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

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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, launch pad and instructions to get you out and flying in no time. You will need to purchase flight supplies (engines, recovery wadding, starters and starter plugs) and new 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.

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

ALMOST RÉADY TO FLY (ARF): Very minor assembly required and is ready to launch in just a few minutes.

E2X* (EASY TO ASSEMBLE): No paint or special tools needed. E2X* kits contain parts that are pre-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, payloaders and multi-stagers 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 advanced 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.

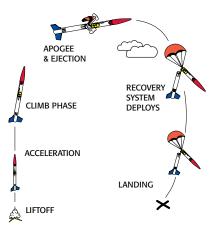
WHAT IS AN ESTES MODEL ROCKET?

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 78-81) 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.

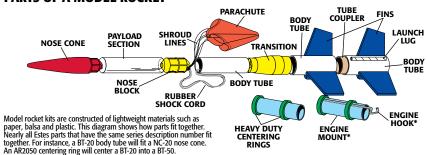
WHAT DO I NEED TO KNOW?

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



* Not included in RTF or E2X® kits.

PLEASE READ!

Estes model rocketry is recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age. Unless otherwise speci-fied, all models require assembly. Engines, recovery wadding, starters and starter 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 model rocket product is warranted against defects in materials or workman-ship 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. August 2012)



- Materials. I will use only lightweight, non-metal parts for the nose, body, and fins of my rocket.
- 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 starters. 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.
- **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 1.500 grams (53 ounces) at liftoff and will not contain more than 125 grams (4.4 ounces) of propellant or 320 Nsec (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	Equivalent Motor	Minimum Site
Impulse (N-sec)	Туре	Dimensions (ft.)
0.00-1.25	1/4A, 1/2A	50
1.26-2.50	A	100
2.51-5.00	В	200
5.01-10.00	С	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.

estesrockets.com

READY TO FLY ROCKETS

1107 Black Hole™

Length: 19.8 in (50.3 cm) Diameter: 1.64 in (42 mm) Estimated Weight: 2.8 oz (79.4 g) Recovery: Parachute Projected Altitude: 550 ft (168 m) Recommended Engines: B4-2, B6-2 (First Flight), B6-4,C6-5

1108 Galaxy Gold™
Length: 19.8 in (50.3 cm)
Diameter: 1.64 in (42 mm)
Estimated Weight: 2.8 oz (79.4 g)
Recovery: Parachute
Projected Altitude: 550 ft (168 m)
Recommended Engines: B4-2, B6-2 (First Flight), B6-4,C6-5

1109 Meteorite White™

Length: 19.8 in (50.3 cm) Diameter: 1.64 in (42 mm)
Estimated Weight: 2.8 oz (79.4 g)
Recovery: Parachute Projected Altitude: 550 ft (168 m) Recommended Engines: B4-2, B6-2 (First Flight), B6-4,C6-5

1110 Atomic Aqua™

Length: 19.8 in (50.3 cm) Diameter: 1.64 in (42 mm) Estimated Weight: 2.8 oz (79.4 g) Recovery: Parachute Projected Altitude: 550 ft (168 m) Recommended Engines: B4-2, B6-2 (First Flight), B6-4,C6-5

1111 Satellite Silver™

Length: 19.8 in (50.3 cm) Diameter: 1.64 in (42 mm)
Estimated Weight: 2.8 oz (79.4 g)
Recovery: Parachute
Projected Altitude: 550 ft (168 m) Recommended Engines: B4-2, B6-2 (First Flight), B6-4,C6-5



ALMOST READY TO FLY ROCKETS

2489 Hyper Dart[™] Length: 16.1 in (40.9 cm) Diameter: .98 in (25 mm) Estimated Weight: 1.4 oz (39.7 g) Recovery: Parachute

Projected Altitude: 1125 ft (343 m) Recommended Engines: A8-3 (First Flight), B4-4, B6-4,

C6-5. C6-7

2490 Fractured™

Length: 18 in (45.7 cm) Diameter: 1.64 in (42 mm) Estimated Weight: 3.7 oz (104.9 g) Recovery: Parachute
Projected Altitude: 550 ft (168 m)
Recommended Engines: B4-2, B6-2 (First Flight), B6-4,

C6-3, C6-5

2491 Drifter™

Length: 18.6 in (47.2 cm) Diameter: 1.33 in (34 mm) Estimated Weight: 2.1 oz (59.5 g) Recovery: Parachute Projected Altitude: 700 ft (213 m) Recommended Engines: B4-2, B6-2, B6-4 (First Flight), C6-3, C6-5

2492 Spirit™

Length: 20 in (50.8 cm) Diameter: 1.33 in (34 mm)
Estimated Weight: 2.6 oz (73.7 g)
Recovery: Parachute
Projected Altitude: 700 ft (213 m) Recommended Engines: B4-2, B6-2, B6-4 (First Flight), C6-3, C6-5

2493 Spectra™

Length: 16.6 in (42.2 cm) Diameter: 1.64 in (42.2 cm)
Diameter: 1.64 in (42 mm)
Estimated Weight: 3.5 oz (99.2 g)
Recovery: Parachute
Projected Altitude: 550 ft (168 m) Recommended Engines: B4-2, B6-2, B6-4 (First Flight), C6-3, C6-5

2494 Dazzler™

Length: 17.5 in (44.5 cm) Diameter: .98 in (25 mm) Estimated Weight: 1.5 oz (30.5 g) Recovery: Parachute Projected Altitude: 1125 ft (343 m) Recommended Engines: A8-3 (First Flight), B4-4, B6-4, C6-5, C6-7

2495 Chiller™

Length: 17.3 in (43.9 cm) Diameter: 1.33 in (34 mm) Estimated Weight: 2.2 oz (62.4 g) Recovery: Parachute Projected Altitude: 600 ft (183 m)

Recommended Engines: B4-2 (First Flight), B6-2, B6-4, C6-3, C6-5



E2X® (EASY TO ASSEMBLE) **ROCKET KITS**

1956 Firebolt™

Length: 36.5 in (92.7 cm) Diameter: 1.64 in (42 mm) Estimated Weight: 6.8 oz (192.8 g)
Recovery: Parachute

Projected Altitude: 1000 ft (305 m)

Recommended Engines: D12-5 (First Flight), E9-6,

Requires 3/16 in (5 mm) Maxi™ launch rod (2244), sold separately.

2428 Orange Crush™

Length: 32.7 in (83.1 cm) Diameter: 1.35 in (34 mm) Estimated Weight: 2.3 oz (65.2 g) Recovery: Parachute Projected Altitude: 850 ft (259 m)

Recommended Engines: C11-3 (First Flight), D12-3,

2429 Humdinger™

Length:22.5 in (57.2 cm) Diameter: .54 in (14 mm) Estimated Weight: .65 oz (18.4 g) Recovery: Parachute Projected Altitude: 1000 ft (335 m) Recommended Engines: 1/2A3-2T (First Flight), 1/2A3-4T, A3-4T, A10-3T

2437 Savage™

Length: 31.8 in (80.6 cm) Diameter: 1.33 in 34 mm)
Estimated Weight: 4.7 oz (133.2 g)
Recovery: Parachute Projected Altitude: 1600 ft (488 m) Recommended Engines: Single Stage: B4-2, B6-2, B6-4 (First Flight), C6-5 Booster: D12-0 With Booster: A8-5, B6-4 (First Flight) B6-6, C6-5, C6-7

2439 Shattered™

Length: 34 in (86.4 cm) Diameter: .98 in (25 mm) Estimated Weight: 2.5 oz (70.9 g) Recovery: Parachute Projected Altitude: 925 ft (282 m) Recommended Engines: B6-4 (First Flight), C6-5

