
ESTES
FREEFALL
World Leader in Model Rocketry
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estes
rockets
.com

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

HOW DO I START MY OWN ESTES ROCKET FLEET?

The best way to begin model rocketry is with an Estes flying model rocket launch set. Most of our launch sets are from the E2X® (Easy To Assemble) line. The rocket itself requires minor assembly. All launch sets come with an electrical launch controller, adjustable launch pad and instructions to get you out and flying in no time. You will need to purchase flight supplies (engines, recovery wadding, igniters and igniter plugs) and four new AA alkaline batteries (for the controller) – sold separately.

HOW EASY AND HOW MUCH TIME DOES IT TAKE TO BUILD MY ROCKETS?

Estes model rocket kits range from ready to fly in just minutes to those that provide many enjoyable hours of building fun. Estes kits are classified into seven categories.

READY TO FLY (RTF): No paint, glue or modeling skills required. Rocket comes assembled and is ready to launch in minutes.

E2X® (EASY TO ASSEMBLE): No paint or special tools needed. E2X® kits contain parts that are colored, easy to assemble, plastic fins or fin units and plastic nose cones. Glue the parts together as instructed, apply the self-stick decals and attach the recovery system.

Skill Level 1: Requires some painting, gluing and sanding. Features laser cut wood fins, plastic or balsa nose cones, self-stick or waterslide decals, unfinished body tubes and step-by-step instructions. Most kits are single stage rockets.

Skill Level 2: First tier of more advanced kits that require beginner skills in model rocket construction, finishing and painting. Features laser cut wood fins, plastic or balsa nose cones, self-stick or waterslide decals, unfinished body tubes and step-by-step instructions. These are unique designs that include multi-stages, payloads and scale models.

Skill Level 3: Second tier of more advanced kits that require moderate skills in model rocket construction, finishing and painting. Features multiple laser cut wood fins and parts, unfinished body tubes, waterslide decals, balsa or plastic nose cones, vacuum-formed plastic detailing and step-by-step instructions. These complex designs include scale models, payloads and multi-stages that can use D and E engines.

Skill Level 4: Requires a high degree of construction and finishing skills. Features multiple laser cut wood fins, unfinished body tubes and waterslide decals. Assembly can take several days depending on the details required.

Skill Level 5: The most advanced and challenging kit level. These kits are designed for very experienced, master modelers. Construction is extremely complex using advance wood, paper and plastic techniques. Finishing is detail-oriented that may involve elaborate paint schemes. Building and finishing these rockets can take up to a week or more.

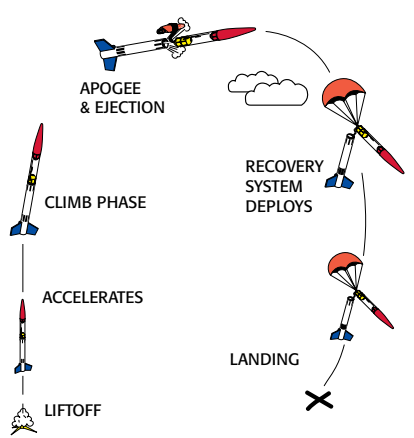
WHAT IS AN ESTES MODEL ROCKET?

Estes model rockets are 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 IT WORK?

The Estes model rocket is propelled into the air 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.

FLIGHT SEQUENCE



WHERE DO I FLY ESTES MODEL ROCKETS?

The chart on page 5 tells you what size field to use for each size engine. Each engine size is designated by a letter and is up to twice as powerful as the letter before it. See the engine section (pages 56-58) of this catalog for more information.

HOW DID IT ALL GET STARTED?

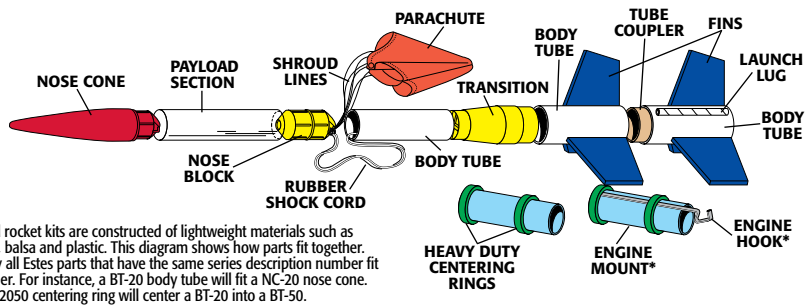
In the mid-1950s when the space age began, flying rockets became very popular. However, there were no propellants readily available to launch model rockets. In 1958 Vernon Estes developed the first, mass-produced model rocket engine. The Estes rocket engine was destined to make model rocketry one of the most popular outdoor activities enjoyed today. Estes products have changed with the times and you can see all of the exciting rockets in this catalog or on the web at www.estesrockets.com.

WHAT DO I NEED TO KNOW?

In this catalog, each description lists important INFORMATION:

- Specifications – length, diameter and estimated weight.
- What engines we recommend.
- How high, on the largest engine recommended, the rocket flies (feet and meters).
- Projected altitudes are estimates only and your rocket's actual performance may vary.
- The type of recovery system that brings the rocket back – parachute, streamer or other.

PARTS OF A MODEL ROCKET



Model rocket kits are constructed of lightweight materials such as paper, balsa and plastic. This diagram shows how parts fit together. Nearly all Estes parts that have the same series description number fit together. For instance, a BT-20 body tube will fit a NC-20 nose cone. An AR2050 centering ring will center a BT-20 into a BT-50.

* Not included in RTF or E2X® kits.

PLEASE READ–IMPORTANT STUFF!

Estes model rocketry is recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age. Unless otherwise specified, all models require assembly. Engines, recovery wadding, igniters and igniter plugs, launch system, glue and finishing supplies are not included with model rocket kits.

USE ONLY WITH ESTES PRODUCTS

Caution: Use of any Estes product with any other brand-name rocket product containing any defect or causing any damage may void the Estes warranty.

FULL ONE-YEAR WARRANTY

Your Estes product is warranted against defects in materials or workmanship for one year from the date of the original purchase. If this 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 www.estesrockets.com or by mail at Estes-Cox Corp., Customer Service Department, 1295 H Street, PO Box 227, Penrose, Colorado 81240-0227.

National Association of Rocketry
MODEL ROCKET SAFETY CODE

(Basic Version, Eff. March 2009)

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.

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 1,500 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	1,000
40.01-80.00	F	1,000
80.01-160.00	G	1,000
160.01-320.00	Two Gs	1,500

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.

www.nar.org

Important Note: G motors must be sold to and used by adults (18 and up) only.

PRO SERIES II™

9700 Leviathan™
Length: 41.5 in (105.4 cm)
Diameter: 3 in (7.6 cm)
Estimated Weight: 17.5 oz (496.1 g)
Fins: Laser cut plywood
Recovery: 24 in (60 cm) Nylon Parachute
Projected Altitude: 1,500 ft (457 m)
Recommended Motors: F26-6FJ, F50-6T, G40-7W, G80-7T

9701 Ventris™
Length: 46.25 in (117.5 cm)
Diameter: 2.5 in (6.4 cm)
Estimated Weight: 15.6 oz (442.3 g)
Fins: Laser cut plywood
Recovery: 24 in (60 cm) Nylon Parachute
Projected Altitude: 2,000 ft (610 m)
Recommended Motors: F26-6FJ, F50-6T, G40-7W, G80-7T

9702 Partizon™
Length: 56 in (142.2 cm)
Diameter: 2.5 in (6.4 cm)
Estimated Weight: 19.1 oz (541.5 g)
Fins: Laser cut plywood
Recovery: 24 in (60 cm) Nylon Parachute
Projected Altitude: 1,800 ft (549 m)
Recommended Motors: F26-6FJ, F50-6T, G40-7W, G80-7T

9703 Argent™
Length: 56.4 in (143.3 cm)
Diameter: 2.5 in (6.4 cm)
Estimated Weight: 16.5 oz (467.6 g)
Fins: Laser cut plywood
Recovery: 24 in (60 cm) Nylon Parachute
Projected Altitude: 1,700 ft (518 m)
Recommended Motors: F26-6FJ, F50-6T, G40-7W, G80-7T

9704 Nike Smoke
Length: 41.8 in (106.2 cm)
Diameter: 3 in (7.6 cm)
Estimated Weight: 17.5 oz (496.1 g)
Fins: Laser cut plywood
Recovery: 24 in (60 cm) Nylon Parachute
Projected Altitude: 1,500 ft (457 m)
Recommended Motors: F26-6FJ, F50-6T, G40-7W, G80-7T

PRO SERIES II™ ACCESSORIES

2261 24 in Nylon Parachute
3552 Pro Series II™ Launch Base
3556 Pro Series II ™ Recovery Wadding (39 pc)
2305 Sonic Igniter (4)

PRO SERIES II™ MODEL ROCKET MOTORS
(1 per pack)

9770 E30-4T Motor
9771 E30-7T Motor
9772 F26-6FJ Motor
9773 F50-4T Motor
9774 F50-6T Motor
9775 G40-4W Motor
9776 G40-7W Motor
9778 G80-10T Motor

Please see our website for more information on Pro Series II™ products.

Pro Series II rockets, require a launch controller with 30 feet of wire, such as our E™ Launch Controller (2230). In addition to the launch controller, you will need a sturdy launch pad with a ¼" (6 mm) launch rod, or you can purchase our 3552 Estes Pro Series II Launch Pad.

G motors require users to be ages 18 years and up.

NEW

E2X® LAUNCH SETS**

1424 Silver Arrow™ Launch Set
Length: 15 in (38 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.3 oz (36.9 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,125 ft (343 m)
Recommended Engines: A8-3 (First Flight), B4-4, B6-4, B6-6, C6-5, C6-7

1425 Manta™ II Launch Set
Length: 15 in (38 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.3 oz (36.9 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 600 ft (183 m)
Recommended Engines: A8-3 (First Flight), B4-4, B6-4

1438 Sky Twister™ Launch Set
Length: 19.3 in (49 cm)
Diameter: 1.35 in (34 mm)
Estimated Weight: 2.9 oz (82.2 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute and helicopter nose cone
Projected Altitude: 650 ft (198 m)
Recommended Engines: B4-2, B6-2 (First Flight), B6-4, C6-3, C6-5

1460 Eliminator XL™ Launch Set
Length: 44.25 in (112.4 cm)
Diameter: 1.35 in (34 mm)
Estimated Weight: 5.6 oz (158.8 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute and helicopter nose cone
Projected Altitude: 1,400 ft (427 m)
Recommended Engines: D12-3 (First Flight), E9-6*, E9-8*
*Requires 3/16 in (5 mm) Maxi™ Launch Rod (2244), sold separately.

AIR ROCKET LAUNCH SET

1900 T-Bolt™ Air Rocket Launch Set
Length: 11 in (27.9 cm)
Estimated Weight: .87 oz (24.7 g)
Fins: Foam
Recovery: Bounce
Projected Altitude: 150 ft (46 m)

**Each Launch Set includes Estes Launch Pad and Controller (Engines and AA alkaline batteries required – sold separately)

* E engines require the Porta-Pad® E™ Launch Pad (2238) and the E Launch Controller (2230), sold separately.

