameter: 0.74 in. (19 mm)  
Recovery: Streamer  
Projected Altitude: 690 ft. (210 m)  
Recommended Engines:  
1/2 A3-2T, A3-4T, A10-3T

#002458



**NEW** COMING LATE SPRING 2024!

### Mini Bertha™ Launch Set

Length: 9.9 in. (25.3 cm)  
Diameter: 0.74 in. (19 mm)  
Recovery: Streamer  
Projected Altitude: 650 ft. (198 m)  
Recommended Engines:  
1/2 A3-2T, A3-4T, A10-3T

#002469



# NEW MINI LAUNCH SETS!



**COMING LATE  
SPRING 2024!**

### Mini Max™ Launch Set

Length: 8.8 in. (22.3 cm)  
Diameter: 0.98 in. (25 mm)  
Recovery: Streamer  
Projected Altitude: 300 ft. (91 m)  
Recommended Engines:  
1/2 A3-2T, A3-4T, A10-3T

#002445



**Note: Painting Required.**  
Rockets that require gluing,  
priming, sanding and/or  
painting but are easy to build,  
fall under our Intermediate level.



**COMING LATE  
SPRING 2024!**

### Star Hopper™ Launch Set

Length: 7.4 in. (18.8 cm)  
Diameter: 0.74 in. (19 mm)  
Recovery: Streamer  
Projected Altitude: 400 ft. (122 m)  
Recommended Engines:  
1/2 A3-2T, A3-2T, A3-4T,  
A10-3T

#002427



# Get flying!

Ignite your rocketry journey with an Estes Launch Set. These sets are designed to get you flying as quickly as possible, while allowing you to choose the motors that will work best for your flying field size. All the essentials are included in one easy purchase: a stunning, high-quality model rocket, launch pad and controller, and a clear visual set of instructions to get you flying. Everything in the box is reusable, so you can take to the skies again and again!



### Taser™ Launch Set

Length: 17 in. (43.2 cm)  
Diameter: 0.98 in. (25 mm)  
Recovery: Parachute  
Projected Altitude: 1100 ft. (335 m)  
Recommended Engines:  
A8-3, B4-4, B6-4, B6-6,  
C6-5, C6-7

#001491



### Alpha III® Launch Set

Length: 12.1 in. (30.7 cm)  
Diameter: 0.98 in. (25 mm)  
Recovery: Parachute  
Projected Altitude: 1150 ft. (351 m)  
Recommended Engines:  
1/2 A6-2, A8-3, A8-5, B4-4,  
B6-4, B6-6, C6-5, C6-7

#001427





**Space Corps Centurion™ Launch Set**

Length: 11.1 in. (28.2 cm)  
 Wingspan: 7.5 in. (19.1 cm)  
 Recovery: Parachute  
 Projected Altitude: 700 ft. (213 m)  
 Recommended Engines:  
 A8-3, B4-4, B6-4, C6-5

#005324



NO ASSEMBLY  
 REQUIRED!



**Rascal™ & HiJinks™ Launch Set**



**Rascal™**

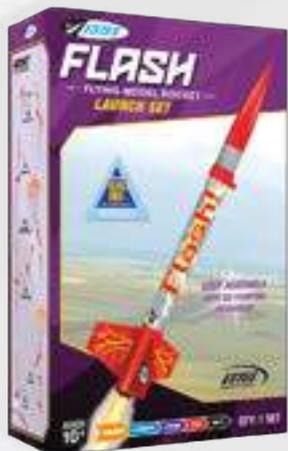
Length: 14.5 in. (36.8 cm)  
 Diameter: 0.98 in. (25 mm)  
 Recovery: Parachute  
 Projected Altitude: 1100 ft. (335 m)  
 Recommended Engines:  
 A8-3, B4-4, B6-4, C6-5, C6-7  
 Sold Separately:  
 A10-3T w/ Engine Adapter



**HiJinks™**

Length: 14.5 in. (36.8 cm)  
 Diameter: 0.98 in. (25 mm)  
 Recovery: Parachute  
 Projected Altitude: 1100 ft. (335 m)  
 Recommended Engines:  
 A8-3, B4-4, B6-4, C6-5, C6-7  
 Sold Separately:  
 A10-3T w/ Engine Adapter

#001499



SNAP TOGETHER  
 NO GLUE  
 REQUIRED

**Flash® Launch Set**

Length: 16.2 in. (41.1 cm)  
 Diameter: 1.1 in. (28 mm)  
 Recovery: Parachute  
 Projected Altitude: 925 ft. (282 m)  
 Recommended Engines:  
 A8-3, B4-4, B6-4, C6-5, C6-7

#001478



**Tandem-X™ Launch Set**



**Amazon™**

Length: 29.4 in. (74.7 cm)  
 Diameter: 1.35 in. (34 mm)  
 Recovery: Parachute  
 Projected Altitude: 600 ft. (183 m)  
 Recommended Engines:  
 B4-2, B4-4, B6-2, B6-4,  
 C5-3, C6-3, C6-5



**Crossfire™ ISX**

Length: 15.6 in. (39.6 cm)  
 Diameter: 0.98 in. (25 mm)  
 Recovery: Parachute  
 Projected Altitude: 1150 ft. (351 m)  
 Recommended Engines:  
 A8-3, B4-4, B6-4, C6-5, C6-7

#001469



**Journey™ Launch Set**

Length: 19.3 in. (49 cm)  
 Diameter: 0.98 in. (25 mm)  
 Recovery: Parachute  
 Projected Altitude: 1100 ft. (335 m)  
 Recommended Engines:  
 A8-3, B4-4, B6-4, C6-5, C6-7

#001441



# BEGINNER ROCKET KITS

Our Easiest Rockets to Build & Fly!



Scan to Shop Now!



**NO ASSEMBLY  
REQUIRED!**

### Athena™

Length: 17 in. (43.2 cm)  
Diameter: 0.98 in. (25 mm)  
Recovery: Parachute  
Projected Altitude: 1125 ft. (343 m)  
Recommended Engines:  
A8-3, B4-4, B6-4, C6-5

#002452



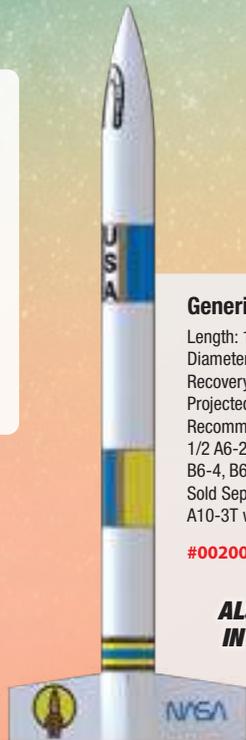
### Alpha III®

Length: 12.1 in. (30.7 cm)  
Diameter: 0.98 in. (25 mm)  
Recovery: Parachute  
Projected Altitude: 1150 ft. (351 m)  
Recommended Engines:  
1/2 A6-2, A8-3, A8-5, B4-4,  
B6-4, B6-6, C6-5, C6-7

#001256



**ALSO AVAILABLE  
IN A BULK PACK  
See Pg. 68**



### Generic E2X®

Length: 13.5 in. (34.3 cm)  
Diameter: 0.98 in. (25 mm)  
Recovery: Parachute  
Projected Altitude: 1325 ft. (404 m)  
Recommended Engines:  
1/2 A6-2, A8-3, A8-5, B4-4,  
B6-4, B6-6, C6-5, C6-7  
Sold Separately:  
A10-3T w/ Engine Adapter

#002008



**ALSO AVAILABLE  
IN A BULK PACK  
See Pg. 68**



### Firehawk™

Length: 11.2 in. (28.4 cm)  
Diameter: 0.74 in. (19 mm)  
Recovery: Parachute  
Projected Altitude: 550 ft. (168 m)  
Recommended Engines:  
1/4 A3-3T, 1/2 A3-2T, A3-2T,  
A3-4T, A3-6T, A10-3T

#000804



### Starship Octavius™

Length: 20 in. (50.8 cm)  
Diameter: 0.98 in. (25 mm)  
Recovery: Parachute  
Projected Altitude: 1100 ft. (335 m)  
Recommended Engines:  
A8-3, B4-4, B6-4, C6-5, C6-7

#007284



**SNAP TOGETHER  
NO GLUE  
REQUIRED**

### Illusion™

Length: 19.5 in. (49.5 cm)  
Diameter: 0.98 in. (25 mm)  
Recovery: Parachute  
Projected Altitude: 1125 ft. (343 m)  
Recommended Engines:  
A8-3, B4-4, B6-4, C6-5, C6-7

#007299





**Star Hopper™**

The Star Hopper is based on a rumored 1950s secret project to counter the “flying saucer threat.” The Estes Star Hopper is a no-glue, no-paint, beginner level kit that you can build and launch up to 400 feet all in the same day. The rocket features detail-molded plastic parts, atomic-age styling, and a 18-inch streamer for recovery.

Length: 7.4 in. (18.8 cm)  
 Diameter: 0.74 in. (19 mm)  
 Recovery: Streamer  
 Projected Altitude: 400 ft. (122 m)  
 Recommended Engines:  
 1/2 A3-2T, A3-2T, A3-4T, A10-3T

#007303



**SNAP TOGETHER  
 NO GLUE  
 REQUIRED**

**ALSO AVAILABLE  
 IN A BULK PACK  
 See Pg. 69**



**3 Bandits™**

Length: 10.8 - 11.1 in. (27.4 - 28.2 cm)  
 Diameter: 0.74 in. (19 mm)  
 Recovery: Parachute  
 Projected Altitude: 550 ft. (168 m)  
 Recommended Engines:  
 1/2 A3-4T, A3-2T, A3-4T,  
 A3-6T, A10-3T

#002435



**Cadet™**

Length: 17.5 in. (44.5 cm)  
 Diameter: 0.98 in. (25 mm)  
 Recovery: Parachute  
 Projected Altitude: 1100 ft. (335 m)  
 Recommended Engines:  
 A8-3, B4-4, B6-4, C6-7

#002021



**Power Patrol™**

Length: 20.5 in. (25.3 cm)  
 Diameter: 0.98 in. (25 mm)  
 Recovery: Parachute  
 Projected Altitude: 1100 ft. (335 m)  
 Recommended Engines:  
 A8-3, B4-4, B6-4, C6-5, C6-7

#002481



*Perfect For First Time  
 Rocketeers & Small  
 Launch Spaces!*



**Mini Alpha™**

Length: 9.2 in. (23.4 cm)  
 Diameter: 0.74 in. (19 mm)  
 Recovery: Streamer  
 Projected Altitude: 690 ft. (210 m)  
 Recommended Engines:  
 1/2 A3-2T, A3-4T, A10-3T

#002098



**Mini Bertha™**

Length: 9.9 in. (25.3 cm)  
 Diameter: 0.74 in. (19 mm)  
 Recovery: Streamer  
 Projected Altitude: 650 ft. (198 m)  
 Recommended Engines:  
 1/2 A3-2T, A3-4T, A10-3T

#002099



**DESTINATION MARS  
 LEAPER™**

Height: 7.7 in. (19.6 cm)  
 Diameter: 0.54 in. (14 mm)  
 Diameter w/ Legs: 23.4 in. (59.4 cm)  
 Recovery: Featherweight/Tumble  
 Projected Altitude: 75 ft. (23 m)  
 Recommended Engines:  
 A10-0T, A10-PT

#007297



**SNAP TOGETHER  
 NO GLUE  
 REQUIRED**

No Assembly  
Required!



**CENTURION™**

Length: 11.1 in. (28.2 cm)  
Diameter: 0.74 in. (19 mm)  
Wingspan: 7.5 in. (19.1 cm)  
Recovery: Parachute  
Projected Altitude: 700 ft. (213 m)  
Recommended Engines:  
A8-3, B4-4, B6-4, C6-5

#007291



PAYLOAD  
READY!

**Ghost Chaser™**

Length: 23 in. (58.4 cm)  
Diameter: 0.98 in. (25 mm)  
Recovery: Parachute  
Projected Altitude: 1100 ft. (335 m)  
Recommended Engines:  
A8-3, B4-4, B6-4, C6-5, C6-7

#007308



**DESTINATION MARS  
MAV™**

Height: 12.7 in. (32.3 cm)  
Diameter: 1.64 in. (42 mm)  
Recovery: Parachute  
Projected Altitude: 250 ft. (76 m)  
Recommended Engines:  
C5-3, C6-3

#007297



**COME ALONG  
FOR THE RIDE!**

- HD Video Camera
- 16GB Memory Card
- USB Connection



**AstroCam®**

Length: 20 in. (50.8 cm)  
Diameter: 0.98 in. (25 mm)  
Recovery: Parachute  
Projected Altitude: 900 ft. (274 m)  
Recommended Engines:  
A8-3, B4-4, B6-4, C6-5

#007308

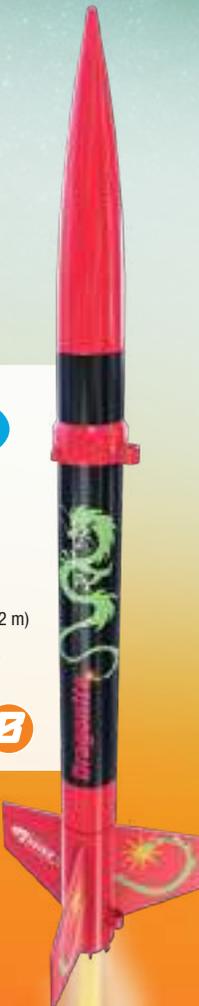


**SNAP TOGETHER  
NO GLUE  
REQUIRED**

**Dragonite™**

Length: 16 in. (40.6 cm)  
Diameter: 1.1 in. (28 mm)  
Recovery: Parachute  
Projected Altitude: 925 ft. (282 m)  
Recommended Engines:  
A8-3, B4-4, B6-4, C6-5, C6-7

#002169



**Long Ranger™**

Length: 25.9 in. (65.8 cm)  
Diameter: 0.98 in. (25 mm)  
Recovery: Parachute  
Projected Altitude: 1100 ft. (335 m)  
Recommended Engines:  
A8-3, B4-4, B6-4, C6-5, C6-7

#000814



# INTERMEDIATE ROCKET KITS

Take the Next Step in Model Rocketry with  
Rockets That Are Fun and Easy to Build!



Scan to Shop Now!



