



education



A place where you can take learning to new heights.

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

Real world, hands on learning happens with Estes Education.

"Model Rocketry is an excellent STEM activity that gets students out of the classroom and into the sky! Students use all the elements of STEM to collect, analyze and communicate data. I've been teaching rocketry for over 6 years and it's the best activity every year!"

- KB

Choose Estes Lesson Plans to Engage Your Students in STEM

- Develop 21st century skills with your students through lesson plans that promote collaborative thinking and leadership.
- Gain confidence in effectively teaching STEM to promote real world learning in the classroom.
- Create lifelong memories in your classroom with hands on learning that inspire and ignite creativity. Aerospace careers start with Estes.

Our FREE Lesson Plans Include

- Remote and in classroom options
- Claims - Evidence -Reasoning Assessments
- NGSS standards
- All 4 STEM elements
- 21st Century skills
- Support resources



Download Lesson Plans at: EstesRockets.com/edu/b2s/lesson-plans/

GET STARTED

These Are the Items You Need to Teach Rocketry in Your Classroom

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



How to Choose the Right Experience for Your Students

Age

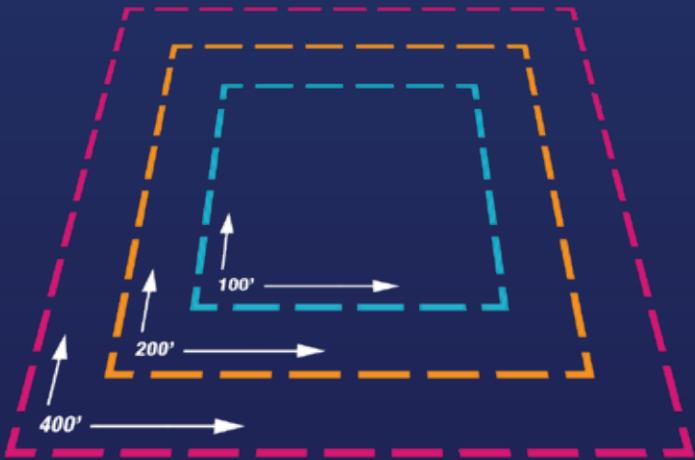
Younger students (Grades 5-8) need beginner rockets that are simple to assemble. They're not quite ready for the challenge of gluing on individual fins yet, so choose one of our beginner bulk packs. Grades 9-12 are ready for the intermediate rockets!

Time

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

Flying Field Size

Recovery method (parachute or streamer), engine size and wind all play a role in what rocket is best suited for the size field you may have. Use the chart below to help you determine what engine will work best!



100' x 100' Area

- Recommended Engines
A8-3, A8-5



200' x 200' Area

- Recommended Engines
B4-4, B6-4, B6-6



400' x 400' Area

- Recommended Engines
C6-5, C6-7

cation



TIPS!

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

NEW PRODUCTS



1721 Star Hopper™ Bulk Pack

- No glue or building supplies required!
- Ready to fly in minutes, perfect for teachers on a tight schedule!
- Great for younger students

Length: 7.4 in. (18.8 cm)
Diameter: 0.74 in. (19 mm)
Recovery: 18 in. (40.7 cm) Streamer
Projected Altitude: 400 ft. (122 m)
Recommended Engines:
1/2A3-4T, A3-4T, A10-3T

Pack of 12
MSRP - \$129.99

2226 Mini AltiTrak™

- The mini AltiTrak provides a technology solution for students to track, graph and analyze data.
- Their small size makes them easy to transport and share amongst students.
- This low-cost solution provides three in pack so you can easily budget for this.

Pack of 3
MSRP - \$9.99



***How High
Did My
Rocket Go?***



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EDUCATOR BULK PACKS



**Quick Snap –
No Gluing!**

1721 Star Hopper™ Bulk Pack

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

Pack of 12
MSRP - \$129.99



**PLASTIC SNAP
IN FINS!**



**ONE-PIECE
MOLDED FIN UNIT**

1749 Gnome™ Bulk Pack

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

Pack of 12
MSRP - \$69.99



**Quick Snap –
No Gluing!**

1794 Firestreak SST™ Bulk Pack

Length: 10.2 in. (25.9 cm)
Diameter: 0.86 in. (22 mm)
Recommended Engines:
1/2A3-2T, 1/2A3-4T, A10-3T

Pack of 12
MSRP - \$104.99



**PLASTIC SNAP
IN FINS!**

■ ■ ■ ■ ■ Easiest To Build

1
HOUR OR LESS

1764 Generic E2X® Bulk Pack

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

Pack of 12
MSRP - \$114.99



**ONE-PIECE
MOLDED FIN
UNIT**



1751 Alpha III® Bulk Pack

Length: 12.3 in. (31.2 cm)
Diameter: 0.98 in. (25 mm)
Recommended Engines:
1/2A6-2, A8-43, A8-5, B4-4, B6-6,
C6-5, C6-7

