



I G N I T E I M A G I N A T I O N

2023

C A T A L O G



THE WORLD LEADER IN MODEL ROCKETRY



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WELCOME TO ESTES MODEL ROCKETS!

There is no thrill quite like launching a model rocket you have built; watching it streak skyward, reach apogee (peak altitude), then gently return to earth using its recovery system. In a very real sense, model rocketeers experience the same excitement felt by space scientists and astronauts as they push humankind's horizons relentlessly forward to the stars. The best way to get started is with an Estes launch set or starter set (see pages 6-11). Each starter set has nearly everything you need to build and fly your first rocket. As you increase your rocketry skills, you can progress to new and exciting projects including multi-stage rockets, payload experiments, and scale models. Whether you are a beginner or expert, Estes Industries will help you advance higher, further, and faster in your adventures.



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 65 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 a near flawless 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 2023 Catalog! Here you will find how the product information is presented, what it means, as well as price and skill level. We hope a quick understanding will help you make an informed decision to find the right product for you. *Let's launch right in!*

This is our example rocket. It is also featured on page 18.

Rocket Name

Product Number

Rocket Specs

Recovery Type

Projected Altitude

Engine Type Recommended

Price

Xtreme™

Product Number: 7306
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

MSRP \$15.99



SKILL KEY



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**



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**



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**



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**



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**

STARTER SETS!

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.

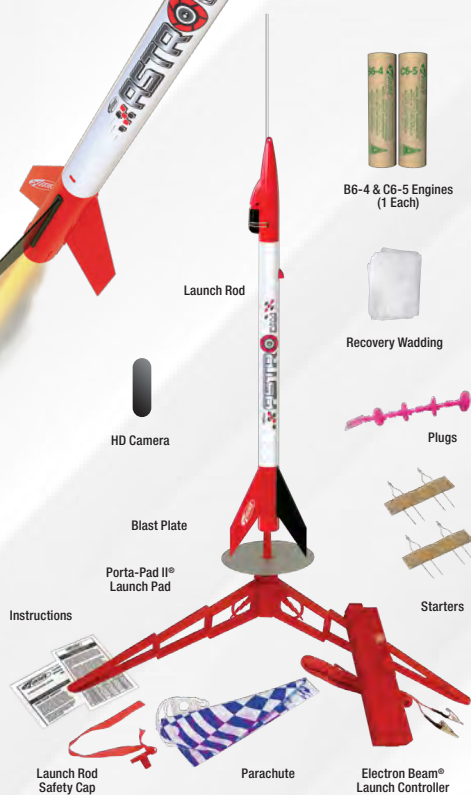
AstroCam® Starter Set

Product Number: 5325
 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

MSRP \$79.99



**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*

Product Number: 5304

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

MSRP \$59.99



*Hobby shop exclusive product.

Includes **2 Engines!**



Rocket Science™ Starter Set*

Product Number: 5302
 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

MSRP \$54.99



*Hobby shop exclusive product.

Includes **3 Engines**
 and an
Altitude Tracker!



LAUNCH SETS!

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.

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.

Space Corps Centurion™ Launch Set

Product Number: 5324
 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

MSRP \$59.99



Includes everything you see here!

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

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

Product Number: 1491
 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

MSRP \$51.99



Alpha III® Launch Set

Product Number: 1427
 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

MSRP \$49.99





**NO ASSEMBLY
REQUIRED!**

Riptide™ Launch Set

Product Number: 1403
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

MSRP \$51.99



**NO ASSEMBLY
REQUIRED!**



2 IN 1

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

MSRP \$57.99



**SNAP TOGETHER
NO GLUE
REQUIRED**

Flash® Launch Set

Product Number: 1478
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

MSRP \$51.99



Tandem-X™ Launch Set

Product Number: 1469

2 IN 1

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

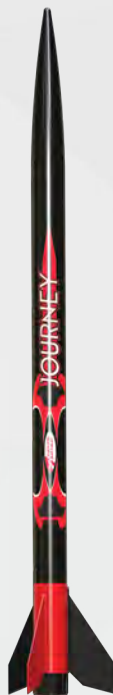
MSRP \$56.99



Journey™ Launch Set

Product Number: 1441
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

MSRP \$52.99



BEGINNER ROCKET KITS

Our easiest rockets to build & fly!

Gnome™

Product Number: 0886
Length: 10.3 in. (26.2 cm)
Diameter: 0.54 in. (14 mm)
Recovery: Streamer
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

MSRP \$10.99



**ALSO AVAILABLE
IN A BULK PACK**
See Pg. 65



Alpha III®

Product Number: 1256
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

MSRP \$23.99



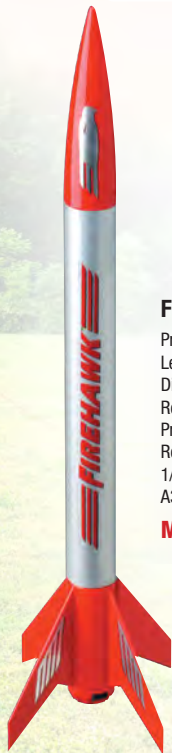
**ALSO AVAILABLE
IN A BULK PACK**
See Pg. 64



Firehawk™

Product Number: 0804
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

MSRP \$11.99



**NO ASSEMBLY
REQUIRED!**

Athena™

Product Number: 2452
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

MSRP \$14.99



**SNAP TOGETHER
NO GLUE
REQUIRED**

Illusion™

Product Number: 7299
Length: 19.3 in. (49 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

MSRP \$21.99



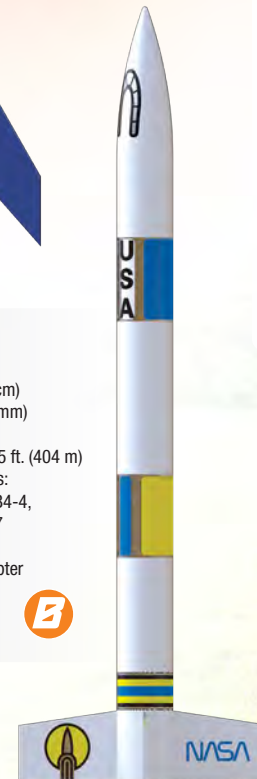
Generic E2X®

Product Number: 2008
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

MSRP \$13.99



**ALSO AVAILABLE
IN A BULK PACK**
See Pg. 64



These easy to build, high flying rockets are perfect for the beginner or quick weekend trips to the launch field!



Starship Octavius™

Product Number: 7284
 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

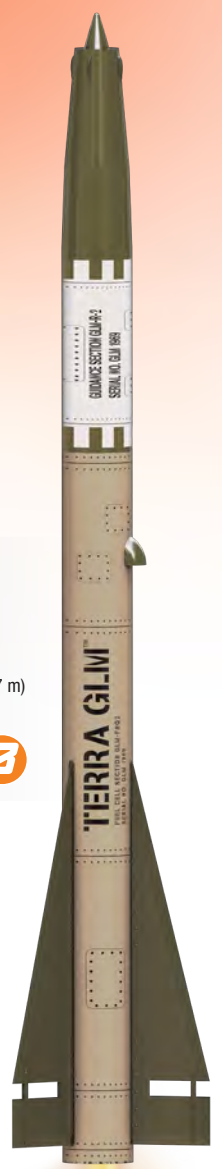
MSRP \$18.99



Terra GLM™

Product Number: 7292
 Length: 17.8 in. (45.2 cm)
 Diameter: 1.1 in. (28 mm)
 Recovery: Parachute
 Projected Altitude: 875 ft. (267 m)
 Recommended Engines:
 B4-4, B6-4, C6-5

MSRP \$21.99



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.

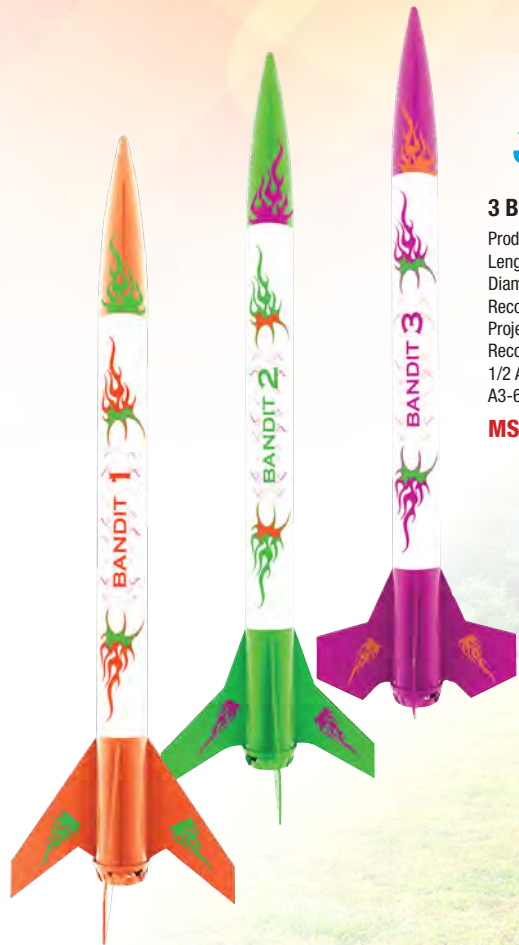
Product Number: 7303
 Length: 7.4 in. (18.8 cm)
 Diameter: 0.74 in. (19 mm)
 Recovery: Streamer
 Projected Altitude: 400 ft. (122 m)
 Recommended Engines:
 1/2 A3-4T, A3-2T, A3-4T,
 A10-3T

MSRP \$14.99



**SNAP TOGETHER
 NO GLUE
 REQUIRED**

**ALSO AVAILABLE
 IN A BULK PACK
 See Pg. 65**



**3 ROCKET
 SET!**

3 Bandits™

Product Number: 2435
 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

MSRP \$25.99





**SNAP TOGETHER
NO GLUE
REQUIRED**

Dragonite™

Product Number: 2169
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

MSRP \$18.99



Ghost Chaser™

All the molded plastic parts in this rocket are a translucent color. Insert the rocket engine and you can see it inside! Truly something unique for your rocket collection!

Product Number: 7300
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

MSRP \$21.99



Cadet™

Product Number: 2021
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

MSRP \$15.99



ASTROCAM® & UNIVERSAL ASTROCAM®

**COME ALONG
FOR THE RIDE!**

- Includes 16GB memory card for hours of HD video content
- Easily connects to your computer's USB port for downloading your videos and charging the camera



**FITS MOST
ESTES
ROCKETS**



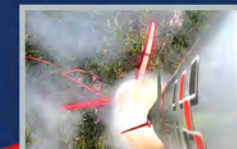
Universal AstroCam®
(Camera Only w/ Holder)

Product Number: 2208
Weight: 0.43 oz. (12.2 g)

MSRP \$49.99

Product images may not be to scale.
For display purposes only.

MSRP \$54.99



INTERMEDIATE ROCKET KITS

Take the next step in model rocketry with rockets that are fun and easy to build!



Hi-Flier®

Product Number: 2178
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

MSRP \$12.99



*Increase your
building skills with
a rocket capable of
Xtreme heights!*

Xtreme™

Product Number: 7306
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

MSRP \$15.99



Luna Bug™

Product Number: 0816
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

MSRP \$7.99



Green Eggs™

Product Number: 7301
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

MSRP \$23.99



*Place an egg in
the rocket payload
section!*

**ALSO AVAILABLE
IN A BULK PACK**

See Pg. 67



Wizard™

Product Number: 1292
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

MSRP \$14.99



**ALSO AVAILABLE
IN A BULK PACK**

See Pg. 66



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!