## Hi-Flier®

Length: 12 in. (30.5 cm)  
Diameter: 0.74 in. (19 mm)  
Recovery: Streamer  
Projected Altitude: 1500 ft. (457 m)  
Recommended Engines:  
1/2 A6-2, A8-3, A8-5, B4-4,  
B6-4, B6-6, C6-5, C6-7  
Sold Separately:  
A10-3T w/ Engine Adapter

#002178



## Luna Bug™

Length: 3.6 in. (9.1 cm)  
Diameter: 0.54 in. (14 mm)  
Recovery: Featherweight  
Projected Altitude: 800 ft. (244 m)  
Recommended Engines:  
1/4 A3-3T, 1/2 A3-2T, 1/2 A3-4T,  
A3-2T, A3-4T, A3-6T, A10-3T

#000816



## Crossfire ISX™

Length: 15.6 in. (39.6 cm)  
Diameter: 0.98 in. (25 mm)  
Recovery: Parachute  
Projected Altitude: 1150 ft. (351 m)  
Recommended Engines:  
A8-3, B4-4, B6-4, C6-5, C6-7

#007220



FLY YOUR FAVORITE  
EGG IN THE ROCKET  
PAYLOAD!



## Green Eggs™

Length: 23.6 in. (59.9 cm)  
Diameter: 1.8 in. (46 mm)  
Recovery: Parachute  
Projected Altitude w/ Egg: 825 ft. (251 m)  
Projected Altitude w/o Egg: 1050 ft. (320 m)  
Recommended Engines:  
w/ Egg: C11-3, D12-3  
w/o Egg: C11-5, D12-5

#007301



**ALSO AVAILABLE  
IN A BULK PACK**  
See Pg. 71

*A true Estes icon and one of the best  
selling model rockets of all time,  
the Alpha is perfect for the beginner  
looking to take the next step in model  
rocketry. Easy to build, this high flyer  
will have you out at the launch pad  
in no time!*

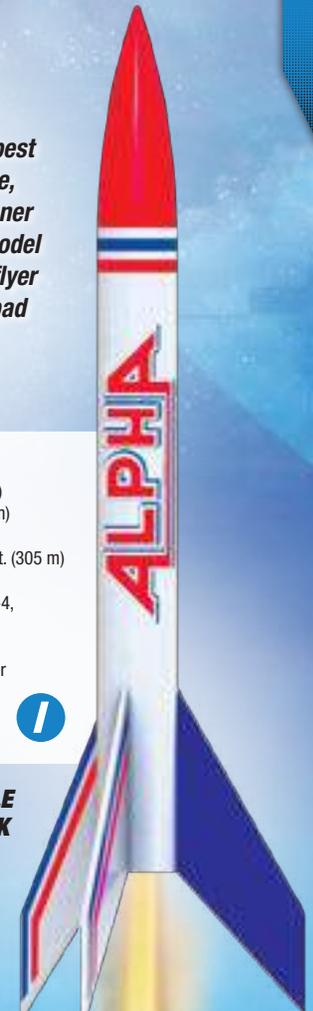
## Alpha®

Length: 12.3 in. (31.2 cm)  
Diameter: 0.98 in. (25 mm)  
Recovery: Parachute  
Projected Altitude: 1000 ft. (305 m)  
Recommended Engines:  
1/2 A6-2, A8-3, A8-5, B4-4,  
B6-4, B6-6, C6-5, C6-7  
Sold Separately:  
A10-3T w/ Engine Adapter

#001225



**ALSO AVAILABLE  
IN A BULK PACK**  
See Pg. 71





**Mini Max™**  
 Length: 8.8 in. (22.4 cm)  
 Diameter: 0.98 in. (25 mm)  
 Recovery: Streamer  
 Projected Altitude: 300 ft. (91 m)  
 Recommended Engines:  
 1/2A3-2T, A3-4T, A10-3T

#002100



**Der Red Max™**  
 Length: 16.3 in. (41.4 cm)  
 Diameter: 1.64 in. (42 mm)  
 Recovery: Parachute  
 Projected Altitude: 600 ft. (183 m)  
 Recommended Engines:  
 B4-2, B4-4, B6-2, B6-4, C6-5

#000651



**WANT IT EVEN BIGGER?**  
 See Pro-Series Pg. 60

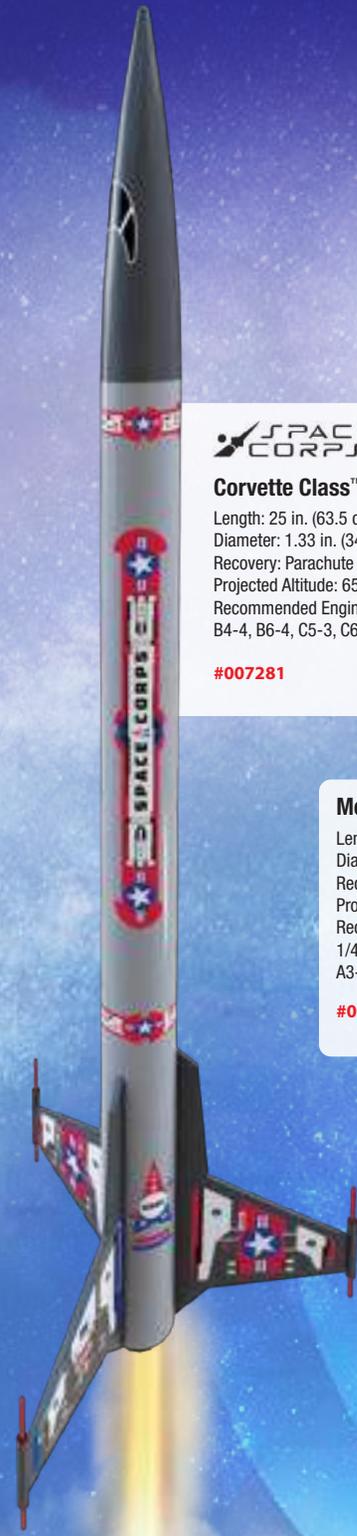
**Baby Bertha™**  
 Length: 12.8 in. (32.5 cm)  
 Diameter: 1.64 in. (42 mm)  
 Recovery: Parachute  
 Projected Altitude: 575 ft. (175 m)  
 Recommended Engines:  
 A8-3, B4-4, B6-4, C6-5

#001261



**SPACE CORPS™**  
**Corvette Class™**  
 Length: 25 in. (63.5 cm)  
 Diameter: 1.33 in. (34 mm)  
 Recovery: Parachute  
 Projected Altitude: 650 ft. (198 m)  
 Recommended Engines:  
 B4-4, B6-4, C5-3, C6-3, C6-5

#007281



**Wizard™**  
 Length: 12 in. (30.5 cm)  
 Diameter: 0.74 in. (19 mm)  
 Recovery: Streamer  
 Projected Altitude: 1600 ft. (488 m)  
 Recommended Engines:  
 1/2 A6-2, A8-3, A8-5, B4-4,  
 B6-4, B6-6, C6-5, C6-7  
 Sold Separately:  
 A10-3T w/ Engine Adapter

#001292

**ALSO AVAILABLE  
 IN A BULK PACK**  
 See Pg. 70



**Mosquito™**  
 Length: 3.8 in. (9.7 cm)  
 Diameter: 0.54 in. (14 mm)  
 Recovery: Featherweight  
 Projected Altitude: 800 ft. (244 m)  
 Recommended Engines:  
 1/4 A3-3T, 1/2 A3-2T, 1/2 A3-4T,  
 A3-2T, A3-4T, A3-6T, A10-3T

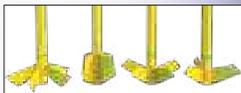
#001345



**SPACE CORPS™**  
**Lunar Scout™**  
 Height: 4 in. (10 cm)  
 Diameter: 0.74 in. (19 mm)  
 Recovery: Featherweight  
 Projected Altitude: 200 ft. (61 m)  
 Recommended Engines:  
 1/2 A3-2T, A3-2T, A3-4T,  
 A10-0T, A10-3T

#007290

**48 Fin Variations to Choose From!**



**Viking™**

Length: 12.1 in. (30.7 cm)  
 Diameter: 0.74 in. (19 mm)  
 Recovery: Streamer  
 Projected Altitude: 1600 ft. (488 m)  
 Recommended Engines:  
 1/2 A6-2, A8-3, A8-5, B4-4,  
 B6-4, B6-6, C6-5, C6-7  
 Sold Separately:  
 A10-3T w/ Engine Adapter

#001949



**ALSO AVAILABLE IN A BULK PACK**  
 See Pg. 70



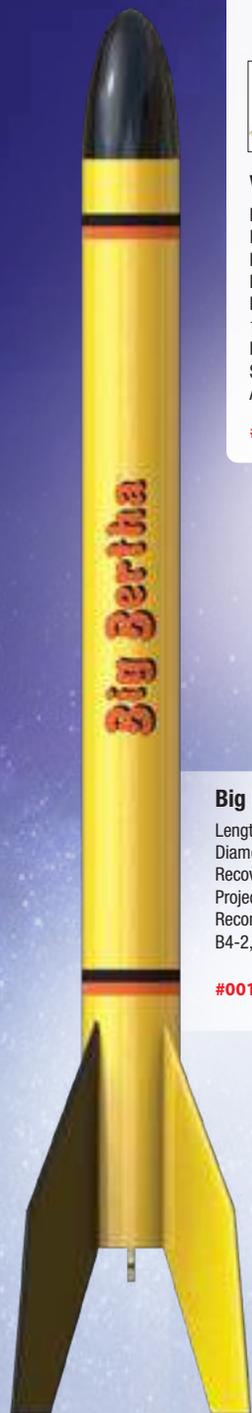
**Big Bertha®**

Length: 24 in. (61 cm)  
 Diameter: 1.64 in. (42 mm)  
 Recovery: Parachute  
 Projected Altitude: 500 ft. (152 m)  
 Recommended Engines:  
 B4-2, B4-4, B6-2, B6-4, C6-5

#001948



**One of Estes' best selling and iconic rockets of all time - a true classic!**



The Mongoose is a two-stage rocket that is a perfect option for the novice looking to gain experience with two-stage rockets. It can be flown as a two-stage or single-stage rocket!

**Mongoose™**

Length: 27 in. (68.6 cm)  
 Diameter: 0.98 in. (25 mm)  
 Recovery: Parachute, Tumble  
 Projected Altitude: 1600 ft. (488 m)  
 Recommended Engines:  
 Rocket Only: A8-3, B4-4, B6-4, C6-5  
 Two Stages:  
 Rocket: A8-5, B6-6, C6-7  
 Booster: B6-0, C6-0

#002092



**Mean Machine™**

**It's so tall, we had to split it in half for easy transport and storage!**

Length: 79 in. (200.7 cm)  
 Diameter: 1.64 in. (42 mm)  
 Recovery: Parachute  
 Projected Altitude: 700 ft. (213 m)  
 Recommended Engines:  
 D12-3, D12-5, E12-4, E12-6  
 Requires (Sold Separately):  
 3/16 in. Maxi™ Launch Rod  
 See Page: 79

#001295



**Note: Advanced Skill Build**  
 The Mean Machine is an Advanced Skill Kit but shown here for comparison purposes.



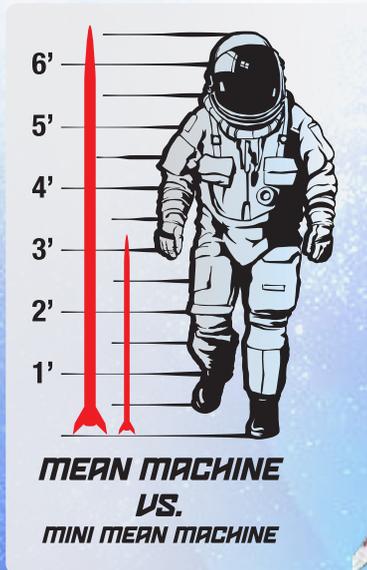
**Mini Mean Machine™**

Length: 39 in. (99.1 cm)  
 Diameter: 0.74 in. (19 mm)  
 Recovery: Parachute  
 Projected Altitude: 225 ft. (69 m)  
 Recommended Engines:  
 A3-2T, A3-4T, A10-3T

#000865



**Note: Not to Scale**  
 Shown for display purposes only.  
 Mini Mean Machine is half the size of regular Mean Machine.



**The Mean Machine stands at over 6 1/2 feet tall and disassembles in the middle for easy transportation and storage!**



**Twist the 2 halves of the Mean Machine body tube in opposite directions and then pull apart.**

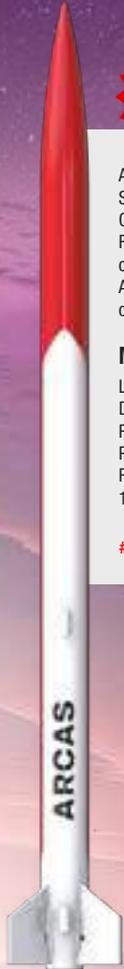


# ADVANCED ROCKET KITS

Take Your Skills to the Next Level with These Exciting & Challenging Builds!



Scan to Shop Now!



**NEW**

ARCAS (All-Purpose Rocket for Collecting Atmospheric Soundings) was developed in 1957 by the Atlantic Research Corporation in partnership with the U.S. Office of Naval Research and the Air Force Research Center with the purpose of measuring high-altitude winds. By 1960 more than 400 ARCAS rockets were launched. This 1:6 scale-like model of the original boasts a max altitude of 550 ft. on Estes A engines.

### Mini ARCAS™

Length: 14.5 in. (36.8 cm)  
Diameter: 0.74 in. (19 mm)  
Recovery: Streamer  
Projected Altitude: 550 ft. (167 m)  
Recommended Engines:  
1/2A3-2T, A3-4T, A3-6T, A10-3T

#002441



### Vesta Intruder™

Length: 25.2 in. (64 cm)  
Diameter: 1.64 in. (42 mm)  
Recovery: Parachute  
Projected Altitude: 650 ft. (198 m)  
Recommended Engines:  
C11-3, D12-5  
Requires (Sold Separately):  
3/16 in. Maxi™ Launch Rod  
See Page: 79

#007312



One Rocket...  
Two Different Looks!  
The Vapor includes both  
decal sheets for you  
to choose!



### Vapor™

Length: 45.2 in. (114.8 cm)  
Diameter: 1.64 in. (42 mm)  
Recovery: Parachute  
Projected Altitude: 900 ft. (274 m)  
Recommended Engines:  
D12-5, E12-6  
Requires (Sold Separately):  
3/16 in. Maxi™ Launch Rod  
See Page: 79

#007294



With its impressive size and power, the Big Daddy rocket has been a hit with model rocket enthusiasts! This Daddy flies well on Estes C & D engines for those who prefer suborbital flights or is ready to pierce the sky on Estes E engines!

