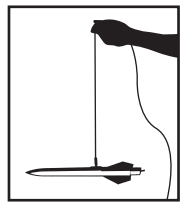
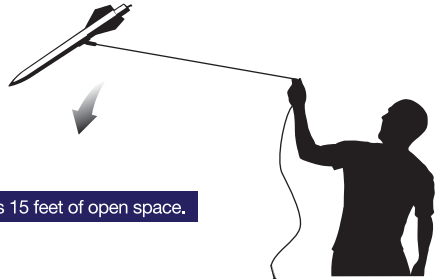


## 2-C: TEST STABILITY

1. Hold string in hand with rocket hanging down about two to three feet from rocket. Place handle on ground.  
(Rocket should not be touching ground.)

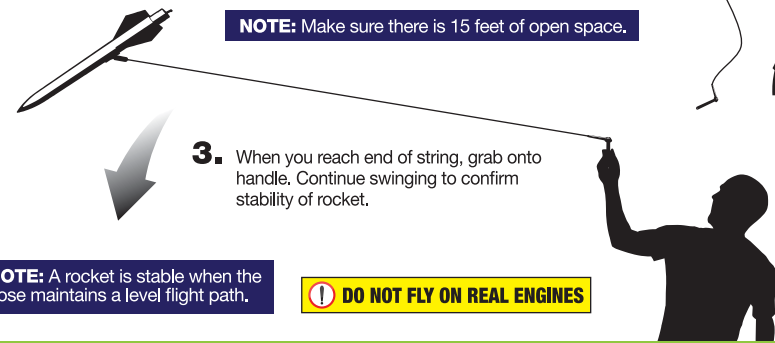


2. Begin swinging rocket over your head while letting string out slowly through your hand.



**NOTE:** Make sure there is 15 feet of open space.

3. When you reach end of string, grab onto handle. Continue swinging to confirm stability of rocket.



**NOTE:** A rocket is stable when the nose maintains a level flight path.

**DO NOT FLY ON REAL ENGINES**

## STEP 3 - MAKE ADJUSTMENTS

### OPTION 1: INSTALL CLAY NOSE WEIGHT



1. Roll **O** into "snake".

2. Insert "snake" into **N**.



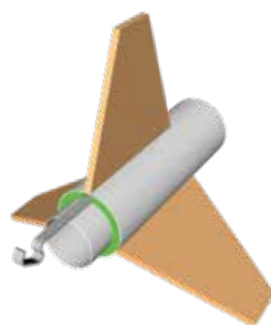
2. Use **P** to push clay into the tip of Nose Cone.



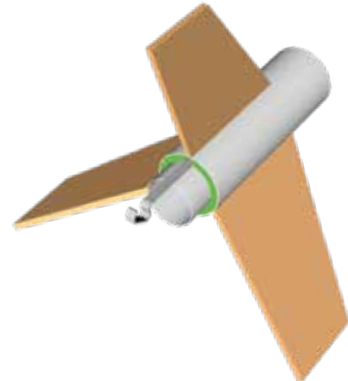
**NOTE:** Amount of clay to use will need to be determined.

### OPTION 2: ASSEMBLE OTHER FIN CONFIGURATIONS

Additional Fin Shape



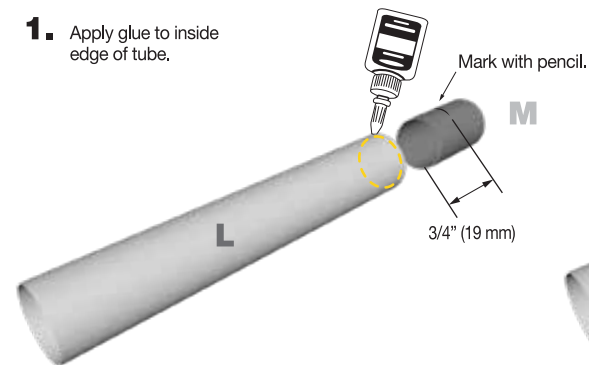
Additional Fin Shape



**NOTE:** Refer to STEP 1: A, B, C for assembly

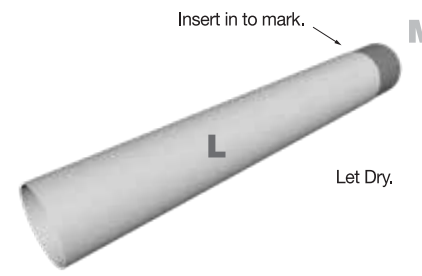
## OPTION 3: ASSEMBLE ADDITIONAL BODY TUBES

1. Apply glue to inside edge of tube.



- 2.