Estes model rocketry is recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age.

NEW

READY TO FLY

2460 Fat Jax™
Length: 12.6 in (32 cm)
Diameter: .74 in (19 mm)
Estimated Weight: .72 oz (20.4 g)
Fins: Plastic
Recovery: 6 in (15.2 cm) Parachute
Projected Altitude: 425 ft (130 m)
Recommended Engines: 1/2A3-4T (First Flight), A3-4T, A10-3T

2461 Nitro™
Length: 12.6 in (32 cm)
Diameter: .74 in (19 mm)
Estimated Weight: .69 oz (19.6 g)
Fins: Plastic
Recovery: 6 in (15.2 cm) Parachute
Projected Altitude: 425 ft (130 m)
Recommended Engines: 1/2A3-4T (First Flight), A3-4T, A10-3T

2462 Sky Duster™
Length: 12.9 in (32.8 cm)
Diameter: .74 in (19 mm)
Estimated Weight: .74 oz (21 g)
Fins: Plastic
Recovery: 6 in (15.2 cm) Parachute
Projected Altitude: 425 ft (130 m)
Recommended Engines: 1/2A3-4T (First Flight), A3-4T, A10-3T

E2X® (EASY TO ASSEMBLE)

1263 Sky Twister™
Length: 19.3 in (49 cm)
Diameter: 1.35 in (34 mm)
Estimated Weight: 2.9 oz (82.2 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute and helicopter nose cone
Projected Altitude: 600 ft (183 m)
Recommended Engines: A8-3 (First Flight), B4-4, B6-4

1330 Freefall™
Length: 20.5 in (52.1 cm)
Diameter: 1.64 in (42 mm)
Estimated Weight: 2.5 oz (71 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 575 ft (175 m)
Recommended Engines: B4-2 (First Flight), B6-2, B6-4, C6-3, C6-5

1398 Sky Lofter™
Length: 22 in (55.9 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.9 oz (78 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,025 ft (312 m)
Recommended Engines: B4-4 (First Flight), B6-4, C6-5

2433 Zinger™
Length: 15 in (38.1 cm)
Diameter: .74 in (19 mm)
Estimated Weight: .9 oz (25.5 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 500 ft (152 m)
Recommended Engines: 1/2A3-4T (First Flight), A3-4T, A10-3T

2434 Silver Streak™
Length: 10 in (25.4 cm)
Diameter: .74 in (19 mm)
Estimated Weight: .65 oz (18.4 g)
Fins: Plastic
Recovery: 6 in (15.2 cm) Parachute
Projected Altitude: 575 ft (176 m)
Recommended Engines: 1/4A3-3T, 1/2A3-2T (First Flight), A3-4T, A10-3T

Estes model rocketry is recommended for ages 10 years and up.
Adult supervision is recommended for those under 12 years of age.

SKILL LEVEL 1 ROCKET KITS

1345 Mosquito™
Length: 3.8 in (9.6 cm)
Diameter: .54 in (14 mm)
Estimated Weight: .11 oz (3.1 g)
Fins: Laser cut wood
Recovery: Tumble
Projected Altitude: 800 ft (244 m)
Recommended Engines: 1/4A3-3T (First Flight), 1/2A3-2T, 1/2A3-4T, A3-4T, A10-3T

2444 Fletcher™
Length: 39.25 in (99.7 cm)
Diameter: .74 in (19 mm)
Estimated Weight: 1.4 oz (39.7 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 325 ft (99 m)
Recommended Engines: A3-4T (First Flight), A10-3T

7220 Crossfire ISX™
Length: 15.6 in (39.6 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.3 oz (37 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1150 ft (351 m)
Recommended Engines: A8-3 (First Flight), B4-4, B6-4, C6-5, C6-7

SKILL LEVEL 2 ROCKET KITS

2448 Mini Comanche-3™
Length: 31.1 in (79 cm)
Diameter: .74 in (19 mm)
Estimated Weight: 1.5 oz (42.5 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 900 ft (274 m)
Recommended Engines: Single Stage: 1/2A3-2T (First Flight), A3-4T, A10-3T
Two or Three Stage:
Booster Stage: A10-0T
Upper Stage: 1/4A3-3T (First Flight), 1/2A3-2T, A3-4T, A10-3T

3225 Solar Warrior™
Length: 27 in (68.6 cm)
Diameter: 1.64 in (42 mm)
Estimated Weight: 3.1 oz (87.9 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 925 ft (282 m)
Recommended Engines: C11-3 (First Flight), C11-5, D12-5, D12-7
Requires 3/16 in (5 mm) Maxi™ Launch Rod (2244), sold separately.

3226 Hi-Flier® XL
Length: 31 in (78.7 cm)
Diameter: 1.64 in (42 mm)
Estimated Weight: 3.5 oz (99.2 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,325 ft (404 m)
Recommended Engines: C11-3 (First Flight), D12-5, D12-7, E9-6*, E9-8*
Requires 3/16 in (5 mm) Maxi™ Launch Rod (2244), sold separately.

* E engines require the Porta-Pad® E™ Launch Pad (2238) and the E Launch Controller (2230), sold separately.

Estes model rocketry is recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age.

NEW

SKILL LEVEL 2 ROCKET KITS

3227 Loadstar™ II
Length: 23.3 in (59.2 cm)
Diameter: 1.64 in (42 mm)
Estimated Weight: 2.8 oz (79.4 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,000 ft (305 m)
Recommended Engines: Single Stage: B4-4 (First Flight), B6-4 C6-5
Two Stage:
Booster Stage: B6-0 (First Flight), C6-0
Upper Stage: A8-5 (First Flight), B6-4, B6-6, C6-7

7219 Dark Energy™
Length: 29.8 in (75.7 cm)
Diameter: 1.33 in (34 mm)
Estimated Weight: 3.8 oz (108 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 700 ft (213 m)
Recommended Engines: B6-2 (First Flight), B4-2, C6-3

SKILL LEVEL 3 ROCKET KITS

3222 Tercel™
Length: 16.5 in (41.9 cm)
Diameter: .54 in (14 mm)
Wingspan: 10.9 in (27.7 cm)
Estimated Weight: .78 oz (22.1 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 700 ft (213 m)
Recommended Engines: 1/2A3-2T (First Flight), A3-4T

3228 V2 Semi-scale Model
Length: 22.4 in (56.9 cm)
Diameter: 2.6 in (66 mm)
Estimated Weight: 6.3 oz (178.6 g)
Fins: Laser cut wood
Recovery: 18 in (46 cm) Parachute
Projected Altitude: 725 ft (221 m)
Recommended Engines: C11-3 (First Flight), D12-3, E9-4*, E9-6*
Requires 3/16 in (5 mm) Maxi™ Launch Rod (2244), sold separately.

3229 Astron Skydart II™
Length: 15.4 in (39.1 cm)
Diameter: .98 in (25 mm)
Wingspan: 12.5 in (31.8 cm)
Estimated Weight: 3.1 oz (87.9 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute & Glider
Projected Altitude: 500 ft (152 m)
Recommended Engines: B6-2 (First Flight), C6-3

SKILL LEVEL 5 ROCKET KITS

3224 Asteroid Hunter™
Length: 16.2 in (41.1 cm)
Diameter: .98 in (25 mm)
Wingspan: 8 in (20.3 cm)
Estimated Weight: 4.4 oz (124.7 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 500 ft (152 m)
Recommended Engines: C6-3

NEW

Estes model rocketry is recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age.

* E engines require the Porta-Pad® E™ Launch Pad (2238) and the E™ Launch Controller (2230), sold separately.

BALSA GLIDERS

3428 Tuff Birds Jet™
Length: 8.3 in (21.1 cm)
Wingspan: 12.8 in (32.5)

3429 Tuff Birds Biplane™
Length: 9.3 in (23.6)
Wingspan: 10.4 in (26.4)

3430 Tuff Birds Stratosphere™ Rubber Band Power
Length: 11 in (27.9 cm)
Wingspan: 12.8 in (32.5 cm)

3434 Tuff Birds Super Stratosphere™ Rubber Band Power
Length: 14.2 in (36.1 cm)
Wingspan: 17.5 in (44.5 cm)

3520 TUFF BIRDS ESTES™
Length: 8.8 in (22.4 cm)
Wingspan: 9 in (22.9 cm)

FOAM GLIDERS

3600 Manta™ II Glider w/Launch Stick
Length: 5.8 in (14.7 cm)
Wingspan: 4 in (10.2 cm)

4011 Falcon Glider™
Length: 21.2 in (53.9 cm)
Wingspan: 20.5 in (52.1 cm)

4013 Spy Glider™
Length: 25.6 in (65 cm)
Wingspan: 16.7 in (42.4 cm)

4014 Hydra™, Condor™ and Hothead™ Rubber Band Power
Length: 12 in (30.5 cm)
Wingspan: 13.6 in (34.5 cm)

NEW! 3428 Tuff Birds Jet™

NEW! 3429 Tuff Birds Biplane™

NEW! 3430 Tuff Birds Stratosphere™ Rubber Band Power

NEW! 3434 Tuff Birds Super Stratosphere™ Rubber Band Power

NEW! 3520 Tuff Birds Estes™

NEW! 4011 Falcon Glider™

NEW! 4013 Spy Glider™

NEW! 3600 Manta™ II Glider

NEW! 4014 Condor™

NEW! 4014 Hydra™

NEW! 4014 Hothead™

NEW

E2X® (EASY TO ASSEMBLE) LAUNCH SETS

1403 Riptide™
Length: 18 in (45.7 cm)
Diameter: 1.35 in (34 mm)
Estimated Weight: 2.7 oz (76.5 g)
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 675 ft (206 m)
Recommended Engines: B4-4 (First Flight), B6-4, C6-5

1427 Alpha® III
Length: 12.3 in (31.2 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.2 oz (34 g)
Fins: Plastic
Projected Altitude: 1,100 ft (335 m)
Recovery: 12 in (30.5 cm) Parachute
Recommended Engines: A8-3 (First Flight), A8-5, B4-4, B6-4, B6-6, C6-5, C6-7

1462 Shuttle Xpress™
Skill Level: E2X®
Length: 17.7 in (45 cm)
Diameter: 1.33 in (34 mm)
Estimated Weight: 3.2 oz (90.7 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute, Shuttles - glide
Projected Altitude: 600 ft (183 m)
Recommended Engines: B4-2 (First Flight), B4-4, B6-2, B6-4, C6-3, C6-5

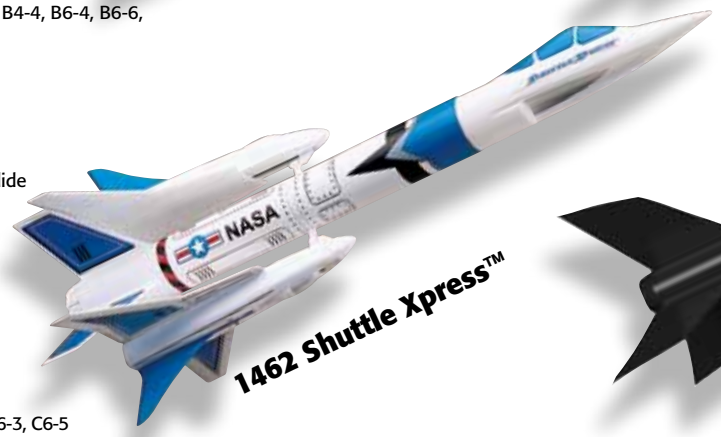
1465 HeliCat™
Length: 30.25 in (76.8 cm)
Diameter: 1.35 in (34 mm)
Estimated Weight: 3.5 oz (99 g)
Fins: Plastic
Recovery: 18 in (46 cm) Parachute; Nose Cone - Helicopter
Projected Altitude: 550 ft (168 m)
Recommended Engines: B6-2 (First Flight), B4-2, C6-3, C6-5

1466 Maxi Alpha™ 3
Skill Level: 2
Length: 33.25 in (84.5 cm)
Diameter: 2.6 in (66 mm)
Estimated Weight: 6.6 oz (187 g)
Fins: Plastic
Recovery: 24 in (61 cm) Parachute
Projected Altitude: 450 ft (137 m)
Recommended Engines: D12-3, E9-4*, E9-6*
Requires 3/16 in (5 mm) Maxi™ Launch Rod (2244), sold separately.