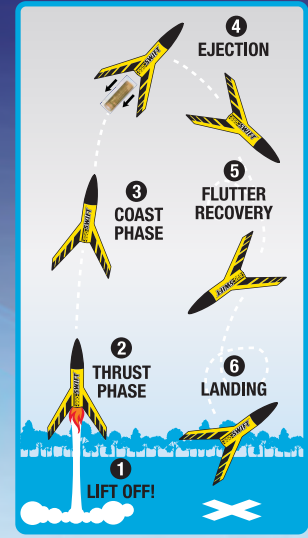
Alpha®
 Product Number: 1225
 Length: 12.3 in. (31.2 cm)
 Diameter: 0.98 in. (25 mm)
 Recovery: Parachute
 Projected Altitude: 1000 ft. (305 m)
 Recommended Engines:
 1/2 A6-2, A8-3, A8-5, B4-4,
 B6-4, B6-6, C6-5, C6-7
 Sold Separately:
 A10-3T w/ Engine Adapter
MSRP \$20.99

**ALSO AVAILABLE
 IN A BULK PACK**
 See Pg. 67

Der Red Max™
 Product Number: 0651
 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
MSRP \$21.99

WISH IT WAS BIGGER?
 See Pro-Series Pg. 58

Mosquito™
 Product Number: 1345
 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
MSRP \$7.99

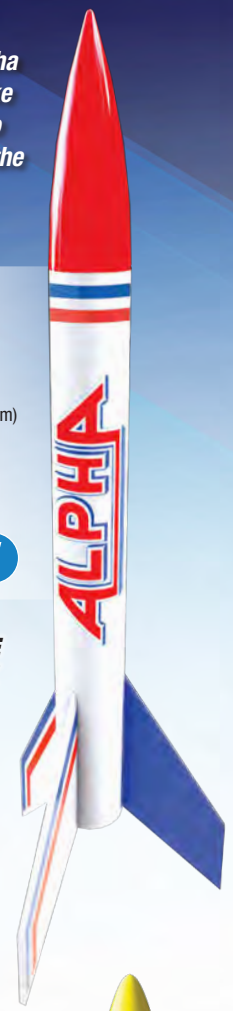


Featherweight rockets are so lightweight that they do not need a recovery system. They "flutter" on their return to earth for a soft landing!

220 Swift™
 Product Number: 0810
 Length: 4.5 in. (11.4 cm)
 Diameter: 0.54 in. (14 mm)
 Recovery: Featherweight
 Projected Altitude: 850 ft. (259 m)
 Recommended Engines:
 1/4 A3-3T, 1/2 A3-2T, 1/2 A3-4T,
 A3-2T, A3-4T, A3-6T, A10-3T
MSRP \$10.99

Crossfire ISX™
 Product Number: 7220
 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
MSRP \$14.99

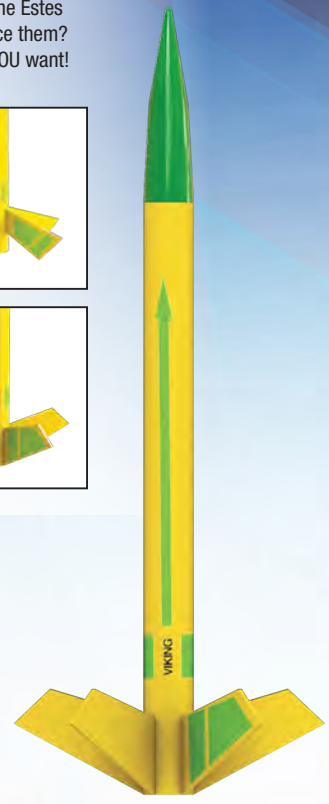
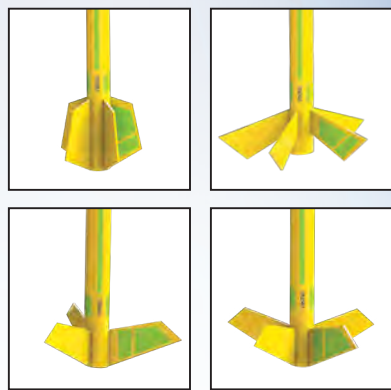
Baby Bertha™
 Product Number: 1261
 Length: 12.8 in. (32.5 cm)
 Diameter: 1.64 in. (42 mm)
 Recovery: Parachute
 Projected Altitude: 575 ft. (175 m)
 Recommended Engines:
 A8-3, B4-4, B6-4, C6-5
MSRP \$15.99





The Viking has 48 various fin configurations to choose from!

It's up to you to decide how to build the Estes Viking! How many fins? Where to place them? It's your choice to create the rocket YOU want!



Big Bertha®

Product Number: 1948
 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

MSRP \$29.99 ⓘ

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

Viking™

Product Number: 1949
 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

MSRP \$14.99 ⓘ

ALSO AVAILABLE IN A BULK PACK
 See Pg. 66

Mean Machine™

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

Product Number: 1295
 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: 75

MSRP \$35.99 ⓘ



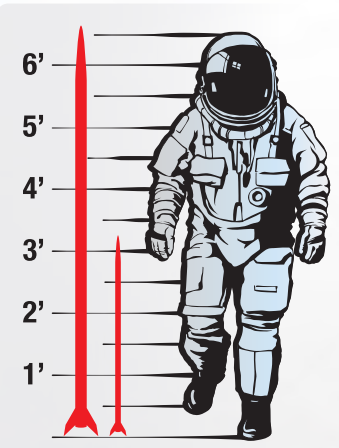
Note: Advanced Skill Build
 The Mean Machine is an Advanced Skill Kit but shown here for comparison purposes.

Mini Mean Machine™

Product Number: 0865
 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

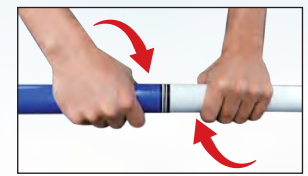
MSRP \$16.99 ⓘ

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



MEAN MACHINE VS. MINI 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!

Nike-X

Product Number: 7259
 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

MSRP \$23.99



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

Tazz™

Product Number: 7282
 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

MSRP \$24.99



Hi-Flier® XL

Product Number: 3226
 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: 75

MSRP \$23.99



Big Daddy™

Product Number: 2162
 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: 75

MSRP \$37.99



Fun to build and even better to fly! Soar to great heights with these two sky piercing customer favorites!

EXPERT ROCKET KITS

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™

Product Number: 7314
Length: 31.3 in. (80 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: 75

MSRP \$49.99



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™

Product Number: 7309
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: 75

MSRP \$37.99



Interceptor™

Product Number: 1250
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

MSRP \$32.99



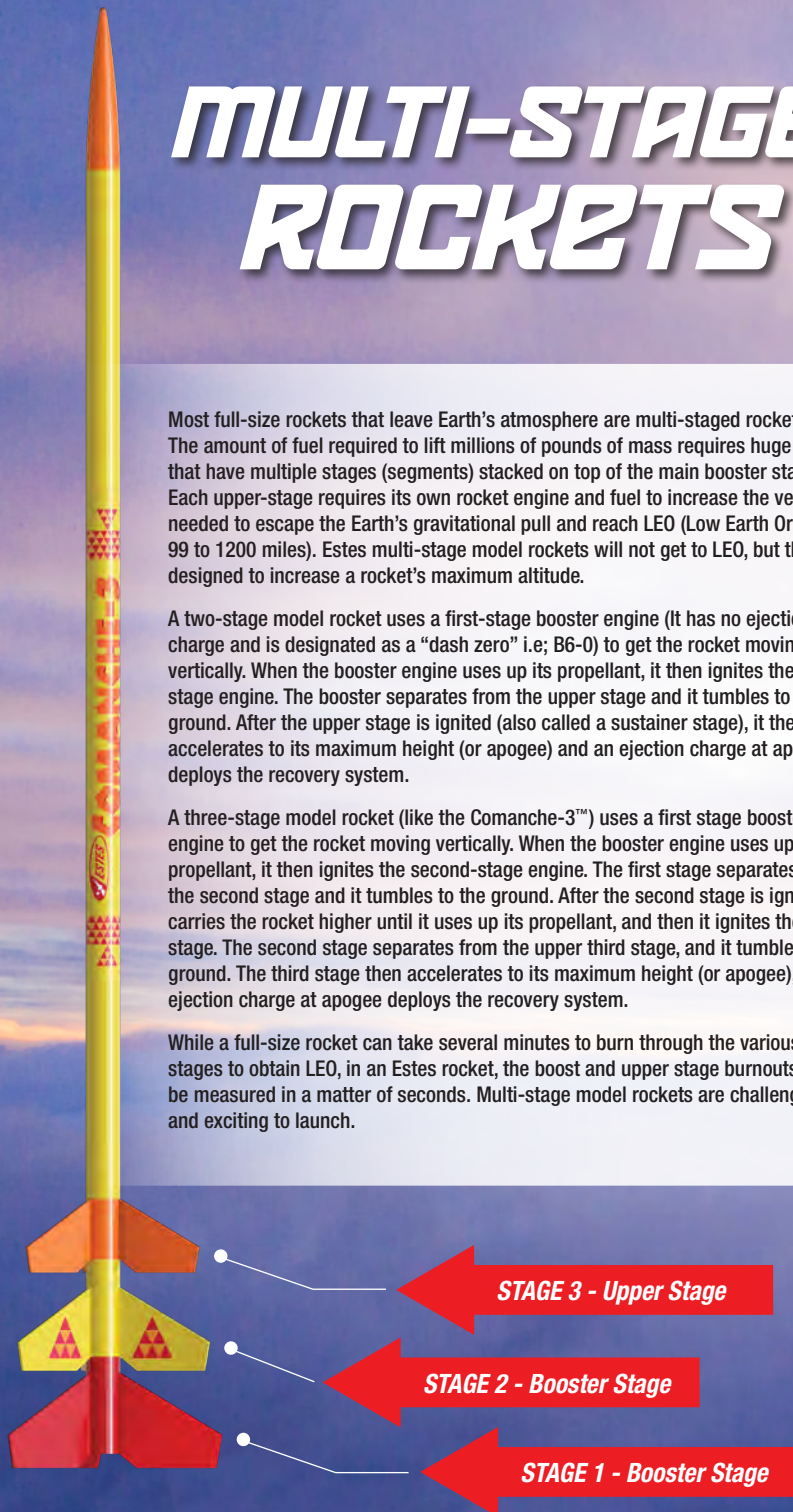
MULTI-STAGE ROCKETS

Most full-size rockets that leave Earth's atmosphere are multi-staged rockets. The amount of fuel required to lift millions of pounds of mass requires huge rockets that have multiple stages (segments) stacked on top of the main booster stage. Each upper-stage requires its own rocket engine and fuel to increase the velocity needed to escape the Earth's gravitational pull and reach LEO (Low Earth Orbit – 99 to 1200 miles). Estes multi-stage model rockets will not get to LEO, but they are designed to increase a rocket's maximum altitude.

A two-stage model rocket uses a first-stage booster engine (it has no ejection charge and is designated as a "dash zero" i.e; B6-0) to get the rocket moving vertically. When the booster engine uses up its propellant, it then ignites the upper stage engine. The booster separates from the upper stage and it tumbles to the ground. After the upper stage is ignited (also called a sustainer stage), it then accelerates to its maximum height (or apogee) and an ejection charge at apogee deploys the recovery system.

A three-stage model rocket (like the Comanche-3™) 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.

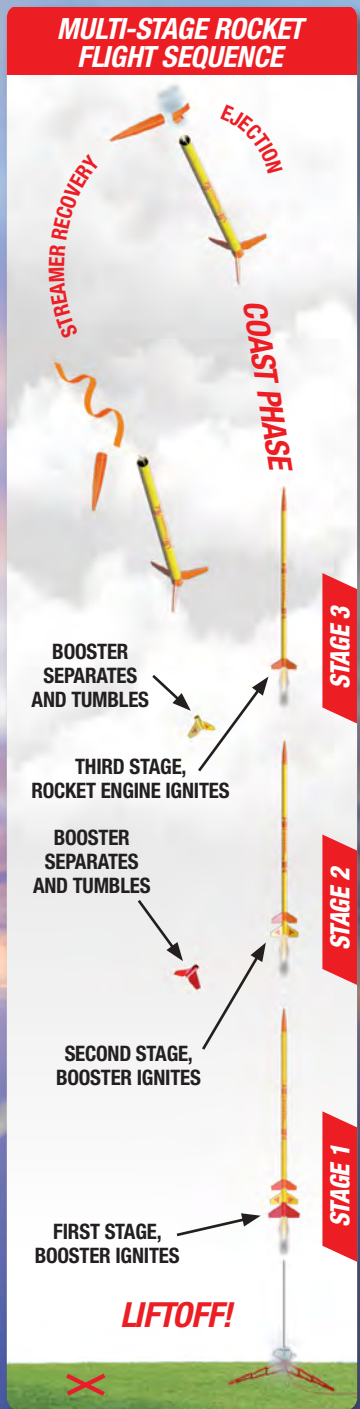
While a full-size rocket can take several minutes to burn through the various stages to obtain LEO, in an Estes rocket, the boost and upper stage burnouts can be measured in a matter of seconds. Multi-stage model rockets are challenging and exciting to launch.