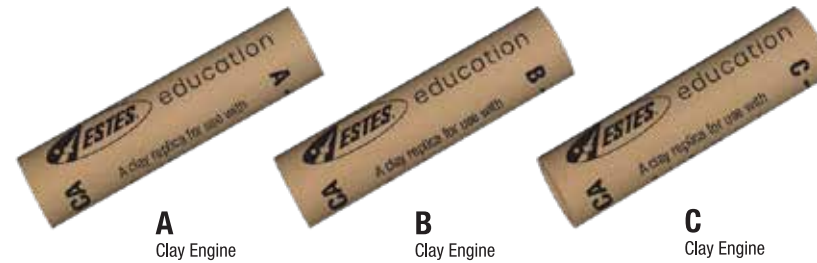
Insert in to mark.



Let Dry.

**NOTE:** You can also use additional 3" Short Body Tubes (Part G) for additional Configurations

## OPTION 4: CHANGE ENGINE REPLICA



**A** Clay Engine

**B** Clay Engine

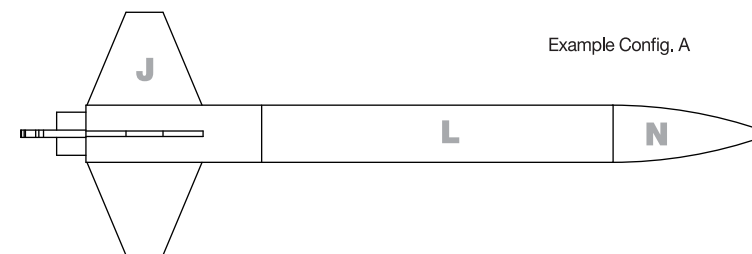
**C** Clay Engine

**NOTE:** Choose different engine from first stability test.

**DO NOT FLY ON REAL ENGINES**

### NOTE:

There are over 100 different testing configurations that are possible with this kit.



**DO NOT FLY ON REAL ENGINES**



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PN 090004-2207 (6-21)

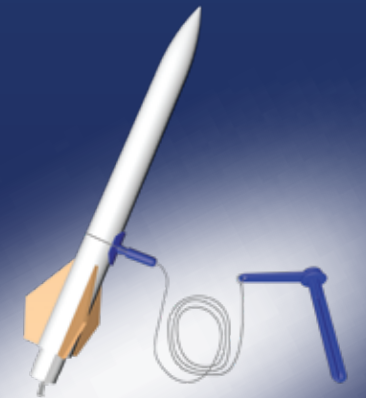


education

## 2207 ROCKET STABILITY KIT INSTRUCTIONS

(KEEP FOR FUTURE REFERENCE)

Discover the relationship between the center of pressure and the center of gravity with this engaging STEM project in a box. Use the engineering design process to evaluate the rocket and correct the stability issues by yourself or with a team!



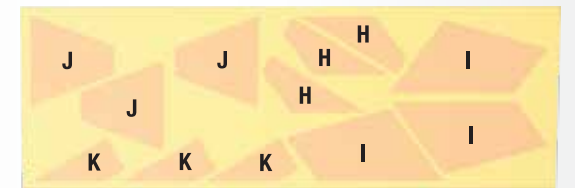
### BUILDING SUPPLIES NEEDED



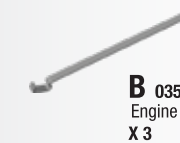
### PARTS



**A** 030408  
2.75" (70 mm) Long  
Engine Mount Tube  
X 3



090051-2207  
Laser Cut Balsa



**B** 035021  
Engine Hook  
X 3



**C** 030162-2  
Engine Block  
X 3



**D** 030168  
Retainer Ring  
20 (Mylar)  
X 3



**E** 080425  
Green Split  
Adapter Ring  
X 3



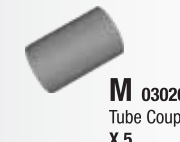
**F** 030164-2  
Adapter Ring  
2050  
X 3