1469 Tandem-X™
Amazon™
Length: 33.6 in (85.3 cm)
Diameter: 1.33 in (34 mm)
Estimated Weight: 3.3 oz (94 g)
Fins: Plastic
Recovery: 18 in (46 cm) Parachute
Projected Altitude: 600 ft (183 m)
Recommended Engines: B4-2 (First Flight), B4-4, B6-2, B6-4, C6-3, C6-5
Crossfire ISX™
Skill Level 1
Length: 15.6 in (39.6 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.3 oz (37 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1150 ft (351 m)
Recommended Engines: A8-3 (First Flight), B4-4, B6-4, C6-5, C6-7

1403 Riptide™ Ready To Fly

1427 Alpha® III



1462 Shuttle Xpress™

1465 HeliCat™

1466 Maxi Alpha™ 3

1469 Tandem X™

Each Launch Set includes Estes Launch Pad and Controller (Engines and AA alkaline batteries required – sold separately)

* E engines require the Porta-Pad® E™ Launch Pad (2238) and the E™ Launch Controller (2230), sold separately.

LAUNCH SETS

E2X® (EASY TO ASSEMBLE) LAUNCH SETS

1475 Solar Scouts™
Sky Dart™
Length: 10.3 in (26.2 cm)
Diameter: .54 in (14 mm)
Estimated Weight: .4 oz (11.3 g)
Fins: Plastic
Recovery: Streamer
Projected Altitude: 950 ft (290 m)
Recommended Engines: 1/2A3-2T (First Flight), 1/2A3-4T, A3-4T, A10-3T
Farside™
Length: 16.5 in (41.9 cm)
Diameter: 1.1 in (28 mm)
Estimated Weight: 1.6 oz (45.4 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,100 ft (335 m)
Recommended Engines: A8-3 (First Flight), B4-4, B6-4, B6-6, C6-5, C6-7

1476 Moon Mutt™
Length: 10 in (25.4 cm)
Diameter: .74 in (19 mm)
Estimated Weight: .65 oz (18.4 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 200 ft (61 m)
Recommended Engines: 1/4A3-3T (First Flight), 1/2A3-2T

1478 Flash®!
Length: 16.2 in (41.2 cm)
Diameter: 1.1 in (28 mm)
Estimated Weight: 1.8 oz (52 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 925 ft (282 m)
Recommended Engines: A8-3 (First Flight), B4-4, B6-4, C6-5, C6-7

1491 Taser™
Length: 16.5 in (41.9 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.5 oz (42.5 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,100 ft (335 m)
Recommended Engines: A8-3 (First Flight), B4-4, B6-4, B6-6, C6-5, C6-7

1497 Customizer™ Mini
BECOME A ROCKET INVENTOR! Build and design your own concept rockets! This kit will turn YOU into a MODEL ROCKET DESIGNER! Many combinations of the 24 parts included allow you to create 12 possible rockets. From the E2X® line, all parts are pre-colored and you simply glue together. You can build one taller rocket or two other rockets. You're the designer here, you choose!
Recommended Engines: 1/2A3-2T (First Flight) A3-4T, A10-3T

1498 Sky Lofter™
Length: 22 in (55.9 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.9 oz (54 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,025 ft (312 m)
Recommended Engines: A8-3 (First Flight), B4-4, B6-4, C6-5

1499 Rascal™ & HiJinks™
Rascal™
Length: 14 in (35.6 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.5 oz (43 g)
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,200 ft (366 m)
Recommended Engines: A8-3 (First Flight), B4-4, B6-4, C6-5, C6-7
HiJinks™
Length: 14 in (35.6 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.5 oz (43 g)
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,200 ft (366 m)
Recommended Engines: A8-3 (First Flight), B4-4, B6-4, C6-5, C6-7

1475 Solar Scouts™

1476 Moon Mutt™

1478 Flash®!

1491 Taser™

1497 Customizer™ Mini

1498 Sky Lofter™

1499 Rascal™ & HiJinks™ Ready To Fly

Each Launch Set includes Estes Launch Pad and Controller (Engines and AA alkaline batteries required – sold separately)

Estes model rocketry is recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age.

LAUNCH SETS

READY TO FLY ROCKETS

1894 Sky Hawker™
Length: 16.5 in (41.9 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.5 oz (42.5 g)
Recovery: 12 in (30.5 cm)
Projected Altitude: 1,125 ft (343 m)
Recommended Engines: A8-3 (First Flight), B4-4, B6-4, C6-5, C6-7

1895 Patriarch™
Length: 18 in (45.7 cm)
Diameter: 1.35 in (34 mm)
Estimated Weight: 2.7 oz (76.5 g)
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 675 ft (206 m)
Recommended Engines: B4-4, B6-4 (First Flight), C6-5

1896 Puma™
Length: 10.3 in (26 cm)
Diameter: .54 in (14 mm)
Estimated Weight: .4 oz (12 g)
Recovery: Streamer
Projected Altitude: 800 ft (244 m)
Recommended Engines: 1/2A3-2T (First Flight), 1/2A3-4T, A3-4T, A10-3T

1906 Rascal™
Length: 14 in (35.6 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.52 oz (43 g)
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,200 ft (366 m)
Recommended Engines: A8-3 (First Flight), B4-4, B6-4, C6-5, C6-7

1907 HiJinks™
Length: 14 in (35.6 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.52 oz (43 g)
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,200 ft (366 m)
Recommended Engines: A8-3 (First Flight), B4-4, B6-4, C6-5, C6-7

2450 EX-200™
Length: 14.25 in (36.2 cm)
Diameter: .74 in (19 mm)
Estimated Weight: .78 oz (22.1 g)
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 550 ft (168 m)
Recommended Engines: 1/2A3-4T (First Flight), A3-4T, A10-3T

2451 Fuse™
Length: 13.1 in (33.3 cm)
Diameter: .74 in (19 mm)
Estimated Weight: .78 oz (22.1 g)
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 550 ft (168 m)
Recommended Engines: 1/2A3-4T (First Flight), A3-4T, A10-3T

1894 Sky Hawker™

1895 Patriarch™

1896 Puma™

1906 Rascal™

1907 HiJinks™

2450 EX-200™

2451 Fuse™

Estes model rocketry is recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age.

READY TO FLY

READY TO FLY ROCKETS

2452 Athena™
Length: 16.5 in (41.9 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.4 oz (39.7 g)
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,125 ft (343 m)
Recommended Engines: A8-3 (First Flight), B6-4, C6-5

2453 Summit™
Length: 20.25 in (51.4 cm)
Diameter: .74 in (19 mm)
Estimated Weight: .85 oz (24.1 g)
Recovery: Streamer
Projected Altitude: 525 ft (160 m)
Recommended Engines: 1/2A3-4T (First Flight), A3-4T, A10-3T

2454 SkyTrax™
Length: 20.75 in (52.7 cm)
Diameter: 1.35 in (34 mm)
Estimated Weight: 2.6 oz (73.7 g)
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 675 ft (206 m)
Recommended Engines: B4-4, B6-4 (First Flight), C6-5

2455 Code Red™
Length: 18.75 in (47.6 cm)
Diameter: 1.35 in (34 mm)
Estimated Weight: 2.2 oz (62.4 g)
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 725 ft (221 m)
Recommended Engines: B4-4, B6-4 (First Flight), C6-5

2456 LoadStar™
Length: 22.6 in (57.4 cm)
Diameter: 1.33 in (34 mm)
Estimated Weight: 2.2 oz (62.4 g)
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 725 ft (221 m)
Recommended Engines: B4-4, B6-4 (First Flight), C6-5

2457 Prospector™
Length: 23 in (58.4 cm)
Diameter: 1.35 in (34 mm)
Estimated Weight: 2.4 oz (68 g)
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 700 ft (213 m)
Recommended Engines: B4-4, B6-4 (First Flight), C6-5

2452 Athena™

2453 Summit™

2454 SkyTrax™

2455 Code Red™

2456 LoadStar™

2457 Prospector™

Estes model rocketry is recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age.

READY TO FLY

E2X® (EASY TO ASSEMBLE) ROCKET KITS

0803 Bandito™
Length: 11.2 in (28.4 cm)
Diameter: .74 in (19 mm)
Estimated Weight: .60 oz (17 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 600 ft (183 m)
Recommended Engines: 1/4A3-3T (First Flight), 1/2A3-2T, A3-4T, A10-3T

0804 Firehawk™
Length: 11.2 in (28.4 cm)
Diameter: .74 in (19 mm)
Estimated Weight: .65 oz (18.4 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 550 ft (168 m)
Recommended Engines: 1/4A3-3T (First Flight), 1/2A3-2T, A3-4T, A10-3T

0806 Firestreak SST™
Length: 10.2 in (25.9 cm)
Diameter: .86 in (22 mm)
Estimated Weight: 1.1 oz (31.2 g)
Fins: Plastic
Recovery: Streamer
Projected Altitude: 350 ft (107 m)
Recommended Engines: 1/2A3-2T (First Flight), 1/2A3-4T, A3-4T, A10-3T

0886 Gnome™
Length: 10.3 in (26.2 cm)
Diameter: .54 in (14 mm)
Estimated Weight: .5 oz (14.2 g)
Fins: Plastic
Recovery: Streamer
Projected Altitude: 800 ft (244 m)
Recommended Engines: 1/2A3-2T (First Flight), 1/2A3-4T, A3-4T, A10-3T

1256 Alpha III®
Length: 12.3 in (31.2 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.2 oz (34 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,100 ft (335 m)
Recommended Engines: 1/2A6-2, A8-3 (First Flight), A8-5, B4-4, B6-6, C6-5, C6-7

0803 Bandito™

0804 Firehawk™

0806 Firestreak SST™

0886 Gnome™


1256 Alpha III®

Estes model rocketry is recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age.