### Big Daddy™

Length: 19 in. (48.3 cm)  
Diameter: 3 in. (76 mm)  
Recovery: Parachute  
Projected Altitude: 900 ft. (274 m)  
Recommended Engines:  
C11-3, D12-3, D12-5,  
E12-4, E12-6  
Requires (Sold Separately):  
3/16 in. Maxi™ Launch Rod  
See Page: 79

#002162



**Hi-Flier® XL**  
 Length: 31 in. (78.7 cm)  
 Diameter: 1.64 in. (42 mm)  
 Recovery: Parachute  
 Projected Altitude: 1325 ft. (404 m)  
 Recommended Engines:  
 C11-3, D12-5, D12-7, E12-6, E12-8  
 Sold Separately:  
 C5-3, C6-3 w/ Engine Adapter  
 Requires (Sold Separately):  
 3/16 in. Maxi™ Launch Rod  
 See Page: 79

#003226 

*During the Tazz recovery, the rocket spins back to earth while the engine mount separates and gently descends with an attached streamer!*

**Tazz™**  
 Length: 16.6 in. (42.2 cm)  
 Diameter: 0.98 in. (25 mm)  
 Recovery: Streamer, Spin  
 Projected Altitude: 700 ft. (213 m)  
 Recommended Engines:  
 A8-3, B6-2, B6-4, C5-3, C6-3

#007282 

**Boosted Bertha™**  
 A sport rocket at its core, this multistage flying model rocket can reach altitudes of 1000 feet! A colorful 18 inch parachute provides a soft landing, so the Boosted Bertha can be quickly prepared for another launch.

Length: 28.2 in. (71.6 cm)  
 Diameter: 1.64 in. (42 mm)  
 Recovery: Parachute, Tumble  
 Projected Altitude: 1000 ft. (305 m)  
 Recommended Engines:  
 Rocket Only: B4-2, B4-4, B6-2, B6-4, B6-6, C6-5, C6-7  
 Two Stages:  
 Rocket: A8-3, A8-5, B4-4, B6-4, B6-6, C6-5, C6-7  
 Booster: A8-0, B6-0, C6-0

#001946 

**Nike-X**  
 Length: 23.4 in. (59.4 cm)  
 Diameter: 1.33 in. (34 mm)  
 Recovery: Parachute  
 Projected Altitude: 600 ft. (183 m)  
 Recommended Engines:  
 A8-3, B4-4, B6-4, C6-5

#007259 

# EXPERT ROCKET KITS



Scan to Shop Now!

*Put Your Skills to the Ultimate Test and Enjoy  
the Satisfaction of a Build Done Well!*

The Orbital Transport is an Estes classic, flown and treasured by rocketeers since the early days of rocketry. It was originally designed by Wayne Kellner and introduced to the nation in the late '60s, proving to be one of Estes' most popular models. After it was taken out of production, rocketeers quickly bought out the remaining kits, and they've been begging for its return ever since. Scaled up from the original, it's bigger and better than ever - this is the *Super* Orbital Transport!



**BEST  
SELLER!**

## Super Orbital Transport™

Length: 31.3 in. (80 cm)  
Diameter: 1.33 in. (34 mm)  
Recovery: Parachute, Glider  
Projected Altitude: 800 ft. (244 m)  
Recommended Engines:  
C11-3, D12-5

Requires (Sold Separately):  
3/16 in. Maxi™ Launch Rod  
See Page: 79

#007314



This "upscaled" version of the original "K-20" released in 1965 stands 29 inches tall and flies on C11 and D12 engines. Thoughtfully redesigned to include all plastic cones and transitions, this unique spacecraft is still a challenging build. It is a faithful replica of the model that was featured on Estes first full color catalog in 1966. Every collector should have this "Super Snooper"!

## Super Mars Snooper™

Length: 29 in. (73.7 cm)  
Diameter: 1.33 in. (34 mm)  
Recovery: Parachute  
Projected Altitude: 800 ft. (244 m)  
Recommended Engines:  
C11-3, D12-5

Requires (Sold Separately):  
3/16 in. Maxi™ Launch Rod  
See Page: 79

#007309



## Interceptor™

Length: 26 in. (66 cm)  
Diameter: 1.33 in. (34 mm)  
Recovery: Parachute  
Projected Altitude: 525 ft. (160 m)  
Recommended Engines:  
B4-2, B6-2, B6-4, C6-5

#001250



**SA-2061 Sasha™**

Inspired by Russian military design, this scale-like model rocket is sure to enthrall the most dedicated rocketeer. A masterful build, this high flying booster model rocket can reach heights of 2300 feet when powered by E model rocket engines in both stages.

- Length: 31.5 in. (80 cm)
- Diameter: 1.64 in. (42 mm)
- Recovery: Parachute, Tumble
- Projected Altitude: 2300 ft. (701 m)
- Recommended Engines:
- Rocket Only: C11-3, C11-5, D12-5, E12-6
- Two Stages:
- Rocket: D12-5, D12-7, E12-8
- Booster: D12-0, E12-0
- Requires (Sold Separately):
- 3/16 in. Maxi™ Launch Rod
- See Page: 79

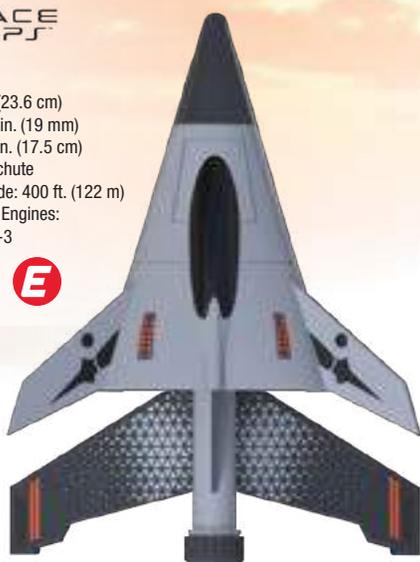
#007271



**DARC-1™**

- Length: 9.3 in. (23.6 cm)
- Diameter: 0.74 in. (19 mm)
- Wingspan: 6.9 in. (17.5 cm)
- Recovery: Parachute
- Projected Altitude: 400 ft. (122 m)
- Recommended Engines:
- B6-2, C5-3, C6-3

#007307

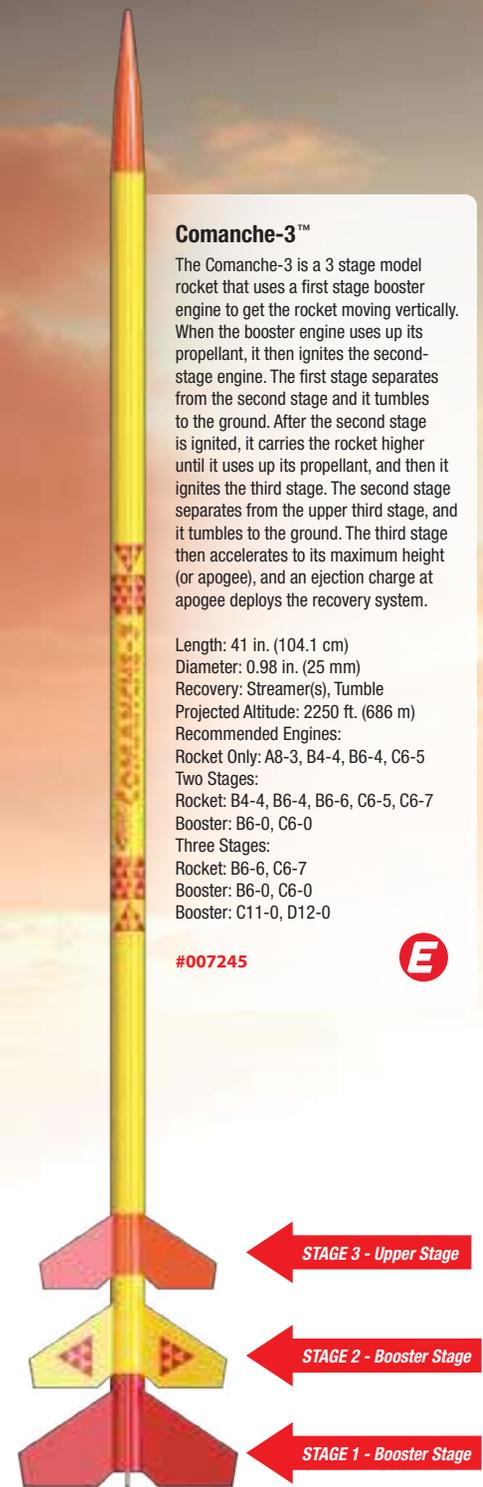


**Comanche-3™**

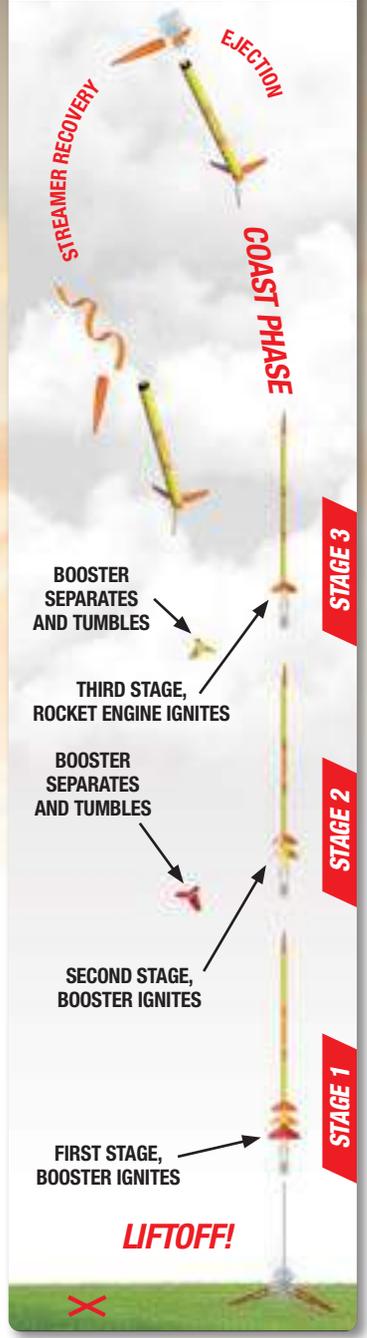
The Comanche-3 is a 3 stage model rocket that uses a first stage booster engine to get the rocket moving vertically. When the booster engine uses up its propellant, it then ignites the second-stage engine. The first stage separates from the second stage and it tumbles to the ground. After the second stage is ignited, it carries the rocket higher until it uses up its propellant, and then it ignites the third stage. The second stage separates from the upper third stage, and it tumbles to the ground. The third stage then accelerates to its maximum height (or apogee), and an ejection charge at apogee deploys the recovery system.

- Length: 41 in. (104.1 cm)
- Diameter: 0.98 in. (25 mm)
- Recovery: Streamer(s), Tumble
- Projected Altitude: 2250 ft. (686 m)
- Recommended Engines:
- Rocket Only: A8-3, B4-4, B6-4, C6-5
- Two Stages:
- Rocket: B4-4, B6-4, B6-6, C6-5, C6-7
- Booster: B6-0, C6-0
- Three Stages:
- Rocket: B6-6, C6-7
- Booster: B6-0, C6-0
- Booster: C11-0, D12-0

#007245



**MULTI-STAGE ROCKET FLIGHT SEQUENCE**



# Designer Signature Series

The Designer Signature Series is a series of kits designed by some of the most famous pioneers of model rocketry. Some are re-introductions of lesser-known classics and others are never-before-seen designs that never made it out of the R&D room. Every serious model rocket collector will want the complete series for their own museum!



Bill Simon was a creative writer and lead designer for Estes in the '60s and early '70s, and he presided over a golden age of rocketry. His designs, such as the *Drifter*, *Farside*, and *Cobra*, have gone on to become the cornerstones of treasured collections, and his work has taught a generation of rocketeers.

The Belt Object Survey Ship (B.O.S.S.) was designed nearly 40 years ago, but the prototype never made its way to release. Bill Simon created this in partnership with Estes after his departure from the company. It was designed at a time where people were hungry for spaceflight innovations, and nuclear propulsion and solar power felt like the best way forward.

This B.O.S.S. rocket uses one tail fin, two engine pod assemblies, and a large circular plate to stabilize the rocket - a rare asymmetrical structure and a challenging build. We've matched the artistry of this design with high-quality components to bring you the latest in the Estes Designer Series.

## B.O.S.S.™

(Belt Object Survey Ship)

Length: 27.8 in. (70.6 cm)  
Diameter: 1.33 in. (34 mm)  
Recovery: Parachute  
Projected Altitude: 600 ft. (183 m)  
Recommended Engines:  
B4-4, B6-4, C6-5

#007316



In 1960, Vern Estes, founder of Estes Industries, designed the Astron Scout™, which was the first Estes model rocket packaged for sale as a complete kit. During a span of more than 20 years, Estes sold tens of thousands of Astron Scout kits, inspiring countless young people to pursue technical careers.

## Orange Bullet™

Length: 5.9 in. (15 cm)  
Diameter: 0.74 in. (19 mm)  
Recovery: Featherweight  
Projected Altitude: 500 ft. (152 m)  
Recommended Engines:  
1/2 A6-2, A8-3

#007295



The Orange Bullet was the prototype for the famous Astron Scout. The original design included metal weights glued to the end of the fins to shift the center of gravity after the engine ejected for a tumbling recovery system. While that approach worked, Vern achieved the same effect by using the weight of the rocket engine itself!



G. Harry Stine (NAR #02) is known as the "Father of Model Rocketry" and founder of the National Association of Rocketry (NAR). He was one of the original pioneers that founded the hobby right alongside Vern Estes.

## Antar™

Length: 23.2 in. (58.9 cm)  
Diameter: 1.64 in. (42 mm)  
Recovery: Parachute  
Projected Altitude: 450 ft. (137 m)  
Recommended Engines:  
B6-2, B6-4, C6-5

#007310



G. Harry Stine was also a talented writer and visionary who believed that mankind would soon travel to and live in space. He wrote several fiction books in the early 1950's including best sellers *Starship Through Space* and *Contraband Rocket*. Many of the characters in his books were based on real people he met while working at White Sands. His stories also needed spaceships that didn't exist yet so he created them. Athena, Fafnir, Vittoria, Absyritis were all designed with incredible detail by a fictional company Hueco Spacecraft Inc.





# SCALE MODEL ROCKETS



*Estes is a scale modeler's dream that brings together both the hobby of model rocketry and history. For over 66 years, Estes has produced the finest scale replicas of rockets and missiles.*



This category features detailed, miniature replicas of full-scale military, commercial, and space agency rockets, which come in a variety of scale sizes and model rocket engine requirements.

Scale model rockets come in a variety of skill ranges that vary from ready to fly Beginner rockets to Master level build kits. RTF (ready to fly) rockets are great for home or office display and are also easily prepared for flight. Intermediate level builds are for those who want to get hands on with a scale model that requires building, painting, and applying decals as they grow their rocketry building knowledge in preparation for more complex kits.

Advanced, Expert, and Master level kits require an advanced knowledge of model rocket building as hobbyist work with handcrafted or molded detailed parts. These rockets often require rocketeers to have mastered a variety of skills in assembly, painting and launching techniques in order to successfully complete these exciting rockets.