2443 Splendor™

Length: 24.8 in (63 cm) Diameter: 1.35 in (34 mm) Estimated Weight: 2.6 oz (73.7 g) Recovery: Parachute Projected Altitude: 700 ft (213 m) Recommended Engines: B6-4 (First Flight), C6-5

2463 Dark Zero™

Length: 21.3 in (54.1 cm) Diameter: 1.1 in (28 mm) Estimated Weight: 2.1 oz (59.5 g) Recovery: Parachute Projected Altitude: 975 ft (297 m)

Recommended Engines: B4-4, B6-4 (First Flight), C6-5



SKILL LEVEL 3 ROCKET KITS

7228 Cobra™ Length: 16.2 in (41.1 cm) Diameter: .98 in (42 cm) Wingspan: 8 in (20,3 cm) Estimated Weight: 2.5 oz (70.9 g) Recovery: Parachute
Projected Altitude: 925 ft (282 m)
Recommended Engines: B4-2 (First Flight), B6-2,

C6-3, C6-5

SKILL LEVEL 4 ROCKET KITS

7229 Dark Silver™

Length: 29.8 in (75.7 cm) Diameter: 1.33 in (34 mm) Estimated Weight: 4.1 oz (116.2 g) Recovery: Parachute Projected Altitude: 400 ft (122 m) Recommended Engines: C6-3

SKILL LEVEL 5 ROCKET KITS

7230 Conquest™ Length: 28.6 in (72.6 cm) Diameter: 1.64 in (42 mm) Wingspan: 12.8 in (32.5 cm) Estimated Weight: 5.5 oz (155.9 g) Recovery: Parachute
Projected Altitude: 1100 ft (335 m)
Recommended Engines: D12-3 (First Flight), E9-4, Requires 3/16 in (5 mm) Maxi™ launch rod (2244), sold separately.

NEW! 7228 Cobrain NEW! 1229 Dark Silver BARK SILL ER NEW! 7230 Conquestin

* E engines require the E™ Launch Controller (2230), sold separately.

Adult supervision is recommended for those under 12 years of age.

PRO SERIES II™ E2X® (EASY TO ASSEMBLE) ROCKET KITS

9706 Ascender™

Length: 42.1 in (106.9 cm) Diameter: 2 in (5.1 cm) Estimated Weight: 11 oz (311.8 g) Recovery: Parachute

Projected Altitude: 2000 ft (610 m)

Recommended Engines: E16-6, F15-6 (First Flight), F15-8

9707 Majestic™

Length: 35.3 in (89.7 cm) Diameter: 2 in (5.1 cm) Estimated Weight: 9.6 oz (272.2 g) Recovery: Parachute

Projected Altitude: 2000 ft (610 m)

Recommended Engines: E16-6, F15-6 (First Flight), F15-8

9709 Trajector™

Length: 35.3 in (89.7 cm)

Diameter: 2 in (5.1 cm) Estimated Weight: 10.7 oz (303.3 g) Recovery: Parachute

Projected Altitude: 1600 ft (488 m)

Recommended Engines: E16-6, F15-6 (First Flight), F15-8

9710 Prowler Launch Set™

Includes Estes Porta Pad E™ Launch Pad and E™ Launch Controller

Length: 33.6 in (85.3 cm) Diameter: 2 in (5.1 cm) Estimated Weight: 8.5 oz (241 g)

Recovery: Parachute

Projected Altitude: 2000 ft (610 m)

Recommended Engines: E16-6, E16-8, F15-6 (First Flight), F15-8

PRO SERIES II™ ACCESSORIES

2240 PS II™ Launch Controller 3172 PS II™ Shock Cord Accessory Pack (3)

INCREASE YOUR ALTITUDE BY 1000 FEET!

9752 PS II™ Booster

For use with rockets 9706 Ascender[™], 9707 Majestic[™], 9709 Trajector™ and 9710 Prowler Launch Set™ Recommended Engine: F15-0

29 mm MODEL **ROCKET ENGINES**

(2 per pack)

1695 E16-0 1696 E16-4 1697 E16-6 1698 E16-8

1650 F15-0 1651 F15-4

1652 F15-6 1653 F15-8





NEW! 9707 Majesticim

NEW! 9706 Ascender^M

NEW! 3172 PS II™ Shock **Cord Accessory Pack**

NEW! 9709 Trajectorin

Pro Series II rockets, require a launch controller with 30 feet of wire, such as our E™ (2230) or PSII™ (2240) Launch Controller. 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.

PRO SERIES II™ ROCKET KITS 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, 9700 Leviathan Th G80-7T 9701 Ventris™ Projected Altitude: 2,000 ft (610 m) Recommended Motors: F26-6FJ, F50-6T, G40-7W, G80-7T 9701 Ventris™ 9702 Partizon™ 9702 Partizon M 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, P703 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, 9702 Partizon™ G80-7T 9703 Argent''

Pro Series II rockets require a launch controller with 30 feet of wire, such as our E™ (2230) or PSII™ (2240) Launch Controller. 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.

PRO SERIES II™ ROCKET KITS

9704 Nike Smoke 1 to 5.5 scale model

Length: 41.8 in (106.2 cm) Diameter: 3 in (7.6 cm) Estimated Weight: 17.5 oz (496.1 g)

Fins: 2 piece plastic

Recovery: 24 in (60 cm) Nylon Parachute Projected Altitude: 1,500 ft (457 m) Recommended Motors: F26-6FJ, F50-6T, G40-7W, G80-7T

9705 Mega Der Red Max™ Length: 40 in (101.6 cm) Diameter: 4 in (10.2 cm) Estimated Weight: 31 oz (878.9 g) Fins: Laser cut plywood with wood laminate Recovery: 30 in (76 cm) Nylon Parachute Projected Altitude: 500 ft (457 m) Recommended Motors: F50-6T, G40-7W, G80-7T

PRO SERIES II™ ACCESSORIES

2261 24 in Nylon Parachute 2273 30 in Nylon Parachute

3552 Pro Series II™ Launch Base 3556 Pro Series II™ Recovery Wadding (39 strips) 2305 Sonic Igniter (4) 9750 29 mm Motor Retainer Set (2 sets)

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 9777 G80-7T Motor







UNITED STATES

3556 Pro Series II™ **Recovery Wadding**



Motor Retainer Set™

3552 Pro Series II™ Launch Base

Pro Series II rockets, require a launch controller with 30 feet of wire, such as our E™ (2230) or PSI™ (2240) Launch Controller. In addition to the launch controller, you will need a sturdy launch pad with a 1/4" (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.