E2X®

E2X® (EASY TO ASSEMBLE) ROCKET KITS

1260 No. 2 Estes Sky Writer®
Length: 26 in (66 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.5 oz (42.5 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,100 ft (335 m)
Recommended Engines: A8-3 (First Flight), B4-4, B6-4, C6-5

1262 Cosmic Cobra™
Length: 19.5 in (49.5 cm)
Diameter: 1.35 in (34 mm)
Estimated Weight: 3.1 oz (88 g)
Fins: Plastic
Recovery: Booster - 12 in (30.5 cm) Parachute; Nose Cone - Helicopter
Projected Altitude: 525 ft (160 m)
Recommended Engines: B4-2 (First Flight), B6-2, B6-4, C6-3, C6-5

1300 Blue Ninja™
Length: 31.3 in (79.5 cm)
Diameter: 1.64 in (42 mm)
Estimated Weight: 5.1 oz (145.4 g)
Fins: Plastic
Recovery: 18 in (46 cm) Parachute
Projected Altitude: 780 ft (238 m)
Recommended Engines: C11-3 (First Flight), D12-3
Requires 3/16 in (5 mm) Maxi™ launch rod (2244), sold separately.

1950 Eliminator™
Length: 30.8 in (78.2 cm)
Diameter: 1.35 in (34 mm)
Estimated Weight: 4.6 oz (130 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,400 ft (427 m)
Recommended Engines: D12-5 (First Flight), D12-7, E9-6*, E9-8*
Requires 3/16 in (5 mm) Maxi™ launch rod (2244), sold separately.

2168 Metalizer™
Length: 22.5 in (57.2 cm)
Diameter: 1.35 in (34 mm)
Estimated Weight: 2.4 oz (68 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 760 ft (232 m)
Recommended Engines: B4-4 (First Flight), B6-4, C6-5

* E engines require the Porta-Pad® E™ Launch Pad (2238) and the E™ Launch Controller (2230), sold separately.

Estes model rocketry is recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age.

E2X®

E2X® (EASY TO ASSEMBLE) ROCKET KITS

2169 Dragonite™
Length: 16 in (40.6 cm)
Diameter: 1.1 in (28 mm)
Estimated Weight: 1.8 oz (51 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,125 ft (343 m)
Recommended Engines: A8-3 (First Flight), B4-4, B6-4, C6-5, C6-7

2181 Chrome Domes™ Gold Series
Length: 18 in (45.7 cm)
Diameter: 1.35 in (34 mm)
Estimated Weight: 2.7 oz (75 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 600 ft (183 m)
Recommended Engines: B4-4 (First Flight), B6-4, C6-5

2183 Shuttle Xpress™
Length: 17.7 in (45 cm)
Diameter: 1.33 in (34 mm)
Estimated Weight: 3.2 oz (90.7 g)
Fins: Plastic
Recovery: Booster - 12 in (30.5 cm) Parachute; Shuttles - Glide
Projected Altitude: 600 ft (183 m)
Recommended Engines: B4-2 (First Flight), B4-4, B6-2, B6-4, C6-3, C6-5

2430 Gold Strike™
Length: 18.75 in (47.6 cm)
Diameter: 1.35 in (34 mm)
Estimated Weight: 2.2 oz (61.5 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 725 ft (221 m)
Recommended Engines: B4-4 (First Flight), B6-4, C6-5
Bonus Rocket: Silver Streak™
Length: 10.25 in (26 cm)
Diameter: .74 in (19 mm)
Estimated Weight: .6 oz (17 g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 550 ft (168 m)
Recommended Engines: 1/4A3-3T (First Flight), 1/2A3-2T, A3-4T, A10-3T

Estes model rocketry is recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age.

SKILL LEVEL 1 ROCKET KITS

0651 Der Red Max™
Length: 16.3 in (41.4 cm)
Diameter: 1.64 in (42 mm)
Estimated Weight: 2.4 oz (68 g)
Fins: Laser cut wood
Recovery: 18 in (46 cm) Parachute
Projected Altitude: 600 ft (183 m)
Recommended Engines: B6-2 (First Flight), B6-4, C6-5

0802 Quark™
Length: 5.2 in (13.2 cm)
Diameter: .54 in (14 mm)
Estimated Weight: .1 oz (3 g)
Fins: Laser cut wood
Recovery: Tumble
Projected Altitude: 850 ft (259 m)
Recommended Engines: 1/4A3-3T (First Flight), 1/2A3-2T, 1/2A3-4T, A3-4T, A10-3T

0810 220 Swift™
Length: 4.5 in (11.4 cm)
Diameter: .54 in (14 mm)
Estimated Weight: .09 oz (2.5 g)
Fins: Laser cut wood
Recovery: Featherweight
Projected Altitude: 750 ft (229 m)
Recommended Engines: 1/4A3-3T (First Flight), 1/2A3-2T, 1/2A3-4T, A3-4T, A10-3T

1225 Alpha®
Length: 12.3 in (31.2 cm)
Diameter: .98 in (25 mm)
Estimated Weight: .8 oz (23 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,000 ft (305 m)
Recommended Engines: 1/2A6-2, A8-3 (First Flight), A8-5, B4-4, B6-4, B6-6, C6-5, C6-7

1261 Baby Bertha™
Length: 12.75 in (32.4 cm)
Diameter: 1.64 in (42 mm)
Estimated Weight: 1.9 oz (53.9 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 575 ft (175 m)
Recommended Engines: A8-3 (First Flight), B4-4, B6-4, C6-5

0651 Der Red Max™

0810 220 Swift™

0802 Quark™

1225 Alpha®

1261 Baby Bertha™

Estes model rocketry is recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age.

SKILL LEVEL 1

SKILL LEVEL 1 ROCKET KITS

1292 Wizard™
Length: 12 in (30.5 cm)
Diameter: .74 in (19 mm)
Estimated Weight: .5 oz (14.2 g)
Fins: Laser cut wood
Recovery: Streamer
Projected Altitude: 1,600 ft (488 m)
Recommended Engines: 1/2A6-2, A8-3 (First Flight), A8-5, B4-4, B6-4, B6-6, C6-5, C6-7

1301 StormCaster™
Length: 30.25 in (76.8 cm)
Diameter: 1.64 (42 mm)
Estimated Weight: 2.9 oz (80.8 g)
Fins: Laser cut wood
Recovery: 18 in (46 cm) Parachute
Projected Altitude: 930 ft (283 m)
Recommended Engines: C11-3 (First Flight), D12-5
Requires 3/16 in (5 mm) Maxi™ launch rod (2244), sold separately.

1381 Yankee™
Length: 11 in (27.9 cm)
Diameter: .74 in (19 mm)
Estimated Weight: .4 oz (12 g)
Fins: Laser cut wood
Recovery: Streamer
Projected Altitude: 1,850 ft (564 m)
Recommended Engines: 1/2A6-2, A8-3 (First Flight), A8-5, B4-4, B6-4, B6-6, C6-5, C6-7

1948 Big Bertha™
Length: 24 in (61 cm)
Diameter: 1.64 in (42 mm)
Estimated Weight: 2.5 oz (71 g)
Fins: Laser cut wood
Recovery: 18 in (46 cm) parachute
Projected Altitude: 500 ft (152 m)
Recommended Engines: B4-2, B4-4, B6-2, B6-4 (First Flight), C6-5

1949 Viking™
Length: 12.1 in (30.7 cm)
Diameter: .74 in (19 mm)
Estimated Weight: .6 oz (17 g)
Fins: Card stock
Recovery: Streamer
Projected Altitude: 1,600 ft (488 m)
Recommended Engines: 1/2A6-2, A8-3 (First Flight), A8-5, B4-4, B6-4, B6-6, C6-5, C6-7

1960 Nova Payloader™
Length: 21.1 in (53.6 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.3 oz (38 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,000 ft (305 m)
Recommended Engines:
With payload: B4-4 (First Flight), B6-4, C6-5
Without payload: A8-3 (First Flight), B4-4, B6-4, C6-5

SKILL LEVEL 1

Estes model rocketry is recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age.

SKILL LEVEL 1 ROCKET KITS

2056 U.S. Army Patriot M-104
Length: 21.3 in (54.1 cm)
Diameter: 1.64 in (42 mm)
Estimated Weight: 2 oz (55.3 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 600 ft (183 m)
Recommended Engines: B4-4 (First Flight), B6-4, C6-5

2092 Mongoose™
Length: 26.5 in (67.3 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 2.3 oz (65g)
Fins: Plastic
Recovery: 12 in (30.5 cm) Parachute and Tumble
Projected Altitude: 1,600 ft (488 m)
Recommended Engines:
Single Stage: A8-3 (First Flight), B4-4, B6-4, C6-5;
Two Stage: Booster – B6-0 (First Flight), C6-0;
Upper Stage: A8-5 (First Flight), B6-6, C6-7

2178 Hi-Flier®
Length: 12 in (30.5 cm)
Diameter: .74 in (19 mm)
Estimated Weight: 1.1 oz (31.2 g)
Fins: Laser cut wood
Recovery: Streamer
Projected Altitude: 1,500 ft (457 m)
Recommended Engines: 1/2A6-2, A8-3 (First Flight), A8-5, B4-4, B6-4, B6-6, C6-5, C6-7

2421 Cosmic Explorer™
Length: 24 in (61 cm)
Diameter: 1.33 in (34 mm)
Estimated Weight: 2.8 oz (78 g)
Fins: Laser cut wood
Recovery: 18 in (46 cm) Parachute
Projected Altitude: 650 ft (198 m)
Recommended Engines: B4-4 (First Flight), B6-4, C6-5

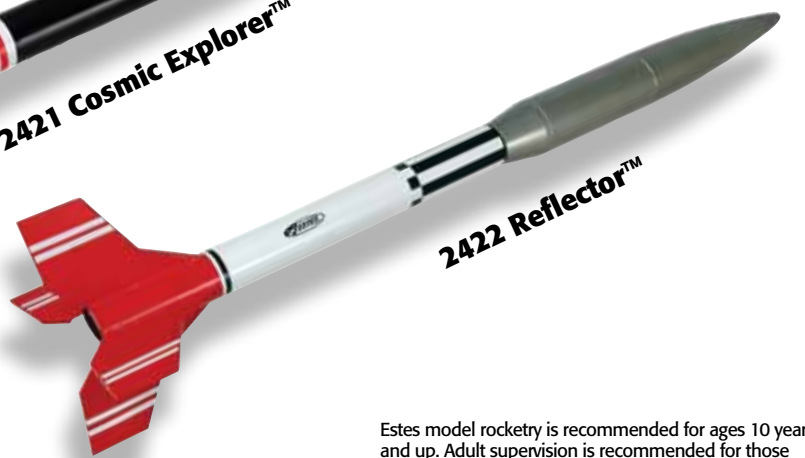
2422 Reflector™
Length: 20.25 in (51.4 cm)
Diameter: 1.33 in (34 mm)
Estimated Weight: 2.1 oz (60 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 750 ft (228 m)
Recommended Engines: B4-4 (First Flight), B6-4, C6-5

2056 U.S. Army Patriot M-104

2092 Mongoose™

2178 Hi-Flier®

2421 Cosmic Explorer™



2422 Reflector™

Estes model rocketry is recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age.

