

Hello 4-Her,

Congratulations on your work this year in the Kansas STEM projects (Astronomy, Computer Systems, Robotics, Rocketry, and UAS). Everyone is proud of you for the work you have invested in your project this year.

This year is also an unusual year for the Kansas State Fair and 4-H exhibits. Because all exhibits are being submitted for judging online we've had to modify the exhibit entry process. This packet is similar to the packet you would create for your exhibit, we just need some additional pictures from you so we can judge your exhibit.

Please fill out the following pages as completely as possible. If you have questions or need additional assistance in completing the pages, please use the contact page on the [www.STEM4KS.com](http://www.STEM4KS.com) website. Extension staff and volunteers are here to help you have a successful and positive experience.

Best wishes,

Tony Foster  
STEM Project Division superintendent  
Saline & Wabaunsee County Volunteer

## Exhibit Sections

Exhibit Form .....	2
Additional information:.....	3
Pictures – 1 of 5 .....	4
Pictures – 2 of 5 (optional).....	5
Pictures – 3 of 5 (optional).....	6
Pictures – 4 of 5 (optional).....	7
Pictures – 5 of 5 (optional).....	8
Additional space for altitude measurement.....	9
Flight Damage (Optional).....	10
Modifications made to the rocket: .....	11
Required Judging Pictures (1 of 5) .....	12
Required Judging Pictures (2 of 5) .....	13
Required Judging Pictures (3 of 5) .....	14
Required Judging Pictures (4 of 5) .....	15
Required Judging Pictures (5 of 5) .....	16

# 2020 4-H Rocket Exhibit Information

This document supersedes and replaces all previous revisions of the form.



Please complete this form and glue to a 10 X 13 envelope. **Place plans, pages of photos, & other required documentation inside the envelope.**

NAME: \_\_\_\_\_ COUNTY or DISTRICT: \_\_\_\_\_

YEARS IN \_\_\_\_\_ YEARS AT COUNTY FAIR \_\_\_\_\_ 4-H

PROJECT: \_\_\_\_\_ EXHIBITING ROCKETRY: \_\_\_\_\_ AGE: \_\_\_\_\_

CLUB: \_\_\_\_\_

TYPE:  Kit  Original Design  Scale Model  MPR  HPR

Original designs, add at least 1 written page documenting stability:  YES  Does Not Apply

High Power (HPR)/Mid-power Rockets (MPR) additional form(s) included:  YES  Does Not Apply

Name of Rocket: \_\_\_\_\_ Skill Level: \_\_\_\_\_

## Launch Data:

Weather Conditions: \_\_\_\_\_

(Example: Clear, Cloudy, South wind, etc.)

Is the wind speed greater than 20 Miles per Hour:  YES  NO

(Entire Trees Move back and forth)

Is a burn ban in effect for the county you will launch in:  YES  NO

(If so do not launch your rocket)

Did your rocket have flight damage:  YES  NO

(If so, on a separate page, document & include photo(s))

Did you make changes to your rocket which are not part of the plans:  YES  NO

(If so, on a separate page, document the modifications and swing test results)

Launch Date: \_\_\_\_\_ Engine Size used to launch: \_\_\_\_\_

(Example: B6-2)

Altitude Achieved when you launched \_\_\_\_\_ (Feet or Meters)

(Visit <https://www.kansasspacetech.com/rocketry/> for a simple altitude tracker)

Example: 750 ft.

Explain how you measured the altitude (include additional pages if needed).

Explain in 1 - 5 sentences your construction experiences this year in rocketry.

I have complied with the rules that set forth by the NAR for building and launching the rocket I am exhibiting.

Members Signature: \_\_\_\_\_

This information can be found at your County Extension Office, <http://www.nar.org>, or <http://www.KansasSpaceTech.com/rocketry/>

## Additional information:

### Link to plans for your rocket:

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*(Most model companies post plans for their current rockets on their website. For example Estes Rockets (<https://estesrockets.com/product-category/rockets/>) can be found on the rockets page under the description at the link titled "Download Instructions". Please insert a link to instructions for your rocket if you cannot find a link to plans for your rocket enter "**no plans available online**".)*

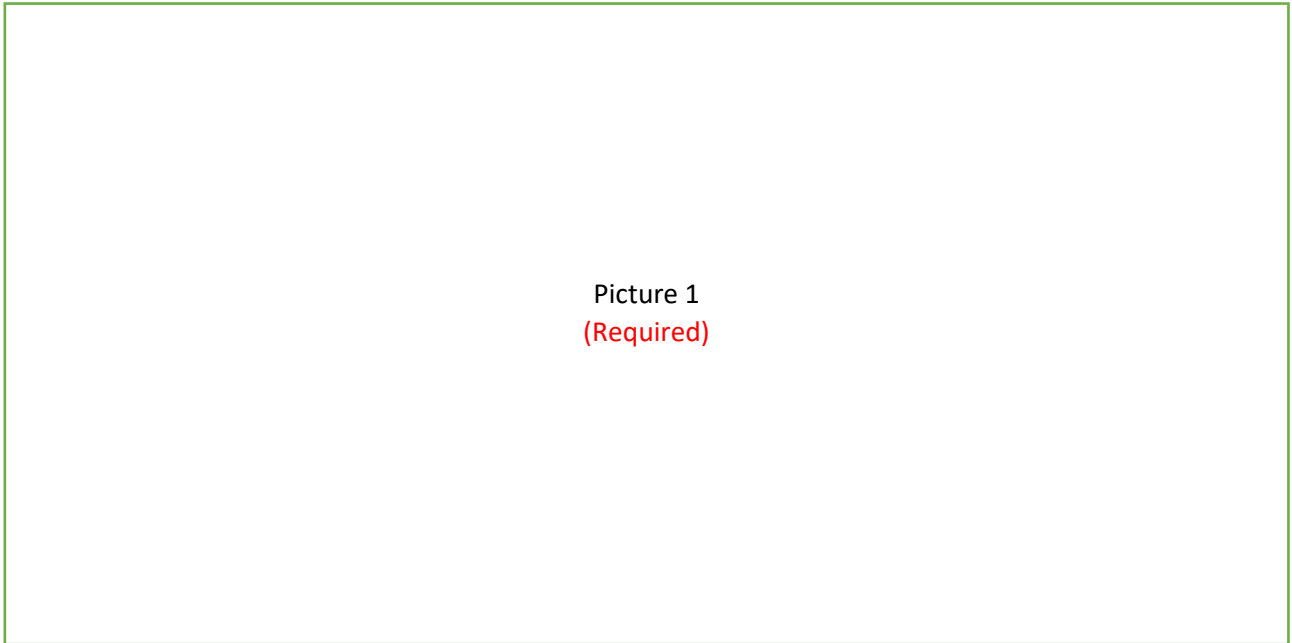
### Link to video (optional):