9704 Nike Smoke



E2X® (EASY TO ASSEMBLE) **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

1427 Alpha® III Launch Set Length: 12.3 in (31.2 cm) Diameter: .98 in (25 mm)

Estimated Weight: 1.2 oz (34 g) Fins: Plastic Projected Altitude: 1,150 ft (351 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

1438 Sky Twister™ Launch Set Length: 21.3 in (54.1 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 Projected Altitude: 650 ft (198 m) Recommended Engines: B4-2, B6-2 (First Flight), B6-4, C6-3, C6-5

1462 Shuttle Xpress™ Launch Set

Length: 17.7 in (45 cm) Diameter: 1.33 in (34 mm) Estimated Weight: 3.2 oz (90.7 g) 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™ Launch Set 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: B4-2, B6-2 (First Flight), C6-3, C6-5

1425 Manta^M II Launch Set 1424 Silver Arrow^M Launch Set 1427 Alpha® III Launch Set 1438 Sky Twister Launch Set dens) 1462 Shuttle Xpress M. Launch Set NASA! 1465 HeliCati Launch Set Each Launch Set includes Estes Launch Pad and Controller (Engines and 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. 23

E2X® (EASY TO ASSEMBLE) **LAUNCH SETS**

1469 Tandem-X™ Launch Set

Amazon™

Length: 29.4 in (74.7 cm) Diameter: 1.33 in (34 mm) Estimated Weight: 3.2 oz (90.7 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

Diameter: .98 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

1475 Solar Scouts™ Launch Set 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

1478 Flash*! Launch Set

Length: 16.2 in (41.2 cm) Diameter: 1.1 in (28 mm) Estimated Weight: 1.8 oz (52 g) 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™ Launch Set

Length: 16.5 in (41.9 cm) Diameter: .98 in (25 mm) Paracheter: .38 in (23 linit)
Estimated Weight: 1.5 oz (42.5 g)
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 Launch Set

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 22X* 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

1478 Flash ! Launch Set



1469 Tandem-X" Launch Set

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

SKILL LEVEL 2 LAUNCH SET

1466 Maxi Alpha™ 3 Launch Set

Skill Level: 2

Length: 33.25 in (84.5 cm) Diameter: 2.6 in (66 mm) Estimated Weight: 8 oz (226.8 g)

Fins: Plastic

Recovery: 24 in (61 cm) Parachute Projected Altitude: 700 ft (213 m) Recommended Engines: D12-3, E9-4*, E9-6* Requires 3/16 in (5 mm) Maxi™ Launch Rod

(2244), included.

AIR ROCKET LAUNCH SETS

1900 T-Bolt™ Air Rocket Launch Set Ready to fly Length: 11.5 in (29.2 cm) Estimated Weight: .87 oz (24.7 g)

Fins: Foam Recovery: Bounce

Projected Altitude: 150 ft (46 m)

1908 Rocket-Star™ Rocket Launch Set

Rocket 1

Length: 8.8 in (22.4 cm) Rocket 2

Length: 6.1 in (15.5 cm) Fins: Foam

Recovery: Bounce

Projected Altitude: 50 ft (15.2 m)

1466 Maxi Alpha[™] 3 Launch Set





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

* E engines require the E[™] Launch Controller (2230), sold separately.

READY TO FLY ROCKETS

1100 Pulsar Pink™

Length: 19.8 in (50.3 cm) Diameter: 1.64 in (42 mm) Estimated Weight: 2.8 oz (79.4 g)

Recovery: Parachute

Projected Altitude: 550 ft (168 m) Recommended Engines: B4-2, B6-2 (First Flight), B6-4,C6-5

1101 Alien Green™

Length: 19.8 in (50.3 cm) Diameter: 1.64 in (42 mm) Estimated Weight: 2.8 oz (79.4 g) Recovery: Parachute Projected Altitude: 550 ft (168 m)

Recommended Engines: B4-2, B6-2 (First Flight), B6-4,C6-5

1102 Rocket Red™

Length: 19.8 in (50.3 cm) Diameter: 1.64 in (42 mm)
Estimated Weight: 2.8 oz (79.4 g)
Recovery: Parachute Projected Altitude: 550 ft (168 m)

Recommended Engines: B4-2, B6-2 (First Flight), B6-4,C6-5

1103 Planet Purple™

Length: 19.8 in (50.3 cm) Diameter: 1.64 in (42 mm) Estimated Weight: 2.8 oz (79.4 g) Recovery: Parachute Projected Altitude: 550 ft (168 m)

Recommended Engines: B4-2, B6-2 (First Flight), B6-4,C6-5

1104 Outer-space Orange™

Length: 19.8 in (50.3 cm) Diameter: 1.64 in (42 mm) Estimated Weight: 2.8 oz (79.4 g) Recovery: Parachute

Projected Altitude: 550 ft (168 m)

Recommended Engines: B4-2, B6-2 (First Flight), B6-4,C6-5

1105 Blast-off Blue™

Length: 19.8 in (50.3 cm) Diameter: 1.64 in (42 mm) Estimated Weight: 2.8 oz (79.4 g) Recovery: Parachute

Projected Altitude: 550 ft (168 m)

Recommended Engines: B4-2, B6-2 (First Flight), B6-4,C6-5

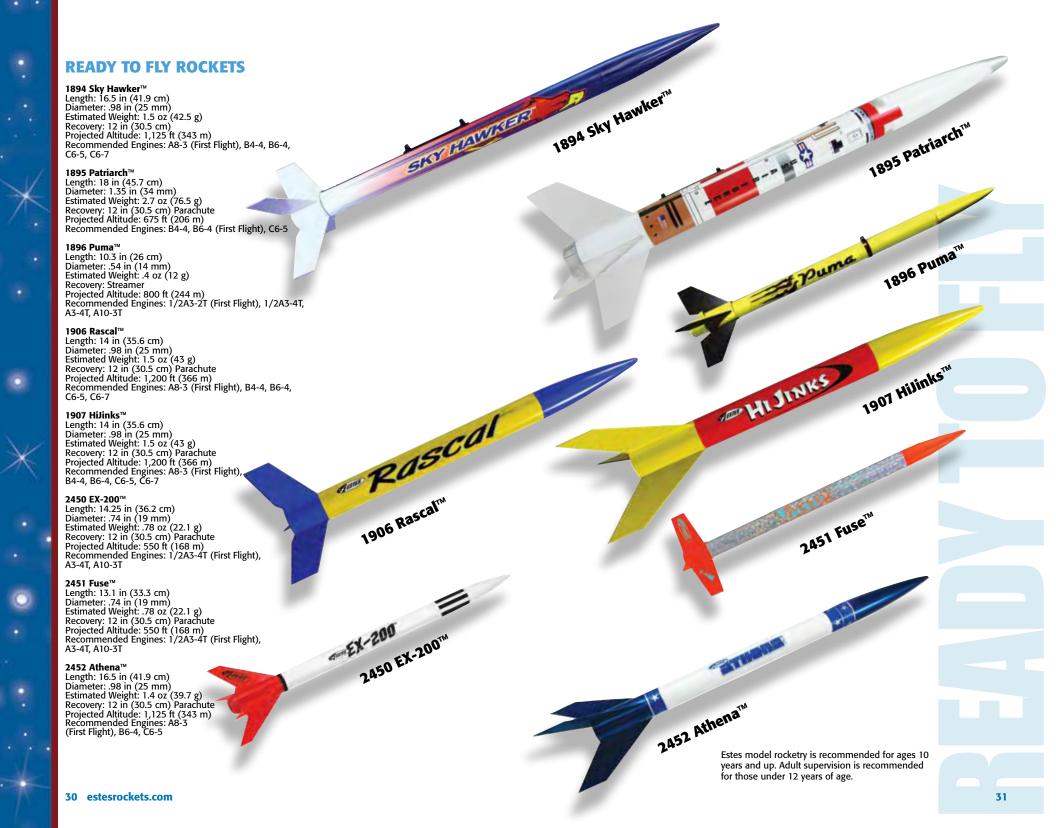
1106 Yellow Star™

Length: 19.8 in (50.3 cm) Diameter: 1.64 in (42 mm)
Estimated Weight: 2.8 oz (79.4 g)
Recovery: Parachute

Projected Altitude: 550 ft (168 m)

Recommended Engines: B4-2, B6-2 (First Flight), B6-4,C6-5





READY TO FLY ROCKETS 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) 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

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



READY TO FLY ROCKETS

2470 Scrappy™
Length: 14.25 in (36.2 cm)
Diameter: .74 in (19 mm)
Estimated Weight: .7 oz (20 g)
Recovery: Parachute
Projected Altitude: 575 ft (175 m)
Recommended Engines: 1/2A3-4T (First Flight), A3-4T A10-4T