SKILL LEVEL 1

SKILL LEVEL 1 ROCKET KITS

2445 Mini Max™
Length: 9.75 in (24.8 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.3 oz (37 g)
Fins: Laser cut wood
Recovery: Streamer
Projected Altitude: 300 ft (91.5 m)
Recommended Engines: 1/2A3-2T (First Flight), 1/2A3-4T, A3-4T, A10-3T

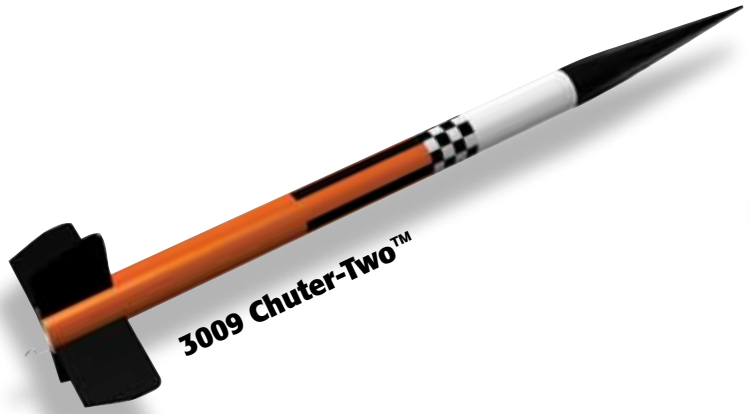
2446 Mini Honest John
Length: 11.75 in (29.8 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.2 oz (34 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 325 ft (99 m)
Recommended Engines: 1/2A3-2T (First Flight), A3-4T, A10-3T

3009 Chuter-Two™
Length: 18.5 in (47 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.2 oz (34 g)
Fins: Laser cut wood
Recovery: 2 12 in (30.5 cm) Parachutes
Projected Altitude: 900 ft (274 m)
Recommended Engines: A8-3 (First Flight), B6-4, C6-5, C6-7

3013 Flutter-By™
Length: 8.25 in (21 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.4 oz (39.7 g)
Fins: Laser cut wood
Recovery: Tumble
Projected Altitude: 575 ft (175 m)
Recommended Engines: A8-3 (First Flight), B4-2, B4-4, B6-2, B6-4

3022 Payloader II™
Length: 17 in (43 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.2 oz (62.4 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,000 ft (305 m)
Recommended Engines: A8-3 (First Flight), B6-4, C6-5, C6-7

3024 Phoenix Bird™
Length: 24 in (61 cm)
Diameter: 1.33 in (34 mm)
Estimated Weight: 2.8 oz (79 g)
Fins: Laser cut wood
Recovery: 18 in (46 cm) Parachute
Projected Altitude: 550 ft (168 m)
Recommended Engines: B4-4 (First Flight), B6-4, C6-5



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SKILL LEVEL 1

SKILL LEVEL 1 ROCKET KITS

3031 Star Trooper™
Length: 7.4 in (18.8 cm)
Diameter: .54 in (14 mm)
Estimated Weight: .3 oz (8.5 g)
Fins: Laser cut wood
Recovery: Streamer
Projected Altitude: 900 ft (274 m)
Recommended Engines: A3-4T (First Flight), A10-3T

3033 Twister™
Length: 13.8 in (35 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.1 oz (31 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,100 ft (335 m)
Recommended Engines: A8-3 (First Flight) B6-4, C6-5, C6-7

3037 Hornet
Length: 19.25 in (48.9 cm)
Diameter: 1.33 in (34 mm)
Estimated Weight: 2.3 oz (65 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 775 ft (236 m)
Recommended Engines: B4-4 (First Flight), B6-4, C6-5

3201 Taser Twin™
Length: 15.4 in (39 cm)
Diameter: .74 in (19 mm)
Estimated Weight: 1.8 oz (51 g)
Fins: Laser cut wood
Recovery: Tumble/Streamer
Projected Altitude: 2,000 ft (610 m)
Recommended Engines: B6-0 (First Flight), B6-6 (First Flight), C6-0, C6-7

3202 Comet Chaser™
Length: 14.4 in (36.5 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.3 oz (36.8 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,150 ft (351 m)
Recommended Engines: A8-3 (First Flight), B6-4, C6-5, C6-7

3203 Equinox™
Length: 15 in (38.1 cm)
Diameter: .74 in (19 mm)
Estimated Weight: 1.1 oz (31.2 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,575 ft (480 m)
Recommended Engines: A8-3 (First Flight), B6-4, C6-5, C6-7

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SKILL LEVEL 1

SKILL LEVEL 1 ROCKET KITS

3205 Fusion X25™
Length: 13.5 in (34 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.3 oz (35.4 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,150 ft (350.5 m)
Recommended Engines: A8-3 (First Flight), B6-4, C6-5

3206 Star Stryker™
Length: 16.8 in (42.7 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.1 oz (30 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,175 ft (358 m)
Recommended Engines: A8-3 (First Flight), B6-4, C6-5, C6-7

3207 Crossbow SST™
Length: 14.4 in (36.6 cm)
Diameter: .74 in (19 mm)
Estimated Weight: 1.1 oz (31.2 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,600 ft (488 m)
Recommended Engines: A8-3 (First Flight), B6-4, C6-5

3208 Ricochet™
Length: 22 in (55.9 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.5 oz (41 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 1,125 ft (343 m)
Recommended Engines: A8-3 (First Flight), B6-4, C6-5, C6-7

3209 Space Eagle™
Length: 26.75 in (67.9 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 2.2 oz (62.4 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 975 ft (297 m)
Recommended Engines: B6-4 (First Flight), C6-5

SKILL LEVEL 1

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SKILL LEVEL 1 ROCKET KITS

3210 Vector Force™
Length: 28.25 in (71.8 cm)
Diameter: 1.33 in (34 mm)
Estimated Weight: 2.4 oz (67 g)
Fins: Laser cut wood
Recovery: 18 in (46 cm) Parachute
Projected Altitude: 725 ft (221 m)
Recommended Engines: B6-4 (First Flight), C6-5

3211 Plasma Probe™
Length: 18.5 in (47 cm)
Diameter: 1.33 in (34 mm)
Estimated Weight: 1.7 oz (48.1 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 800 ft (244 m)
Recommended Engines: B4-4, B6-4 (First Flight), C6-5

3216 Super Alpha®
Length: 19.5 in (49.5 cm)
Diameter: 1.64 in (42 mm)
Estimated Weight: 2.2 oz (62.3 g)
Fins: Laser cut wood
Recovery: 18 in (46 cm) Parachute
Projected Altitude: 600 ft (183 m)
Recommended Engines: B6-4 (First Flight), C6-5

7214 Monarch™
Length: 22.5 in (57.1 cm)
Diameter: 1.33 in (34 mm)
Estimated Weight: 2.4 oz (68 g)
Fins: Laser cut wood
Recovery: 18 in (46 cm) Parachute
Projected Altitude: 700 ft (228 m)
Recommended Engines: B6-4 (First Flight), C6-5

7215 Stratocruiser™
Length: 23.5 in (59.7 cm)
Diameter: 1.33 in (34 mm)
Estimated Weight: 2.2 oz (62.4 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 725 ft (221 m)
Recommended Engines: B6-4 (First Flight), C6-5

SKILL LEVEL 1

Estes model rocketry is recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age.

SKILL LEVEL 2 ROCKET KITS

1295 Mean Machine™
Length: 79 in (200.7 cm)
Diameter: 1.64 in (42 mm)
Estimated Weight: 5.8 oz (164 g)
Fins: Laser cut wood
Recovery: 24 in (61 cm) Parachute
Projected Altitude: 900 ft (274 m)
Recommended Engines: D12-3, D12-5 (First Flight), E9-4*, E9-6*
Requires 3/16 in (5 mm) Maxi™ launch rod (2244), sold separately.

1302 CC Express™
Length: 28.4 in (72.1 cm)
Diameter: 1.33 in (34 mm)
Estimated Weight: 2.7 oz (76.5 g)
Fins: Laser cut wood
Recovery: 18 in (46 cm) Parachute
Projected Altitude: 1,700 ft (518 m)
Recommended Engines: Upper Stage Only: D12-5; Two-Stage: Booster - D12-0; Upper - D12-7
Requires 3/16 in (5 mm) Maxi™ launch rod (2244), sold separately.

1335 Mega Mosquito™
Length: 18.6 in (47.2 cm)
Diameter: 2.6 in (66 mm)
Estimated Weight: 5.2 oz (147.4 g)
Fins: Laser cut wood
Recovery: 18 in (46 cm) Parachute
Projected Altitude: 750 ft (229 m)
Recommended Engines: D12-3 (First Flight), E9-4*, E9-6*
Requires 3/16 in (5 mm) Maxi™ launch rod (2244), sold separately.
Bonus rocket: Mosquito™
Skill Level: 1
Length: 3.8 in (9.6 cm)
Diameter: .54 in (14 mm)
Estimated Weight: .11 oz (3.1 g)
Fins: Laser cut wood
Recovery: Tumble
Projected Altitude: 800 ft (244 m)
Recommended Engines: 1/4A3-3T (First Flight), 1/2A3-2T, A3-4T, A10-3T

1903 Maxi Alpha™ 3
Length: 33.25 in (84.5 cm)
Diameter: 2.6 in (66 mm)
Estimated Weight: 6.6 oz (187 g)
Fins: Plastic
Recovery: 24 in (61 cm) Parachute
Projected Altitude: 700 ft (213 m)
Recommended Engines:
D12-3 (First Flight), E9-4*, E9-6*
Requires 3/16 in (5 mm) Maxi™ launch rod (2244), sold separately.

2037 D-Region Tomahawk
Length: 38.8 in (98.6 cm)
Diameter: 1.8 in (46 mm)
Estimated Weight: 9.2 oz (260 g)
Fins: Plastic
Recovery: 18 in (46 cm) Parachute
Projected Altitude: 750 ft (229 m)
Recommended Engines: D12-5 (First Flight), E9-6*
Requires 3/16 in (5 mm) Maxi™ launch rod (2244), sold separately.

*E engines require the Porta-Pad® E™ Launch Pad (2238) and the E Launch Controller (2230), sold separately.

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SKILL LEVEL 2

SKILL LEVEL 2 ROCKET KITS

2117 Screaming Eagle®
Length: 16.75 in (42.5 cm)
Diameter: 1 in (25 mm)
Estimated Weight: 2.3 oz (65.2 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 600 ft (183 m)
Recommended Engines: B4-4 (First Flight), B6-4, C6-5

2123 EggsCaliber™
Length: 20 in (50.8 cm)
Diameter: 1 in (25 mm)
Estimated Weight. (without egg): 2.6 oz (74 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute and 18 in (46 cm) Parachute
Projected Altitude: 1700 ft (610 m) without egg
Recommended Engines: With egg – B6-2 (First Flight), C6-3, C11-3, D12-3, E9-4*; Without egg – B4-2 (First Flight), B6-2, C6-5, D12-5, E9-6*.
Requires 3/16 in (5 mm) Maxi™ launch rod (2244), sold separately.