# SPACE SHUTTLE

1:200-SCALE FLYING MODEL ROCKET

## Bring a piece of American spaceflight history home

The Space Shuttle was the workhorse of the American space program from its introduction in 1981 until its retirement in 2011. Operating for over thirty years, Space Shuttles Columbia, Challenger, Discovery, Atlantis and Endeavor flew 135 missions carrying 355 individual astronauts from 16 nations into space. Shuttle missions launched numerous satellites, interplanetary probes, and the Hubble Space Telescope, conducted science experiments in orbit, participated in the Shuttle-Mir program with Russia, and constructed and serviced the International Space Station (ISS). The Space Shuttle fleet's total mission time was 1,330 days.



**NEW**

### Space Shuttle

Length: 10.9 in. (27.7 cm)  
Diameter: 1.64 in. (42 mm)  
Recovery: Parachute & Glider  
Projected Altitude: 600 ft. (183 m)  
Recommended Engines:  
C5-3, C6-3

#009991



[Learn More](#)



# BLUE ORIGIN

## NEW SHEPARD

### ESTES, BLUE ORIGIN, AND CLUB FOR THE FUTURE

We are providing a piece of history that inspires kids to dream of a future filled with the wonders of space exploration; that's why a portion of every dollar from the Estes New Shepard will go to support Club for the Future, Blue Origin's foundation that inspires future generations to pursue careers in STEM, and why Estes is proud to partner with them.

### THE NEW SHEPARD

In 1961, Alan Shepard made history as the first American in space. A decade later, he walked on the moon and pushed the boundaries of space exploration so that we can reach for the planets beyond. From this legacy, Blue Origin furthers our dreams of reaching new frontiers with the New Shepard rocket.

#### Builder Kit

- Launches Up to 700 ft.
- Larger Fins for Added Stability!
- Fun to Build!

#### Ready to Fly

- 1/66th Scale Model
- Payload Capable
- Custom Display Stand



Length: 11.8 in. (30 cm)  
 Diameter: 1.64 in. (42 mm)  
 Recovery: Parachute  
 Projected Altitude: 700 ft. (213 m)  
 Recommended Engines:  
 B4-4, B6-4, C6-5

#007315



Length: 10.3 in. (26.3 cm)  
 Diameter: 1.78 in. (45 mm)  
 Recovery: Parachute  
 Projected Altitude: 400 ft. (122 m)  
 Recommended Engines:  
 C5-3, C6-3

#002198



# SPACEX

## FALCON 9

A BEAUTIFUL ADDITION TO ANY COLLECTION



Estes is pleased to present this licensed, flying reproduction of the Falcon 9 rocket and Crew Dragon Spacecraft. Fully assembled and ready to fly or display straight from the box, you will enjoy the accuracy of this 1:100 scale model of the groundbreaking launch vehicle. The rocket includes clear plastic fins for stability, and looks great both in flight and on its custom display stand.

- Highly Detailed 1:100 Scale Falcon 9 & Crew Dragon Spacecraft
- Collector's Edition High End Custom Packaging
- Estimated Max Altitude: 300 ft.

#002161

[Learn More](#)



The Estes 1:200 scale replica of this rocket portrays the Project Artemis Block 1 configuration, the first in the proposed series of heavy lift launch vehicles. Pre-assembled, pre-finished, and ready to launch, this highly detailed model realistically reproduces the features and markings of America's next generation rocket for deep space missions.

**The NASA SLS Comes Almost Ready-to-Fly Out of the Box!**



Model features clear plastic fins to stabilize flights and can be used for display!



**NASA SLS**  
**1:200 Scale**

Length: 19.4 in. (49.3 cm)  
Diameter: 1.64 in. (42 mm)  
Recovery: Parachute  
Projected Altitude: 350 ft. (107 m)  
Recommended Engines:  
C5-3, C6-3

#002206



The Estes commemorative 1:200 scale Apollo 11 Saturn V model is almost 2 feet tall and comes fully assembled with many scale details and markings carefully reproduced for exceptional realism. This historical model of the Saturn V is suitable for display or launch.

**The Saturn V Comes Almost Ready-to-Fly Out of the Box!**



Model features a clear plastic fin unit to stabilize flights and a custom display stand!



**50<sup>th</sup> Anniversary Saturn V**  
**1:200 Scale**

Length: 21.8 in. (55.4 cm)  
Diameter: 1.98 in. (50 mm)  
Recovery: Parachute  
Projected Altitude: 200 ft. (61 m)  
Recommended Engines:  
C5-3, C6-3

#002160



Mercury-Redstone 4 was the second U.S. human spaceflight, on July 21, 1961. The suborbital Project Mercury flight was launched with a Mercury-Redstone Launch Vehicle, MRLV-8. The spacecraft, Mercury capsule #11, was nicknamed Liberty Bell 7. It was piloted by astronaut Virgil "Gus" Grissom.

### Mercury Redstone 4 Liberty Bell 7

#### 1:34 Scale

Length: 28.6 in. (72.6 cm)  
Diameter: 2.05 in. (52 mm)  
Recovery: Parachute  
Projected Altitude: 200 ft. (61 m)  
Recommended Engines:  
C5-3, C6-3

#001921



The Estes Saturn 1B is a stunning 1:100 recreation of this rocket of the Apollo era. Designed to test Apollo hardware, it later served as crew launch vehicle for Skylab and the Apollo Soyuz Test Project. Build and launch this Master-Level kit for spectacular lift-offs and dazzling dual parachute recoveries.

### Saturn 1B 1:100 Scale

Length: 26.8 in. (68.1 cm)  
Diameter: 2.62 in. (67 mm)  
Recovery: Parachute x2  
15 in., 18 in.  
Projected Altitude: 1000 ft. (305 m)  
Recommended Engines:  
C11-3, D12-3, E12-4, E12-6

#007251



The Saturn V permitted weights of up to 280,000 pounds to be placed in Earth Orbit. The Saturn V launched the nearly 100,000 pound Apollo 11 spacecraft into lunar trajectory which resulted in the first manned lunar landing in July 1969. The Apollo-Saturn V was 363 feet tall and weighed 6,000,000 pounds when fully fueled.

### Saturn V

#### 1:100 Scale

Length: 43.25 in. (110 cm)  
Diameter: 3.94 in. (100 mm)  
Recovery: Parachute x 3  
Projected Altitude: 350 ft. (107 m)  
Recommended Engines:  
E16-4, F15-4

Requires (Sold Separately):  
1/4 in. Launch Rod  
See Porta-Pad®E pg. 79  
or PS II Launch Base pg. 63

#001969



In 1973, the last Saturn V was launched with a special payload – Skylab, America's first space station. Build and fly a 1/100 scale replica of that historic mission. Exciting launches up to 350 feet on an Estes F15-4 engine, and spectacular three-parachute recoveries.

### Saturn Skylab

#### 1:100 Scale

Length: 41.25 in. (104.8 cm)  
Diameter: 3.94 in. (100 mm)  
Recovery: Parachute x3  
(18 in. x 1, 24 in. x 2)  
Projected Altitude: 400 ft. (122 m)  
Recommended Engines:  
E16-4, F15-4

Requires (Sold Separately):  
1/4 in. Launch Rod  
See Porta-Pad®E pg. 79  
or PS II Launch Base pg. 63

#001973



The MIM-104 Patriot is a surface-to-air missile (SAM) system, the primary of its kind used by the United States Army and several allied states. The AN/MPQ-53 at the heart of the system is known as the "Phased Array Tracking Radar to Intercept on Target" which is a backronym for PATRIOT.

### U.S. Army Patriot M-104

#### 1:10 Scale

Length: 21.3 in. (54.1 cm)  
Diameter: 1.64 in. (42 mm)  
Recovery: Parachute  
Projected Altitude: 600 ft. (183 m)  
Recommended Engines:  
B4-4, B6-4, B6-6, C6-5

#002056



Check out this mini-engine powered version of the U.S. Army's Honest John. The Estes Mini Honest John is a sport scale model, featuring a molded plastic nose cone and balsa fins that's quick to build and fun to fly!

### Mini Honest John

#### 1:24 Scale

Length: 11.75 in. (29.8 cm)  
Diameter: 0.98 in. (25 mm)  
Recovery: Parachute  
Projected Altitude: 325 ft. (99 m)  
Recommended Engines:  
1/2 A3-2T, A3-4T, A10-3T

#002446



An iconic weapon of the Cold War, the MGR-1 Honest John battlefield rocket could carry nuclear or conventional warheads.



The Canadian Black Brant line of sounding rockets is one of the most successful launch vehicles ever flown. Since the late 1950s, several hundred Black Brant rockets have completed research missions for Canada and NASA.

### Black Brant II

#### 1:13 Scale

Length: 24.9 in. (63.2 cm)  
Diameter: 1.33 in. (34 mm)  
Recovery: Parachute  
Projected Altitude: 1300 ft. (396 m)  
Recommended Engines:  
C11-3, D12-5, D12-7

Requires (Sold Separately):  
3/16 in. Maxi™ Launch Rod  
See Page: 79

#007243



The Estes Bull Pup 12D is based off of the AGM-12 Bullpup, which is a short-range air-to-ground missile developed by Martin Marietta for the U.S. Navy in 1959. It was among the earliest precision guided air-to-ground weapons and the first to be mass produced for the U.S. Navy and U.S. Airforce.

### Bull Pup 12D

#### 1:9 Scale

Length: 15.6 in. (39.6 cm)  
Diameter: 1.33 in. (34 mm)  
Recovery: Parachute  
Projected Altitude: 675 ft. (206 m)  
Recommended Engines:  
A8-3, B4-4, B6-4, C6-5

#007000





## PRO SERIES II

*Estes Pro Series II products are bigger and better than ever, giving you all the power you need to reach towering heights! Experience the awesome power of rockets that fly on our 29 mm engines!*

### IMPORTANT INFORMATION

Estes Pro Series II can be enjoyed by adult flyers of all skill levels. Kits in this category range from Beginner to Expert. Beginner & Intermediate kits may still require some building knowledge with plastic molded parts and the use of epoxy glues. Advanced and Expert kits should only be attempted by hobbyist with the acquired skills for kits of this type.

### LAUNCH INFORMATION

In order to launch your Pro Series II rocket, you will need a launch controller with 30 feet of wire, such as our 2240 Pro Series II Launch Controller. In addition to the launch controller, you will need a sturdy launch pad with a 1/4" (6.4 mm) launch rod, or you can purchase our 3552 Estes Pro Series II Launch Pad. *See Page 63*

**AGES**  
**18+**

Estes Pro Series II rocket kits are for adult rocketeers. Anyone under the age of 18 using these products should be supervised by an adult at all times.

#### PRO SERIES II

### So Long™

Length: 46.2 in. (118 cm)  
Diameter: 1.21 in. (31 mm)  
Recovery: Streamer  
Projected Altitude: 3600 ft. (1097 m)  
Recommended Engines:  
Rocket Only: E-16-6, E16-8, F15-6, F15-8  
Two Stages:  
Rocket: E16-8, F15-8  
Booster: E16-0, F15-0

#009722



*The So Long is the highest flying two-stage rocket that we have ever produced!*



**POWERED BY OUR LARGEST ENGINES!**

## PRO SERIES II

The Black Brant XII is a four-stage, solid propellant sounding rocket consisting of a Talos 1st stage, Taurus 2nd stage, Black Brant 3rd stage, and Nihka 4th stage. The actual vehicle is capable of lifting 1000 lbs to a 500 km altitude or 250 lbs to approximately 1400 km. Originally Built by Bristol Aerospace, the Black Brant family continues to be one of the most popular sounding rockets of all time.

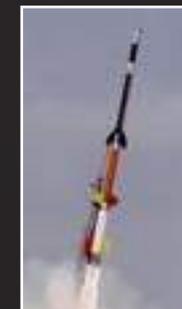
#### PRO SERIES II

### Black Brant XII

**1:14 Scale**

Length: 54.6 in. (139 cm)  
Diameter: 2.22 in. (56 mm)  
Recovery: Nylon Parachute  
Projected Altitude: 1100 ft. (335 m)  
Recommended Engines:  
E16-6, F15-6

#009723



**BLACK BRANT XII**



Zuri Anderson-Haney takes to the sky with her impressive build of the Estes Black Brant XII at the FAI Championships this past summer in Austin TX. Photo Credit: Jim Wilkerson



## PRO SERIES II

POWERED BY OUR  
LARGEST ENGINES!

## PRO SERIES II

### PRO SERIES II

#### Super Big Bertha™

Length: 36.8 in. (93.5 cm)  
Diameter: 2.6 in. (66 mm)  
Recovery: Parachute  
Projected Altitude: 1200 ft. (366 m)  
Recommended Engines:  
E16-4, F15-6  
Sold Separately:  
D12-3, E12-4 w/ Engine Adapter

#009719



### PRO SERIES II

#### Doorknob

##### 1:5.3 Scale

Length: 26.9 in. (68.3 cm)  
Diameter: 3 in. (76 mm)  
Recovery: Nylon Parachute  
Projected Altitude: 1100 ft. (335 m)  
Recommended Engines:  
E16-4, F15-4, F15-6  
Sold Separately:  
D12-3, E12-4 w/ Engine Adapter

#009720



The Doorknob was a sounding rocket manufactured by Lacrosse Rocket Motors for the project Hardtack Nuclear Test Series.



### PRO SERIES II

#### Star Orbiter™

Length: 45.2 in. (114.8 cm)  
Diameter: 1.64 in. (42 mm)  
Recovery: Parachute  
Projected Altitude: 1800 ft. (549 m)  
Recommended Engines:  
E16-6, F15-8  
Sold Separately:  
D12-3, E12-4 w/ Engine Adapter

#009716



STAR ORBITER



### PRO SERIES II

#### Great Goblin™

Length: 33.5 in. (85 cm)  
Diameter: 3 in. (76 mm)  
Recovery: Nylon Parachute  
Projected Altitude: 880 ft. (268 m)  
Recommended Engines:  
E15-4, F15-6

#009724





PRO SERIES II

PRO SERIES II



PRO SERIES II

### Majestic™

Length: 35.3 in. (89.7 cm)  
Diameter: 2 in. (51 mm)  
Recovery: Nylon Parachute  
Projected Altitude: 1300 ft. (610 m)  
Recommended Engines:  
E16-6, F15-6, F15-8  
Sold Separately:  
D12-3, E12-4 w/ Engine Adapter

#009707



*The Majestic can be flown as a two stage using the E2X Booster accessory! See pg. 62*

PRO SERIES II

### Der Big Red Max™

Length: 29.9 in. (75.9 cm)  
Diameter: 3 in. (76 mm)  
Recovery: Skull & Bones Parachute  
Projected Altitude: 1100 ft. (335 m)  
Recommended Engines:  
E16-4, F15-4

#009721



PRO SERIES II

### F15-4 Bulk Pack

#### Includes:

- (8) F15-4 Engines
- (10) Starters
- (8) Large Engine Plugs

#001787

Available Only at [EstesRockets.com](http://EstesRockets.com)

NEW

PRO SERIES II

### LAUNCH RAIL

Estes' all new, lightweight, and easy to transport Pro Series II Launch Rail is the perfect choice for rocket enthusiasts looking for affordable solutions to launch mid to high powered rockets!