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*(If you would like to share additional information about your rocket or there are special things you would like to highlight about your rocket you can provide a link to a video you have recorded and posted. This is NOT required for judging.)*

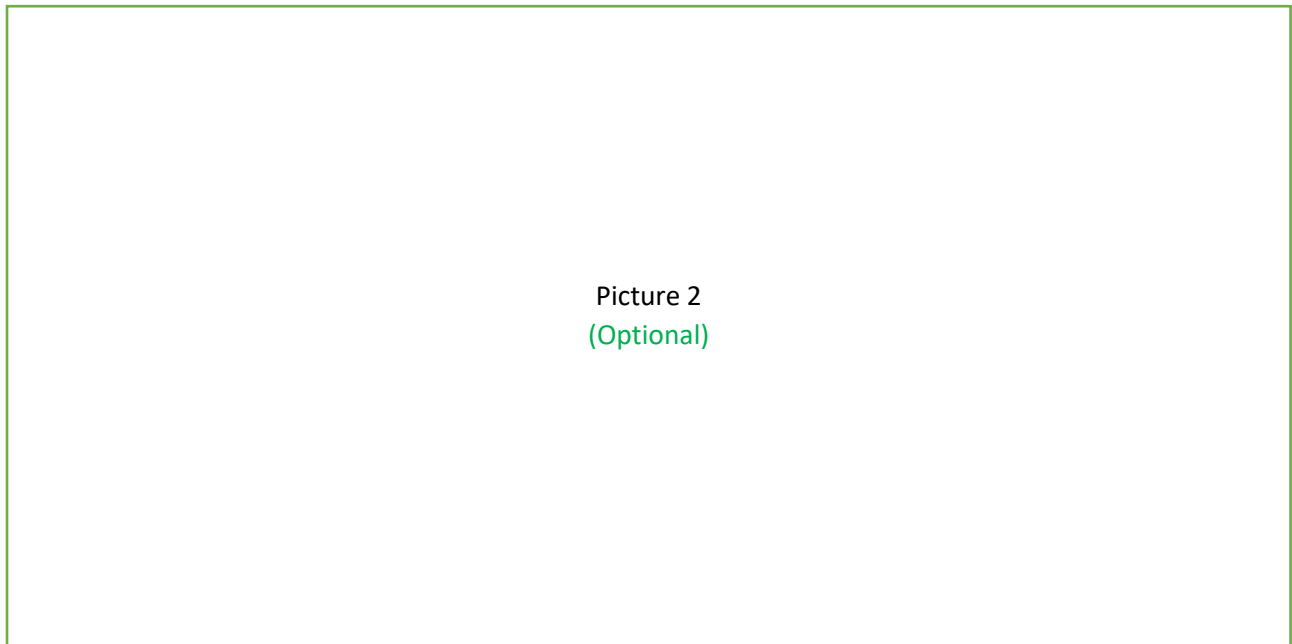
## Pictures – 1 of 5

(One or more photographs of the rocket during construction and at the launch site)



Picture 1  
(Required)

Description:

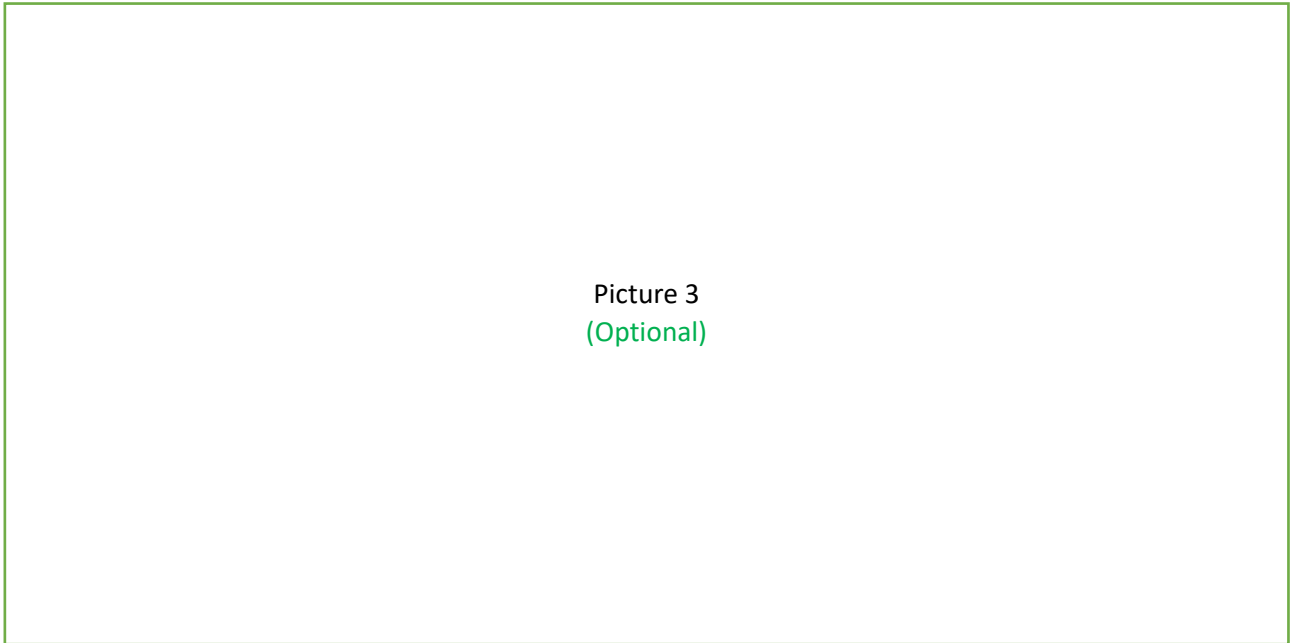


Picture 2  
(Optional)

Description:

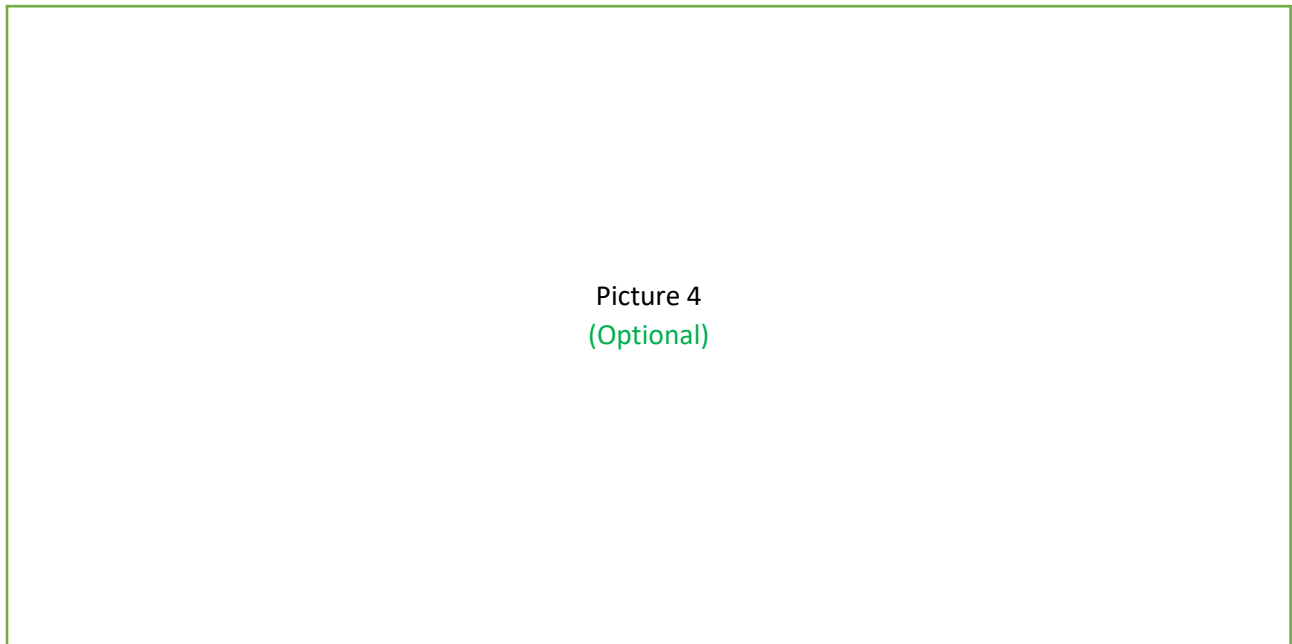
## Pictures – 2 of 5 (optional)

(One or more photographs of the rocket during construction and at the launch site)



Picture 3  
(Optional)

Description:

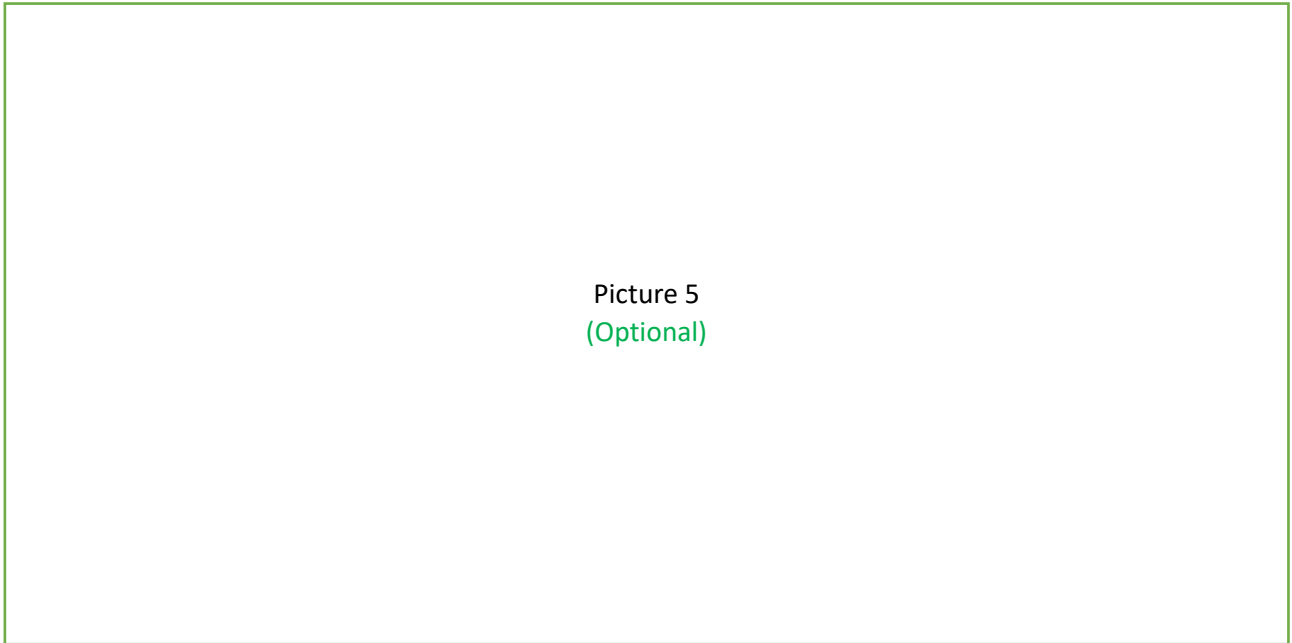


Picture 4  
(Optional)

Description:

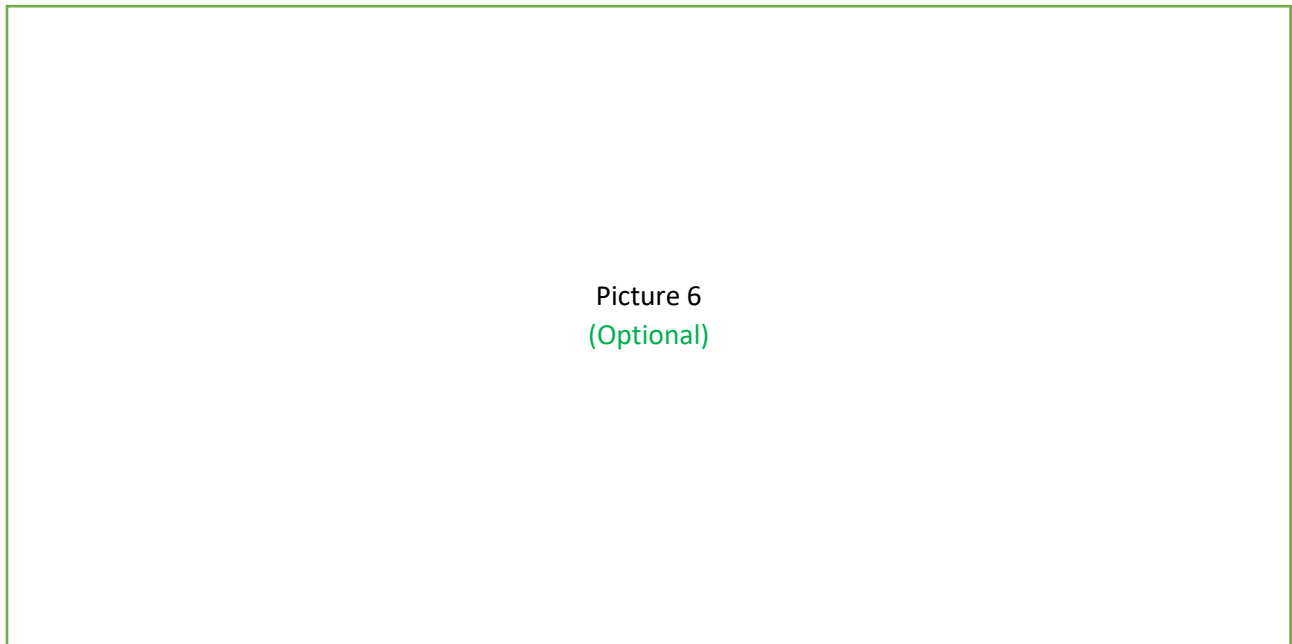
## Pictures – 3 of 5 (optional)

(One or more photographs of the rocket during construction and at the launch site)



Picture 5  
(Optional)

Description:

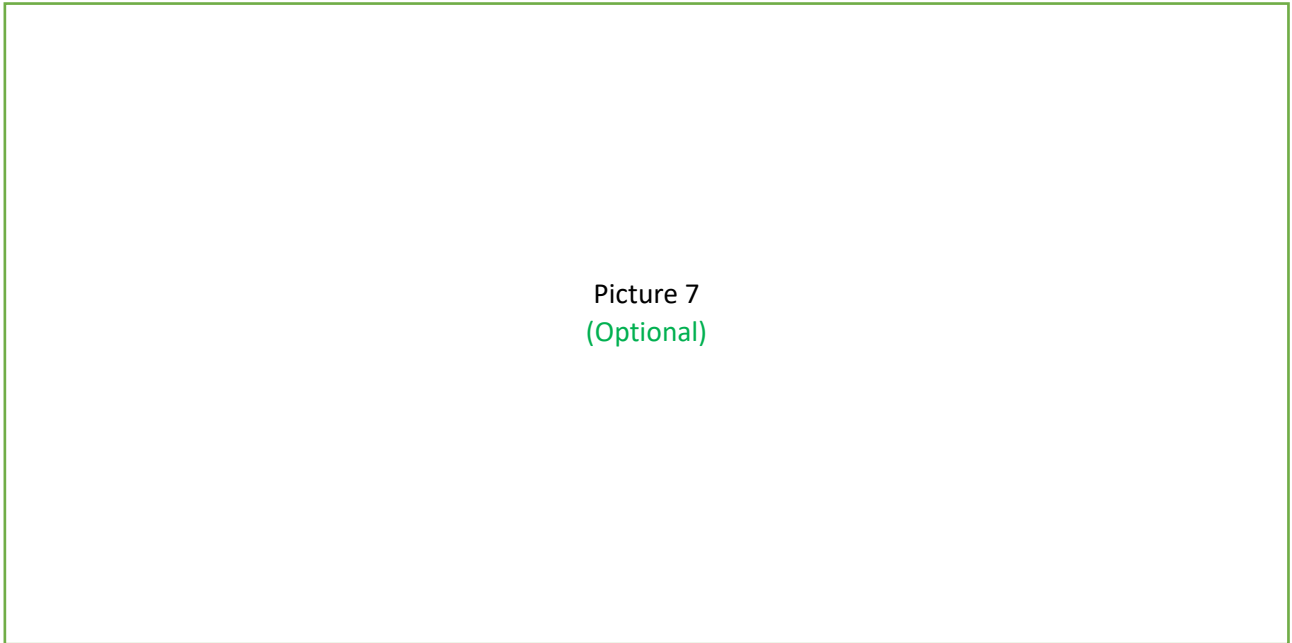


Picture 6  
(Optional)

Description:

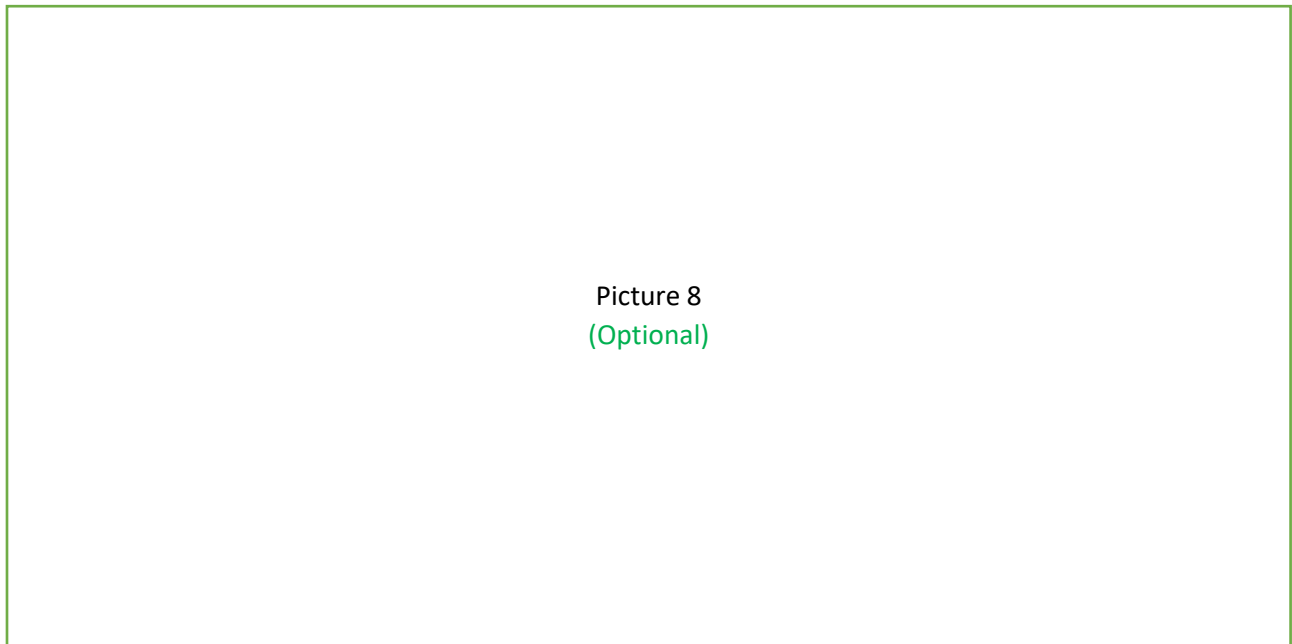
Pictures – 4 of 5 (optional)