2162 Big Daddy™
Length: 19 in (48.3 cm)
Diameter: 3 in (76 mm)
Estimated Weight: 5.3 oz (150 g)
Fins: Laser cut wood
Recovery: 24 in (61 cm) Parachute
Projected Altitude: 900 ft (274 m)
Recommended Engines: C11-3 (First Flight), D12-3, D12-5, E9-4*, E9-6*
Requires 3/16 in (5 mm) Maxi™ Launch Rod (2244), sold separately.

2179 Guardian™
Length: 19.1 in (48.5 cm)
Diameter: 1.33 in (34 mm)
Estimated Weight: 2.4 oz (68 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 700 ft (213 m)
Recommended Engines: B4-4 (First Flight), B6-4, B6-6, C6-5

2401 Solar Flare™
Length: 27 in (68.6 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 3.2 oz (90.7 g)
Fins: Laser cut wood and paper rings
Recovery: 12 in (30.5 cm) Parachute and Tumble
Projected Altitude: 800 ft (244 m)
Recommended Engines: Single Stage - A10-3T;
Two Stage: Booster Stage - B6-0 or C6-0;
Second Stage - A10-3T

2447 Astron Elliptic II™
Length: 23.3 in (59.2 cm)
Diameter: .74 in (19 mm)
Estimated Weight: 1 oz (28.3 g)
Fins: Laser cut wood
Recovery: Streamer and Tumble
Projected Altitude: 925 ft (282 m)
Recommended Engines:
Upper Stage Only: 1/2A3-2T (First Flight), A3-4T, A10-3T
Two Stage: Booster – A10-0T
Upper – 1/2A3-4T (First Flight), 1/4A3-3T, A3-4T, A10-3T

SKILL LEVEL 2

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SKILL LEVEL 2 ROCKET KITS

3003 Alien Invader™
Length: 20.2 in (51.3 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 2.4 oz (68 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 900 ft (274 m)
Recommended Engines: B4-4 (First Flight), B6-4, C6-5

3016 Long Tom™
Length: 33.25 in (84.4 cm)
Diameter: 1.33 in (34 mm)
Estimated Weight: 3.2 oz (91 g)
Fins: Laser cut wood
Recovery: 18 in (46 cm) Parachute
Projected Altitude: 1,100 ft (488 m)
Recommended Engines:
Single Stage: B6-4 (First Flight), C6-5;
Two Stage: Booster – B6-0, C6-0,
Upper Stage: B6-6 (First Flight), C6-7

3025 Photon Disruptor™
Length: 24.5 in (62.2 cm)
Diameter: 1.33 in (34 mm)
Estimated Weight: 2.4 oz (68 g)
Fins: Laser cut wood
Recovery: 18 in (46 cm) Parachute
Projected Altitude: 750 ft (229 m)
Recommended Engines: B4-4 (First Flight), B6-4, C6-5

3026 Photon Probe™
Length: 23 in (58.4 cm)
Diameter: 1.33 in (34 mm)
Estimated Weight: 3.5 oz (99.2 g)
Fins: Laser cut wood
Recovery: 18 in (46 cm) Parachute
Projected Altitude: 575 ft (175 m)
Recommended Engines: B4-4 (First Flight), B6-4, C6-5

3027 Satellite Interceptor™
Length: 22 25 in (56.5 cm)
Diameter: .98 in (25 mm)
Fin Span: 5.5 in (14 cm)
Estimated Weight: 2.3 oz (65 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 950 ft (290 m)
Recommended Engines: B4-4 (First Flight), B6-4, C6-5

SKILL LEVEL 2

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SKILL LEVEL 2 ROCKET KITS

3217 Vagabond™
Length: 35.25 in (89.5 cm)
Diameter: 1.64 in (42 mm)
Estimated Weight: 4.1 oz (116.2 g)
Fins: Laser cut wood
Recovery: 18 in (46 cm) Parachute
Projected Altitude: 1,275 ft (389 m)
Recommended Engines: D12-5 (First Flight), D12-7, E9-6*, E9-8*
Requires 3/16 in (5 mm) Maxi™ launch rod (2244), sold separately.

3218 Laser Lance™
Length: 20.3 in (51.6 cm)
Diameter: 1.64 in (42 mm)
Estimated Weight: 2.8 oz (79.4 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 925 ft (282 m)
Recommended Engines: C11-3 (First Flight), C11-5, D12-5, D12-7

3219 Air Commander™
Length: 32.5 in (82.5 cm)
Diameter: 1.33 in (34 mm)
Estimated Weight: 3.8 oz (107.7 g)
Fins: Laser cut wood
Recovery: 18 in (46 cm) Parachute
Projected Altitude: 686 ft (209 m)
Recommended Engines: Booster: Single Stage: C11-3 (First Flight), D12-5, D12-7; Two Stage: Booster: C11-0 (First Flight), D12-0; Upper Stage: C11-5 (First Flight), C11-7, D12-5, D12-7

7000 Bull Pup 12D
Length: 15.6 in (39.6 cm)
Diameter: 1.33 in (34 mm)
Estimated Weight: 1.8 oz (51 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 675 ft (206 m)
Recommended Engines: A8-3 (First Flight), B4-4, B6-4, C6-5

7216 EPM-010™
Length: 35.25 in (89.5 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 2.4 oz (68 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute
Projected Altitude: 925 ft (282 m)
Recommended Engines: B4-4, B6-4 (First Flight), C6-3, C6-5

7217 Hyper Bat™
Length: 21.9 in (55.6 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.8 oz (51 g)
Fins: Laser cut wood
Recovery: 12 in (30.5 cm) Parachute and Tumble
Projected Altitude: 2,125 ft (648 m)
Recommended Engines:
Upper Stage Only: B6-4, (First Flight), B6-6, C6-5, C6-7
Two Stage: Booster – A8-0, B6-0 (First Flight), C6-0
Upper – A8-5 (First Flight), B6-6, C6-5, C6-7

SKILL LEVEL 2

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SKILL LEVEL 3, 4 & 5 ROCKET KITS

2134 MIRV™
Skill Level: 3
Length: 24.5 in (62.2 cm)
Diameter: 1.64 in (42 mm)
Estimated Weight: 4.7 oz (134 g)
Fins: Laser cut wood
Projected Altitude: 600 ft (183 m)
Recommended Engines:
Booster Stage: B6-0, (First Flight) C6-0
Second Stage: A10-3T Only (Requires three A engines and one B or C engine per launch.)

2410 Renegade-D™
Skill Level: 3
Length: 26.6 in (67.6 cm)
Diameter: 1.64 in (42 mm)
Estimated Weight: 4.3 oz (120.9 g)
Fins: Laser cut wood
Recovery: 18 in (46 cm) Parachute
Projected Altitude: 850 ft (260 m)
Recommended Engine: D12-5
Requires 3/16 in (5 mm) Maxi™ launch rod (2244), sold separately.

2425 Super Neon XL™
Skill Level: 3
Length: 37.75 in (95.9 cm)
Diameter: 1.64 in (42 mm)
Estimated Weight: 7 oz (198 g)
Fins: Laser cut wood
Recovery: 24 in (61 cm) Parachute
Projected Altitude: 1,000 ft (305 m)
Recommended Engines: D12-5 (First Flight), E9-4*, E9-6*
Requires 3/16 in (5 mm) Maxi™ launch rod (2244), sold separately.

2440 Magician™
Skill Level: 3
Length: 33.5 in (85 cm)
Diameter: 1.33 in (34 mm)
Estimated Weight: 3.5 oz (100 g)
Fins: Laser cut wood
Recovery: 18 in (46 cm) Parachute
Projected Altitude: 1,600 ft (488 m)
Recommended Engines: D12-5 (First Flight), E9-6*
Requires 3/16 in (5 mm) Maxi™ launch rod (2244), sold separately.

3221 QCC Explorer™
Skill Level: 4
Length: 35 in (88.9 cm)
Diameter: 1.64 in (42 mm)
Estimated Weight: 5 oz (141.2 g)
Fins: Laser cut wood
Recovery: 18 in (46 cm) Parachute
Projected Altitude: 1225 ft (373 m)
Recommended Engines: C11-3 (First Flight), D12-5, E9-4*, E9-6*
Requires 3/16 in (5 mm) Maxi™ launch rod (2244), sold separately.

3223 Xarconian Cruiser™
Skill Level: 5
Length: 22.7 in (57.7 cm)
Diameter: 1.33 in (34 mm)
Estimated Weight: 3.7 oz (105 g)
Wing Span: 8.4 in (21.3 cm)
Fins: Laser cut wood
Recovery: 18 in (46 cm) Parachute
Projected Altitude: 525 ft (160 m)
Recommended Engines: B6-2, C6-3 (First Flight)

2134 MIRV™

2410 Renegade-D™

2425 Super Neon XL™

2440 Magician™

3221 QCC Explorer™

3223 Xarconian Cruiser™

SKILL LEVEL 3, 4 & 5

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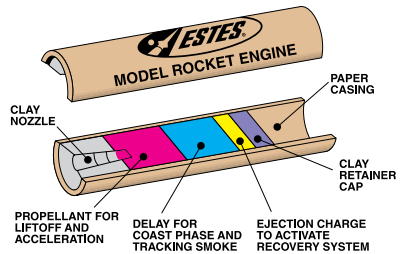
ESTES MODEL ROCKET ENGINES

The famous model rocket engines that made model rocketry the great activity it is today. Estes model rocket engines have been proven consistent and reliable in more than 400,000,000 launches.

- The concept of a factory assembled model rocket engine is the foundation of this scientific and educational activity!
- 3% of all 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 and are certified by the National Association of Rocketry.

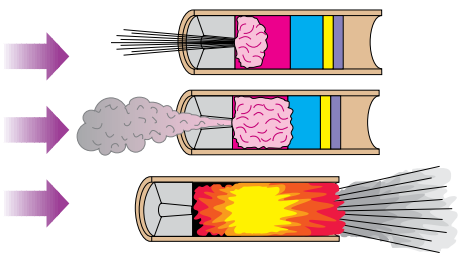


HOW DOES A MODEL ROCKET ENGINE WORK?

1. When engine is ignited, it produces thrust and boosts rocket into sky.

2. After propellant is used up, delay is activated, producing tracking smoke and allowing rocket to coast.

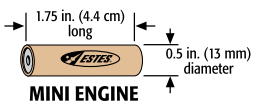
3. After delay, ejection charge is activated, deploying recovery system.

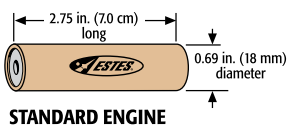


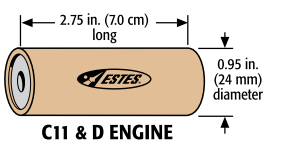
WHAT SIZES ARE AVAILABLE?