- Compatible with all 1010 rail buttons and rail guides
- Sturdy enough to launch our biggest rockets!
- Six foot long aluminum adjustable rail
- Rail pivots for easy rocket loading

#002311

Available Only at [EstesRockets.com](http://EstesRockets.com)

NEW



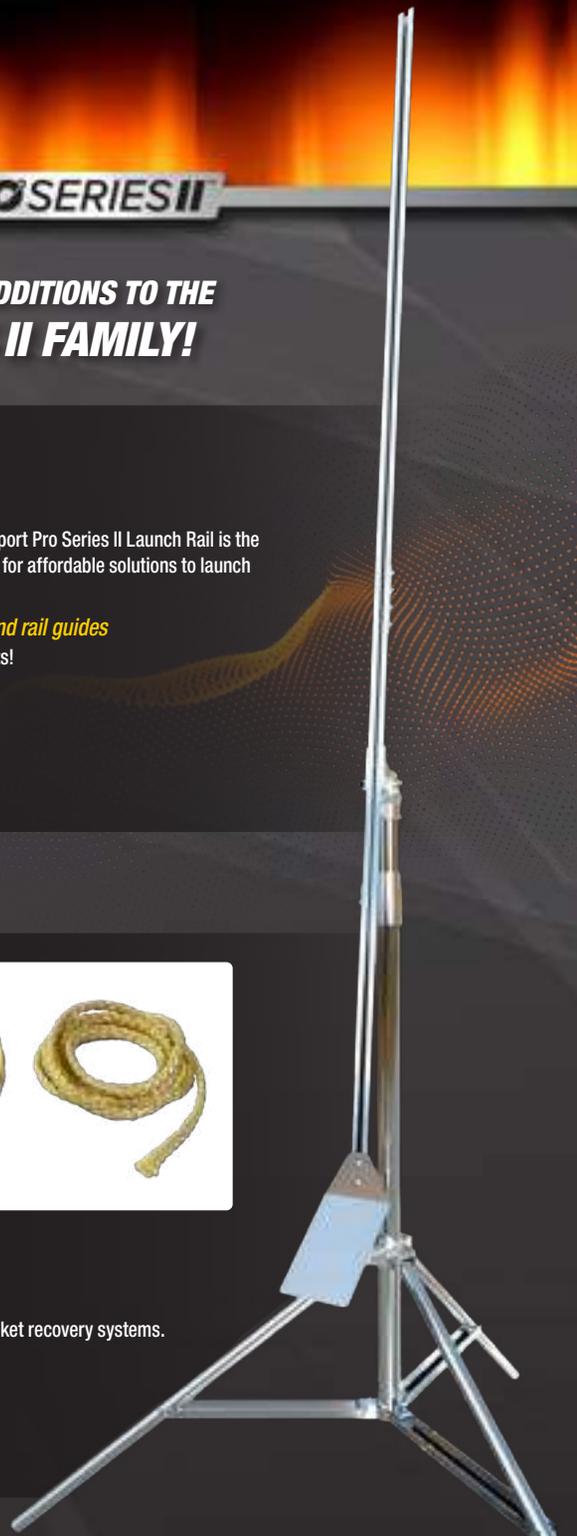
PRO SERIES II

### Aramid Cord

Heavy duty flame resistant cord for large rocket recovery systems.

- |                |                |                |
|----------------|----------------|----------------|
| <b>100 lb.</b> | <b>200 lb.</b> | <b>300 lb.</b> |
| #003140        | #003141        | #003142        |

Available Only at [EstesRockets.com](http://EstesRockets.com)



**NEW**

**PRO SERIES II**
**Pro Series Parts Assortment**

- (1) BT70 - Plastic Blow Mold Nose Cone
- (1) BT80 - Plastic Blow Mold Nose Cone
- (2) BT70 - 24" Body Tube
- (2) BT80 - 24" Body Tube
- (2) BT70 - 3" Tube Coupler
- (2) BT80 - 3" Tube Coupler
- (1) BT70 to BT80 - Plastic Blow Mold Adaptor
- (2) 24mm 3.5" Engine Mount Tubes
- (2) 24mm Engine Retainer Set
- (2) 29mm Engine Retainer Set
- (1) 24mm to 29mm Engine Adaptor Set
- (1) BT70 - 24mm Centering Rings
- (1) BT80 - 24mm Centering Rings
- (1) BT70 - 29mm Centering Rings
- (1) BT80 - 29mm Centering Rings
- (2) BT70 - Plywood Bulk Head
- (2) BT80 - Plywood Bulk Head
- (2) Bulk Head Screw Eye
- (4) 12"x4"x1/8" Balsa Sheets
- (1) 18" Red Nylon Parachute
- (1) 15" Red Nylon Parachute
- (1) BT-70 Fin Marking Template
- (1) BT-80 Fin Marking Template
- (2) 29mm - 8" Engine Mount Tubes
- (2) Shockcord Mounts
- (2) Shock Cords
- (4) Rail Guides

**#009987**

 Available Only at [EstesRockets.com](http://EstesRockets.com)
**PRO SERIES II**

**Engine Adapter Set**  
(24mm - 29mm)

**#009753**

**Shock Cord Accessory Pack**

 3 heavy-duty elastic shock cords;  
1/2 in. (13 mm) x 96 in. (243.8 cm)

**#003172**
**PRO SERIES II**

**E2X® Booster**

 For use with the Majestic (9707)  
Recommended Engine: F15-0

**#009752**
**PS II Recovery Wadding**

 Approximately 216 sheets for larger rockets.  
Can also be used in any Estes rocket.

**#003556**

**PRO SERIES II**
**Launch Controller**

- 30 feet launch cable
- (Required set back distance for rocket engines with more than 30 grams propellant)
- Audible Continuity (Easily hear if the starter is connected correctly)
- Two hands required for launch (Even with the Safety Key left inserted, the rocket will not launch without both buttons pressed)
- Requires 6 1.5V "C" size alkaline batteries (sold separately)
- Includes 4 wire leads with micro clips for multi-engine clusters
- Includes JST style plug for alternate battery use (8-10 cell 1000mAh NimH or 3 cell LiPo (11.1V) battery)

**#002240**
**PRO SERIES II**
**Launch Base**

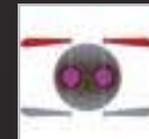
- Stands 18 inches off the ground!
- Sturdy enough to launch our biggest Pro Series rockets
- Two-piece 1/4 in. (6 mm), 5' (152.4 cm) Launch Rod

**#003552**
**Engine Configurations for a Cluster Launch**

Config. 1 - Single Engine



Config. 2 - Two Engine



Config. 3 - Three Engine



Config. 4 - Four Engine



The NAR Safety Code requires all rockets that launch with motors larger than a "D" to be launched from thirty (30) feet. We suggest using the 2240 Pro Series II launch controller. It is also capable of launching cluster engine configurations (see Config. 1-4 above).



# Take learning to new heights.

Inspire your students to imagine the limitless possibilities in aerospace with our line of model rocketry education products.

## Choose **Estes Lesson Plans** to Engage Your Students in **STEM!**

Develop 21<sup>st</sup> century skills with your students through lesson plans that promote communication, creativity, collaboration, and critical thinking.

Use our free resources to gain confidence and effectively teach STEM topics while promoting real world learning.

Create lifelong memories in your classroom with hands on learning that inspires and ignites creativity. Aerospace careers start with Estes.

### Our Free Lesson Plans Include:

- A range of topics including STEM, ELA & History
- Assessments
- NGSS and Common Core Standards
- Slide Presentations
- Student Portfolios



“**Model Rocketry is an excellent STEM activity** that gets students out of the classroom and into the sky! Students use all the elements of STEM to collect, analyze and communicate data. I’ve been teaching rocketry for over six years and it’s the best activity every year!”

Find all of our resources at [edu.estesrockets.com](http://edu.estesrockets.com)

## Get Started

These are the items you need to teach **rocketry in your classroom:**

- Rocket Bulk Packs
- Engine Bulk Packs
- Lifetime Launch System



## How to choose the right experience for your students:

### Age

Younger students (Grades 4-6) need beginner rockets that are simple to assemble. They're not quite ready for the challenge of gluing on individual fins yet, so choose one of our beginner bulk packs. Grades 7-12 are ready for the intermediate rockets!

### Time

Consider the amount of time needed to build a rocket, for glue to dry, and how long it will take to prep the rockets before launch. Our snap together rockets are ready to fly in minutes! Our intermediate rockets require a longer glue drying time.

### Flying Field Size

The available field size will determine which rocket(s) and engine(s) will be best for your launch. Smaller fields will require smaller engines such as 1/2 A or A. Bigger fields = bigger engines!

## A Few Tips

- **PREPARE** Build a rocket and launch it ahead of time! It's helpful to have that experience before you launch with your students.
- **ORGANIZE** Get your supplies together and encourage students to keep track of all their rocket parts. Sometimes, there can be many pieces and organization is key!
- **BE FLEXIBLE** Sometimes lessons don't go according to plan. Have backup activities ready in case things change.
- **CONNECT** STEM and rocketry go hand in hand. Use every opportunity to connect rockets to the science or math concepts you are teaching.
- **ENCOURAGE** The more excited you are, the more your students will be. Launching rockets is fun and creates memories your students will carry with them forever.



# Educator Bulk Packs

## BEGINNER

**1 hr**  
OR LESS

### Generic E2X® Bulk Pack

Length: 13.5 in. (34.3 cm)  
Diameter: 0.98 in. (25 mm)  
Recovery: Parachute  
Recommended Engines:  
1/2 A6-2, A8-3, A8-5, B4-4,  
B6-6, C6-5, C6-7

**Pack of 12**  
#001764



ONE PIECE  
MOLDED FIN UNIT



### Alpha III® Bulk Pack

Length: 12.1 in. (30.7 cm)  
Diameter: 0.98 in. (25 mm)  
Recovery: Parachute  
Recommended Engines:  
1/2 A6-2, A8-3, A8-5, B4-4,  
B6-4, B6-6, C6-5, C6-7

**Pack of 12**  
#001751

ONE PIECE  
MOLDED FIN UNIT



**NEW**

### Cosmic Ray® Bulk Pack

Length: 13.3 in. (33.7 cm)  
Diameter: 0.98 in. (25 mm)  
Recovery: Parachute  
Recommended Engines:  
A8-3, A8-5, B4-4, B6-6,  
C6-5, C6-7

**Pack of 12**  
#001112

*Create your own custom deco design!*



PLASTIC SNAP IN FINS:  
NO GLUING!

*Only available at EstesRockets.com*



**NEW**

### Cosmic Cargo® Bulk Pack

Length: 16.7 in. (42.4 cm)  
Diameter: 0.98 in. (25 mm)  
Recovery: Parachute  
Recommended Engines:  
A8-3, A8-5, B4-4, B6-6,  
C6-5, C6-7

**Pack of 12**  
#001752

*Create your own custom deco design!*  
*Includes added payload section!*



PLASTIC SNAP IN FINS:  
NO GLUING!

*Only available at EstesRockets.com*



### Star Hopper™ Bulk Pack

Length: 7.4 in. (18.8 cm)  
Diameter: 0.74 in. (19 mm)  
Recovery: Streamer  
Recommended Engines:  
1/2 A3-2T, A3-2T, A3-4T,  
A10-3T

**Pack of 12**  
#001721

PLASTIC SNAP IN FINS:  
NO GLUING!





# Educator Bulk Packs

## INTERMEDIATE

**2 hrs  
OR LESS**



### AVG Bulk Pack

Includes 4 of each - Alpha, Viking, and Generic E2X rockets.

Recommended Engines:  
1/2 A6-2, A8-3, A8-5, B4-4,  
B6-4, B6-6, C6-5, C6-7

**Pack of 12**  
**#001753**



### Wizard™ Bulk Pack

Length: 12 in. (30.5 cm)  
Diameter: 0.74 in. (19 mm)  
Recommended Engines:  
1/2 A6-2, A8-3, A8-5, B4-4,  
B6-4, B6-6, C6-5, C6-7  
Sold Separately:  
A10-3T w/ Engine Adapter

**Pack of 12**  
**#001754**



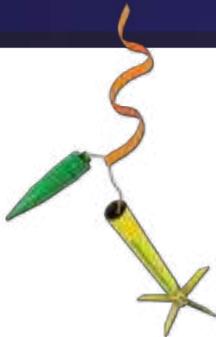
INDIVIDUAL FINS THAT GLUE  
ONTO THE BODY TUBE



### Viking™ Bulk Pack

Length: 12.1 in. (30.7 cm)  
Diameter: 0.74 in. (19 mm)  
Recommended Engines:  
1/2 A6-2, A8-3, A8-5, B4-4,  
B6-4, B6-6, C6-5, C6-7  
Sold Separately:  
A10-3T w/ Engine Adapter

**Pack of 12**  
**#001755**



INDIVIDUAL FINS THAT GLUE  
ONTO THE BODY TUBE



### Alpha® Bulk Pack

Length: 12.3 in. (31.2 cm)  
Diameter: 0.98 in. (25 mm)  
Recovery: Parachute  
Recommended Engines:  
1/2 A6-2, A8-3, A8-5, B4-4,  
B6-4, B6-6, C6-5, C6-7  
Sold Separately:  
A10-3T w/ Engine Adapter

**Pack of 12**  
**#001756**



INDIVIDUAL FINS THAT GLUE  
ONTO THE BODY TUBE

### Green Eggs™ Bulk Pack

An egg lofting rocket designed for the unique needs of teachers. Uses our "mighty" C11 rocket engines to safely lift the extra weight of an egg and keep it well within an average school yard for safe recovery.

Length: 23.6 in. (59.9 cm)  
Diameter: 1.8 in. (46 mm)  
Recovery: Parachute  
Recommended Engines:  
w/egg: C11-3, D12-3  
w/o egg: C11-5, D12-5

**Pack of 12**  
**#001718**



INDIVIDUAL FINS THAT GLUE  
ONTO THE BODY TUBE



### Orbis 3D™ Bulk Pack

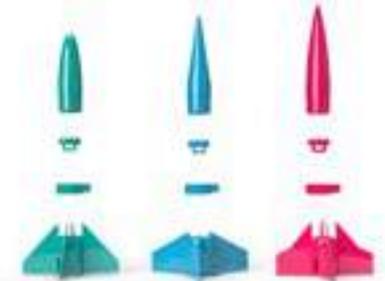
This kit comes with body tubes, parachutes and parts you need to build an engine mount. Download .stl files from the Estes website to print your 3D plastic parts to complete your rocket. Nine different design options.