Comanche-3™
 Product Number: 7245
 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

MSRP \$25.99 **E**

Each Multi-Stage rocket booster contains an Estes engine. Once the engine fuel is exhausted, the boosters detach and tumble gently to the ground for reuse!





Reach amazing altitudes with this high flying multi-stage rocket!



Mongoose™

Snakes won't get close to this one! The Mongoose is a two stage rocket that builds into one over the top, high performance rocket! Soars to astonishing heights of 1,600 feet using the Estes standard model rocket engines.

Product Number: 2092
 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

MSRP \$18.99



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.

Product Number: 1946
 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

MSRP \$32.99



WORLD SPACEMODELING CHAMPIONSHIPS ARE RETURNING TO THE USA – AUSTIN, TX JULY 1ST thru 8TH – 2023



SA-2061 Sasha™

Inspired by Russian military design, this scale-like model rocket is sure to enthruse 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.

Product Number: 7271
 Length: 31.5 in. (80 cm)
 Diameter: 1.64 in. (42 mm)
 Recovery: Parachute
 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: 75

MSRP \$32.99



The National Association of Rocketry, the world's oldest and largest sport rocketry organization, in conjunction with the Academy of Model Aeronautics, is pleased to host the 2023 FAI World Championships for Space Models.

1 At Altitude	2 Eg Precision	5 Sa Scale Altitude	7 S Scale
3 Pd Parachute	4 Bg Boost Glider	6 Sd Streamer	9 Hd Gyrocopter
		8 Rc Rocket Glider	
		79 Au Gold	47 Ag Silver
		29 Cu Bronze	

**USA-Texas
2023**
 FAI World Championships for Space Models
 National Association of Rocketry

For More Information Visit:

www.nar.org/championships



Estes is a proud sponsor of the competition and the U.S. Team

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)

Product Number: 7316
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

MSRP \$34.99



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™

Product Number: 7295
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

MSRP \$12.99



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!



Antar™

Product Number: 7310
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

MSRP \$32.99



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.

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.

DESTINATION MARS™

MARS ONE EXPEDITION: UTOPIA PLANITIA

DR. GRACE HENRY, MISSION COMMANDER

19OCT2035 11:12 UT

CMDR HENRY: Altitude 3,000 meters. Some buffeting... increase throttle... 2,000. Landing radar engaged... Surface details visible... hello Utopia! 1,000 meters. MAV throttle-up to 60 percent... landing site targeted. Descending at 20 meters per and slowing rapidly... 500 meters. Correcting drift... 100 meters... 50... 20... 10... contact signal! Engine cut-off.

19OCT2035 11:14 UT

CMDR HENRY: Utopia Outpost reporting. Please be advised: as of this moment, there IS life on Mars!

Commander's Surface Journal

Mission Day 01

"Mars is magnificent! After the swirling red dust kicked up by the MAV settled, we finally got a look at Utopia Planitia - the Plains of Utopia - the vast impact basin in the Mars northern hemisphere that will be our base of operations for the next 33 days. The dusty dunes stretch to the horizon and are every shade of red and brown imaginable, and the sky ranges through the day from vivid pink to baby blue. Truly magnificent!"

Mission Day 03

"I'm ready to direct the crew to unload the MAV and set up the Utopia Outpost habitats. We have a lot of ground to cover - can't wait to test the LAMPNU backpack. LAMPNU... that's quite the mouthful! Going to have to come up with a better name!"

Mission Day 06

"We fired up the backpack today. It was flawless! I've run the simulator many times, but nothing can prepare you for the actual article. So exhilarating! With the backpack you don't so much fly, you leap! When I told the crew this, they started calling it 'The Leaper.' We'll see if the nickname sticks..."

Mission Day 15

"The MAV is our only ticket off Mars and today we almost lost it. Mission Pilot Finn Watts was conducting his daily inspection and noticed a growing fissure in the soil under landing strut #2. Acting quickly, Watts activated the MAV thrusters and repositioned the lander to a rocky plain 100 meters east of Utopia Outpost. If Watts had waited even one more minute, the fissure would have toppled the lander. We owe him our lives."

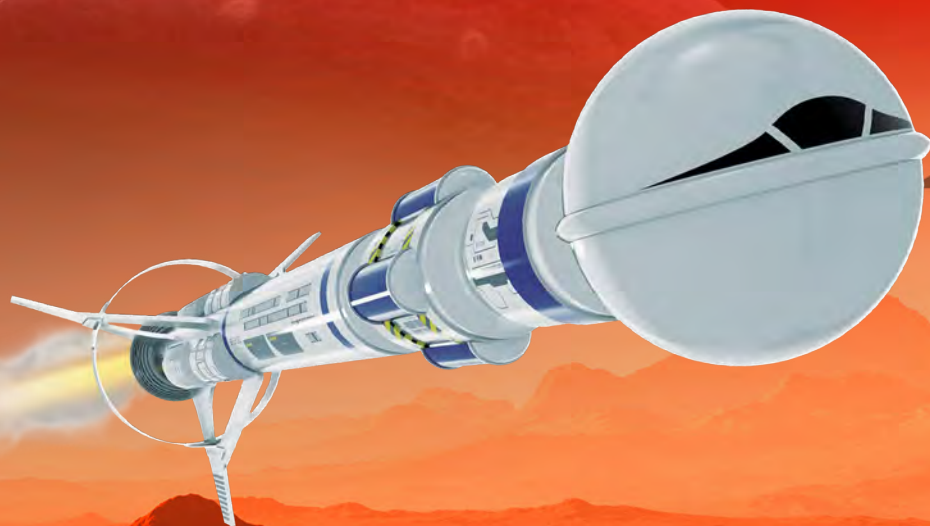
Mission Day 22

"A discovery for the ages! Excavating an early-Mars streambed formation, Mission Exopaleontologist Max Kolb uncovered evidence of fossilized flora - an ancient Martian grove, right under our feet! The answer to the question of life on Mars has been answered. Mars was once a living planet. Will it be again?"

Mission Day 33

"Today ends our mission and humanity's first adventure on another world. We leave as we arrived, peaceful visitors from the blue planet, seeking only to learn from the red planet, and to maybe, someday, make it our home."

DESTINATION MARS



DESTINATION MARS MARS LONGSHIP™

Mission: Interplanetary transport
Complement: 32 crew / up to 120 colonists
Propulsion: Phased fusion induction
First Flight: 2052

Operational Notes: Support the Mars exploration and colonization effort. The Mars Longship completes the Earth-Mars circuit every 12 to 18 months, depending on orbital positioning. This massive transport remains in Mars orbit while colonists and cargo are ferried to the surface aboard next generation MAV Landers. Each transit of the Mars Longship replenishes the Mars base and acts as a vital link for the colonists to old Earth.

This spectacular Estes Mars Longship includes laser cut wood fins and struts, an extended nosecone/crew compartment, molded plastic and cardstock components, and two big sheets of detailed water-slide decals to add the perfect touch of realism! Be prepared for long, slow liftoffs on a recommended Estes D or E engine. Impressive on the pad and in flight!

Product Number: 7296
 Length: 27.2 in. (69.1 cm)
 Diameter: 1.33 in. (34 mm)
 Recovery: Parachute
 Projected Altitude: 500 ft. (152 m)
 Recommended Engines:
 D12-3, E12-4

Requires (Sold Separately):
 3/16 in. Maxi™ Launch Rod
 See Page: 75

MSRP \$37.99



DESTINATION MARS LEAPER™

Mission: Personal transport
Complement: 1 pilot
Propulsion: High efficiency chemical reaction rockets
First Flight: 2035

Operational Notes: Official designation – Low-Altitude Mars Personal Maneuvering Unit (LAMPMU). Carried to the surface on the Mars One Expedition, the LAMPMU, often referred to as “The Leaper,” enabled crew to rapidly travel between habitats. The first Mars surface test flights were conducted by Mission Commander Grace Henry. Modified versions of The Leaper (Mark II – Mark V) were utilized by each successive Mars Expedition.

The Leaper is a lightweight, highly detailed, pre-finished model rocket that requires almost no assembly - you'll be ready to “leap” in minutes! Count down and watch the Leaper lift-off from the launch pad and fly up to 75 ft. on a recommended Estes mini engine before gently tumbling back, ready to leap again!

Product Number: 7297
 Height: 7.7 in. (19.6 cm)
 Diameter: 0.54 in. (14mm)
 Diameter w/ legs: 23.4 in. (59.4 cm)
 Recovery: Featherweight
 Projected Altitude: 75 ft. (23 m)
 Recommended Engines:
 A10-OT

MSRP \$24.99



DESTINATION MARS MAV™

Mission: Surface-orbit transport
Complement: 2 crew / 6 science staff
Propulsion: Focused reaction jets
First Flight: 2035

Operational Notes: The robust Mars Ascent Vehicle (MAV) was essential to the success of the Mars One Expedition. Landing and returning the crew safely paved the way for successive missions, with longer surface stays and more challenging goals. The next generation MAVs, with increased capacity for crew and cargo, would help build the Mars base, and later, the Mars colony.

Simple to assemble, the MAV features molded plastic fins struts, a detailed pre-wrapped body tube, and a realistic “capsule” nosecone, the Estes MAV Lander can be built and flown in the same day. A durable, dependable, and fun rocket that flies great on a recommended Estes C engine.

Product Number: 7283
 Length: 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

MSRP \$21.99





The first Vesta Intrusion of 2055 was a watershed moment for humanity. An alien trespasser was detected lurking among the asteroids and humankind realized that in the face of a true threat, it was helpless. Space Corps assessed its vulnerabilities and prepared for a possible second intrusion. Twenty-one years later, those preparations are put to the test...

31JUL2076 0111 UT. SECURE CHANNEL AUTHORIZED... BEGIN TRANSMISSION...
EXTRA-SOLAR INTRUDER DETECTED NEAR VESTA. INTENTIONS UNKNOWN. ALL
STATIONS AND ALL VESSELS GO IMMEDIATELY TO MAXIMUM THREAT LEVEL.
HOSTILITIES MAY BE IMMINENT ... END TRANSMISSION

ABOARD SPACE CORPS CENTURION INTERCEPTOR 124B - "BLUEBIRD" - ON PATROL NEAR ASTEROID VESTA

Centurion pilot Lt. Dominic "Dominator" Andrews listened to the threat alert and shared a glance with his navigator and weapons officer, Lt. Billy "Booster" Barnes. They didn't need a warning about a mysterious intruder... they were staring at the thing! Sleek, menacing, and utterly alien, the massive spaceship was sliding effortlessly past their Centurion interceptor, away from Vesta and toward the inner planets, and Earth.

There was no mistaking what they were seeing - the Vesta Intruder had returned! But what were its intentions? Barnes whispered to his pilot "what do you think, Dom? Friend or foe?" The aft end of the strange craft was spewing particles and glowing a ghostly green. The forward section bulged with strange protrusions. There were no obvious weapons. Just immense, intimidating power.

Andrews knew it was no secret that Space Corps had been planning for this day since the first Vesta intrusion in '55. He knew that a fleet of Centurion interceptors, Corvette attack vessels, and every other defensive asset of the Corps were even now deploying to face the Intruder. He knew these things, but he wondered: was it enough?