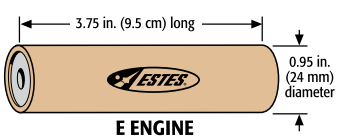
Estes engines are available in a wide variety of sizes and power levels:

TYPE	TOTAL IMPULSE	ENGINE TYPES
1/4A	0.313 - 0.625	Mini
1/2A	0.626 - 1.25	Standard, Mini
A	1.26 - 2.50	Standard, Mini
B	2.51 - 5.00	Standard
C6	5.01 - 10.00	Standard
C11	5.01 - 10.00	D Size
D	10.01 - 20.00	D Size
E	20.01 - 30.00	E Size









Each engine type is color coded.

- **Single Stage** - Green
- **Upper Stage** - Purple (Upper stage engines can be used as single stage engines in lightweight rockets.)
- **Booster** - Red (Booster engines contain no delay or ejection charge.)
- **Plugged** - Blue (Plugged engines are used for R/C gliders and contain no delay or ejection charge.)

Each engine has an alpha-numeric code printed on it.

B = 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.)

6 = AVERAGE THRUST
This number shows the engine's average push 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 = 1 lb.).

4 = TIME DELAY
This number gives you the time delay in seconds between the end of the thrust phase and 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.

MODE ROCKET ENGINE CHART

- Delays have a tolerance of plus or minus 10% or 1 second, whichever is greater.
- All Estes engines come complete with igniters and patented igniter plugs (Pat. No. 5,410,966 and 5,509,354).
  The Estes Igniter Plug makes engine ignition extremely reliable.
- Do not fly a rocket/engine combination whose liftoff weight exceeds the recommended maximum liftoff weight.

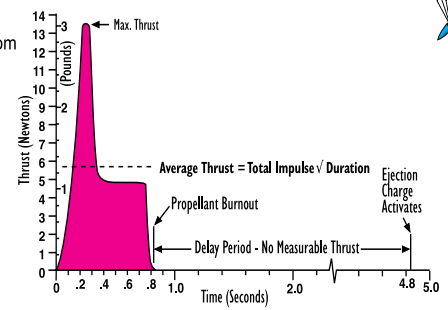
Prod. No.	Engine Type	Total Impulse	Time Delay	Max. Lift Wt.		Max. Thrust		Thrust Duration	Initial Weight		Propellant Weight	
		N-sec	Sec.	Oz.	g	Newtons	lbs.	Sec.	Oz.	g	Oz.	g
SINGLE STAGE ENGINES												
1502	1/4A3-3T*	0.625	3	1.0	28	4.9	1.1	0.25	0.21	5.9	0.46	1.3
1503	1/2A3-2T*	1.25	2	2.0	57	8.3	1.9	0.3	0.23	6.4	0.07	1.9
1507	A3-4T*	2.50	4	2.0	57	6.8	1.5	0.6	0.28	8	0.12	3.3
1511	A10-3T*	2.50	3	3.0	85	13.0	2.9	0.8	0.29	8.1	0.12	3.5
1593	1/2A6-2	1.25	2	2.0	57	8.9	2.0	0.3	0.48	13.6	0.10	2.7
1598	A8-3	2.50	3	3.0	85	10.7	2.4	0.5	0.55	15.5	0.14	4.1
1601	B4-2	5.00	2	4.0	113	13.2	3.0	1.1	0.66	18.6	0.27	7.6
1602	B4-4	5.00	4	3.5	99	13.2	3.0	1.1	0.68	19.2	0.27	7.6
1605	B6-2	5.00	2	4.5	127	12.1	2.7	0.8	0.61	17.3	0.23	6.5
1606	B6-4	5.00	4	4.0	113	12.1	2.7	0.8	0.63	17.8	0.23	6.5
1613	C6-3	10.00	3	4.0	113	15.3	3.4	1.6	0.83	23.4	0.43	12.2
1614	C6-5	10.00	5	4.0	113	15.3	3.4	1.6	0.85	24	0.43	12.2
1622	C11-3	10.00	3	6.0	170	22.1	4.9	0.8	1.13	32.1	0.44	12.4
1623	C11-5	10.00	5	5.0	142	22.1	4.9	0.8	1.18	33.4	0.44	12.4
1666	D12-3	20.00	3	14.0	396	32.9	7.4	1.6	1.57	44.5	0.85	24.2
1667	D12-5	20.00	5	10.0	283	32.9	7.4	1.6	1.61	45.7	0.85	24.2
1673	E9-4	30.00	4	15.0	425	25.0	5.6	2.8	2.16	61.2	1.30	36.9
1674	E9-6	30.00	6	12.0	340	25.0	5.6	2.8	2.23	63.2	1.30	36.9
1692	E12-4	30.00	4.6	17.0	482	30.6	6.9	2.7	2.16	61.2	1.30	36.9
1693	E12-6	29.50	7	14.0	397	29.6	6.7	2.7	2.23	63.2	1.30	36.9
UPPER STAGE ENGINES												
1504	1/2A3-4T*	1.25	4	1.0	28	8.3	1.9	0.3	0.23	6.6	0.07	1.9
1599	A8-5	2.50	5	2.0	57	13.3	3.0	0.5	0.55	15.7	0.14	4.1
1607	B6-6	5.00	6	2.5	71	12.1	2.7	0.8	0.64	18.2	0.23	6.5
1615	C6-7	10.00	7	2.5	71	15.3	3.4	1.6	0.85	24.3	0.43	12.2
1624	C11-7	10.00	7	4.0	113	22.1	4.9	0.8	1.19	33.8	0.44	12.4
1668	D12-7	20.00	7	8.0	226	32.9	7.4	1.6	1.62	46.0	0.85	24.2
1675	E9-8	30.00	8	10.0	283	25.0	5.6	2.8	2.24	63.5	1.30	36.9
1694	E12-8	29.80	8	12.0	340	31.8	7.1	2.7	2.24	63.5	1.30	36.9
BOOSTER STAGE ENGINES												
1510	A10-0T*	2.50	None	4.0	113	13	2.9	0.8	0.24	6.8	0.12	3.5
1600	A8-0	2.50	None	3.0	85	13.3	3.0	0.3	0.47	13.5	0.14	4.1
1608	B6-0	5.00	None	4.0	113	12.1	2.7	0.8	0.55	15.7	0.23	6.5
1616	C6-0	10.00	None	4.0	113	15.3	3.4	1.6	0.76	21.4	0.43	12.2
1621	C11-0	10.00	None	6.0	170	22.1	4.9	0.8	1.03	29.2	0.44	12.4
1665	D12-0	20.00	None	14.0	396	32.9	7.4	1.6	1.43	40.4	0.84	23.8
1691	E12-0	28.80	None	16.0	454	31.3	7.0	2.6	2.05	58.1	1.30	36.9
PLUGGED ENGINES - FOR USE WITH ROCKET POWERED RACERS & R/C ROCKET GLIDERS												
1505	A10-PT*	2.50	None	3.0	85	13.0	2.9	0.8	0.26	7.4	0.13	3.78

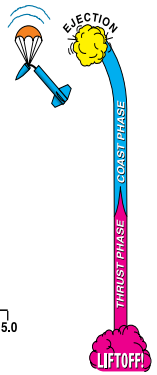
The data listed above is from randomly chosen production samples.
NOTE: The "T" designates a mini engine.

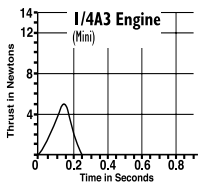
* There are 4 mini engines per package. All other engines are 3 per package.

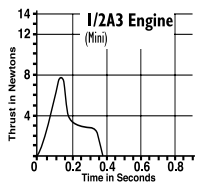
ENGINE TIME/THRUST CURVES

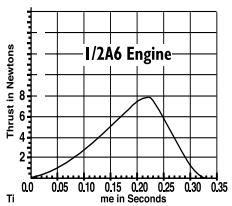
- Time/thrust curves are representative of random production samples
- Graphs are not drawn to the same scale

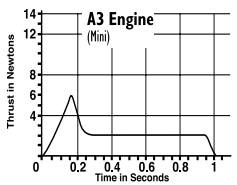


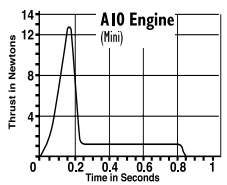


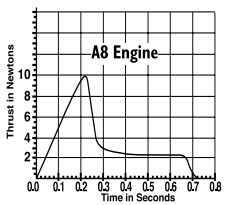


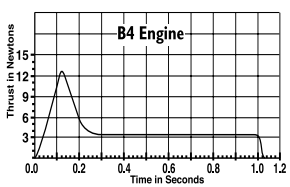


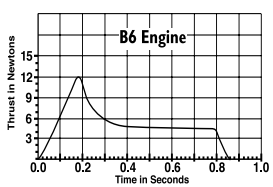


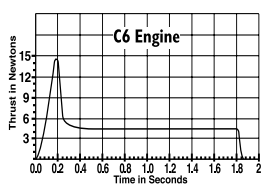


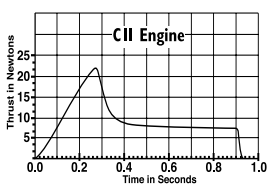


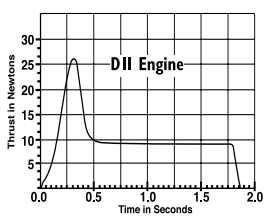


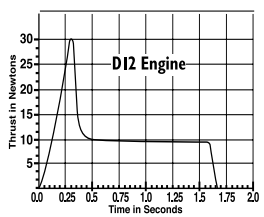


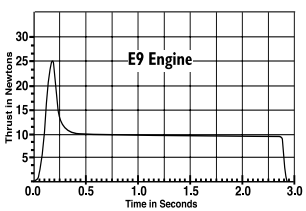


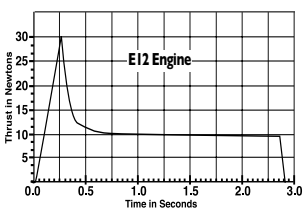


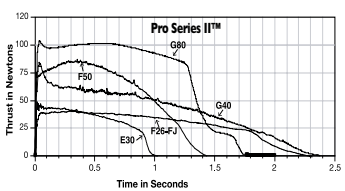












MODEL ROCKET ACCESSORIES

1672 BLAST-OFF® FLIGHT PACK
Includes 6 each of A8-3, B6-4, C6-3, C6-5 engines, 30 igniters and 75 sheets of recovery wadding.

2230 E™ LAUNCH CONTROLLER
Comes complete with safety key and 30 ft (9 m) of cable. Requires 4 AA alkaline batteries - not included. Adult supervision is required for anyone under 18 when launching E engine powered rockets.

2238 PORTA-PAD® E LAUNCH PAD
Quick assembly - no glue or tools required. Includes a 1/4 in (6 mm) launch rod, but can accommodate a 3/16 in (5 mm) Maxi™ launch rod - not included. Adult supervision required for anyone under 18 when launching E engine powered rockets.

2215 PORTA-PAD® II LAUNCH PAD
Quick assembly - no glue or tools required! Comes complete with blast deflector, standoff, two-piece 1/8 in (3 mm) launch rod and safety cap. Porta-Pad® II can accommodate a 3/16 in (5 mm) Maxi™ launch rod - not included.