**3D printer and filament NOT included**

Length: 10 - 12 in. (25.4 - 30.5 cm)  
Recovery: Parachute  
Recommended Engines: A8-3,  
B4-4, B6-4, C6-5

**#001706**

Students 3D print these parts!



# Engine Bulk Packs

Every launch requires engines, recovery wadding, starters, and plugs. These convenient engine bulk packs include enough of each for multiple launches. Choose from a variety of engine sizes. We advise using the smallest recommended engines for the first launches. Learn more about how to find the perfect engine on pg. 89.



**#001788 1/2A3-4T Engines** (24); 30 starters; 24 plugs; 72 sheets wadding

**#001781 A8-3 Engines** (24); 30 starters; 24 plugs; 72 sheets wadding

**#001783 B6-4 Engines** (24); 30 starters; 24 plugs; 72 sheets wadding

**#001784 B6-0 & B6-6 Engines** (12 each); 30 starters, 24 plugs; 72 sheets wadding

**#001789 C6-5 Engines** (24); 30 starters; 24 plugs; 72 sheets wadding

**#001726 C11-3 Engines** (12); 20 starters; 16 plugs; 144 sheets wadding

**#001786 D12-5 Engines** (12); 20 starters; 16 plugs; 144 sheets wadding

**#001672 Blast-Off® Flight Pack** A8-3, B6-4, C6-3, C6-5 Engines (6 each); 30 starters; 28 plugs; 72 sheets wadding

# Accessories

## Lifetime Launch System

Designed for teachers and students to withstand the rigors of multiple launches.

Stands 18 inches off the ground for easy launch preparation.

- Tiltable launch rod.
- Includes both 1/8 in. & 3/16 in. launch rods
- Two-hand safety feature in the launch controller.
- Includes a Pro Series II controller, 30 feet of cable and two different size launch rods

**#002310**

The Lifetime Launch System comes with a lifetime warranty available to read at: [www.estesrockets.com/lifetime-launch-system-warranty](http://www.estesrockets.com/lifetime-launch-system-warranty)



## Phantom™

The Phantom is a STEM education tool and is used in classrooms nationwide!

It demonstrates the various parts of a model rocket to your students!

Length: 12.1 in. (30.7 cm)

Diameter: 0.98 in. (25 mm)

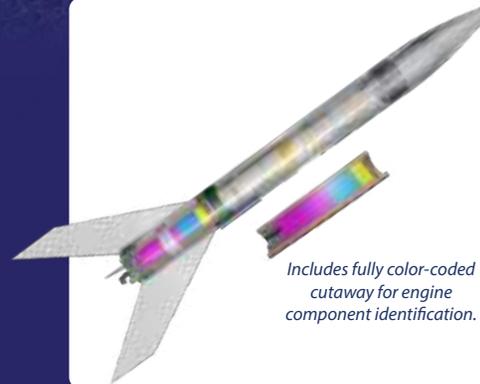
Recovery: Parachute (for demo)

Projected Altitude: Non-Flying Model

Recommended Engines:

Included cutaway engine only.

**#001207**



*Includes fully color-coded cutaway for engine component identification.*

## Altimeter

The Estes Altimeter records heights in one-foot increments up to 10,000 feet (+/- 3 feet). It weighs about 1/2 oz. with a 0.625 diameter. It easily hooks onto the nose cone of your rocket and inserts into the body tube right above the parachute.

**#002246**



- LCD Display
- Store up to 10 flights
- Battery included.

## How High Did It Fly?

Part of the fun in launching a model rocket is knowing how high it goes. The Estes AltiTrak is a favorite, easy-to-use rocketry tool that provides fairly accurate measurements of flight altitudes.

The AltiTrak works like a protractor, providing the angle between the baseline and the triangle's hypotenuse (a big math word for the straight line between the person using the AltiTrak and the rocket when it's at peak altitude).

If you measure the baseline as given in the instructions, the AltiTrak also provides your rocket's altitude. The AltiTrak is great for students' science experiments and for teachers' math lessons!

### AltiTrak™

Measure altitude with this easy-to-use device. Follow the rocket in the sight to apogee, and release the trigger to lock the reading.

#002232



### Mini AltiTrak™

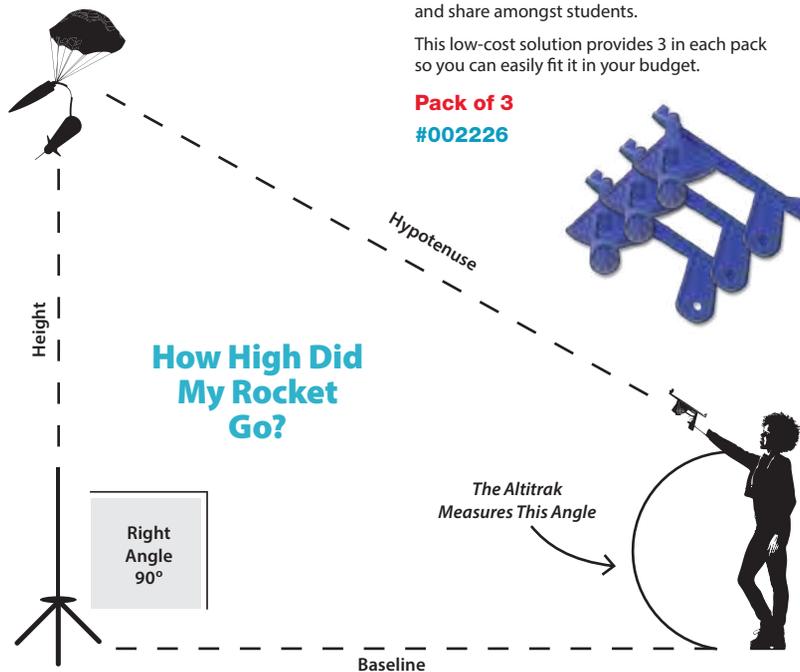
The mini AltiTrak provides a technology solution for students to track, graph and analyze data.

Their small size makes them easy to transport and share amongst students.

This low-cost solution provides 3 in each pack so you can easily fit it in your budget.

Pack of 3

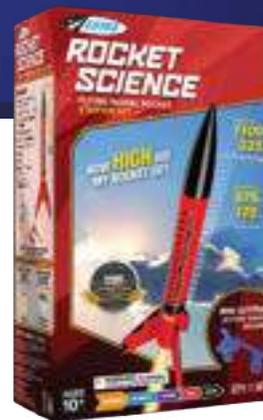
#002226



## How High Did My Rocket Go?

# Promote Engineering Thinking & Design

The (5326) Rocket Science Starter Set was chosen for the 2019 Purdue University Engineering Gift Guide. Build the rocket and launch it with one of two included engine options. Observe as a reaction occurs to make the rocket soar! Launch again with the second engine, and measure the difference in altitude with the included altitude tracker.



### Rocket Science Starter Set

Length: 12.6 in. (32 cm)  
 Diameter: 0.98 in. (25 mm)  
 Recovery: Parachute  
 Projected Altitude: 1100 ft. (335 m)  
 Recommended Engines:  
 1/2 A6-2, A8-3, B4-4, B6-4,  
 B6-6, C6-5, C6-7

#005326

### Set Includes:

- 1 Rocket
- 1 Porta-Pad II Launch Pad
- 1 Electron Beam Launch Controller
- 1 Parachute
- 1ea. B6-4, C6-5 Engine
- 4 Starters
- 4 Plugs
- 12 Sheets of Recovery Wadding
- 1 Mini AltiTrak Altitude Tracker



# ACCESSORIES

*Take Your Rocketry Hobby to the Next Level with Unique Tools, Launch Equipment, and Accessories to Help You Build and Fly.*

Building a model rocket can be as easy as following the instructions - but sometimes you need clean edges, precision alignment, and a flawless finish. For the perfectionist in you, we provide useful jigs, building fixtures, and templates for accurate fin alignment and precision assembly of an Estes model rocket. These tools are made for an expert finish. They make showroom and high-performance modeling look easy.

The Estes model rocket starter is the basic ignition device used to start the combustion process in the rocket engine.



## StarTech™ Model Rocket Starters

The StarTech starters stay true to the design of the original, with one key addition. The small nichrome wire, the one that heats the propellant at launch, has been dipped in a specially-crafted chemical compound that reacts with the heat of the wire to create a large burst of heat and pressure that ensures ignition. Never misfire again! Includes 6 starters.

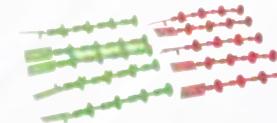
**#002303**

Estes starter plugs are used to safely secure your model rocket starters to your Estes engines during ignition. Different colored starter plugs are designed to accommodate different sized engines. They are a convenient way to ensure the success of your rocket launches; they are reusable.

## Mini Engine Plugs

1/4A3, 1/2A3, A3, and A10 (20 pack)

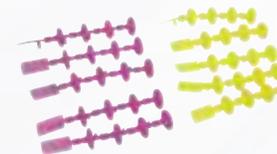
**#002250**



## Standard Engine Plugs

1/2A6, A8, B4, B6, and C6 (20 pack)

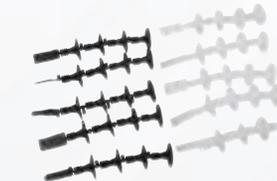
**#002251**



## Large Engine Plugs

C11, D12, E9, E12, E16 and F15 (20 pack)

**#002252**



Shock cords hold the body tube and nose cone of a model rocket together once they separate during the ejection phase. The shock cord is made of an elastic material to help absorb the shock placed upon the rocket when the recovery system ejects, then opens — creating drag during the recovery phase.



## Shock Cords & Mount Pack

Includes three 1/8 in. x 36 in. (3 mm x 91.4 mm) and one 1/4 in. x 36 in. (6 mm x 91.4 mm) rubber shock cords (enough for four shock cords). Includes shock cord mounts and instructions.

**#002278**

Model rocket recovery wadding is placed inside the rockets body tube to protect the recovery system from intense heat and gases during the rocket engine's ejection stage. All Estes recovery wadding is flame resistant, ensuring the safety of your rocket's flight.



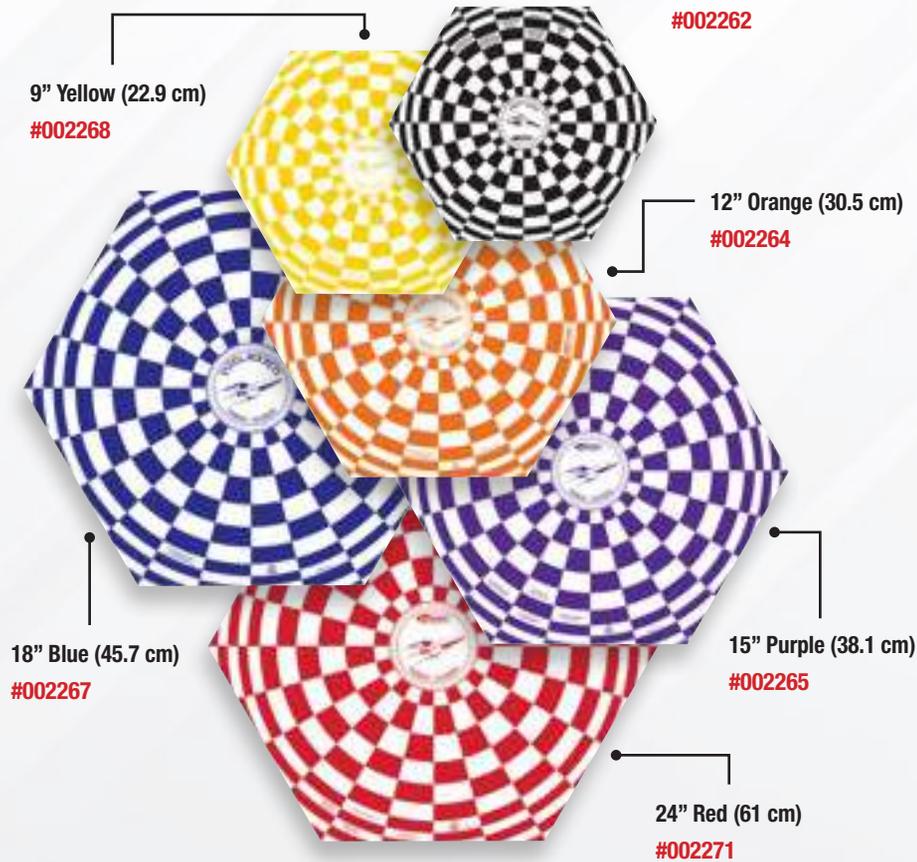
## Recovery Wadding

Required in most Estes rockets. Contains approximately 72 squares — enough for about 18-25 flights!

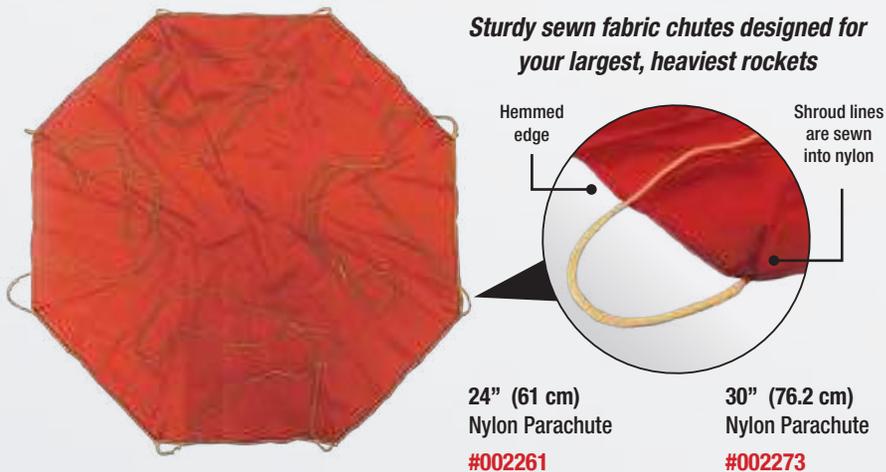
**#002274**

## RECOVERY PARACHUTES

### PLASTIC



### NYLON



## LAUNCH EQUIPMENT

In order to safely and successfully launch your rocket time after time, you'll need the essentials which are a launch base, launch rod, blast plate, and launch controller. Different sized launch bases and launch rods are used to accommodate different sized rockets.