**G** 031305  
3" (76 mm)  
Short Body Tube  
X 5



**L** 030650  
6" (152 mm)  
Long Body Tube  
X 2



**M** 030263  
Tube Coupler  
X 5



**N** 071028  
Nose Cone  
X 2



**O** 085705  
Clay



**P** 032054  
Wood Dowel



**A** 088100  
Clay Engine

**B** 088101  
Clay Engine

**C** 088102  
Clay Engine



Swing Handle  
Rocket Holder

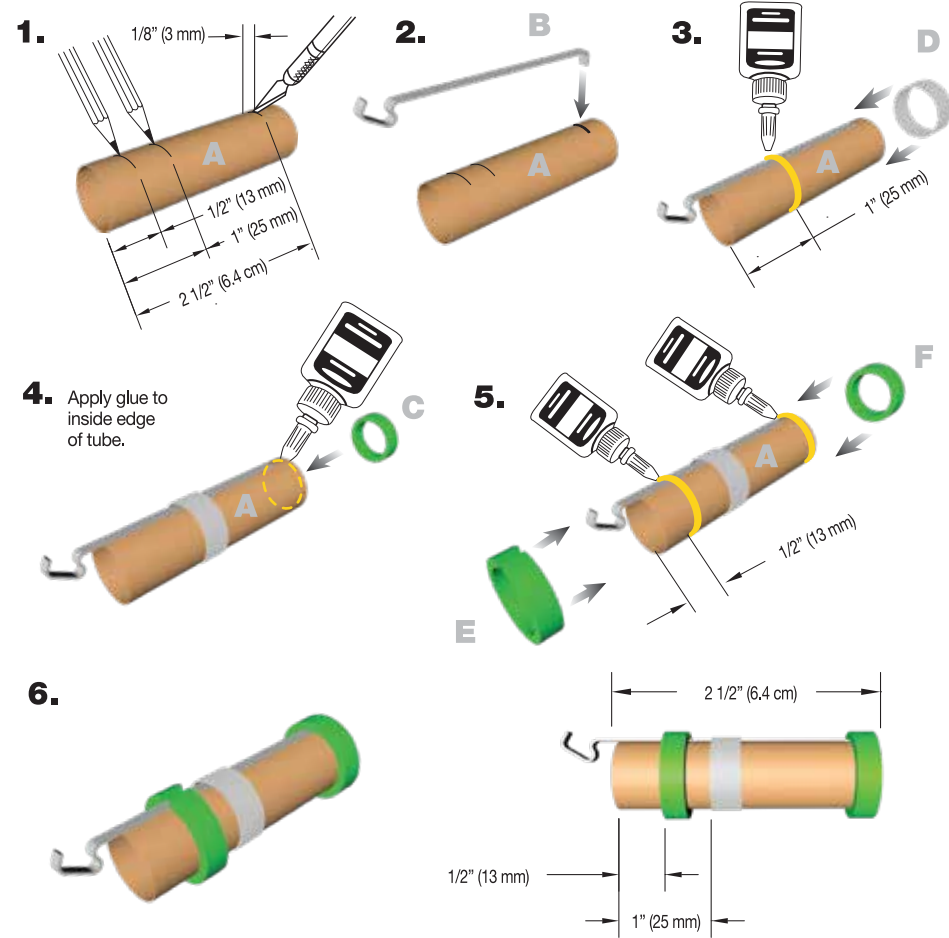
**Q** 073113  
String  
Cap

EstesRockets.com/EDU

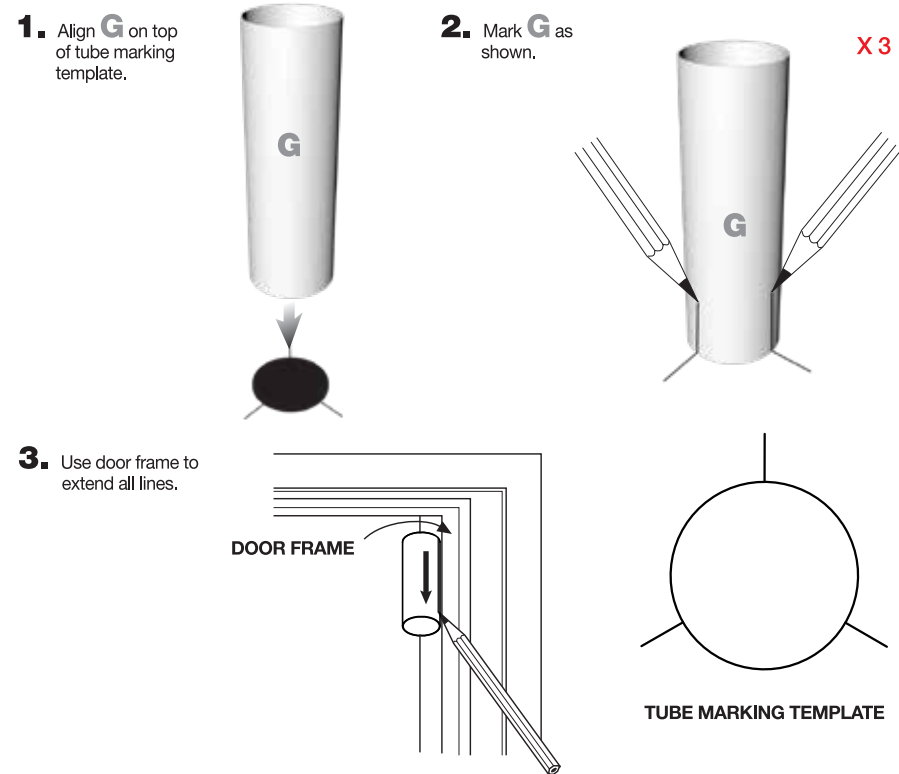


## STEP 1 - BUILD THE ROCKET

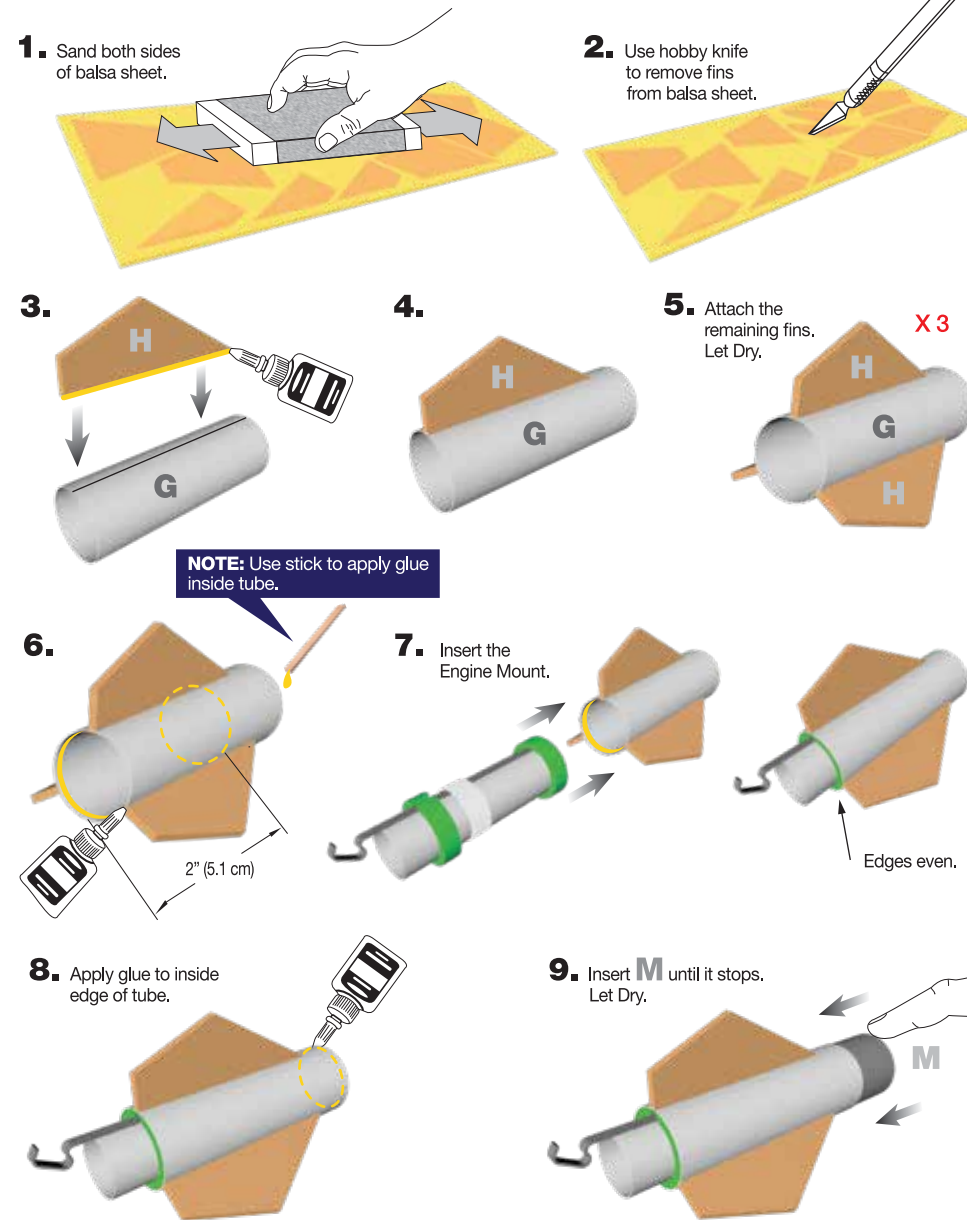