He thought for a moment of his Space Corps Academy days. "Know your job, do your part, and the rest will follow," Admiral Beard used to tell the assembled students. The Old Man had great faith in the Corps and the cadets he was training. Lt. Dominic Andrews hoped he was right...

SPACE CORPS VESTA INTRUDER™

Mission: Unknown
Complement: Unknown
Propulsion: Unknown
First Flight: Unknown

Operational Notes: Its origins are a mystery, as is its composition and its purpose. What is known is this: on June 24, 2055, a Corvette convey detected an anomalous energy source near Asteroid Vesta. Investigating, the patrol encountered a large alien spacecraft engaged in observations of Earth. As quickly as it was spotted, the mysterious intruder disappeared in a flash of green light. Stunned by undeniable evidence of an alien intelligence, an uncertain humanity prepared for its return. Twenty-one years later, it did return. And this time, humanity was ready...

At more than two feet in length, the Vesta Intruder is large and intimidating. Claw-like fins, bulging mid-body strakes, and an immense molded nosecone come together to make one truly alien-looking rocket! This Advanced-Level kit will test your modeling skills, but the results are worth it, especially when you watch it lift-off under the power of a recommended Estes C or D engine.

Product Number: 7312
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: 75

MSRP \$37.99



SPACE CORPS

DARC-1™

Mission: Exploration, Survey
 Complement: 2 crew / 2 science staff
 Propulsion: Ion reaction (2nd gen)
 First Flight: 2052

Operational Notes: Before the Deep Atmosphere Research Craft (DARC-1), only robotic probes could safely pierce the crushing atmospheres of Venus, Jupiter, Saturn, and other impenetrable worlds. Lifting body characteristics for stability in dense atmospheres, and a breakaway aft booster to escape deep gravity wells are crucial features of this research rocket. When the original DARC-1 was lost during a rescue mission over Titan, Space Corps authorized six new spacecraft.

Designed around a detailed, conical plastic shroud, this kit is unlike any other model rocket! Show up at your launch site with this one, and watch every head turn as it roars off the pad on a recommended Estes B or C engine. Challenge yourself with the Expert-Level DARC-1 kit.

Product Number: 7307
 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

MSRP \$32.99



No Assembly Required!



SPACE CORPS
CENTURION™

Mission: Interceptor, fighter
 Complement: 1 pilot / 1 navigator
 Propulsion: Pulsed plasma thruster
 First Flight: 2061

Operational Notes: Developed under a crash program in response to the first Vesta Intrusion of 2055, the Centurion Space Interceptor is armed with a phased energy cannon array, and mounting points for missiles and kinetic weapons. This compact fighter is highly maneuverable and capable of 12G acceleration and Mach 6.3 in atmosphere. The Centurion fleet is tasked with protecting Earth and the Solar-colonies from any threat.

The Estes Space Corps Centurion Fighter is molded from highly durable EPP foam. When bent or crushed the Centurion pops back into shape and is ready to launch again. This model rocket comes pre-finished and almost-ready-to-fly – simply attach the parachute and you're all set to launch!

Product Number: 7291
 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

MSRP \$32.99



SPACE CORPS
CORVETTE CLASS™

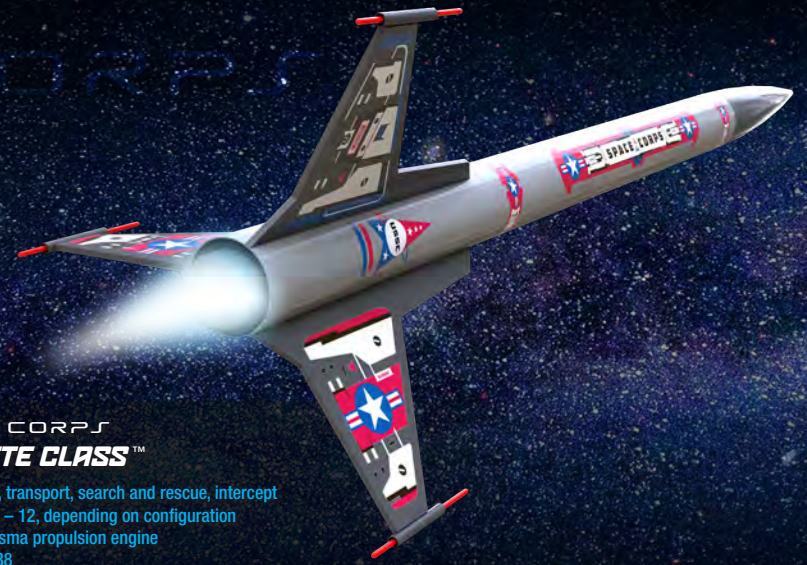
Mission: Patrol, transport, search and rescue, intercept
 Complement: 6 – 12, depending on configuration
 Propulsion: Plasma propulsion engine
 First Flight: 2038

Operational Notes: The primary "ship of the line" for Space Corps. The Corvette Class rocket has been pressed into many roles within the fleet, including patrol, transport, interdiction, and search and rescue. With upgrades, Space Corps anticipates maintaining the Corvette fleet into the 2070s and beyond.

The Corvette Class takes the classic model rocket design and cranks it up to "very cool!" This Intermediate-Level kit is a straightforward build that's loaded with great details, and it's no slouch on the pad, either. Look out for amazing flights using the recommended Estes B and C engines.

Product Number: 7281
 Height: 25 in. (63.5 cm)
 Diameter: 1.33 in. (19 mm)
 Recovery: Parachute
 Projected Altitude: 650 ft. (198 m)
 Recommended Engines:
 B4-4, B6-4, C5-3, C6-3, C6-5

MSRP \$26.99



SPACE CORPS
LUNAR SCOUT™

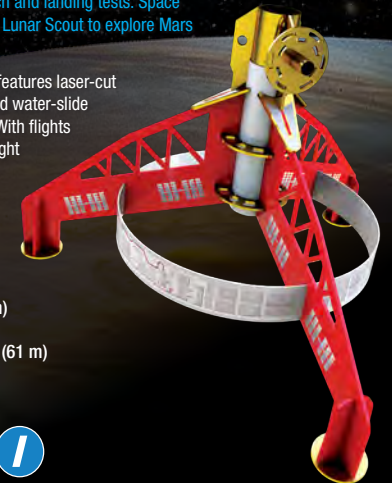
Mission: Exploration, survey
 Complement: Robotic AI
 Propulsion: Ion reaction (1st gen)
 First Flight: 2026

Operational Notes: This adaptable probe led the way for the return to the moon by mapping large sections of the lunar surface and performing remote approach and landing tests. Space Corp later reconfigured the Lunar Scout to explore Mars and its moons.

This Intermediate-level kit features laser-cut cardstock parts and detailed water-slide decals for added realism. With flights up to 200 feet and lightweight recovery, the Lunar Scout is a great small field launcher.

Product Number: 7290
 Height: 4 in. (10.2 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

MSRP \$11.99





SCALE MODEL ROCKETS



Estes is a scale modeler's dream that brings together both the hobby of model rocketry and history. For over 65 years, Estes has produced the finest scale replicas of rockets and missiles.



SPACEX FALCON 9

THE MOST ANTICIPATED MODEL ROCKET OF THE YEAR



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, looks great in flight, and on its custom display stand.

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

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



Product Number: 7315
 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

MSRP \$35.99



Product Number: 2198
 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

MSRP \$69.99



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 (or ready to fly) rockets are great for home or office display and are also easily prepared for flight. Intermediate skill 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.

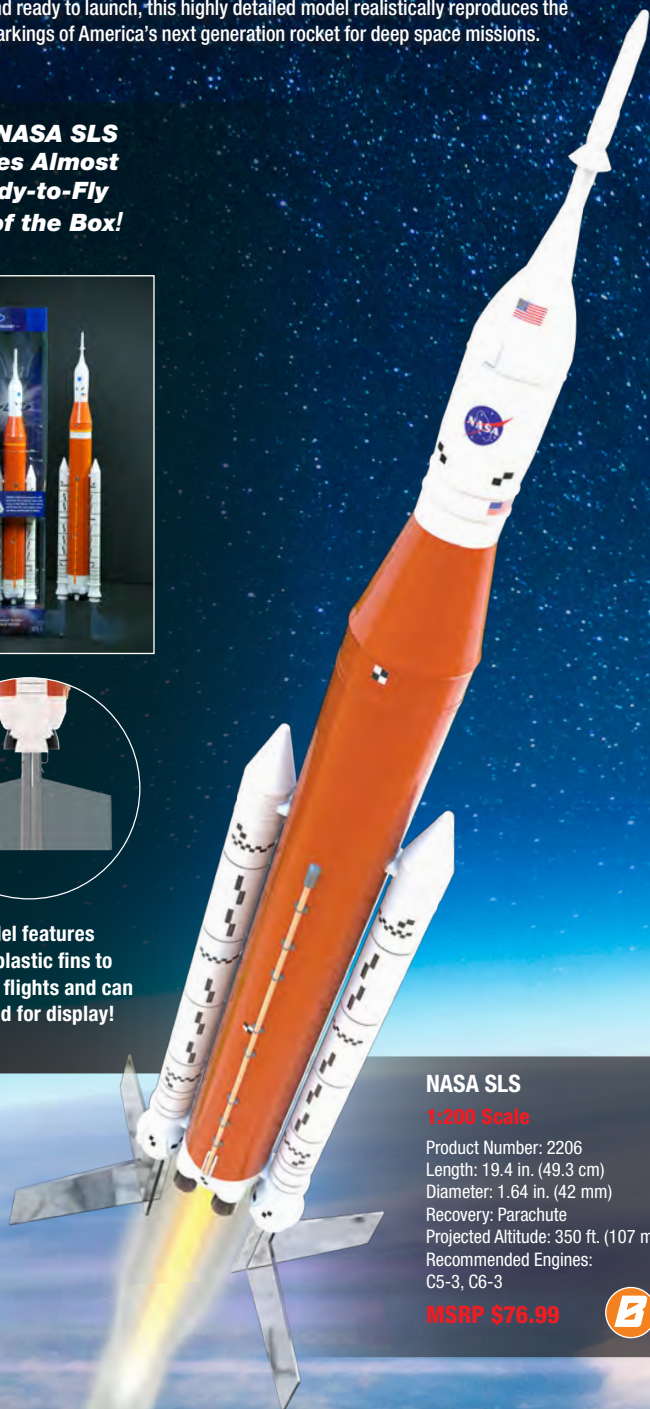


The Estes 1:200 scale replica of this rocket portrays the Project Artemis Block 1 configuration, the first in the proposed series of heavy lift launch vehicles. Pre-assembled, pre-finished, and ready to launch, this highly detailed model realistically reproduces the features and markings of America's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

Product Number: 2206
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

MSRP \$76.99 

The Estes commemorative 1:200 scale Apollo II 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!



50th Anniversary Saturn V
1:200 Scale

Product Number: 2160
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

MSRP \$76.99 



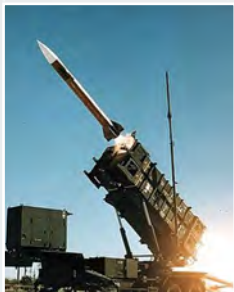
The MIM-104 Patriot is a surface-to-air missile (SAM) system, the primary of its kind used by the United States Army and several allied states. The AN/MPQ-53 at the heart of the system is known as the "Phased Array Tracking Radar to Intercept on Target" which is a backronym for PATRIOT.

U.S. Army Patriot M-104

1:10 Scale

Product Number: 2056
 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

MSRP \$20.99



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

Product Number: 2446
 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

MSRP \$13.99



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

Product Number: 7243
 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: 75

MSRP \$25.99



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

Product Number: 7000
 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

MSRP \$22.99





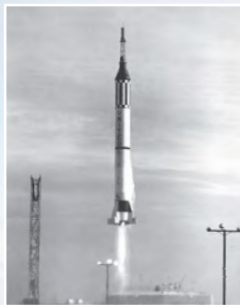
Mercury-Redstone 4 was the second U.S. human spaceflight, on July 21, 1961. The suborbital Project Mercury flight was launched with a Mercury-Redstone Launch Vehicle, MRLV-8. The spacecraft, Mercury capsule #11, was nicknamed Liberty Bell 7. It was piloted by astronaut Virgil "Gus" Grissom.