*Perfect for beginners and smaller rockets!*



### Porta-Pad® II & Electron Beam® Launch Controller

Quick assembly - no glue or tools required! Launch rod angle is adjustable. Comes complete with blast deflector, standoff, two-piece 1/8 in. (3 mm) launch rod, and safety cap. Pad can accommodate a 3/16 in. (5 mm) Maxi™ launch rod - not included. Launch controller comes assembled with safety key and 15 ft. (4.6 m) of cable. Requires 4 new 1.5V AA alkaline batteries - not included.

#002222

(Sold Separately)

### Porta-Pad® II Launch Pad

#002215

(Sold Separately)

### Electron Beam® Launch Controller

#002220



### E Launch Controller

Comes assembled with safety key and 30 ft. (9.7 m) of cable. Requires 4 new 1.5V AA alkaline batteries - not included.

#002230

### Blast Deflector Plate

Replaces that worn-out deflector. For use with 2215 Porta-Pad® II.

#002241



### Two Piece Launch Rod 1/8 in. (3 mm)

Replacement rod ideal for most rockets.

#002243

### Two Piece Maxi™ Launch Rod 3/16 in. (5 mm)

Launch rod with extra strength and length for larger rockets.

#002244

### Porta-Pad® E Launch Pad

Quick assembly - no glue or tools required. Launch rod angle is adjustable. Includes a three-piece 1/4 in. (6 mm) launch rod, but can accommodate a 3/16 in. (5 mm) Maxi™ launch rod - not included.

#002238



*Designed for launching larger rockets!*

### Mini Launch Pad & Controller

Just the right size Launch Pad for launching mini engine powered rockets. Requires 4 new 1.5V AA alkaline batteries - not included

#002244

## BUILDING TOOLS

Now you can make exact, easy measurements when attending to your fleet of Estes model rockets. Tube marking guides and fin alignment tools help make your hobby rocket endeavors fast, efficient, and fun! These are must-have items for the advanced model rocket enthusiast.



The Tube Marking Guide Allows for Accurate and Consistent Fin Placement When Building Your Rocket.

### Ultimate™ Tube Marking Guide

Accurately mark your body tubes for a variety of rocket-assembly purposes!

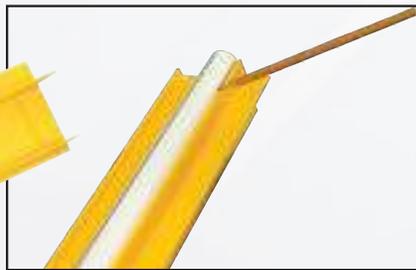
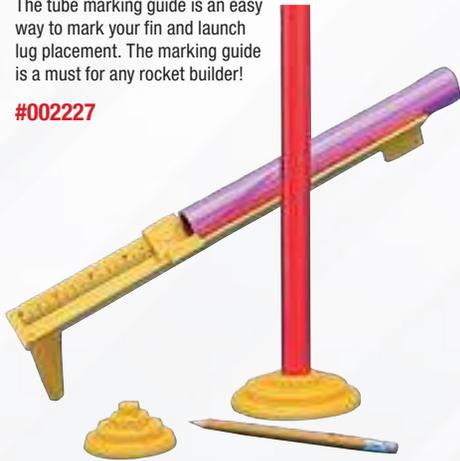
#002228



### Tube Marking Guide

The tube marking guide is an easy way to mark your fin and launch lug placement. The marking guide is a must for any rocket builder!

#002227



The Ultimate Tube Marking Guide Helps Mark Body Tubes of All Different Sizes.

### Never misalign rocket fins again!

### Fin Alignment Guide

Fast and accurate fin alignment for three- or four-finned rockets.

#002231



### Tube Cutting Guides

Assorted sizes: BT-5, BT-20, BT-50, BT-55, and BT-60 (hobby knife not included).

#002315



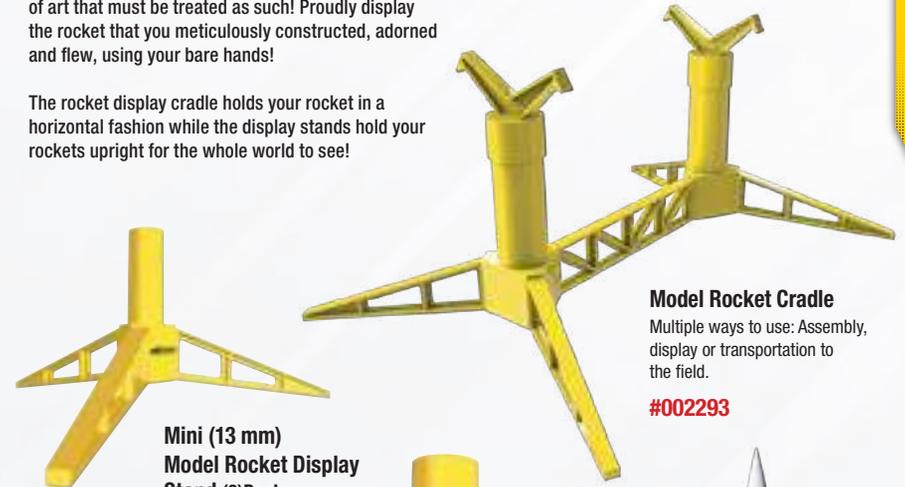
## ROCKET DISPLAYS

Proudly display your rockets and craftsmanship with Estes Display Stands and Rocket Cradles!



In the world of model rocketry, models become works of art that must be treated as such! Proudly display the rocket that you meticulously constructed, adorned and flew, using your bare hands!

The rocket display cradle holds your rocket in a horizontal fashion while the display stands hold your rockets upright for the whole world to see!



Mini (13 mm)  
Model Rocket Display  
Stand (3)Pack

#002290

### Model Rocket Cradle

Multiple ways to use: Assembly, display or transportation to the field.

#002293

Standard (18 mm)  
Model Rocket Display  
Stand (3)Pack

#002291

Large (24 mm)  
Model Rocket Display  
Stand (3)Pack

#002292



## ROCKET PARTS

Model rockets are constructed using various essential parts. Nose cones streamline a rocket's ascent. Nose cone weights help stabilize a rocket's trajectory. Payload sections allow the rocketeer to view their cargo.



### Nose Cone Assortment

Each package of nose cones may contain a variety of shapes. Some are one piece, others two piece. All have eyelets for shock cord and shroud line attachments. (3173 shown)

<b>NC-5</b>	Assortment (5)Pack.....	<b>#003160</b>
<b>NC-20</b>	Assortment (4)Pack.....	<b>#003161</b>
<b>NC-50</b>	Assortment (5)Pack.....	<b>#003162</b>
<b>NC-55</b>	Assortment (4)Pack.....	<b>#003163</b>
<b>NC-56</b>	Assortment (4)Pack.....	<b>#003164</b>
<b>NC-60A</b>	Assortment (3)Pack.....	<b>#003165</b>
<b>NC-80B</b>	Assortment (1)Pack.....	<b>#003168</b>
<b>Sci-Fi</b>	Assortment (5)Pack.....	<b>#003173</b>

### Body Tube Packs

High quality spiral wound paper tubes. Use tube couplers to connect tubes of the same diameter. Outer diameters listed. (not all body tube sizes shown)

<b>BT-5</b>	0.54 in./14 mm diameter • 18 in./45.7 cm long	(4)Pack.....	<b>#003084</b>
<b>BT-20</b>	0.74 in./19 mm diameter • 18 in./45.7 cm long	(4)Pack.....	<b>#003085</b>
<b>BT-50</b>	0.98 in./25 mm diameter • 18 in./45.7 cm long	(3)Pack.....	<b>#003086</b>
<b>BT-55</b>	1.33 in./34 mm diameter • 18 in./45.7 cm long	(3)Pack.....	<b>#003087</b>
<b>BT-60</b>	1.64 in./42 mm diameter • 18 in./45.7 cm long	(3)Pack.....	<b>#003089</b>
<b>BT-80</b>	2.60 in./66 mm diameter • 14 in./36.1 cm long	(2)Pack.....	<b>#003090</b>



### Payload Section Assortment (Clear - BT-20, BT-50, BT-60)

**#003171**



### Clay Nose Cone Weights

**#003180**



### Centering Ring Assortment (BT-5 through BT-50)

**#003175**

## ROCKET PARTS

### Engine Hook Accessory Pack

Hooks fit mini engines (x2), regular and D engines (x3), and E12 engines (x2).

**#003143**



### Laser Cut Centering Ring & Shroud Templates (2 ea.)

**#003179**



### Engine Mount Assorted Parts (3 ea.)

Engine mounts for mini-engines, standard engines, and D engines.

**#003181**



### D & E12 Engine Mount Kit

Heavy duty engine mounts for D and E12 engines. Fits BT-55, BT-60, and BT-80 tubes.

**#003159**

## ROCKET PARTS



**29 mm Pro Series II  
Engine Retainer Set (2 sets)**

#009750



**24 mm Engine Retainer Set  
(2 sets)**

#009751



**18 mm Engine Retainer Set  
(3 sets)**

#003187



**Mini (13mm) to Standard (24 mm)  
Engine Adapters**

Two simple steps transform a mini-engine into a standard size. Insert a mini-engine into the adapter, and insert the adapter into a rocket. 3 adapters per pack. Reusable. (Engines not included).

#002316



**Standard (18 mm) to Large (24 mm)  
Engine Adapters**

Two simple steps transform a standard engine into a 24 mm size. Insert a standard engine into the adapter, and insert the adapter into a rocket. 3 adapters per pack. Reusable. (Engines not included).

#002317



**Launch Lug Pack**

Contains 4 each: 1/8 in. x 2 3/8 in. (3 mm x 60 mm), 1/8 in. x 1 1/4 in. (3 mm x 32 mm), 3/16 in. x 2 in. (5 x 51 mm) and 1/4 in. x 1 in. (6 mm x 25 mm) launch lugs.

#002320



**Waterslide Decal Set**

#003170

## ROCKET PARTS



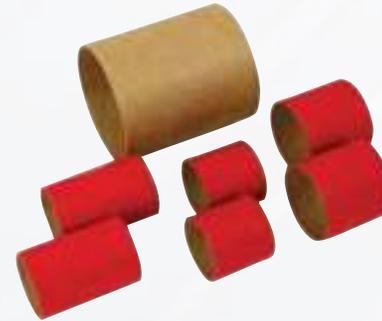
**Tube Couplers (2 ea.) (BT-5, BT-20, BT-50)**

#003176



**Tube Couplers (2 ea.) (BT-55, BT-60)**

#003177



**Tube Couplers Assortment Pack**

Includes two couplers for BT-55, BT-56, and BT-60; One for BT-80.

#003196



**Tube Couplers (2 ea.) (BT-80)**

#003178

**Standard Engine Mount Kit**

Fits BT-50, BT-55, and BT-60 tubes. Can also be used to make a conversion mount for lightweight D powered rockets.

#003158



# ULTIMATE SANDING BAR

with Adhesive 120 Grit Sandpaper

## Ultimate Sanding Bar

Size: 2.75" x 7"  
Includes: (1) 120 Grit Sandpaper

#002318

## Sandpaper Refill Pack

(2) 220 Grit Sandpaper  
(2) 120 Grit Sandpaper  
(2) 80 Grit Sandpaper

#002319

## Sandpaper 180 Grit

Includes 3 sheets per pack

#002323

## Sandpaper 300 Grit

Includes 3 sheets per pack

#002324

## Sandpaper 400 Grit

Includes 3 sheets per pack

#002325

PERFECT ADDITION  
TO ANY  
ROCKET WORKSHOP!

## DESIGNER'S SPECIAL

Challenge your imagination & take your skills to the next level!



Contains over 100 parts so you can design  
and build the rockets of your dreams!

Experiment with your own designs. Includes enough parts  
to build at least 8 complete rockets. Just add some glue and  
your imagination!

Designer's Special™

#001980



Designs shown are for  
inspiration only and may  
include other imaginative  
parts not included in your  
Designer's Special.



# UNIVERSAL ASTROCAM

FITS MOST ESTES  
ROCKETS!

- Records HD Video & Audio on a 16GB Memory Card
- Easily Download Video to Your Computer Via USB 2.0
- Up to 90 Minutes of Recording Time
- Includes Camera, Holder & Reusable Strap That Easily Attaches to Your Rocket

#002208

# ENGINES

*Our world famous model rocket engines have made model rocketry safe since 1958!*

Estes model rocket engines have been proven safe, consistent, and reliable in more than 500 million launches. Thousands of Estes engines are static-tested at the factory for reliability and adherence to performance specifications. All engines comply with the code requirements of the National Fire Protection Association, California Fire Marshal, and are certified by the National Association of Rocketry.



## ENGINE CODES

### LETTER = TOTAL IMPULSE

This letter is the total power (in Newton-seconds) produced by the engine. Each succeeding letter has up to twice the total power as the previous letter. (Example: 'B' engines have up to twice the power of 'A' engines, which results in approximately twice the altitude the rocket will reach.)

### FIRST NUMBER = AVERAGE THRUST

This number shows the engine's average thrust or how fast the engine powers the rocket to go. The higher the number, the faster the speed. It is measured in Newtons (4.45 Newtons = 1lb.).

### SECOND NUMBER = TIME DELAY

This number gives you the time delay in seconds between the end of the thrust phase and the ignition of the ejection charge. Engine types ending in '0' have no time delay or ejection and are used for booster stages and special purposes only. Engines ending in 'P' have no time delay or ejection charge and the forward end is plugged.