(One or more photographs of the rocket during construction and at the launch site)



Picture 7  
(Optional)

Description:

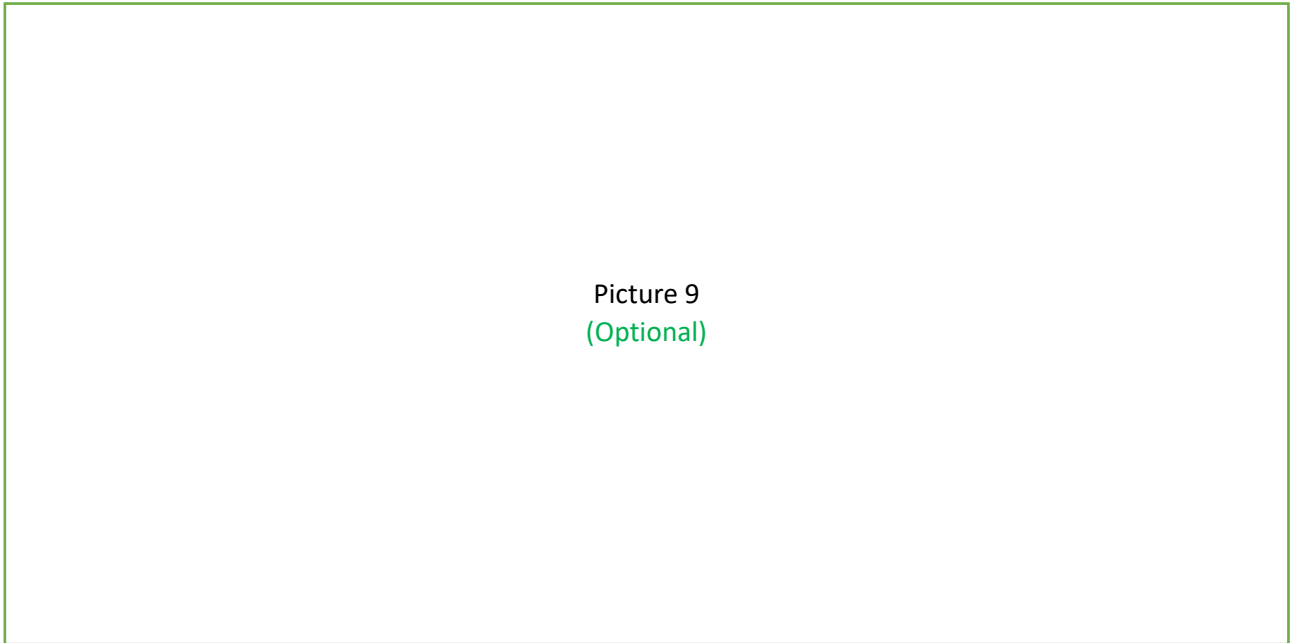


Picture 8  
(Optional)

Description:

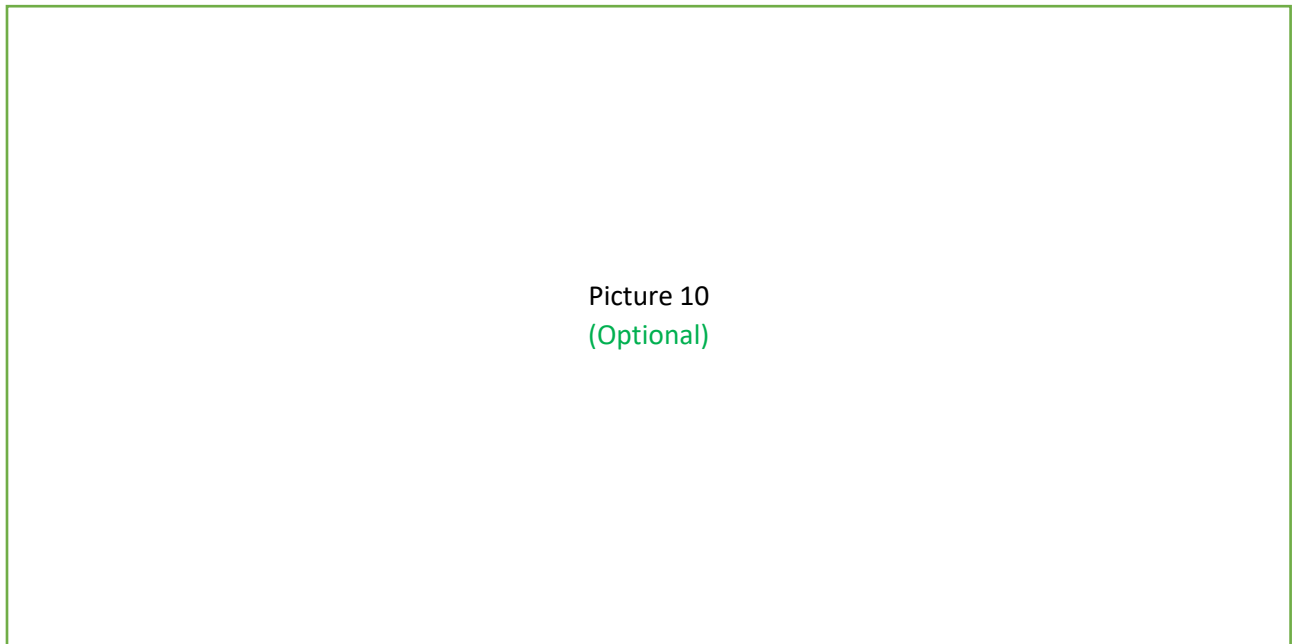
## Pictures – 5 of 5 (optional)

(One or more photographs of the rocket during construction and at the launch site)



Picture 9  
(Optional)

Description:



Picture 10  
(Optional)

Description:



## Additional space for altitude measurement

If you need additional space to describe how you calculated how high your rocket went, you can include it here.