4T, A10-3T

2471 Slinger™
Length: 14.25 in (36.2 cm)
Diameter: .74 in (19 mm)
Estimated Weight: .74 oz (21 g)
Recovery: Parachute
Projected Altitude: 550 ft (168 m)
Recommended Engines: 1/2A3-4T (First Flight), A3-4T, A10-3T

2472 Sizzler™

Length: 14.5 in (36.8 cm)
Diameter: 1.64 in (42 mm)
Estimated Weight: 2.1 oz (59.5 g)
Recovery: Parachute Projected Altitude: 550 ft (168 m) Recommended Engines: B4-4, B6-4 (First Flight), C6-5

2474 Outlaw™

Length: 22 in (55.9 cm)

Diameter: 1.35 in (34 mm)

Estimated Weight: 2 oz (56.7 g)

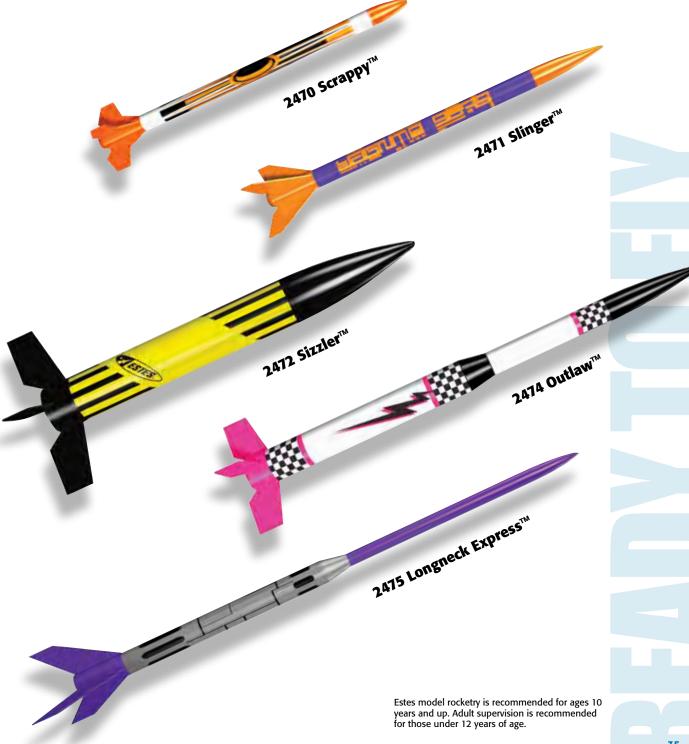
Recovery: Parachute

Projected Altitude: 750 ft (229 m)

Recommended Engines: B4-4, B6-4 (First Flight), C6-5

2475 Longneck Express™ Length: 23.25 in (59.1 cm) Diameter: .98 in (25 mm) Estimated Weight: 1.4 oz (39.7 g) Recovery: Parachute Projected Altitude: 1125 ft (343 m) Recommended Engines: A8-3 (First Flight), B4-4,

B6-4, C6-5



ALMOST READY TO FLY ROCKETS

2473 Shooting Star™ Length: 19.25 in (48.9 cm) Diameter: 1.35 in (34 mm) Estimated Weight: 2.3 oz (65.2 g)

Recovery: Parachute

Projected Altitude: 725 ft (221 m) Recommended Engines: B4-4, B6-4 (First Flight), C6-5

2481 Power Patrol™

Length: 20.5 in (52.1 cm) Diameter: .98 in (25 mm) Estimated Weight: 1.6 oz (45.4 g) Recovery: Parachute Projected Altitude: 1100 ft (335 m) Recommended Engines: A8-3 (First Flight), B4-4, B6-4, C6-5,

2482 Solaris™

Length: 18.5 in (47 cm)
Diameter: .98 in (25 mm)
Estimated Weight: 1.6 oz (45.4 g)
Recovery: Parachute
Projected Altitude: 1125 ft (343 m) Recommended Engines: A8-3 (First Flight), B4-4, B6-4, C6-5,

2483 Phantom Blue™

Length: 19.3 in (49 cm) Diameter: .98 in (25 mm) Estimated Weight: 1.4 oz (39.7 g) Recovery: Parachute Projected Altitude: 1150 ft (351 m) Recommended Engines: A8-3 (First Flight), B4-4, B6-4, C6-5,

2485 L.G.M. 0095™

Length: 21 in (53.3 cm) Diameter: 1.33 in (34 mm)
Estimated Weight: 2.7 oz (79.5 g)
Recovery: Parachute
Projected Altitude: 650 ft (198 m)

Recommended Engines: B4-2 (First Flight), B6-2, B6-4, C6-3,



ALMOST READY TO FLY ROCKETS

2486 Flying Colors™ Length: 21 in (53.3 cm) Diameter: 1.64 in (42 mm) Estimated Weight: 3 oz (85 g)

Recovery: Parachute
Projected Altitude: 600 ft (183 m)
Recommended Engines: B4-2 (First Flight), B6-2, B6-4, C6-3, C6-5

2488 Firestorm™

Length: 20.8 in (52.8 cm) Diameter: 1.64 in (42 mm) Estimated Weight: 3 oz (85 g) Recovery: Parachute

Projected Altitude: 600 ft (183 m)

Recommended Engines: B4-2 (First Flight), B6-2, B6-4, C6-3, C6-5

2884 Red Rider™

Length: 18.5 in (47 cm) Diameter: 1.33 in (34 mm) Estimated Weight: 3 oz (85 g) Recovery: Parachute Projected Altitude: 700 ft (213 m)

Recommended Engines: B4-2 (First Flight), B6-2, B6-4, C6-3, C6-5

2887 Helios™

Length: 18.2 in (46.2 cm) Diameter: 1.64 in (42 mm) Estimated Weight: 3.7 oz (104.9 g) Recovery: Parachute

Projected Altitude: 600 ft (183 m)

Recommended Engines: B4-2 (First Flight), B6-2, B6-4, C6-3, C6-5

INCREASE YOUR ALTITUDE BY 800 FEET!

2256 Booster-60

For use with rockets 2486 Flying Colors™, 2887 Helios™, 2488 Firestorm™, 2490 Fractured™, 2493 Spectra[™]. Recommended Engine: D12-0

2257 Booster-55

For use with rockets 2884 Red Rider™ and 2485 L.G.M. 0095™, 2491 Drifter™, 2492 Spirit™, 2495 Chiller™.

Recommended Engine: D12-0







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, A3-4T (First Flight), 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), B4-4, B6-4, B6-6, C6-5, C6-7

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



E2X® (EASY TO ASSEMBLE) ROCKET KITS

1263 Sky Twister™ Length: 21.3 in (54.1 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 (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.

1330 Freefall™

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

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, Requires 3/16 in (5 mm) Maxi™ launch rod (2244), sold separately.



E2X® (EASY TO ASSEMBLE) **ROCKET KITS**

1954 Red Flare™

Length: 24.4 in (62 cm)

Length: 24.4 in (62 cm)
Diameter: 2.6 in (6.6 cm)
Estimated Weight: 6.5 oz (184.3 g)
Recovery: Parachute
Projected Altitude: 1000 ft (305 m)
Recommended Engines: D12-5 (First Flight), E9-4*, E9-6*
Requires 3/16 in (5 mm) Maxi™ launch rod (2244), sold

1955 Top Shot™

Length: 37 in (94 cm) Length: 37 in (94 cm)
Diameter: 1.64 in (42 mm)
Estimated Weight: 5.3 oz (150 g)
Recovery: Parachute
Projected Altitude: 1150 ft (351 m)
Recommended Engines: D12-5 (First Flight), E9-6*, E12-6*
Requires 3/16 in (5 mm) Maxi™ launch rod (2244), sold

separately.