2220 ELECTRON BEAM® LAUNCH CONTROLLER
Launch controller comes complete with safety key and 15 ft (4.6 m) of cable. Requires four AA alkaline batteries - not included.

302227 TUBE MARKING GUIDE
Easy way to mark fin and launch lug placement lines. Also includes a fin gluing jig.

***NEW!* 2228 ULTIMATE TUBE MARKING GUIDE**

2231 FIN ALIGNMENT GUIDE
Fast and accurate fin alignment for three- or four-finned rockets.

302232 ALTITRAK™
Measure altitude with this easy to use device. Follow the rocket in the sights to apogee, release the trigger to lock the reading.

302241 BLAST DEFLECTOR PLATE
Replaces that worn-out deflector.

2243 1/8 in (3 mm) TWO-PIECE LAUNCH ROD
Replacement rod ideal for most rockets.

2244 3/16 in (5 mm) TWO-PIECE MAXI™ LAUNCH ROD
Launch rod with extra strength and length for larger rockets.

2262 6 in (15.2 cm) PARACHUTE (Assembled)

2264 12 in (30.5 cm) PARACHUTE (Assembled)

2267 18 in (46 cm) PARACHUTE (Assembled)

2271 24 in (61 cm) PARACHUTE (Assembled)

2274 RECOVERY WADDING
Flame resistant wadding protects recovery system. Required in most Estes rockets. Contains 75 sheets – enough for about 18-25 flights!

302278 SHOCK CORDS & MOUNT PACK
Contains two 1/8 in x 18 in (3 mm x 450 mm) and one 1/4 in x 36 in (6 mm x 910 mm) rubber shock cords (enough for four shock cords). Includes mounts and instructions.

2301 MODEL ROCKET IGNITERS
Dependable, easy-to-use Estes igniters in a convenient six pack. It's always a good idea to have a few spares.

***NEW!* 2315 TUBE CUTTING GUIDES**

***NEW!* 2316 MINI TO STANDARD ENGINE ADAPTERS**

***NEW!* 2317 STANDARD TO D ENGINE ADAPTERS**

302320 LAUNCH LUG PACK
Contains eight 1/8 in (3 mm), four 3/16 in (5 mm) and two 1/4 in (6 mm) launch lugs.

303143 ENGINE HOOK ACCESSORY PACK
Hooks fit mini engines (one), regular and D engines (three) and E engines (two). Includes spacer for E engine hooks.

303158 REGULAR ENGINE MOUNT KIT
Fits BT-50, 55 and 60 tubes. Can also be used to make a conversion mount for lightweight D powered rockets.

303159 D AND E ENGINE MOUNT KIT
Heavy duty engine mounts for D and E engines. Fits BT-55, 60 and 80 tubes.

NOSE CONE ASSORTMENTS
Each package of nose cones contains a variety of shapes. Some are one piece, others two piece. All have eyelets for shock cord and shroud line attachments.

303160 NC-5 NOSE CONE ASSORTMENT (5 pack)

303161 NC-20 NOSE CONE ASSORTMENT (4 pack)

303162 NC-50 NOSE CONE ASSORTMENT (5 pack)

303163 NC-55 NOSE CONE ASSORTMENT (4 pack)

303164 NC-56 NOSE CONE ASSORTMENT (4 pack)

303165 NC-60A NOSE CONE ASSORTMENT (4 pack)

303168 NC-80B NOSE CONE (1 pack)

303196 Large Tube Coupler Pack
Includes two couplers for BT-55, BT-56 and BT-60; One for BT-80.

BODY TUBES

High quality spiral wound paper tubes. Use tube couplers to connect tubes of the same diameter. Four tubes per package with BT-5 & BT-20, three per package with BT-50, BT-55 and BT-60 and two per package in BT-80.

Product Number	Body Tube Size	Inside Dimension in./mm	Outside Dimension in./mm	Length in./cm
303084	BT-5	.52/13	.54/14	18.0/45.7
303085	BT-20	.71/18	.74/19	18.0/45.7
303086	BT-50	.95/24	.98/25	18.0/45.7
303087	BT-55	1.28/33	1.33/34	18.0/45.7
303089	BT-60	1.60/41	1.64/42	18.0/45.7
303090	BT-80	2.56/65	2.60/66	14.2/36.1

GET YOUNG PEOPLE EXCITED ABOUT LEARNING!

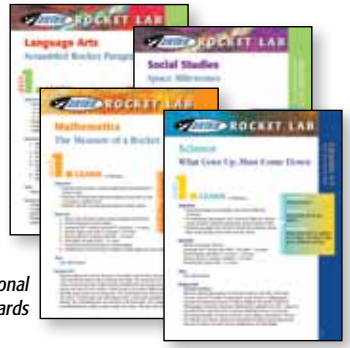
Inspiring students and young people – that's what Estes Educator is here to do! Just log onto EstesEducator.com to find everything you need for your classroom or youth organization. We've made it easy to bring the fun of model rockets to your students.

- Free lesson plans
- Automated list of items needed
- Links to funding and grants
- Extensive resource materials
- Special Discount Bulk Packs

Estes Makes it EASY!

"Estes model rockets are the best hands-on activity I have ever done with my students!"

FREE LESSON PLANS ONLINE



Use the handy pull-down menus to:

- Choose a grade level
- Choose a subject
- Choose the number of classroom sessions

The perfectly matched lesson plan will be displayed!

All matched to National Learning Standards

AUTOMATED LIST OF ITEMS NEEDED

After choosing a lesson plan, just enter the number of students and our website will automatically display a list of recommended rockets and accessories. We've removed the guesswork and determined the best, most budget-friendly choices for you.

LINKS TO FUNDING

We've located a number of organizations that support teaching with model rockets. From EstesEducator.com, you can link directly to funding opportunities to get the application process started. Many are easy to request and you can expect a response quickly.

EXTENSIVE RESOURCES ONLINE

In addition to free lesson plans, we have many resources available and easily accessed. At EstesEducator.com you can find useful information about:

- How to Choose a Launch Site
- The Basics of Model Rocketry
- Reference Guide for Teachers and Youth Group Leaders
- Worksheets for the Classroom
- Videos, Curricula and much more

ESTES EDUCATOR™

ESTES EDUCATOR.com
launch learning fun

SPECIAL BULK PACKS FOR EDUCATORS

Estes offers 12- and 24-piece discount Bulk Packs especially for educators and youth group leaders. Bulk Packs are available for a variety of rockets, including E2X® Easy To Assemble Rockets and Skill Level 1 and 2 Rocket Kits. (Rocket Engines, Recovery Wadding, Igniters and Igniter Plugs are sold separately.)

E2X® EASY TO ASSEMBLE BULK PACK ROCKETS

E2X Kits can be assembled in about one hour. Simply glue the parts together according to the instructions, apply decals and attach the parachute. They require no special tools or painting.

1750 Gnome™
(24-pack)
Length: 10.3 in (26.2 cm)
Recommended Engines: 1/2A3-2T (First Flight), 1/2A3-4T, A3-4T, A10-3T

1751 Alpha® III
(12-pack)
Length: 12.3 in (31.2 cm)
Recommended Engines: 1/2A6-2, A8-3 (First Flight), A8-5, B4-4, B6-4, B6-6, C6-5, C6-7

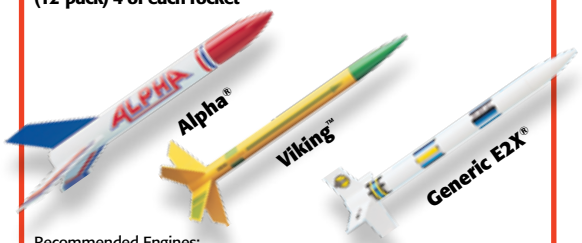
1764 Generic E2X®
(12-pack)
Length: 15 in (38.1 cm)
Recommended Engines: 1/2A6-2, A8-3 (First Flight), A8-5, B4-4, B6-4, B6-6, C6-5, C6-7

1792 Firestreak SST™
(24-pack)
Length: 10.2 in (25.9 cm)
Quick Snap – No gluing!
Recommended Engines: 1/2A3-2T (First Flight), 1/2A3-4T, A3-4T, A10-3T

1793 UP Aerospace™ SpaceLoft™
(12-pack)
Length: 12.5 in (31.8 cm)
Recommended Engines: 1/2A3-2T (First Flight), 1/2A3-4T, A3-4T, A10-3T

NEW! 1753 AVG BULK PACK

(12-pack) 4 of each rocket



Recommended Engines:
½A6-2, A8-3 (First Flight), A8-5, B4-4, B6-4, B6-6, C6-5, C6-7

SKILL LEVEL 1 & 2 BULK PACK ROCKET KITS

Skill Level 1 & 2 Rocket Kits require more model building and decorating. Most can be built in less than two hours and require fins to be assembled and some painting.

1754 Wizard™
(12-pack)
Skill Level 1
Length: 12 in (30.5 cm)Recommended Engines: 1/2A6-2, A8-3 (First Flight), A8-5, B4-4, B6-4, B6-6, C6-5, C6-7

1755 Viking™
(12-pack)
Skill Level 1
Length: 12.1 in (30.7 cm)Recommended Engines: 1/2A6-2, A8-3 (First Flight), A8-5, B4-4, B6-4, B6-6, C6-5, C6-7

1756 Alpha®
(12-pack)
Skill Level 1
Length: 12.3 in (31.2 cm)Recommended Engines: 1/2A6-2, A8-3 (First Flight), A8-5, B4-4, B6-4, B6-6, C6-5, C6-7

1760 Loadstar™ II
(12-pack)
Skill Level 2
Length: 23.3 in (59.2 cm)
Recommended Engines: Single Stage: B4-4 (First Flight), B6-4 C6-5;
Two Stage: Booster Stage: B6-0 (First Flight), C6-0; Upper Stage: A8-5 (First Flight), B6-4, B6-6, C6-7

ROCKET ENGINE BULK PACKS

Every launch requires Engines, Recovery Wadding, Igniters and Igniter Plugs. These convenient Engine Bulk Packs include enough of each for 24 launches. Choose from a variety of engine sizes. We advise using the smallest recommended engine for first flights.

1781	A8-3 Engines (24)
1783	B6-4 Engines (24)
1784	B6-0/B6-6 Engines (12 each)
1788	½ A3-4T Engines (24)
1789	C6-5 Engines (24)
1672	Blast-Off Variety Flight Pack (6 each of A8-3, B6-4, C6-3 & C6-5)

LAUNCH EQUIPMENT

For first time flights you'll need launch equipment, which can be re-used launch after launch. We recommend choosing a Launch Set, as shown on pages 18 to 21 of this catalog. With each Launch Set you get the Launch Controller, Launch Pad, plus a rocket for the teacher.

USEFUL CLASSROOM TOOLS

302227	Tube Marking Guide	302232	AltiTrak™ Altitude Finder
2228	Ultimate Tube Marking Guide	2315	Tube Cutting Guides
302231	Fin Alignment Guide		

ESTES EDUCATOR™