Pack of 12
MSRP - \$129.99



**ONE-PIECE
MOLDED FIN
UNIT**

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EDUCATOR BULK PACKS



1753 AVG Bulk Pack

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

Pack of 12
MSRP - \$89.99

Assorted Rockets
Including:
4 Alpha®, 4 Viking™,
4 Generic E2X®



1754 Wizard™ Bulk Pack

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

Pack of 12
MSRP - \$79.99



INDIVIDUAL FINS
THAT GLUE ONTO
THE BODY TUBE



1755 Viking™ Bulk Pack

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

Pack of 12
MSRP - \$84.99



INDIVIDUAL FINS
THAT GLUE ONTO
THE BODY TUBE

1756 Alpha® Bulk Pack

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

Pack of 12
MSRP - \$129.99



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



1718 Green Eggs™ Bulk Pack

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

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

Pack of 12
MSRP - \$199.99



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

1706 Orbis 3D™ Bulk Pack

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

3D printer and filament NOT included

Length: 10 - 12 in. (25.4 - 30.5 cm)
Recovery: 9 in. (22.9 cm) Parachute
Projected Altitude: 400 ft. (122 m)
Recommended Engines: A8-3,
B4-4, B6-4, C6-5
Non-flying model.

MSRP - \$59.99



Students 3D print these parts!

ENGINE BULK PACKS

Every launch requires engines, recovery wadding, starters, and plugs. These convenient engine bulk packs include enough of each for multiple launches. Choose from a variety of engine sizes. We advise using the smallest recommended engines for the first launches.

- 1781** A8-3 Engines (24); 30 starters; 24 plugs; 72 sheets wadding **MSRP - \$71.99**
- 1783** B6-4 Engines (24); 30 starters; 24 plugs; 72 sheets wadding **MSRP - \$72.99**
- 1784** B6-0 & B6-6 Engines (12 each); 30 starters;
24 plugs; 72 sheets wadding..... **MSRP - \$80.59**
- 1788** 1/2A3-4T Engines (24); 30 starters; 24 plus wadding **MSRP - \$57.79**
- 1789** C6-5 Engines (24); 30 starters; 24 plugs; 72 sheets wadding **MSRP - \$84.99**
- 1726** C11-3 Engines (12); 20 starters; 16 plugs; 144 sheets wadding **MSRP - \$47.99**
- 1672** Blast-Off® Flight Pack A8-3, B6-4, C6-3, C6-5 engines (6 each); 30 starters;
28 plugs; 72 sheets wadding **MSRP - \$69.99**



Pictured above: 1672 Blast-Off® Flight Pack

ACCESSORIES

2310 Lifetime Launch System

Kids are TOUGH. That's why we recommend our lifetime launch system for educators and youth leaders. It is so tough we guarantee it will last a lifetime. Designed for kid use, it will help you create a memorable launch day experience for your students.

- Stands 18 inches off-the-ground - Allows students to easily see the micro clips.
- 2 Tiltable launch rods - Aim rocket upwind to help it recover in-bounds.
- Pro Series II Launch Controller - Uses bigger batteries for more launches.

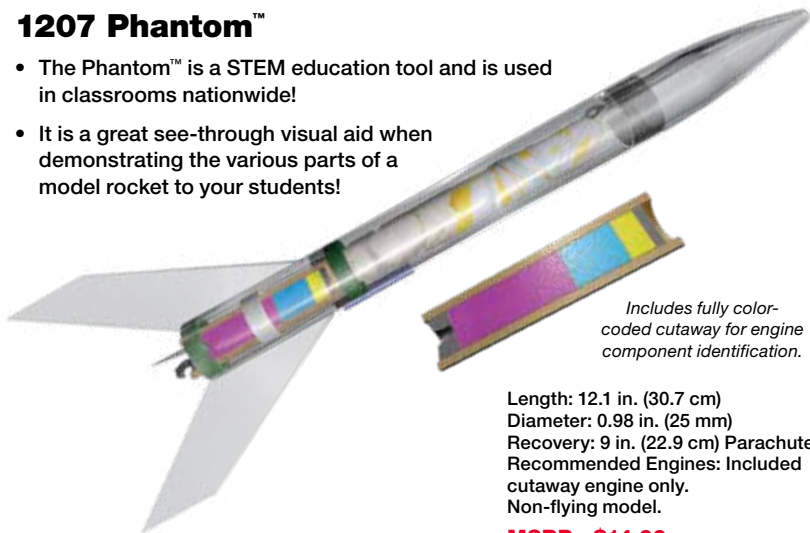
MSRP - \$79.99



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

1207 Phantom™

- The Phantom™ is a STEM education tool and is used in classrooms nationwide!
- It is a great see-through visual aid when demonstrating the various parts of a model rocket to your students!