**Mercury Redstone 4
Liberty Bell 7**

1:34 Scale

Product Number: 1921
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

MSRP \$29.99



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

Product Number: 7251
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

MSRP \$76.99



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

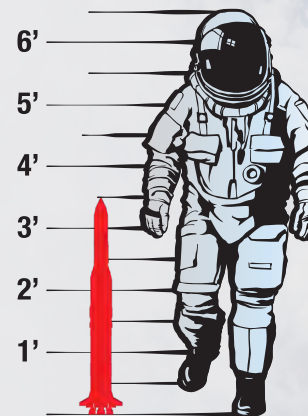
1:100 Scale

Product Number: 1973
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

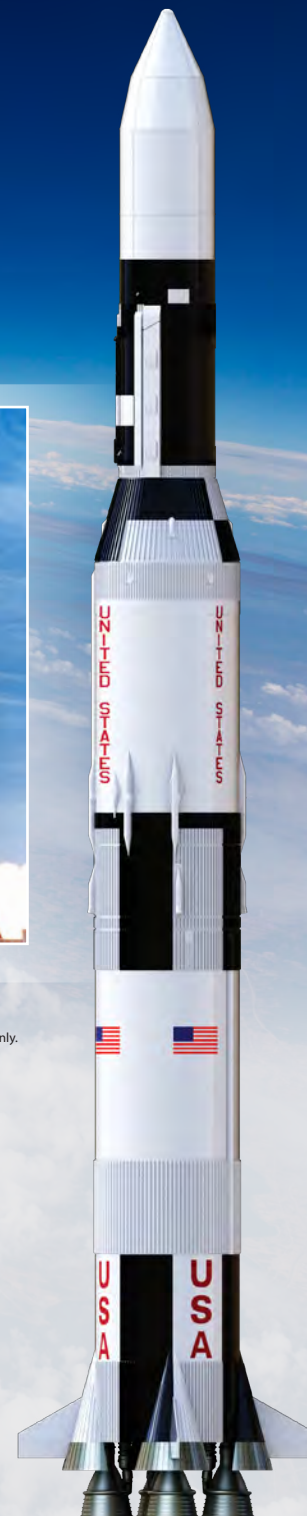
MSRP \$109.99



Note: Not to Scale
Shown for display purposes only.



SATURN SKYLAB





PRO SERIES II

POWERED BY OUR LARGEST ENGINES!

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 59*

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.

AVAILABLE
EARLY 2023!

PRO SERIES II

So Long™

Product Number: 9722
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

MSRP \$39.99



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

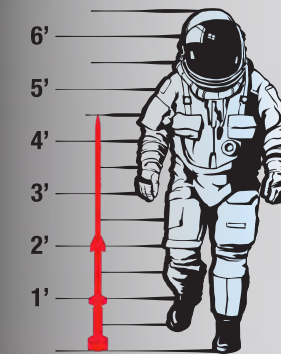


PRO SERIES II

Black Brant XII

1:14 Scale

Product Number: 9723
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



BLACK BRANT XII

EXCITING NEW ADDITIONS TO THE PRO SERIES II FAMILY COMING LATER THIS YEAR!

PRO SERIES II

Great Goblin™

Product Number: 9724
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





PRO SERIES II

POWERED BY OUR LARGEST ENGINES!



PRO SERIES II

Super Big Bertha™

Product Number: 9719
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

MSRP \$43.99



PRO SERIES II

Doorknob

1:5.3 Scale

Product Number: 9720
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

MSRP \$43.99



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



PRO SERIES II

Star Orbiter™

Product Number: 9716
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

MSRP \$26.99



PRO SERIES II

Majestic™

Product Number: 9707
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

MSRP \$53.99



STAR ORBITER

*Fly it as a
two stage using
the E2X Booster
accessory!
See pg. 58*





BIG ROCKETS WITH BIG ACCESSORIES!

PRO SERIES II™



PRO SERIES II

Der Big Red Max™

Product Number: 9721
 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

MSRP \$54.99



PRO SERIES II



Engine Adapter Set (29mm - 24mm)

Product Number: 9753

MSRP \$6.99

PRO SERIES II



Shock Cord Accessory Pack

3 heavy-duty elastic shock cords;
 1/2 in. (13 mm) x 96 in. (243.8 cm)
 Product Number: 3172

MSRP \$11.99

PRO SERIES II



E2X® Booster

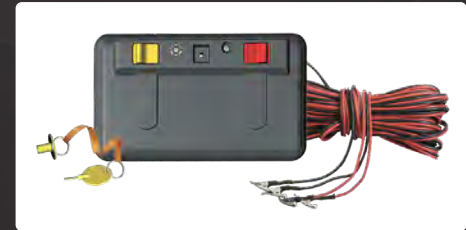
For use with the Majestic (9707)
 Recommended Engine: F15-0
 Product Number: 9752

MSRP \$10.99

PS II Recovery Wadding

Approximately 216 sheets for larger rockets.
 Can also be used in any Estes rocket.
 Product Number: 3556

MSRP \$10.99



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)

Product Number: 2240

MSRP \$43.99

PRO SERIES II

Launch Base

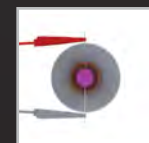
- Stands 18 inches off the ground!
- Sturdy enough to launch our biggest Pro Series rockets
- Two-piece 1/4 in. (6 mm), 5' (152.4 cm) Launch Rod

Product Number: 3552

MSRP \$49.99

Engine Configurations for a Cluster Launch

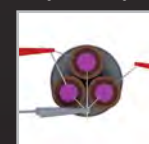
Config. 1 - Single Engine



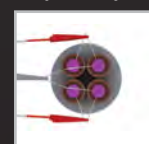
Config. 2 - Two Engine



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).



A place where you can 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 21st century skills with your students through lesson plans that promote communication, collaboration, and critical thinking.

Gain confidence in effectively teaching STEM to promote real world learning in the classroom.

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

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

1. **Prepare.** Build a rocket and launch it ahead of time! It's helpful to have that experience before you launch with your students.
2. **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!
3. **Be Flexible.** Sometimes lessons don't go according to plan. Have backup activities ready in case things change.
4. **Connect.** STEM and rocketry go hand in hand. Use every opportunity to connect rockets to the science or math concepts you are teaching.
5. **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**



1764 Generic E2X® Bulk Pack

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

Pack of 12
MSRP - \$129.99



**ONE PIECE
MOLDED FIN UNIT**



1751 Alpha III® Bulk Pack

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

Pack of 12
MSRP - \$144.99



**ONE PIECE
MOLDED FIN UNIT**



1721 Star Hopper™ Bulk Pack

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

Pack of 12
MSRP - \$144.99



**PLASTIC SNAP IN FIN'S:
NO GLUING!**

1749 Gnome™ Bulk Pack

Length: 10.3 in. (26.2 cm)
Diameter: 0.54 in. (14 mm)
Recovery: Streamer
Recommended Engines:
1/4 A3-3T, 1/2A3-2T, 1/2A3-4T,
A3-2T, A3-4T, A3-6T, A10-3T

Pack of 12
MSRP - \$79.99



**ONE PIECE
MOLDED FIN UNIT**

Educator Bulk Packs

**2 hrs
OR LESS**

INTERMEDIATE

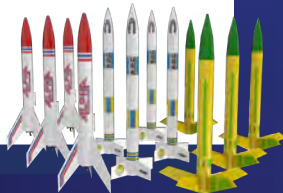


1753 AVG Bulk Pack

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

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

Pack of 12
MSRP - \$99.99



1754 Wizard™ Bulk Pack

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

Sold Separately:
A10-3T w/ Engine Adapter

Pack of 12
MSRP - \$89.99



**INDIVIDUAL FINNS THAT GLUE
ONTO THE BODY TUBE**



1755 Viking™ Bulk Pack

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

Sold Separately:
A10-3T w/ Engine Adapter

Pack of 12
MSRP - \$94.99



**INDIVIDUAL FINNS THAT GLUE
ONTO THE BODY TUBE**

1756 Alpha® Bulk Pack

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

Sold Separately:
A10-3T w/ Engine Adapter

Pack of 12
MSRP - \$144.99



**INDIVIDUAL FINNS THAT GLUE
ONTO THE BODY TUBE**



1718 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
MSRP - \$219.99



**INDIVIDUAL FINNS THAT GLUE
ONTO THE BODY TUBE**

1706 Orbis 3D™ Bulk Pack

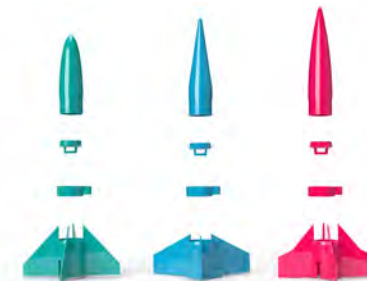
Students 3D print these parts!

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

MSRP - \$69.99



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.



- 1788 1/2A3-4T Engines** (24); 30 starters; 24 plugs; 72 sheets wadding **MSRP - \$69.99**
- 1781 A8-3 Engines** (24); 30 starters; 24 plugs; 72 sheets wadding **MSRP - \$73.99**
- 1783 B6-4 Engines** (24); 30 starters; 24 plugs; 72 sheets wadding **MSRP - \$89.99**
- 1784 B6-0 & B6-6 Engines** (12 each); 30 starters; 24 plugs; 72 sheets wadding **MSRP - \$89.99**
- 1789 C6-5 Engines** (24); 30 starters; 24 plugs; 72 sheets wadding **MSRP - \$99.99**
- 1726 C11-3 Engines** (12); 20 starters; 16 plugs; 144 sheets wadding **MSRP - \$56.99**
- 1672 Blast-Off® Flight Pack** A8-3, B6-4, C6-3, C6-5 Engines (6 each); 30 starters; 28 plugs; 72 sheets wadding **MSRP - \$79.99**

Accessories

2310 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.
- Two-hand safety feature in the launch controller.
- Includes a Pro Series II controller, 30 feet of cable and two different size launch rods

MSRP: \$79.99

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



Includes fully color-coded cutaway for engine component identification.

1207 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.

MSRP - \$21.99



2246 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.

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

MSRP - \$43.99



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!

2232 AltiTrak™

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

MSRP - \$23.99



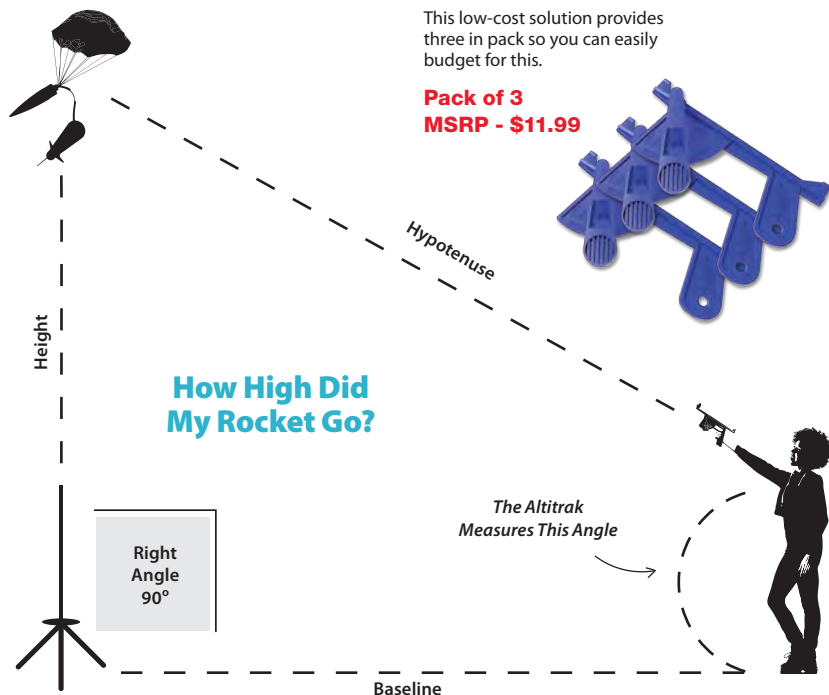
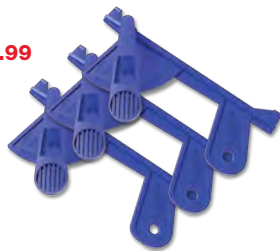
2226 Mini AltiTrak™

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 three in pack so you can easily budget for this.