<p>Altitude Calculation Picture 1 (Optional)</p>	<p>Altitude Calculation Picture 2 (Optional)</p>
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Additional details of how you calculated the altitude:

## Flight damage to your rocket (Optional)

If your rocket sustained flight damage from launch/landing please document it here. If there is no flight damage write N/A in the description.

<p>Flight Damage Picture 1 (Optional)</p>	<p>Flight Damage Picture 2 (Optional)</p>
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Description of what happened:

## Modifications made to your rocket

Describe modifications you made to your rocket. Changing the color of the paint does not count as a modification. *IF you did not make any changes to your model put N/A in the description:*

Description:

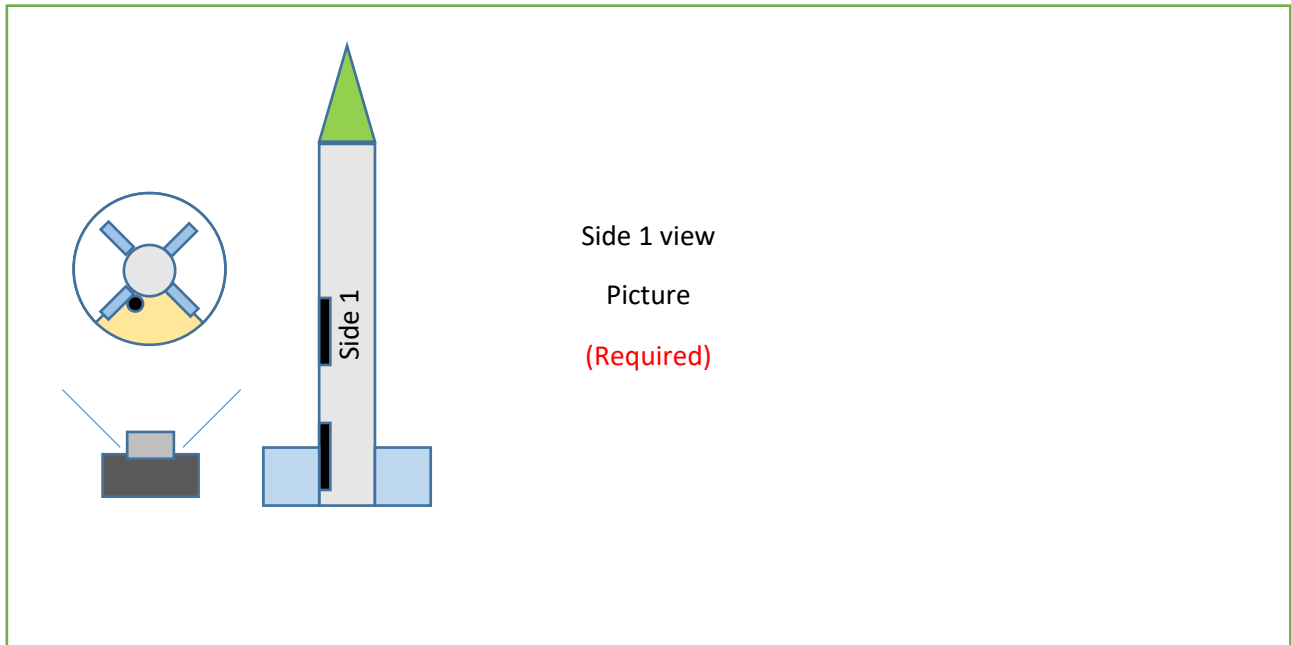
Modifications  
Picture 1  
(Optional)

Describe how you swing tested your rocket for stability following the modifications:

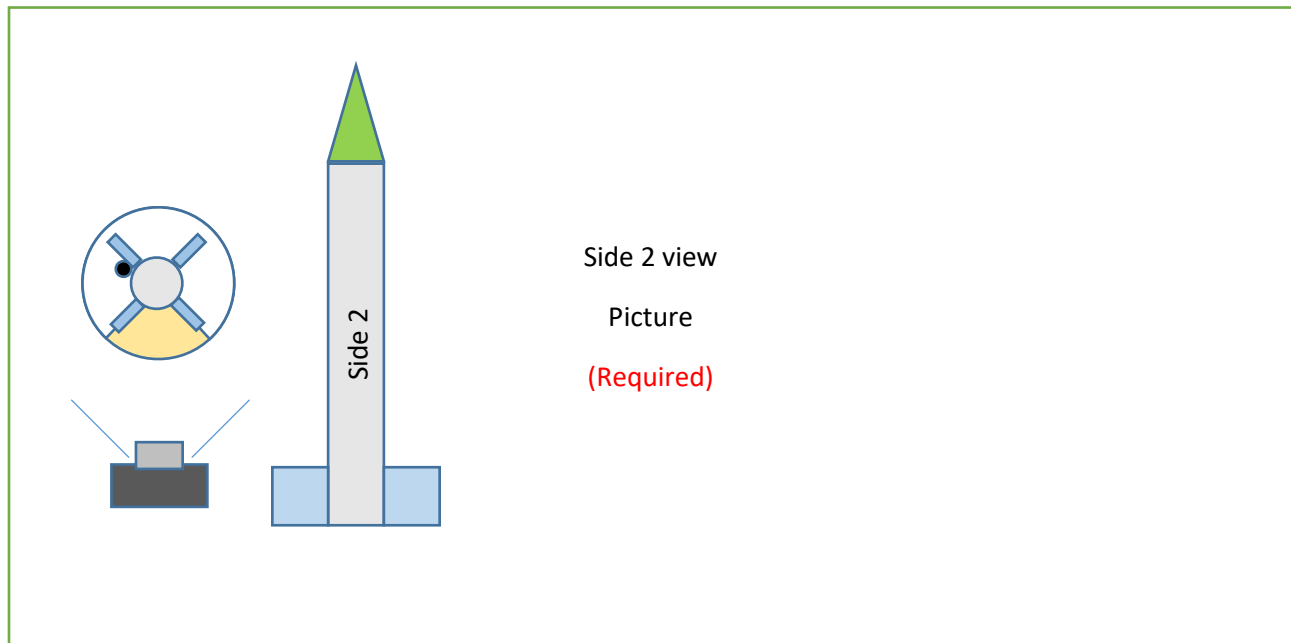
Swing Testing  
Picture 1  
(Optional)

## Required Judging Pictures (1 of 5)

For judging the construction quality of your rocket the following pictures of your finished rocket ***are required***. Pictures can be horizontal or vertical.