Includes fully color-coded cutaway for engine component identification.

Length: 12.1 in. (30.7 cm)
Diameter: 0.98 in. (25 mm)
Recovery: 9 in. (22.9 cm) Parachute
Recommended Engines: Included cutaway engine only.
Non-flying model.

MSRP - \$14.99

“EQUIPPED WITH HIS FIVE SENSES,
MAN EXPLORES THE UNIVERSE AROUND HIM
AND CALLS THE ADVENTURE **SCIENCE**.”

- EDWIN POWELL HUBBLE



Promote Engineering Thinking & Design

Chosen for the 2019 Purdue University Engineering Gift Guide. Build the rocket and launch it with one of three included engines. Observe as a reaction occurs to make the rocket soar! Launch again with a different size engine and measure the difference in altitude with the included altitude tracker.

5302 Rocket Science Starter Set

Length: 12.6 in. (32 cm)

Recovery: 12 in. (30.5 cm) Parachute

Projected Altitude: 1100 ft. (335 m)

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

MSRP - \$39.99

Starter Set Includes:

- 1 Rocket
- 1 Porta-Pad® II Launch Pad
- 1 Electron Beam® Launch Controller
- 1 12 in. (30.5 cm) Parachute
- 1 each A8-3, B6-4, C6-5 Model Rocket Engine
- 4 Starters
- 8 Plugs
- 12 Sheets of Recovery Wadding
- 1 Altitude Tracker



National Association of Rocketry MODEL ROCKET SAFETY CODE

(Basic Version, Eff. August 2012)



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

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

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

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

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

6. Launcher. I will launch my rocket from a launch rod, tower, or rail that is pointed to within 30 degrees of the vertical to ensure that the rocket flies nearly straight up, and I will use a blast deflector to prevent the motor's exhaust from hitting the ground. To prevent accidental eye injury, I will place launchers so that the end of the launch

rod is above eye level or will cap the end of the rod when it is not in use.

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

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

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

LAUNCH SITE DIMENSIONS

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

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

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



rocketcontest.org

Estes is a proud Sponsor of The American Rocketry Challenge

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

Get Involved!

Here you'll find respected groups and institutions who support the development of young people. Like Estes®, many of these organizations provide their own unique learning opportunities for students, youth leaders and teaching professionals. Together, we strive to create an environment rich with resources to keep your students interested, inquisitive and inspired. Please take a moment to visit their sites today.



aiaa.org



**BOYS & GIRLS CLUBS
OF AMERICA**

bgca.org



aia-aerospace.org



nar.org



challenger.org



ymca.net



4-h.org



spacecamp.com



gocivilairpatrol.com



Girl Scouts
Where Girls Glow Strong™

girlscouts.org



scouting.org



INDEX

Accessories

1980 Designer's Special	83	2278 Shock Cords & Mounts Pack	75	3179 Centering Ring, Shroud Template	80
2222 Launch Pad & Controller	77	2293 Model Rocket Cradle	82	3180 Clay Nose Cone Weights	79
2226 Mini AltTrak	91	2302 Model Rocket Starters	75	3181 Engine Mount Parts Assortment	80
2227 Tube Marking Guide	78	2310 Lifetime Launch System	97	3187 Engine Retainer Set 18mm	81
2228 Ultimate Tube Marking Guide	78	2315 Tube Cutting Guides	78	3196 Tube Coupler Assortment Pack	80
2230 E Launch Controller	77	2316 Mini Engine Adapters	81	3552 PS II Launch Base	69
2231 Fin Alignment Guide	78	2317 Standard to D Engine Adapters	81	3556 PS II Recovery Wadding	68
2232 Altitrak	84	2320 Launch Lug Pack	81	9750 Pro Series II Engine Retainer Set	81
2238 Porta-Pad E Launch Pad	77	3143 Engine Hook Accessory Pack	81	9751 Engine Retainer Set 24mm	81
2240 PS II Launch Controller	69	3158 Standard Engine Mount Kit	80	9752 Pro Series II E2X Booster	68
2241 Blast Deflector Plate	77	3159 D and E12 Engine Mount Kit	80	9753 PS II Engine Adapter Set	68
2243 Two-Piece Launch Rod	77	3170 Waterslide Decal Set	81	38206 Two-Piece Launch Rod	77
2244 Two-Piece Maxi Launch Rod	77	3171 Clear Payload Assortment	79	Body Tube Packs	79
2246 Altimeter	85	3172 PS II Shock Cord Pack	68	Model Rocket Display Stand	82
2250 Plugs for Mini Engines	75	3175 Centering Ring Assortment	79	Nose Cone Assortments	79
2251 Plugs for Standard Engines	75	3176 Tube Couplers	80	Recovery Parachutes	76
2252 Plugs for Large Engines	75	3177 Tube Couplers	80		
2274 Recovery Wadding	75	3178 Estes Tube Couplers	80		