**Pack of 3
MSRP - \$11.99**



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 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.



5326 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

MSRP - \$54.99

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

Product Number: 2303

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.

MSRP \$6.99

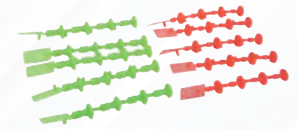
Estes starter plugs are used to safely secure your model rocket starters to your Estes engines during ignition. Different colored starter plugs are designed to accommodate different sized engines. They are a convenient way to ensure the success of your rocket launches; they are reusable.

Mini Engine Plugs

Product Number: 2250

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

MSRP \$6.99

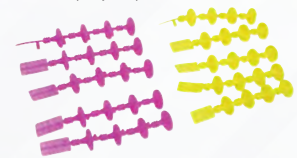


Standard Engine Plugs

Product Number: 2251

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

MSRP \$6.99

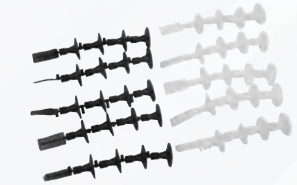


Large Engine Plugs

Product Number: 2252

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

MSRP \$6.99



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

Product Number: 2278

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.

MSRP \$6.99

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



Recovery Wadding

Product Number: 2274

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

MSRP \$5.99

RECOVERY PARACHUTES

PLASTIC

9" Yellow (22.9 cm)

Product Number: 2268

MSRP \$4.99

6" Black (15.2 cm)

Product Number: 2262

MSRP \$3.99

12" Orange (30.5 cm)

Product Number: 2264

MSRP \$4.99

18" Blue (45.7 cm)

Product Number: 2267

MSRP \$5.99

15" Purple (38.1 cm)

Product Number: 2265

MSRP \$5.99

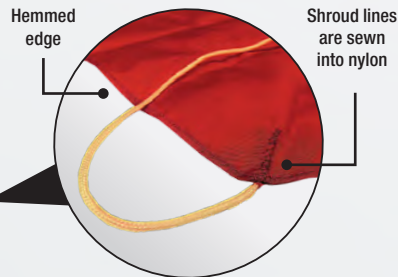
24" Red (61 cm)

Product Number: 2271

MSRP \$6.99

NYLON

Sturdy sewn fabric chutes designed for your largest, heaviest rockets



24" (61 cm)

Nylon Parachute

Product Number: 2261

MSRP \$14.99

30" (76.2 cm)

Nylon Parachute

Product Number: 2273

MSRP \$19.99

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

Product Number: 2222

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.

MSRP \$39.99

(Sold Separately)

Porta-Pad® II Launch Pad

Product Number: 2215

MSRP \$24.99

(Sold Separately)

Electron Beam® Launch Controller

Product Number: 2220

MSRP \$29.99



E Launch Controller

Product Number: 2230

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

MSRP \$35.99

Porta-Pad® E Launch Pad

Product Number: 2238

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.

MSRP \$33.99

Blast Deflector Plate

Product Number: 2241

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

MSRP \$7.99

Two Piece Launch Rod

1/8 in. (3 mm)

Product Number: 2243

Replacement rod ideal for most rockets.

MSRP \$8.99

Two Piece Maxi™ Launch Rod

3/16 in. (5 mm)

Product Number: 2244

Launch rod with extra strength and length for larger rockets.

MSRP \$14.99



Designed for launching larger rockets!

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

Product Number: 2228

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

MSRP \$12.99

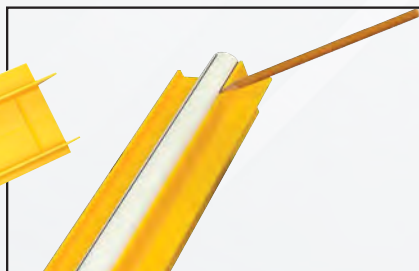


Tube Marking Guide

Product Number: 2227

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!

MSRP \$13.99



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

Never misalign rocket fins again!

Fin Alignment Guide

Product Number: 2231

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

MSRP \$23.99

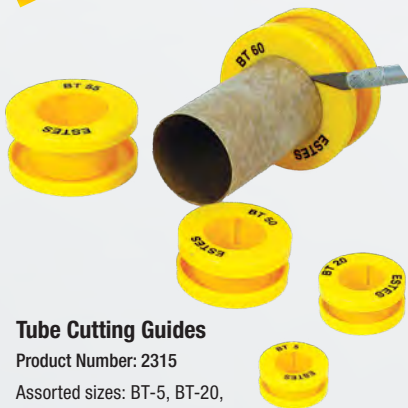


Tube Cutting Guides

Product Number: 2315

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

MSRP \$13.99



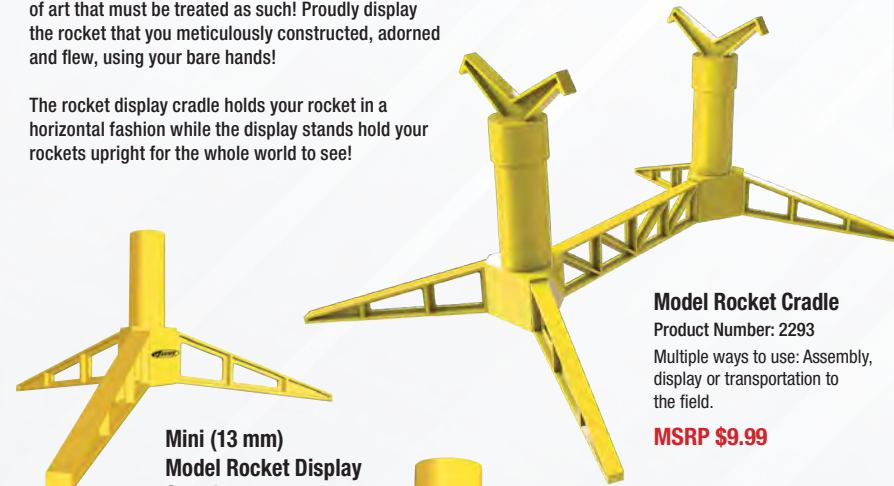
ROCKET DISPLAYS

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**
Product Number: 2290
MSRP \$8.99

Model Rocket Cradle

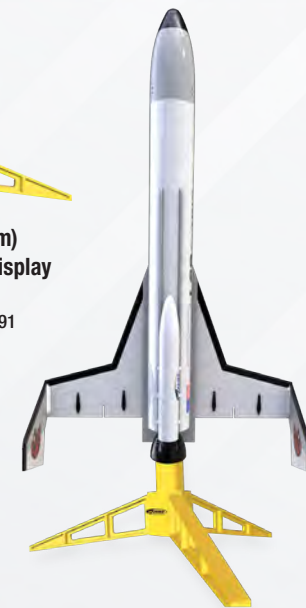
Product Number: 2293

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

MSRP \$9.99

**Standard (18 mm)
Model Rocket Display
Stand (3)Pack**
Product Number: 2291
MSRP \$8.99

**Large (24 mm)
Model Rocket Display
Stand (3)Pack**
Product Number: 2292
MSRP \$8.99



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)

NC-5	Assortment (5)Pack	3160	MSRP \$ 5.99
NC-20	Assortment (4)Pack	3161	MSRP \$ 5.99
NC-50	Assortment (5)Pack	3162	MSRP \$ 9.99
NC-55	Assortment (4)Pack	3163	MSRP \$ 8.99
NC-56	Assortment (4)Pack	3164	MSRP \$ 8.99
NC-60A	Assortment (3)Pack	3165	MSRP \$ 9.99
NC-80B	Assortment (1)Pack	3168	MSRP \$ 4.99
Sci-Fi	Assortment (5)Pack	3173	MSRP \$18.99

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)

BT-5	0.54 in./14 mm diameter	• 18 in./45.7 cm long	(4)Pack	3084	MSRP \$ 8.99
BT-20	0.74 in./19 mm diameter	• 18 in./45.7 cm long	(4)Pack	3085	MSRP \$ 8.99
BT-50	0.98 in./25 mm diameter	• 18 in./45.7 cm long	(3)Pack	3086	MSRP \$ 8.99
BT-55	1.33 in./34 mm diameter	• 18 in./45.7 cm long	(3)Pack	3087	MSRP \$ 9.99
BT-60	1.64 in./42 mm diameter	• 18 in./45.7 cm long	(3)Pack	3089	MSRP \$ 9.99
BT-80	2.60 in./66 mm diameter	• 14 in./36.1 cm long	(2)Pack	3090	MSRP \$ 9.99



Payload Section Assortment (Clear - BT-20, BT-50, BT-60) Product Number: 3171

MSRP \$19.99



Clay Nose Cone Weights Product Number: 3180

MSRP \$6.99



Centering Ring Assortment (BT-5 through BT-50) Product Number: 3175

MSRP \$7.99

ROCKET PARTS

Engine Hook Accessory Pack

Product Number: 3143

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

MSRP \$5.99



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

Product Number: 3179

MSRP \$8.99



Engine Mount Assorted Parts (3 ea.)

Product Number: 3181

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

MSRP \$8.99



D & E12 Engine Mount Kit

Product Number: 3159

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

MSRP \$11.99

ROCKET PARTS



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

Product Number: 9750

MSRP \$9.99



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

Product Number: 9751

MSRP \$8.99



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

Product Number: 3187

MSRP \$7.99



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

Product Number: 2316

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).

MSRP \$6.99



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

Product Number: 2317

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).

MSRP \$6.99

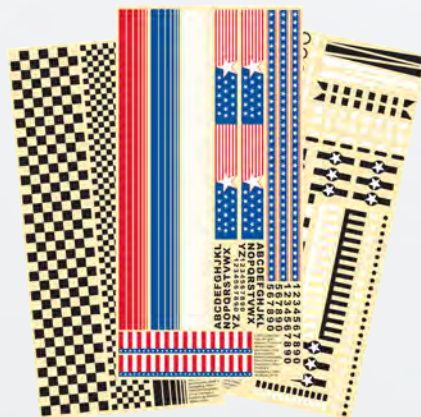


Launch Lug Pack

Product Number: 2320

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.

MSRP \$6.99



Waterslide Decal Set

Product Number: 3170

MSRP \$13.99

ROCKET PARTS



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

Product Number: 3176

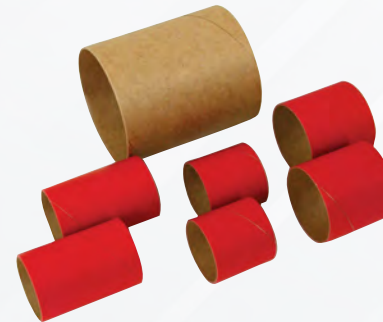
MSRP \$4.99



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

Product Number: 3177

MSRP \$5.99



Tube Couplers Assortment Pack

Product Number: 3196

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

MSRP \$7.99



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

Product Number: 3178

MSRP \$4.99

Standard Engine Mount Kit

Product Number: 3158

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

MSRP \$7.99



ULTIMATE SANDING BAR

with Adhesive 120 Grit Sandpaper

NEW

**PERFECT ADDITION
TO ANY
ROCKET WORKSHOP!**



Ultimate Sanding Bar

Product Number: 2318
Size: 2.75" x 7"
Includes: (1) 120 Grit Sandpaper

MSRP \$14.99

Sand Paper

Product Number: 2319
Includes: (2) 220 Grit Sandpaper
(2) 120 Grit Sandpaper
(2) 80 Grit Sandpaper

MSRP \$7.99

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™

Product Number: 1980

MSRP \$95.99



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



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

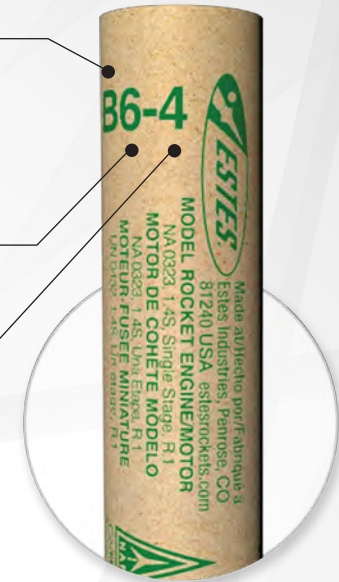
This letter is the total power (in Newton-seconds) produced by the engine. Each succeeding letter has up to twice the total power as the previous letter. (Example: 'B' engines have up to twice the power of 'A' engines, which results in approximately twice the altitude the rocket will reach.)