## ENGINE DIMENSIONS



### Each Engine Type is Color Coded

■ Single Stage - Green

■ Booster - Red

*Booster engines contain no delay or ejection charge.*

■ Upper Stage - Purple

*Upper stage engines can be used as single stage engines in lightweight rockets.*

■ Plugged - Blue

*Plugged engines are used for rocket-powered racers and contain no delay or ejection charge.*

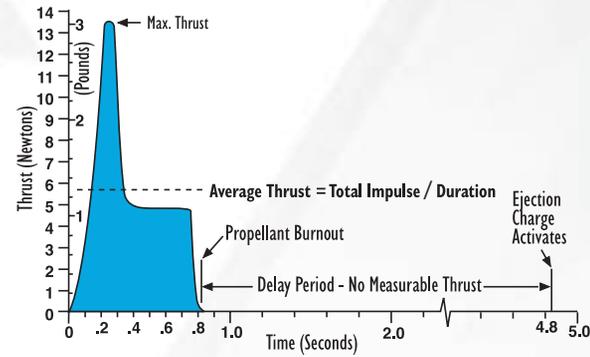
# ENGINE TYPES - PERFORMANCE CHART

OLD Prod. No.	NEW** Prod. No.	Engine Type	Total Impulse	Time Delay*	Est Max Lift Wt		Max Thrust		Thrust Duration	Initial Weight		Propellant Weight		Diameter	QTY Per Pack
			N-sec	Sec	oz	g	Newtons	Lbs	Sec	oz	g	oz	g		
<b>SINGLE STAGE ENGINES</b>															
1502	10010	1/4A3-3T	0.625	3	1.0	28	4.90	1.1	0.25	0.21	5.9	0.05	1.3	13	4
1503	10011	1/2A3-2T	1.25	2	2.0	57	8.30	1.9	0.30	0.23	6.4	0.07	1.9	13	4
1506	10012	A3-2T	2.50	2	2.0	57	6.80	1.5	0.60	0.25	7.1	0.12	3.3	13	4
1507	10013	A3-4T	2.50	4	2.0	57	6.80	1.5	0.60	0.26	7.4	0.12	3.3	13	4
1508	10014	A3-6T	2.50	6	2.0	57	6.80	1.5	0.60	0.27	7.7	0.12	3.3	13	4
1511	10015	A10-3T	2.50	3	3.0	85	13.00	2.9	0.80	0.29	8.1	0.12	3.5	13	4
1593	10016	1/2A6-2	1.25	2	2.0	57	8.90	2.0	0.30	0.48	13.6	0.10	2.7	18	3
1598	10017	A8-3	2.50	3	3.0	85	10.70	2.4	0.50	0.55	15.5	0.14	4.1	18	3
1601	10018	B4-2	5.00	2	4.0	113	13.20	3.0	1.10	0.66	18.6	0.27	7.6	18	3
1602	10019	B4-4	5.00	4	3.5	99	13.20	3.0	1.10	0.68	19.2	0.27	7.6	18	3
1605	10020	B6-2	5.00	2	4.5	127	12.10	2.7	0.80	0.61	17.3	0.23	6.5	18	3
1606	10021	B6-4	5.00	4	4.0	113	12.10	2.7	0.80	0.63	17.8	0.23	6.5	18	3
1617	10022	C5-3	10.00	3	8.0	227	20.40	4.6	1.85	0.83	23.6	0.39	11	18	3
1613	10023	C6-3	10.00	3	4.0	113	15.30	3.4	1.60	0.83	23.4	0.43	12.2	18	3
1614	10024	C6-5	10.00	5	4.0	113	15.30	3.4	1.60	0.85	24.0	0.43	12.2	18	3
1522	10025	C11-3	10.00	3	6.0	170	22.10	4.9	0.80	1.13	32.1	0.44	12.4	24	2
1523	10026	C11-5	10.00	5	5.0	142	22.10	4.9	0.80	1.18	33.4	0.44	12.4	24	2
1566	10027	D12-3	20.00	3	14.0	396	32.90	7.4	1.60	1.57	44.5	0.85	24.2	24	2
1567	10028	D12-5	20.00	5	10.0	283	32.90	7.4	1.60	1.61	45.7	0.85	24.2	24	2
1692	10029	E12-4	30.00	4	17.0	482	30.60	6.9	2.70	2.16	61.2	1.30	36.9	24	3
1693	10030	E12-6	29.50	6	14.0	397	29.60	6.7	2.70	2.23	63.2	1.30	36.9	29	3
1651	10031	F15-4	49.61	4	21.0	595	25.26	5.7	3.45	3.59	101.5	2.12	60	29	2
1652	10032	F15-6	49.61	6	17.0	482	25.26	5.7	3.45	3.66	103.7	2.21	60	29	2
1696	10033	E16-4	33.68	4	20.0	566	26.44	5.9	2.09	2.86	81.0	1.41	40	29	2
1697	10034	E16-6	33.68	6	16.0	453	26.44	5.9	2.09	2.92	82.7	1.41	40	29	2
<b>UPPER STAGE ENGINES</b>															
1504	10035	1/2A3-4T	1.25	4	1.0	28	8.30	1.9	0.30	0.23	6.6	0.07	1.9	13	4
1599	10036	A8-5	2.50	5	2.0	57	13.30	3.0	0.50	0.55	15.7	0.14	4.1	18	3
1607	10037	B6-6	5.00	6	2.5	71	12.10	2.7	0.80	0.64	18.2	0.23	6.5	18	3
1615	10038	C6-7	10.00	7	2.5	71	15.30	3.4	1.60	0.85	24.3	0.43	12.2	18	3
1524	10039	C11-7	10.00	7	4.0	113	22.10	4.9	0.80	1.19	33.8	0.44	12.4	24	2
1568	10040	D12-7	20.00	7	8.0	226	32.90	7.4	1.60	1.62	46.0	0.85	24.2	24	2
1694	10041	E12-8	29.80	8	12.0	340	31.80	7.1	2.70	2.24	63.5	1.30	36.9	24	3
1653	10042	F15-8	49.61	8	15.0	425	25.26	5.7	3.45	3.69	104.4	2.12	60	29	2
1698	10043	E16-8	33.68	8	14.0	396	26.44	5.9	2.09	2.99	84.7	1.41	40	29	2
<b>BOOSTER STAGE ENGINES</b>															
1510	10044	A10-0T	2.50	NONE	4.0	113	13.00	2.9	0.80	0.24	6.8	0.12	3.5	13	4
1600	10045	A8-0	2.50	NONE	3.0	85	13.30	3.0	0.30	0.47	13.5	0.14	4.1	18	3
1608	10046	B6-0	5.00	NONE	4.0	113	12.10	2.7	0.80	0.55	15.7	0.23	6.5	18	3
1616	10047	C6-0	10.00	NONE	4.0	113	15.30	3.4	1.60	0.76	21.4	0.43	12.2	18	3
1521	10048	C11-0	10.00	NONE	6.0	170	22.10	4.9	0.80	1.03	29.2	0.44	12.4	24	2
1565	10049	D12-0	20.00	NONE	14.0	396	32.90	7.4	1.60	1.43	40.4	0.84	23.8	24	2
1691	10050	E12-0	28.80	NONE	16.0	454	31.30	7.0	2.60	2.05	58.1	1.30	36.9	24	3
1650	10051	F15-0	49.61	NONE	19.0	539	25.26	5.7	3.45	3.32	94.0	2.12	60	29	2
1695	10052	E16-0	33.68	NONE	18.0	509	26.44	5.9	2.09	2.58	73.2	1.41	40	29	2
<b>PLUGGED ENGINES - FOR USE WITH ROCKET-POWERED RACERS</b>															
1505	10053	A10-PT	2.50	NONE	3.0	85	13.00	2.9	0.80	0.26	6.83	0.13	3.5	13	4

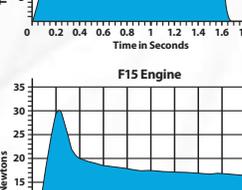
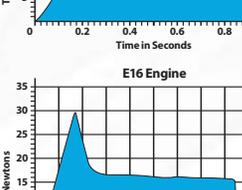
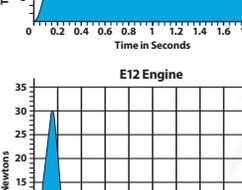
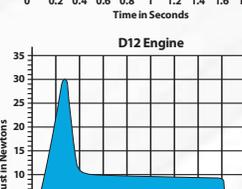
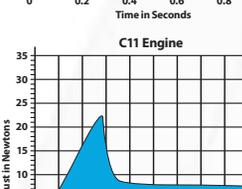
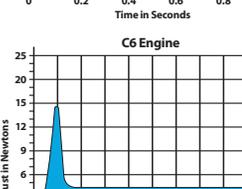
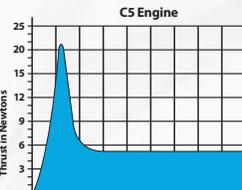
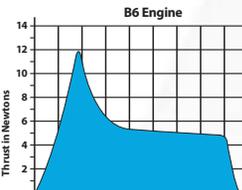
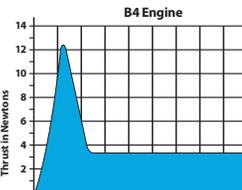
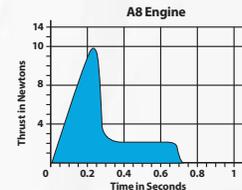
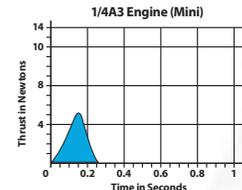
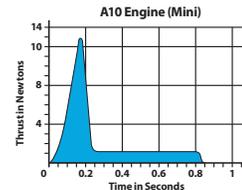
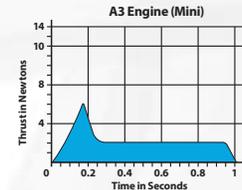
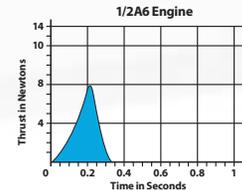
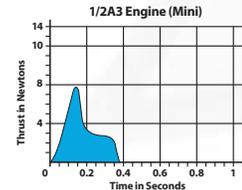
\*\*Estes is changing our engine packaging to a new re-sealable flexi bag. This change will rollout in 2024 at different times of the year based on inventory levels of current engine stock. During this change, the old product numbers will be updated to correspond with the new bag packaging for that engine type. Customers will still be able to search by the old PN or new PN on EstesRockets.com until further notice.

\*Delays have a tolerance of 1.5 seconds or 20%, whichever is greater. The data listed above is from randomly chosen production samples. There are four mini-engines per package. All other engines are two or three per package. NOTE: The "T" designates a mini-engine. All Estes engines come complete with starters and starter plugs. The Estes starter plug makes engine ignition extremely reliable.

# ENGINE TIME / THRUST CURVES



- Time/thrust curves are representative of normal production samples.
- Graphs are not drawn to the same scale.





Estes encourages membership in the  
**NATIONAL ASSOCIATION OF ROCKETRY**  
<https://www.nar.org>

## MODEL ROCKET SAFETY CODE

(Basic Version - Effective August 2012)

**1. Materials.** I will use only lightweight, non-metal parts for the nose, body, and fins of my rocket.

**2. Motors.** I will use only certified, commercially-made model rocket motors, and will not tamper with these motors or use them for any purposes except those recommended by the manufacturer.

**3. Ignition System.** I will launch my rockets with an electrical launch system and electrical motor igniters. My launch system will have a safety interlock in series with the launch switch, and will use a launch switch that returns to the "off" position when released.

**4. Misfires.** If my rocket does not launch when I press the button of my electrical launch system, I will remove the launcher's safety interlock or disconnect its battery, and will wait 60 seconds after the last launch attempt before allowing anyone to approach the rocket.

**5. Launch Safety.** I will use a countdown before launch, and will ensure that everyone is paying attention and is a safe distance of at least 15 feet away when I launch rockets with D motors or smaller, and 30 feet when I launch larger rockets. If I am uncertain about the safety or stability of an untested rocket, I will check the stability before flight and will fly it only after warning spectators and clearing them away to a safe distance. When conducting a simultaneous launch of more than ten rockets I will observe a safe distance of 1.5 times the maximum expected altitude of any launched rocket.

**6. Launcher.** I will launch my rocket from a launch rod, tower, or rail that is pointed to within 30 degrees of the vertical to ensure that the rocket flies nearly straight up, and I will use a blast deflector to prevent the motor's exhaust from hitting the ground. To prevent accidental eye injury, I will place launchers so that the end of the launch rod is above eye level or will cap the end of the rod when it is not in use.

**7. Size.** My model rocket will not weigh more than 1500 grams (53 ounces) at liftoff and will not contain more than 125 grams (4.4 ounces) of propellant or 320 N-sec (71.9 pound-seconds) of total impulse.

**8. Flight Safety.** I will not launch my rocket at targets, into clouds, or near airplanes, and will not put any flammable or explosive payload in my rocket.

**9. Launch Site.** I will launch my rocket outdoors, in an open area at least as large as shown in the accompanying table, and in safe weather conditions with wind speeds no greater than 20 miles per hour. I will ensure that there is no dry grass close to the launch pad, and that the launch site does not present risk of grass fires.

LAUNCH SITE DIMENSIONS

Installed Total Impulse (N-sec)	Equivalent Motor Type	Minimum Site Dimensions (ft.)
0.00-1.25	1/4A, 1/2A	50
1.26-2.50	A	100
2.51-5.00	B	200
5.01-10.00	C	400
10.01-20.00	D	500
20.01-40.00	E	1000
40.01-80.00	F	1000
80.01-160.00	G	1000
160.01-320.00	Two Gs	1500

**10. Recovery System.** I will use a recovery system such as a streamer or parachute in my rocket so that it returns safely and undamaged and can be flown again, and I will use only flame-resistant or fireproof recovery system wadding in my rocket.

**11. Recovery Safety.** I will not attempt to recover my rocket from power lines, tall trees, or other dangerous places.



## ESTES IS A PROUD EDUCATIONAL PARTNER OF THE AMERICAN ROCKETRY CHALLENGE

The American Rocketry Challenge is the world's largest rocket contest with nearly 5,000 students nationwide competing each year. The contest gives middle and high school students the opportunity to design, build and launch model rockets and hands-on experience solving engineering problems.

Visit [rocketcontest.org](http://rocketcontest.org) for more information.

## GET INVOLVED TODAY!

These organizations and institutions support the development of young people. Like Estes, many of these groups provide unique and valuable learning experiences for students, youth leaders, and education professionals. Together we can inspire and engage students to create lasting memories.



[aiaa.org](http://aiaa.org)



[bgca.org](http://bgca.org)



[aia-aerospace.org](http://aia-aerospace.org)



[nar.org](http://nar.org)



[ymca.net](http://ymca.net)



[challenger.org](http://challenger.org)



[4-h.org](http://4-h.org)



[spacecamp.com](http://spacecamp.com)



[gocivilairpatrol.com](http://gocivilairpatrol.com)



[girlscouts.org](http://girlscouts.org)



[scouting.org](http://scouting.org)

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## ESTES WARRANTY STATEMENT

Estes model rocket products are warranted against defects in materials or workmanship for one year from the date of the original purchase. If the Estes product, because of a manufacturing mistake, malfunctions or proves to be defective within the one-year warranty period, it will be repaired or replaced, at Estes' option and at no charge to you.

This warranty does not cover incidental or consequential damage to persons or property caused by the use, abuse, misuse, failure to comply with operating instructions or improper storage of the warranted products. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

For repair or replacement under this warranty, please contact us at [EstesRockets.com](http://EstesRockets.com) or by mail at Estes Industries, LLC, Customer Service Department, 1295 H Street, Penrose, Colorado 81240-9698. For customer service, call (719) 372-5214.

**WARNING:** This product can expose you to silica, which is known to the state of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

All Estes model rocket engine packaging carries this warning.

**WARNING:** Drilling, sawing, sanding or machining wood products can expose you to wood dust, a substance known to the state of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection. For more information go to [www.P65Warnings.ca.gov/wood](http://www.P65Warnings.ca.gov/wood).

Estes Rockets that contain wood parts/components carry this warning.

Availability may be subject to change without notice. Color of products may vary.

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PN-2928 (1-24)

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LEARNING

STEM

FLYING MODEL ROCKET HITS



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