Engine Bulk Packs

1672 Blast-Off Flight Pack	96	1783 B6-4 Engines	96	1789 C6-5 Engines	96
1726 C11-3 Engines	96	1784 B6-0 & B6-6 Engines	96		
1781 A8-3 Engines	96	1788 1/2A3-4T Engines	96		

Launch Sets

1403 Riptide	14	1469 Tandem-X	15	1499 Rascal & Hijinks	15
1427 Alpha III	13	1478 Flash!	14	5324 Space Corps Centurion	12
1441 Journey	14	1491 Taser	13		

Rocket Education Bulk Packs

1706 Orbis 3D Bulk Pack	95	1751 Alpha III Bulk Pack	93	1756 Alpha Bulk Pack	95
1718 Green Eggs Bulk Pack	95	1753 AVG Bulk Pack	94	1764 Generic E2X Bulk Pack	93
1721 Star Hopper Bulk Pack	91	1754 Wizard Bulk Pack	94	1794 Firestreak SST Bulk Pack	92
1749 Gnome Bulk Pack	92	1755 Viking Bulk Pack	94		

Rockets

0651 Der Red Max	24	1250 Interceptor	47	1946 Boosted Bertha	37
0652 Citation Patriot	26	1256 Alpha III	16	1948 Big Bertha	26
0803 Bandito	20	1261 Baby Bertha	22	1949 Viking	26
0806 Firestreak SST	18	1292 Wizard	25	1973 Saturn Skylab	62
0810 220 Swift	24	1295 Mean Machine	27	2008 Generic E2X	17
0865 Mini Mean Machine	27	1329 Multi-Roc	39	2021 Cadet	25
0883 Gnome	16	1345 Mosquito	24	2056 U.S. Army Patriot M-104	63
1207 Phantom	97	1381 Yankee	25	2092 Mongoose	36
1225 Alpha	23	1921 Mercury Redstone 4	65	2160 Anniversary Saturn V	61

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

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2162 Big Daddy	66	7249 Expedition	49	7288 Solo	40
2169 Dragonite	20	7250 Twin Factor	38	7289 Low-Boom SST	29
2178 Hi-Flier	23	7251 Saturn 1B	62	7290 Space Corps Lunar Scout	56
2206 NASA SLS	60	7253 Explorer Aquarius	48	7291 Space Corps Centurion	57
2435 3 Bandits	19	7255 Little Joe I	65	7292 Terra GLM	19
2437 Savage	36	7257 Airborne Surveillance Missile	28	7295 Orange Bullet	45
2442 Mini Fat Boy	22	7259 Nike-X	26	7296 Destination Mars Longship	53
2446 Mini Honest John	63	7260 Protostar	48	7297 Destination Mars The Leaper	52
2452 Athena	17	7261 Air Walker	30	7299 Illusion	16
2483 Phantom Blue	19	7263 Hex-3	29	7300 Ghost Chaser	32
2492 Spirit	20	7264 Astron Explorer	49	7301 Green Eggs	31
2495 Chiller	18	7265 Space Crater	33	7303 Star Hopper	18
2603 Sundancer	17	7266 Red Nova	29	7306 Xtreme	22
3226 Hi-Flier XL	66	7271 SA-2061 Sasha	66	7307 Space Corps DARC-1	57
7000 Bull Pup 12D	28	7275 Sterling Silver	37	7308 AstroCam	21
7220 Crossfire ISX	24	7276 Checkmate	39	7309 Super Mars Snooper	46
7237 Goblin	27	7279 Double Ringer	41	7310 Antar	44
7239 Sky Warrior	29	7280 Gryphon	43	9707 Majestic Pro Series II E2X	67
7240 Honest John	64	7281 Space Corps Corvette Class	56	9716 Star Orbiter Pro Series II	67
7241 Quinstar	42	7282 Tazz	42	9719 Super Big Bertha	66
7243 Black Brant II	64	7283 Destination Mars MAV Lander	53	9720 Doorknob Pro Series II	67
7244 Indicator	23	7284 Starship Octavius	47	9721 Der Big Red Max	68
7245 Comanche-3	38	7285 Leo Space Train	46		
7248 Supernova	32	7287 Sidekick	28		

Starter Sets

5302 Rocket Science	99
5322 Colonizer	11
5325 AstroCam	10



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

All Estes rockets that contain wood parts/components carry this warning.



Our Return Policy

YOU'RE COVERED WITH THE ESTES FULL ONE-YEAR WARRANTY

Your Estes® model rocket 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 EstesRockets.com or by mail at Estes Industries, LLC, Customer Service Department, 1295 H Street, Penrose, Colorado 81240-9698.



**NEW
PRODUCTS
2021**



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