### 1-A: ASSEMBLE ENGINE MOUNT



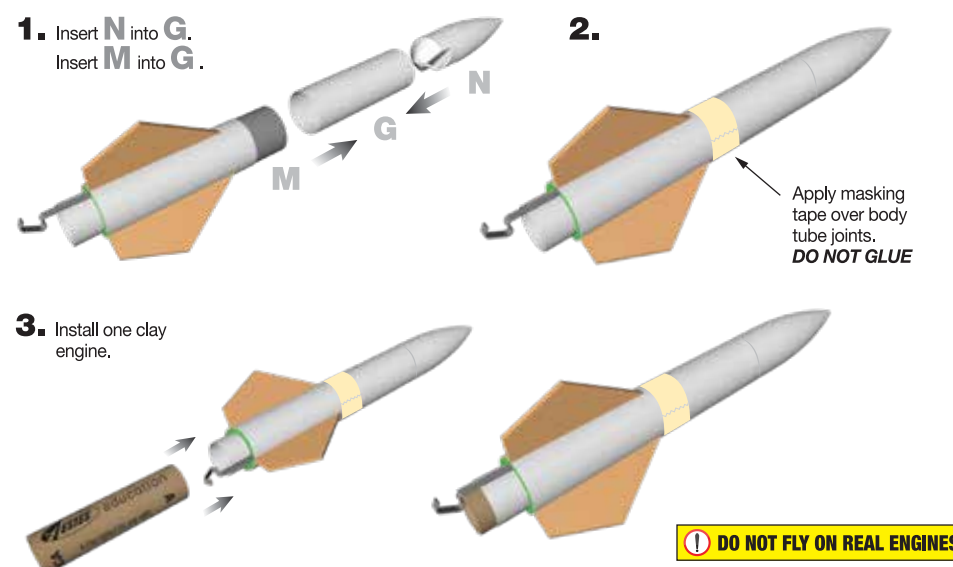
### 1-B: MARK BODY TUBES



### 1-C: PREPARE THE FINS

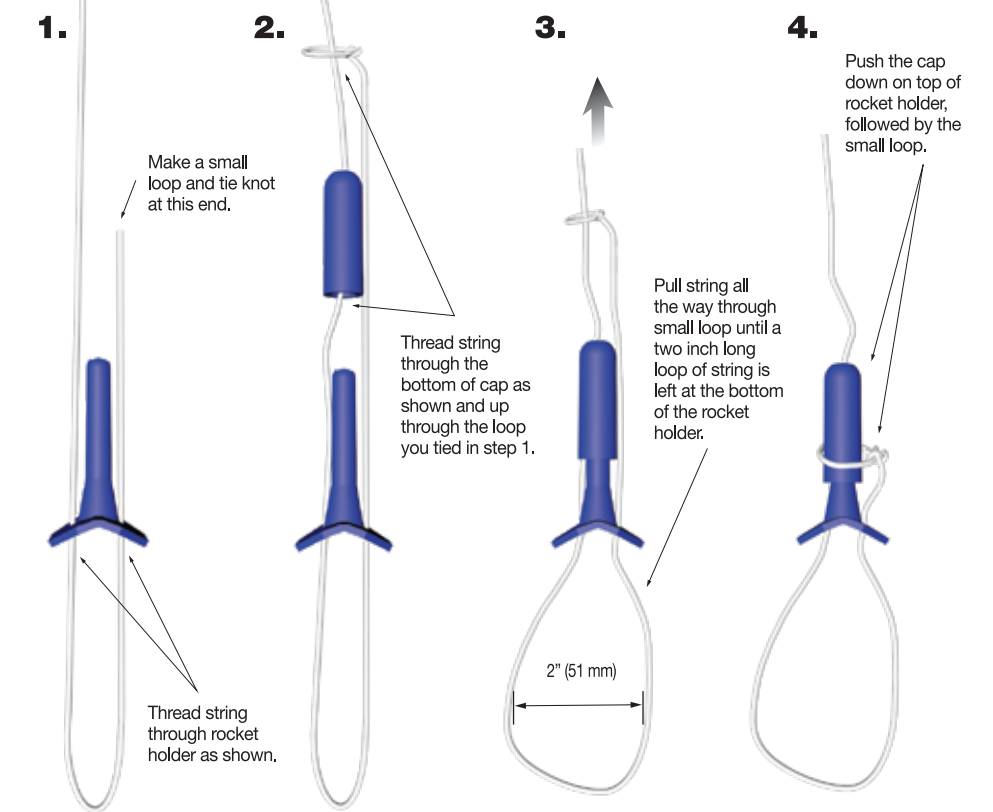


### 1-D: FINAL ROCKET ASSEMBLY



## STEP 2 - TEST ROCKET STABILITY

### 2-A: ATTACH THE STRING



### 2-B: INSERT ROCKET INTO STRING