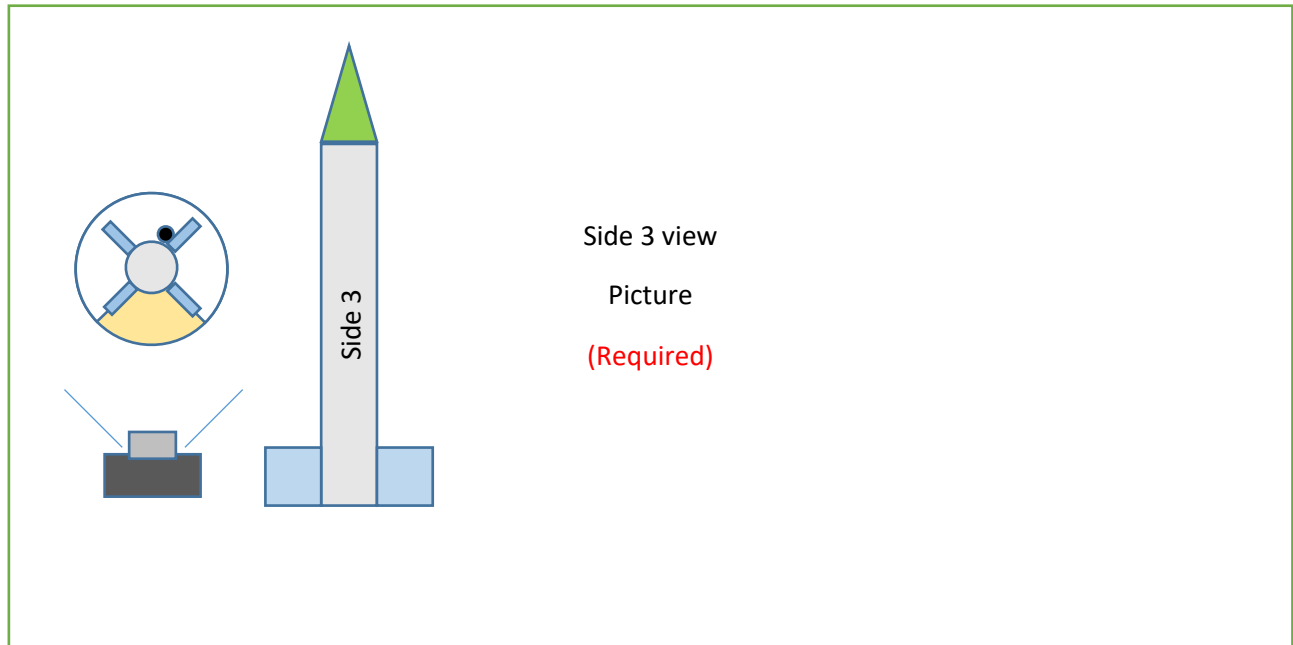
Your rocket has 4 quadrants or sides ( $90^\circ \times 4 = 360^\circ$ ) to it. Include a picture of side where the launch lugs are located. (See diagram for example)



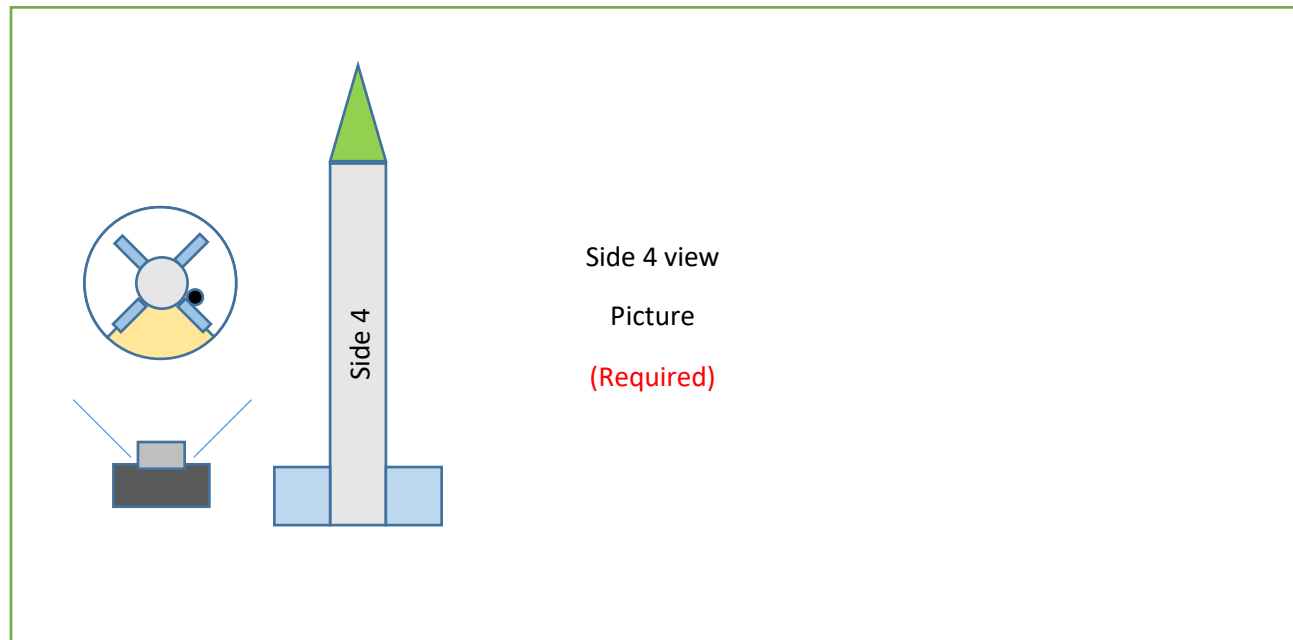
Include a picture of your rocket  $90^\circ$  from the launch lugs to show side 2 of your rocket.