2132 Banshee™

Length: 15.6 in (39.6 cm)
Diameter: 1.1 in (28 mm)
Estimated Weight: 1.6 oz (45.4 g)

Recovery: Parachute Projected Altitude: 1100 ft (335 m)

Recommended Engines: A8-3 (First Flight), B4-4, B6-4,

B6-6, C6-5, C6-7

2158 AGM-57X Heatseeker™

Length: 18.6 in (47.2 cm) Diameter: 1.1 in (28 mm)
Estimated Weight: 2.0 oz (56.7 g)
Recovery: Parachute

Projected Altitude: 1025 ft (312 m) Recommended Engines: B4-4 (First Flight), B6-4, C6-5



* E engines require the E[™] Launch Controller (2230), sold separately.

E2X® (EASY TO ASSEMBLE) ROCKET KITS

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

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

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: 1/2A3-4T (First Flight), A3-4T,



E2X® (EASY TO ASSEMBLE) **ROCKET KITS**

2431 Dink™

Length: 10 in (25.4 cm) Diameter: .74 in (19 mm)
Estimated Weight: .6 oz (15.2 g)
Recovery: Parachute Projected Altitude: 600 ft (183 m) Recommended Engines: 1/2A3-4T (First Flight), A3-4T, A10-3T

2432 Mix-it Up™

Length: 16.25 in (41.3 cm) Diameter: .98 in (25 mm) Estimated Weight: 1.4 oz (39.7 g) Recovery: Parachute Projected Altitude: 1100 ft (335 m) Recommended Engines: A8-3 (First Flight), B4-4, B6-4, B6-6, C6-5, C6-7

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: 1/2A3-4T (First Flight), A3-4T, A10-3T



E2X® (EASY TO ASSEMBLE) **ROCKET KITS**

2435 3 Bandits™

2435 3 Bandts⁻⁻⁻
3 rocket set
Length: 10.8-11.1 in (27.4-28.3 cm)
Diameter: .74 in (19 mm)
Estimated Weight: .6-.71 oz (19.8-20.1 g)
Recovery: Parachute
Projected Altitude: 550 ft (168 m)
Recommended Engines: 1/2A3-4T (First Flight), A3-4T,

2436 Emerald Streak™

Length: 22 in (55.9 cm)
Diameter: 1.1 in (28 mm)
Estimated Weight: 2.0 oz (56.7 g)
Recovery: Parachute
Projected Altitude: 950 ft (290 m)

Recommended Engines: B4-4 (First Flight), B6-4, C6-5

2438 Sky Shark™ Length: 15.1 in (38.4 cm) Diameter: .74 in (19 mm) Estimated Weight: .76 oz (21.5 g)

Recovery: Parachute Projected Altitude: 550 ft (168 m)

Recommended Engines: 1/2A3-2T (First Flight), 1/2A3-4T,

A3-4T, A10-3T

2476 Black Diamond™

Length: 26.25 in (66.7 cm)

Length: 26.25 in (66.7 cm)
Diameter: 1.64 in (42 mm)
Estimated Weight: 3.3 oz (93.6 g)
Recovery: Parachute
Projected Altitude: 500 ft (152 m)
Recommended Engines: B4-2 (First Flight), B6-2, C6-3



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: B4-2, B4-4, 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: Tumble
Projected Altitude: 850 ft (259 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: 12.8 in (32.5 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

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





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

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 Prijs. Ldsei 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

2056 U.S. Army Patriot M-104

Length: 21.3 in (54.1 cm) Diameter: 1.64 in (42 mm) Estimated Weight: 2 oz (56.7 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 (65 g)

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

1345 Mosquito"

U.S.ARMY

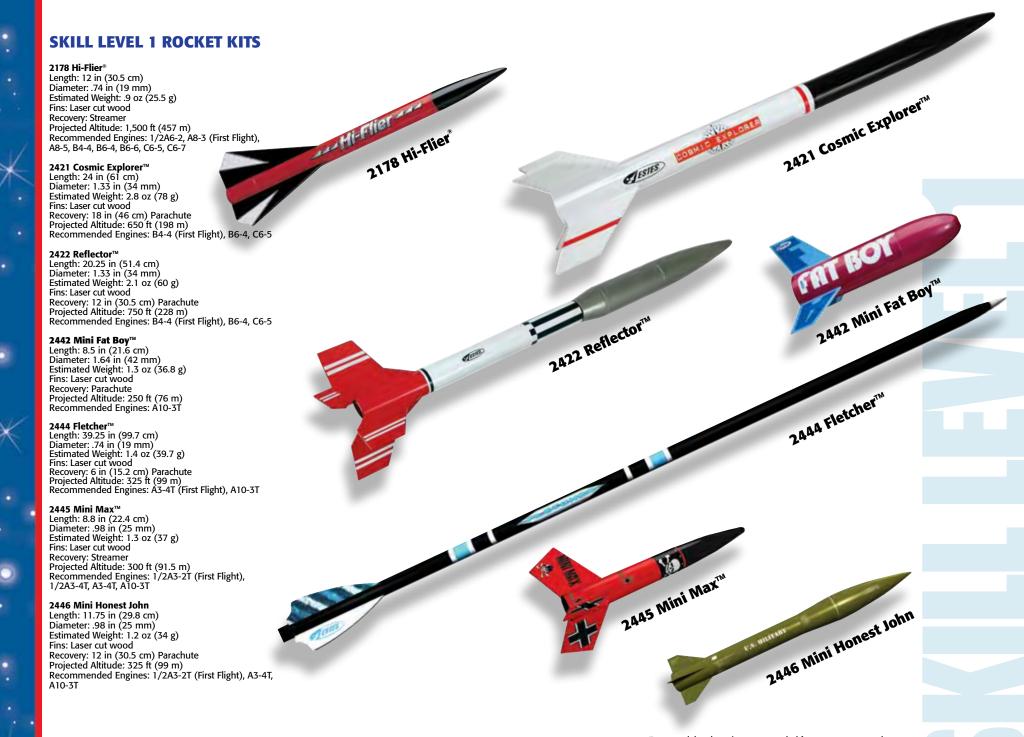
1948 Big Bertham

1949 Viking[™]

1381 Yankee[™]

2056 U.S. Army Patriot M-104

2092 MongooseTM



SKILL LEVEL 1 ROCKET KITS

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

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: 1/2A6-2, 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

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

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

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



SKILL LEVEL 1 ROCKET KITS 3201 Taser Twin **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 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 3208 Ricochet^m 3209 Space Eagle™ Length: 26.75 in (67.9 cm) Diameter: .98 in (25 mm) Estimated Weight: 2.2 oz (62.4 g) 3209 Space Eagle™ 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 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), 3211 Plasma Probe™ Length: 18.5 in (47 cm) Diameter: 1.33 in (34 mm) Estimated Weight: 1.7 oz (48.1 g) 3210 Vector Force Fins: Laser cut wood Recovery: 12 in (30.5 cm) Parachute Projected Altitude: 800 ft (244 m) Recommended Engines: B6-4 (First Flight), C6-5 3211 Plasma Probein

SKILL LEVEL 1 ROCKET KITS

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

3230 Estes Jetliner™

Length: 9.3 in (23.6 cm) Diameter: 1.64 in (42 mm) Wingspan: 11 in (27.9 cm) Estimated Weight: 1.9 oz (53.9 g) Fins: Laser cut wood Recovery: Parachute Projected Altitude: 150 ft (46 m) Recommended Engines: A10-3T