FIRST NUMBER = AVERAGE THRUST

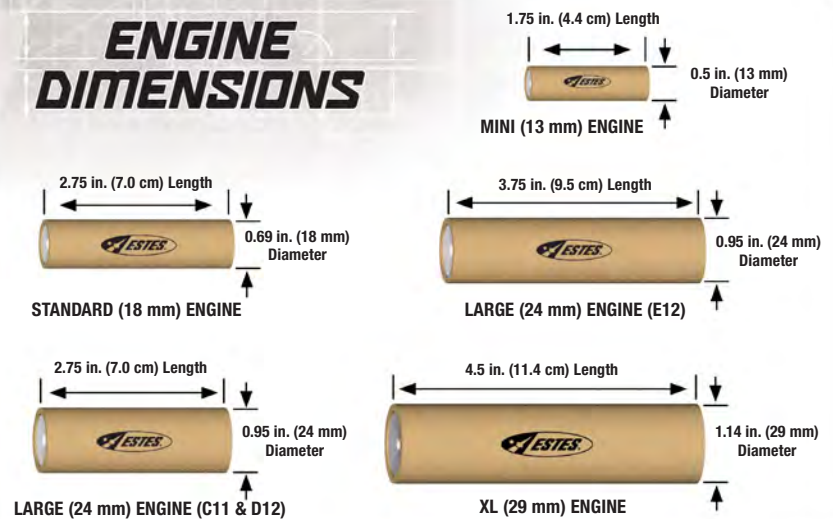
This number shows the engine's average thrust or how fast the engine powers the rocket to go. The higher the number, the faster the speed. It is measured in Newtons (4.45 Newtons = 1lb.).

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

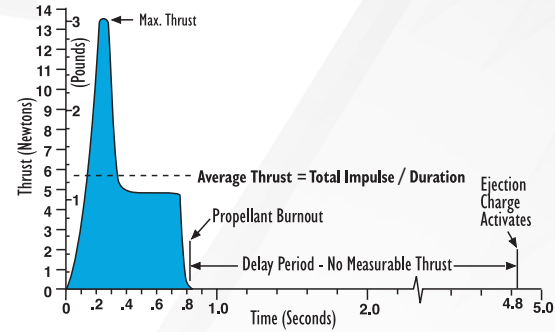
Plugged engines are used for rocket-powered racers and contain no delay or ejection charge.



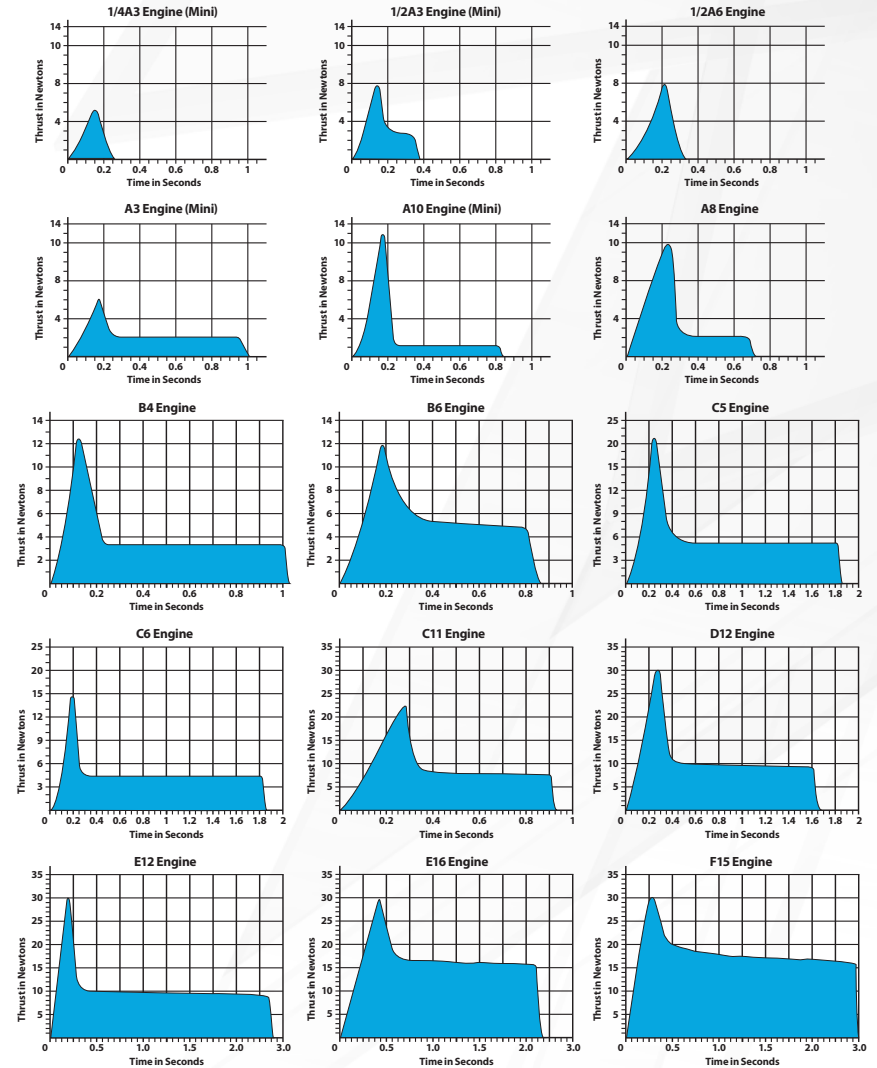
ENGINE TYPES - PERFORMANCE CHART

ENGINE TIME / THRUST CURVES

Prod. No.	Engine Type	Total Impulse		Est Max Lift Wt	Max Thrust		Thrust Duration	Initial Weight		Propellant Weight		Diameter	QTY Per Pack	Retail Price Per Pack	
		N-sec	Sec		oz	g		Newtons	Lbs	oz	g				oz
SINGLE STAGE ENGINES															
1502	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	\$11.29
1503	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	\$11.29
1506	A3-2T	2.50	2	2.0	57	6.80	1.5	0.60	0.25	7.1	0.12	3.3	13	4	\$11.29
1507	A3-4T	2.50	4	2.0	57	6.80	1.5	0.60	0.26	7.4	0.12	3.3	13	4	\$11.29
1508	A3-6T	2.50	6	2.0	57	6.80	1.5	0.60	0.27	7.7	0.12	3.3	13	4	\$11.29
1511	A10-3T	2.50	3	3.0	85	13.00	2.9	0.80	0.29	8.1	0.12	3.5	13	4	\$11.29
1593	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	\$11.29
1598	A8-3	2.50	3	3.0	85	10.70	2.4	0.50	0.55	15.5	0.14	4.1	18	3	\$11.29
1601	B4-2	5.00	2	4.0	113	13.20	3.0	1.10	0.66	18.6	0.27	7.6	18	3	\$11.99
1602	B4-4	5.00	4	3.5	99	13.20	3.0	1.10	0.68	19.2	0.27	7.6	18	3	\$11.99
1605	B6-2	5.00	2	4.5	127	12.10	2.7	0.80	0.61	17.3	0.23	6.5	18	3	\$11.99
1606	B6-4	5.00	4	4.0	113	12.10	2.7	0.80	0.63	17.8	0.23	6.5	18	3	\$11.99
1617	C5-3	10.00	3	8.0	227	20.40	4.6	1.85	0.83	23.6	0.39	11	18	3	\$12.99
1613	C6-3	10.00	3	4.0	113	15.30	3.4	1.60	0.83	23.4	0.43	12.2	18	3	\$12.99
1614	C6-5	10.00	5	4.0	113	15.30	3.4	1.60	0.85	24.0	0.43	12.2	18	3	\$12.99
1522	C11-3	10.00	3	6.0	170	22.10	4.9	0.80	1.13	32.1	0.44	12.4	24	2	\$9.99
1523	C11-5	10.00	5	5.0	142	22.10	4.9	0.80	1.18	33.4	0.44	12.4	24	2	\$9.99
1566	D12-3	20.00	3	14.0	396	32.90	7.4	1.60	1.57	44.5	0.85	24.2	24	2	\$13.49
1567	D12-5	20.00	5	10.0	283	32.90	7.4	1.60	1.61	45.7	0.85	24.2	24	2	\$13.49
1692	E12-4	30.00	4	17.0	482	30.60	6.9	2.70	2.16	61.2	1.30	36.9	24	3	\$26.49
1693	E12-6	29.50	6	14.0	397	29.60	6.7	2.70	2.23	63.2	1.30	36.9	29	3	\$26.49
1651	F15-4	49.61	4	21.0	595	25.26	5.7	3.45	3.59	101.5	2.12	60	29	2	\$29.99
1652	F15-6	49.61	6	17.0	482	25.26	5.7	3.45	3.66	103.7	2.21	60	29	2	\$29.99
1696	E16-4	33.68	4	20.0	566	26.44	5.9	2.09	2.86	81.0	1.41	40	29	2	\$25.49
1697	E16-6	33.68	6	16.0	453	26.44	5.9	2.09	2.92	82.7	1.41	40	29	2	\$25.49
UPPER STAGE ENGINES															
1504	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	\$11.29
1599	A8-5	2.50	5	2.0	57	13.30	3.0	0.50	0.55	15.7	0.14	4.1	18	3	\$11.29
1607	B6-6	5.00	6	2.5	71	12.10	2.7	0.80	0.64	18.2	0.23	6.5	18	3	\$11.99
1615	C6-7	10.00	7	2.5	71	15.30	3.4	1.60	0.85	24.3	0.43	12.2	18	3	\$12.99
1524	C11-7	10.00	7	4.0	113	22.10	4.9	0.80	1.19	33.8	0.44	12.4	24	2	\$9.99
1568	D12-7	20.00	7	8.0	226	32.90	7.4	1.60	1.62	46.0	0.85	24.2	24	2	\$13.49
1694	E12-8	29.80	8	12.0	340	31.80	7.1	2.70	2.24	63.5	1.30	36.9	24	3	\$26.49
1653	F15-8	49.61	8	15.0	425	25.26	5.7	3.45	3.69	104.4	2.12	60	29	2	\$29.99
1698	E16-8	33.68	8	14.0	396	26.44	5.9	2.09	2.99	84.7	1.41	40	29	2	\$25.49
BOOSTER STAGE ENGINES															
1510	A10-0T	2.50	NONE	4.0	113	13.00	2.9	0.80	0.24	6.8	0.12	3.5	13	4	\$11.29
1600	A8-0	2.50	NONE	3.0	85	13.30	3.0	0.30	0.47	13.5	0.14	4.1	18	3	\$11.29
1608	B6-0	5.00	NONE	4.0	113	12.10	2.7	0.80	0.55	15.7	0.23	6.5	18	3	\$11.99
1616	C6-0	10.00	NONE	4.0	113	15.30	3.4	1.60	0.76	21.4	0.43	12.2	18	3	\$12.99
1521	C11-0	10.00	NONE	6.0	170	22.10	4.9	0.80	1.03	29.2	0.44	12.4	24	2	\$9.99
1565	D12-0	20.00	NONE	14.0	396	32.90	7.4	1.60	1.43	40.4	0.84	23.8	24	2	\$13.49
1691	E12-0	28.80	NONE	16.0	454	31.30	7.0	2.60	2.05	58.1	1.30	36.9	24	3	\$26.49
1650	F15-0	49.61	NONE	19.0	539	25.26	5.7	3.45	3.32	94.0	2.12	60	29	2	\$29.99
1695	E16-0	33.68	NONE	18.0	509	26.44	5.9	2.09	2.58	73.2	1.41	40	29	2	\$25.49
PLUGGED ENGINES - FOR USE WITH ROCKET-POWERED RACERS															
1505	A10-PT	2.50	NONE	3.0	85	13.00	2.9	0.80	0.26	6.83	0.13	3.5	13	4	\$10.29



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



*Delays have a tolerance of +/- 10% or one second, 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.