3231 Curvilinear™

Length: 10.5 in (27.7 cm) Diameter: 1.64 in (42 mm) Estimated Weight: 1.5 oz (42.5 g) Fins: Laser cut wood Recovery: Parachute Projected Altitude: 175 ft (53 m) Recommended Engines: A10-3T

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

7220 Crossfire ISX™

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

3230 Estes Jetliner™ A L'ÉHA 3216 Super Alpha® 3231 Curvilinear™ THE PLANT 7214 Monarch STRATOCRUISER E 1215 Stratocruiser" crossino 1220 Crossfire ISX'"





SKILL LEVEL 2 ROCKET KITS

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,

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,

3217 Vagabond™

Length: 35.3 in (89.7 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, 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

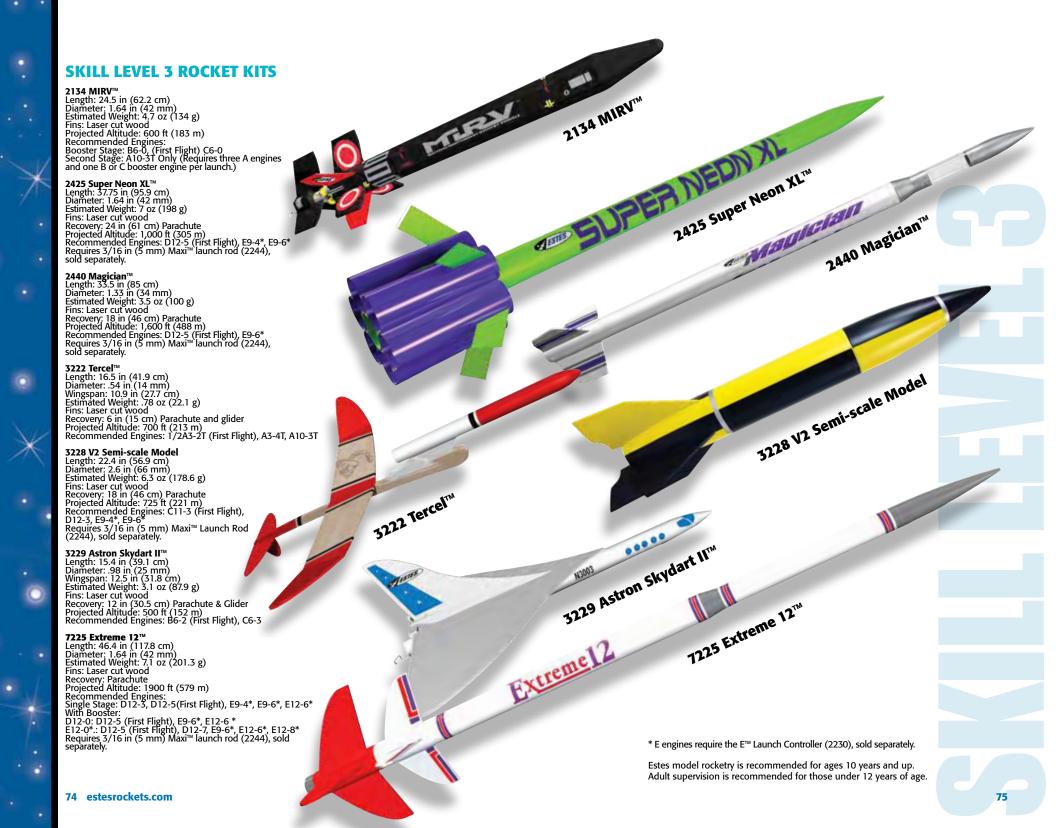
3225 Solar Warrior™

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: 18 in (46 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.

3026 Photon Probe Th 3025 Photon Disruptor Magabond 3217 Vagabond[™] U.S. AIR ATTACK FC 803 3219 Air Commanderⁱⁿ 3218 Laser LanceTM 3225 Solar Warrior™ * E engines require 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.

SKILL LEVEL 2 ROCKET KITS 3226 Hi-Flier® XL Length: 31 in (78.7 cm) 3226 Hi-Flier® XL Diameter: 1.64 in (42 mm) Estimated Weight: 3.5 oz (99.2 g) --- Hi-Flier XL Fins: Laser cut wood Recovery: 18 in (46 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), 3227 Loadstar" II sold separately. 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 3232 Centuri® Length: 29.3 in (74.4 cm) Diameter: 1.33 in (34 mm) Estimated Weight: 3.1 oz (87.9 g) Fins: Laser cut wood Recovery: Parachute Projected Altitude: 600 ft (183 m) Recommended Engines: B4-4 (First Flight), B6-4, 3233 Blendersim 3232 Centuri® 3233 Blenders™ Length: 2.6 in (6.6 cm) Diameter: 4.8 in (12.2 cm) Estimated Weight: .4 oz (11.3 g) Fins: Laser cut wood Recovery: Spin Projected Altitude: 75 ft (23 m) Recommended Engine: A10-0T 3234 JBR-013™ Length: 18.4 in (46.7 cm) Diameter: 1.33 in (34 mm) Estimated Weight: 1.9 oz (53.9 g) Fins: Laser cut wood Recovery: Parachute Projected Altitude: 775 ft (236 m) 3234 JBR-013TM Recommended Engines: B4-4 (First Flight), B6-4, C6-5, C6-7 JBR-013 7000 Bull Pup 12D 7000 Bull Pup 120 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 * E engines require the E™ Launch Controller (2230), sold separately.







ESTES MODEL ROCKET ENGINES

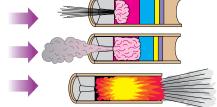
The famous model rocket engines that made model rocketry the great activity it is today. Estes model rocket engines have been proven consistent and reliable in more than 275,000,000 launches.

- 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.

CLAY NOZZLE PROPELLANT FOR LIFTOFF AND ACCELERATION TRACKING SMOKE RECOVERY SYSTEM EJECTION CHARGE TO ACTIVATE TO ACTIVATE RECOVERY SYSTEM

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:

TOTAL IMPULSE	ENGINE TYPES
0.313 - 0.625	Mini
0.626 - 1.25	Standard, Mini
1.26 - 2.50	Standard, Mini
2.51 - 5.00	Standard
5.01 - 10.00	Standard
5.01 - 10.00	Standard
10.01 - 20.00	D Size
20.01 - 30.00	E Size
45.01 - 50.00	F Size
	0.313 - 0.625 0.626 - 1.25 1.26 - 2.50 2.51 - 5.00 5.01 - 10.00 10.01 - 20.00 20.01 - 30.00

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.)

1.75 in. (4.4 cm) 0.5 in. (13 mm) SESTES.) MINI ENGINE 4 2.75 in. (7.0 cm) → 1.75 in. (7.0 cm) → 0.69 in. (18 mm) ESTES. STANDARD ENGINE = 2.75 in. (7.0 cm) long ESTES. (24 mm) C11 & D ENGINE - 3.75 in. (9.5 cm) long SESTES. (24 mm) diameter 24 mm E ENGINE 4.5 in (9.5 cm) long 1.14 in ESTES.) (29 mm) 29 mm E & F ENGINE

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

B6-4

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.).

ESTES.

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.