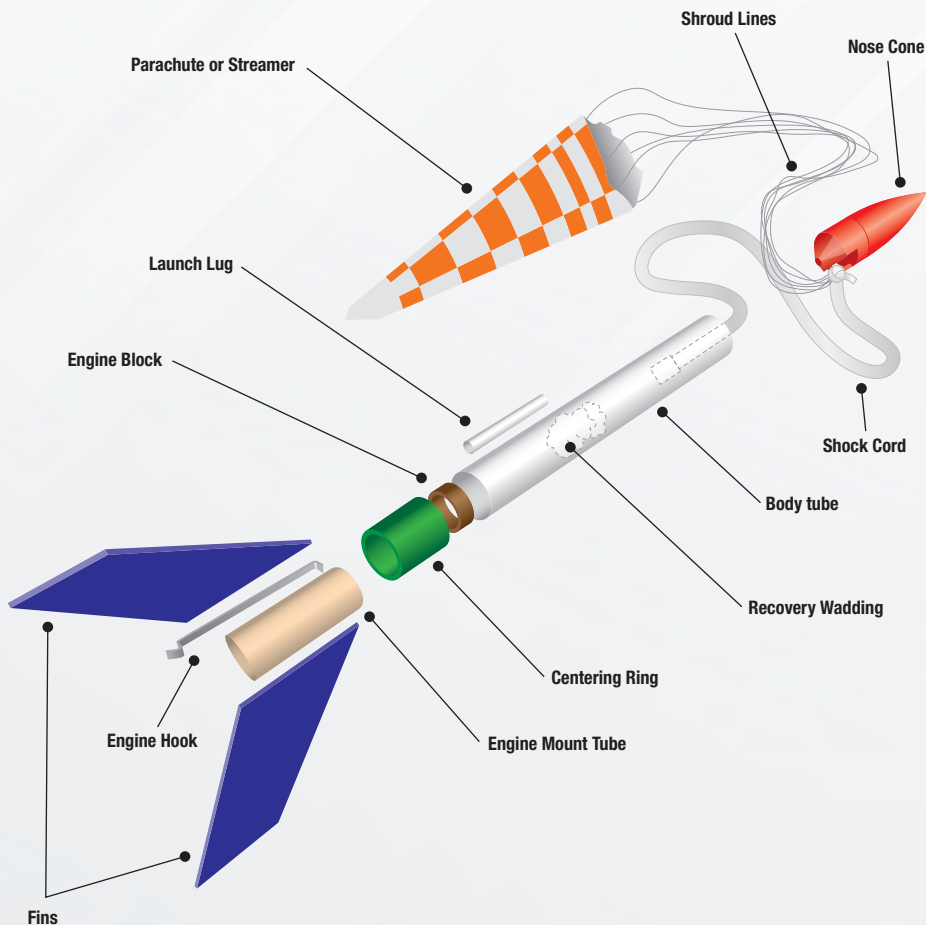
MODEL ROCKET BASICS

What is a Flying Model Rocket?

Estes flying model rockets are safe activity kits designed 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.



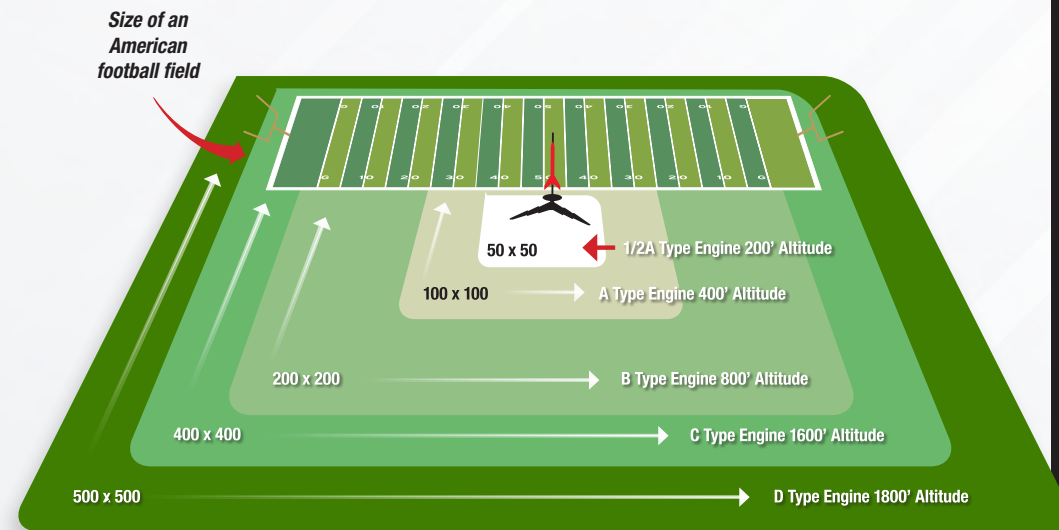
This diagram shows the basic components found in most model rocket kits. Model rocketry is recommended for ages 10 to adult. Adult supervision is suggested for those under 12 years of age.

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



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.

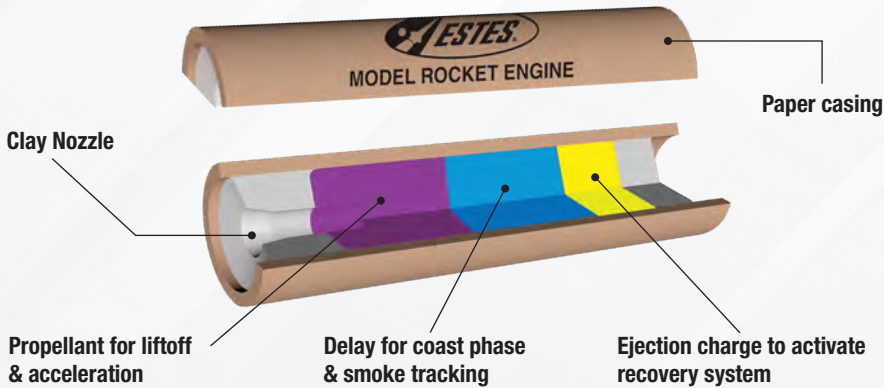
ENGINE BASICS

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.

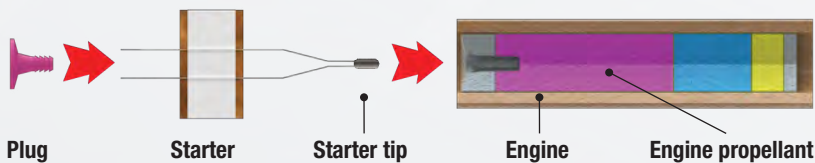


Components of a Model Rocket Engine

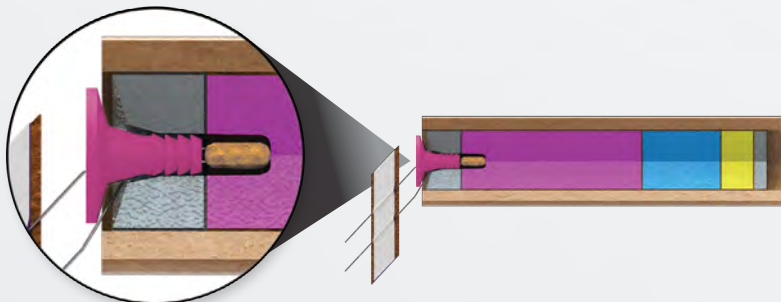


How to Prepare Your Rocket Engine for a Safe Launch

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

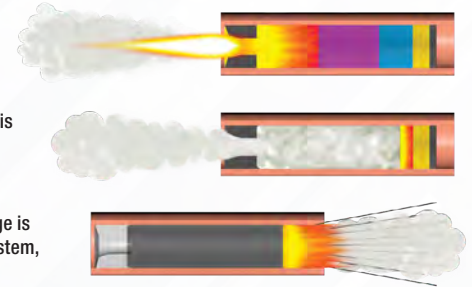


- 2 Make sure the starter is inserted into the engine nozzle and touches the propellant, then insert the plug.

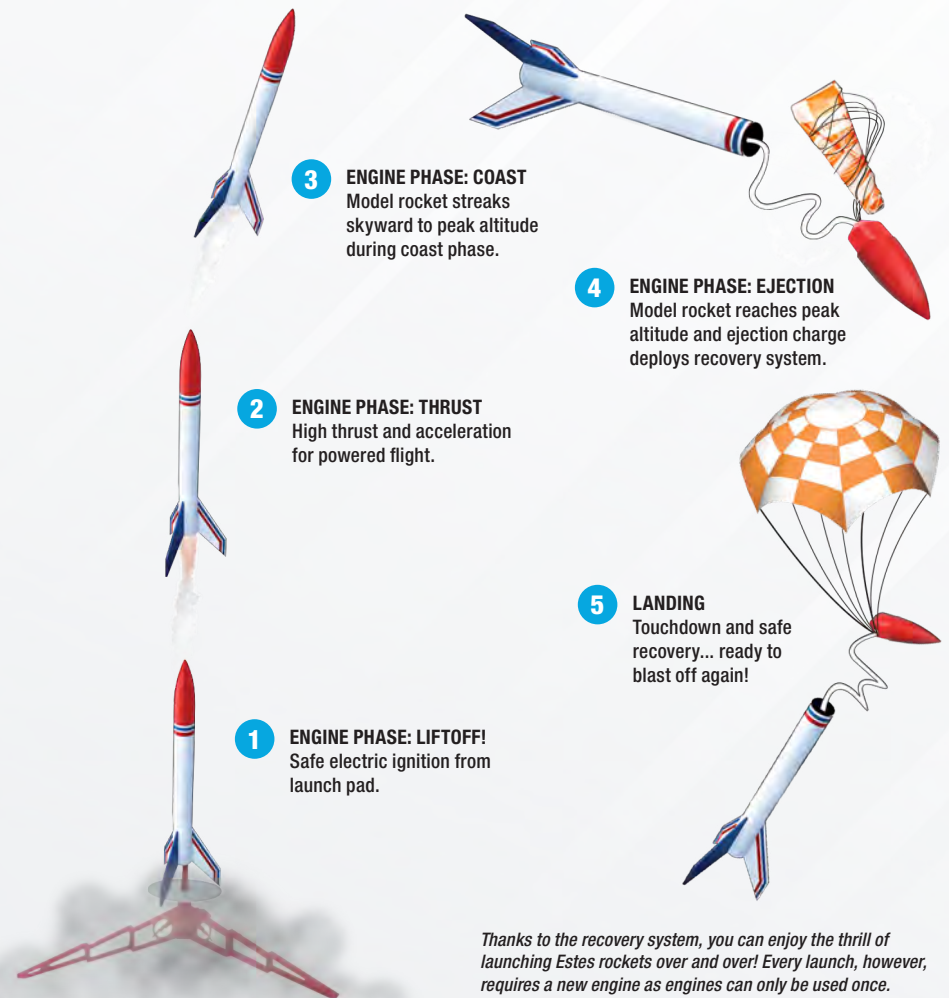


How Does a Model Rocket Engine Work?

- 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.



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 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.



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ymca.net



challenger.org



4-h.org



spacecamp.com



gocivilairpatrol.com



girlscouts.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 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.

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.

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

Prices and availability are subject to change without notice. Color of products may vary.

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PRO SERIES II™

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BLACK BRANT XII

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