MODEL ROCKET ENGINE CHART

- Delays have a tolerance of plus or minus 10% or 1 second, whichever is greater.
- All Estes engines come complete with starters* and starter plugs.
 The Estes starter 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	Ma Lift '		Max Thrus		Thrust Duration	Initi Weig			ellant ight
		N-sec	Sec.	Oz.	g	Newtons	lbs.	Sec.	Oz.	g	Oz.	g
SINGLE	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
1522	C11-3	10.00	3	6.0	170	22.1	4.9	0.8	1.13	32.1	0.44	12.4
1523	C11-5	10.00	5	5.0	142	22.1	4.9	0.8	1.18	33.4	0.44	12.4
1566	D12-3	20.00	3	14.0	396	32.9	7.4	1.6	1.57	44.5	0.85	24.2
1567	D12-5	20.00	5	10.0	283	32.9	7.4	1.6	1.61	45.7	0.85	24.2
1573	E9-4	30.00	4	15.0	425	25.0	5.6	2.8	2.16	61.2	1.30	36.9
1574	E9-6	30.00	6	12.0	340	25.0	5.6	2.8	2.23	63.2	1.30	36.9
1582	E12-4	30.00	4.6	17.0	482	30.6	6.9	2.7	2.16	61.2	1.30	36.9
1583	E12-6	29.50	7	14.0	397	29.6	6.7	2.7	2.23	63.2	1.30	36.9
1651	F15-4	49.61	4	21	595	25.26	5.7	3.45	3.59	101.5	2.12	60
1652	F15-6	49.61	6	17	482	25.26	5.7	3.45	3.66	103.7	2.12	60
1696	E16-4	33.68	4	20	566	26.44	5.9	2.09	2.86	81.0	1.41	40
1697	E16-6	33.68	6	16	453	26.44	5.9	2.09	2.92	82.7	1.41	40
UPPER	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	8.0	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
1524	C11-7	10.00	7	4.0	113	22.1	4.9	0.8	1.19	33.8	0.44	12.4
1568	D12-7	20.00	7	8.0	226	32.9	7.4	1.6	1.62	46.0	0.85	24.2
1575	E9-8	30.00	8	10.0	283	25.0	5.6	2.8	2.24	63.5	1.30	36.9
1584	E12-8	29.80	8	12.0	340	31.8	7.1	2.7	2.24	63.5	1.30	36.9
1653	F15-8	49.61	8	15	425	25.26	5.7	3.45	3.69	104.4	2.12	60
1698	E16-8	33.68	8	14	396	26.44	5.9	2.09	2.99	84.7	1.41	40

The data listed above is from randomly chosen production samples.

NOTE: The "T" designates a mini engine.

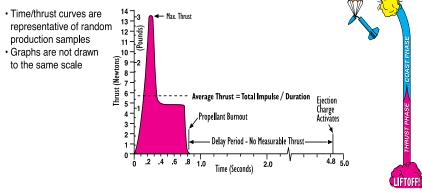
*Patent pending.

MODEL ROCKET ENGINE CHART CONTINUED

Prod. No.	Engine Type	Total Impulse	Time Delay	Ma Lift \		Max. Thrus		Thrust Duration	Initi Wei			ellant ight
		N-sec	Sec.	Oz.	g	Newtons	lbs.	Sec.	Oz.	g	Oz.	g
BOOST	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
1521	C11-0	10.00	None	6.0	170	22.1	4.9	0.8	1.03	29.2	0.44	12.4
1565	D12-0	20.00	None	14.0	396	32.9	7.4	1.6	1.43	40.4	0.84	23.8
1581	E12-0	28.80	None	16.0	454	31.3	7.0	2.6	2.05	58.1	1.30	36.9
1650	F15-0	49.61	None	19	539	25.26	5.7	3.45	3.32	94.0	2.12	60
1695	E16-0	33.68	None	18	509	26.44	5.9	2.09	2.58	73.2	1.41	40
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

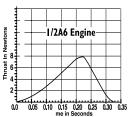
^{*} There are 4 mini engines per package. All other engines are 2 or 3 per package.

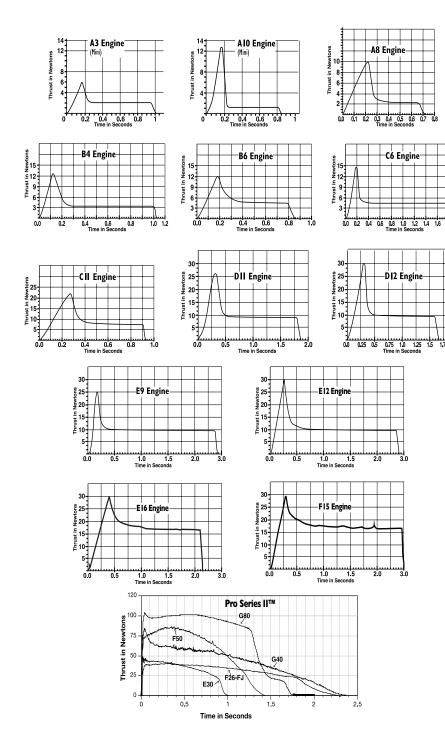
ENGINE TIME/THRUST CURVES











MODEL ROCKET ACCESSORIES



1672 BLAST-OFF® FLIGHT PACK

Includes 6 each of A8-3, B6-4, C6-3, C6-5 engines, 30 starters, 30 starter plugs and 75 sheets of recovery wadding.



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. Can accommodate a 3/16 in (5 mm) Maxi™ launch rod - not included.

2220 ELECTRON BEAM® LAUNCH CONTROLLER

Launch controller comes assembled with safety key and 15 ft (4.6 m) of cable. Requires four AA alkaline batteries - not included.



ft (5.2 m) of cable. Requires 1 9V alkaline battery - not included.

2225 Astron II™ LAUNCH PAD AND CONTROLLER

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. Controller comes with 17 ft (5.2 m) of cable. Requires 1 9V alkaline battery - not included.

2239 Astron 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.



2227 TUBE MARKING GUIDE

Easy way to mark fin and launch lug placement lines. Also includes a fin gluing jig. Body tube

2230 E™ LAUNCH CONTROLLER

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

2238 PORTA-PAD® E LAUNCH PAD

Quick assembly - no glue or tools required. Launch rod angle is adjustable. 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 recommended for anyone under 18 when launching E engine powered rockets.

NEW! 2250 Mini Starter Plugs 5 Orange, 5 Green NEW! 2251 Standard Starter Plugs

5 Magenta, 5 Yellow NEW! 2252 C11, D, E, E16 and F15

Starter Plugs 5 White, 5 Black





in the sights to apogee, release the trigger to lock the reading.



2241 BLAST DEFLECTOR PLATE

Replaces that worn-out deflector. For use with 2215 and 2239

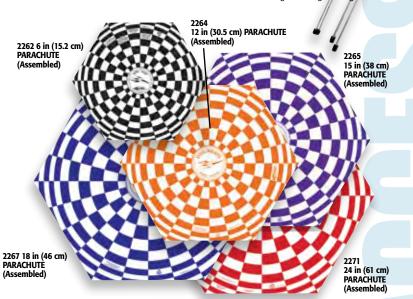


2246 ALTIMETER Record up to 10 flights. LCD display, battery included.



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.







2274 RECOVERY WADDING

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



2278 SHOCK CORDS & MOUNT PACK

Includes three 1/8 in x 36 in (3 mm x 914 mm) and one 1/4 in x 36 in (6 mm x 914 mm) rubber shock cords (enough for four shock cords). Includes shock cord mounts and



2290 ROCKET DISPLAY STAND



instructions.



2302 MODEL ROCKET STARTERS*

Dependable, easy-to-use Estes starters in a convenient six pack. It's always a good idea to have a few spares.



2320 LAUNCH LUG PACK

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



2315 TUBE CUTTING GUIDES

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



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.)



2317 STANDARD TO D ENGINE ADAPTERS

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



3143 ENGINE HOOK ACCESSORY PACK

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



3159 D AND E ENGINE MOUNT KIT

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



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.

3160 NC-5 NOSE CONE ASSORTMENT (5 pack)

3161 NC-20 NOSE CONE ASSORTMENT (4 pack)

3162 NC-50 NOSE CONE ASSORTMENT (5 pack)

3163 NC-55 NOSE CONE ASSORTMENT (4 pack)

3164 NC-56 NOSE CONE ASSORTMENT (4 pack)

3165 NC-60A NOSE CONE ASSORTMENT (4 pack)

3168 NC-80B NOSE CONE (1 pack)

3171 CLEAR PAYLOAD ASSORTMENT (9 pack) 3173 SCI-FI NOSE CONE ASSORTMENT (5 pack)



3158 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.



3196 Large Tube Coupler Pack

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



NEW! 3170 WATERSLIDE DECAL SET

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
3084	BT-5	.52/13	.54/14	18.0/45.7
3085	BT-20	.71/18	.74/19	18.0/45.7
3086	BT-50	.95/24	.98/25	18.0/45.7
3087	BT-55	1.28/33	1.33/34	18.0/45.7
3089	BT-60	1.60/41	1.64/42	18.0/45.7
3090	BT-80	2.56/65	2.60/66	14.2/36.1

NEW! 3171 CLEAR PAYLOAD ASSORTMENT



VEW! 9751 24 mm Motor Retainer Set (2 sets)

Contents and specifications subject to change without notice.



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











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, Starters and Starter Plugs are sold separately.)

$\mathsf{E2X}^{\scriptscriptstyle oldsymbol{\otimes}}$ 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), A85, 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

JU Aerospace" Spaceloff

1793 UP Aerospace™ SpaceLoft™ (12-pack) Length: 11.1 in (28.2 cm) Recommended Engines:

1/2A3-2T (First Flight).

1/2A3-4T, A3-4T, A10-3T



* Quantity subject to change

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.



1722 Comet Chaser™ (12-pack) Skill Level 1 Length: 14.4 in (36.5 cm) Recommended Engines: A8-3, (First Flight), B6-4, C6-5, C6-7

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

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, Starters and 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 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 20-27 of this catalog. With each Launch Set you get the Launch Controller, Launch Pad, plus a rocket for the teacher.

USEFUL CLASSROOM TOOLS

2227	Tube Marking Guide
2228	Ultimate Tube Marking Guide
2231	Fin Alignment Guide
2232	AltiTrak [™] Altitude Finder

2246 Altimeter
2315 Tube Cutting Guides
2290-2292 Model Rocket
Display Stands

1980 Designer's Special

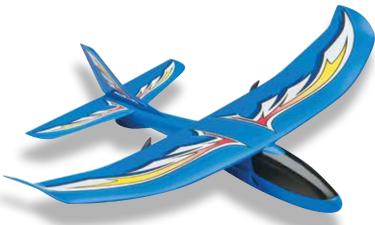


Comes with everything you see here. Build and fly your own designs. 100+ parts to build up to 8 rockets. Turn your imagination into reality. Color of product may vary.

NEW! 8311 ZipDisc™ Sports Set
Disc glides on a cushion of air, indoors and out. Includes: disc,
2 hockey sticks and 2 goals.



RADIO CONTROL



4553 Wild Sky™

Wingspan: 14 in (35.6 cm) Includes fully assembled Airplane, Radio Controller, Twin high-speed motors, connects to controller for faster recharging, 2.4 GHz controller. Flight range of 500 feet. Recommended for ages 14+.



4601 Mad Cat™

Fully Assembled!
Length: 8.6 in (21.9 cm)
Width: 1.4 in (3.6 cm)
Height: 3.9 in (9.9 cm)
For indoor flight only. Includes 3.7V
Lithium Polymer Battery. 3.5 Channel
Infrared Controller requires 6 - 1.5V AA
alkaline batteries, not included. Recommended for ages 14+.



4602 Firestrike™

Fully Assembled!
Length: 8.6 in (21.90 cm)
Width: 2.8 in (7.1 cm)
Height: 3.7 in (9.4 cm)
For indoor flight only. Includes 3.7V Lithium Polymer
Battery. 3.5 Channel Infrared Controller requires 6 - 1.5V
AA alkaline batteries (not included). Recommended for ages 14+.

4605 Dart™

Diameter: 4.3 in (10.9 cm) Includes fully assembled quadcopter, 2.4 GHz Radio Controller, rechargeable LiPO flight battery, 4 Spare rotor blades. and instructions. Recommended for ages 14+.

4604 Diamondback™

4603 Copperhead™ Length: 14.5 in (36.8 cm) Width: 2.5 in (6.4 cm) Height: 5.8 in (14.7 cm)

for ages 14+.

Main Rotor: 11.8 in (30 cm)
Includes fully assembled helicopter, Radio Controller, Rechargeable 3.7V Li-Po - 500mAh battery, AC Wall Charger, extra blades and instructions. Recommended

Length: 24 in (61 cm) Width: 3.8 in (9.6 cm) Height: 8.8 in (22.6 cm) Main Rotor: 18 in (45.7 cm)

Includes fully assembled helicopter, Radio Controller, Rechargeable 7.4V, 1000mAh battery, AC Wall Charger, extra blades and instructions. Recommended for ages 14+.

Color of product may vary.

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)

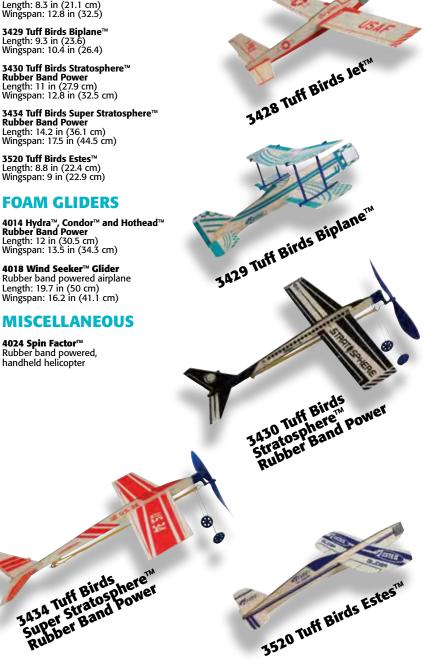
FOAM GLIDERS

4014 Hydra™, Condor™ and Hothead™ Rubber Band Power Length: 12 in (30.5 cm) Wingspan: 13.5 in (34.3 cm)

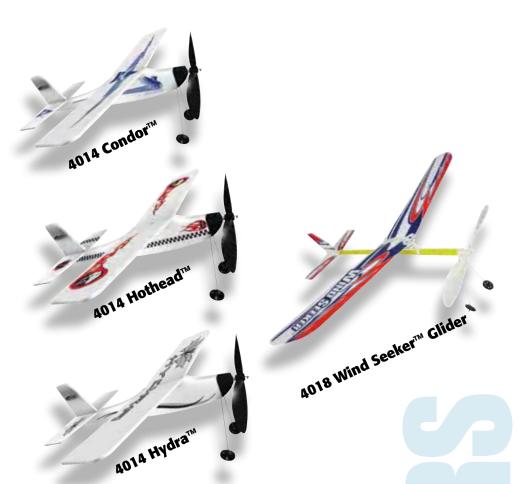
4018 Wind Seeker™ Glider Rubber band powered airplane Length: 19.7 in (50 cm) Wingspan: 16.2 in (41.1 cm)

MISCELLANEOUS

4024 Spin Factor™ Rubber band powered, handheld helicopter









4024 Spin Factor™