## Required Judging Pictures (2 of 5)

(For judging the construction quality of your rocket the following pictures of your finished rocket **are required**.) Pictures can be horizontal or vertical.



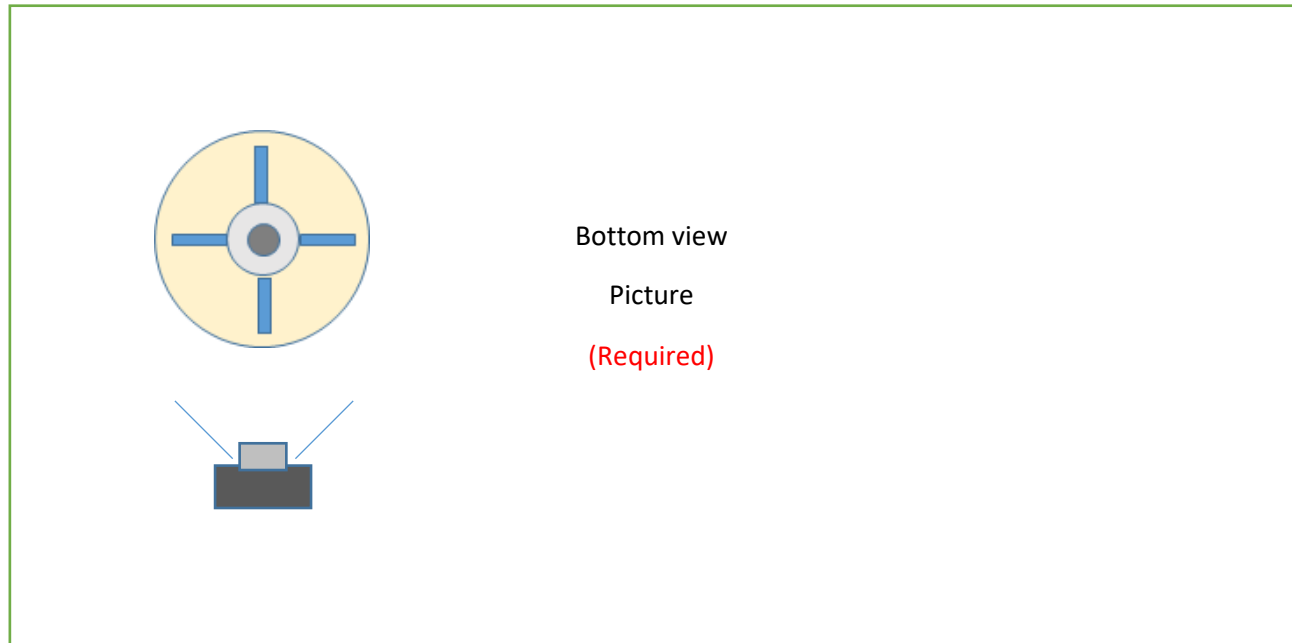
Include a picture of your rocket 180° from the launch lugs to show side 3 of your rocket.



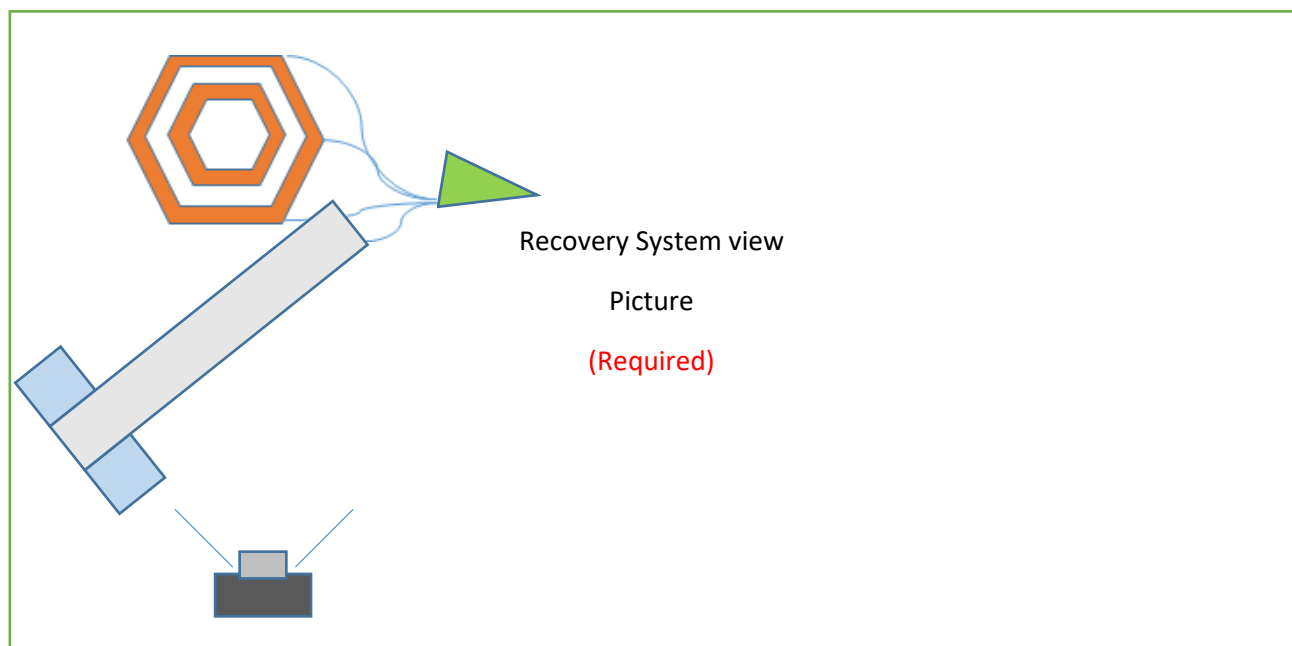
Include a picture of your rocket 270° from the launch lugs to show side 4 of your rocket.

## Required Judging Pictures (3 of 5)

(For judging the construction quality of your rocket the following pictures of your finished rocket **are required**.) Pictures can be horizontal or vertical.



Include a picture of the bottom of your rocket (please remove engines for a good view of the engine mount(s)).



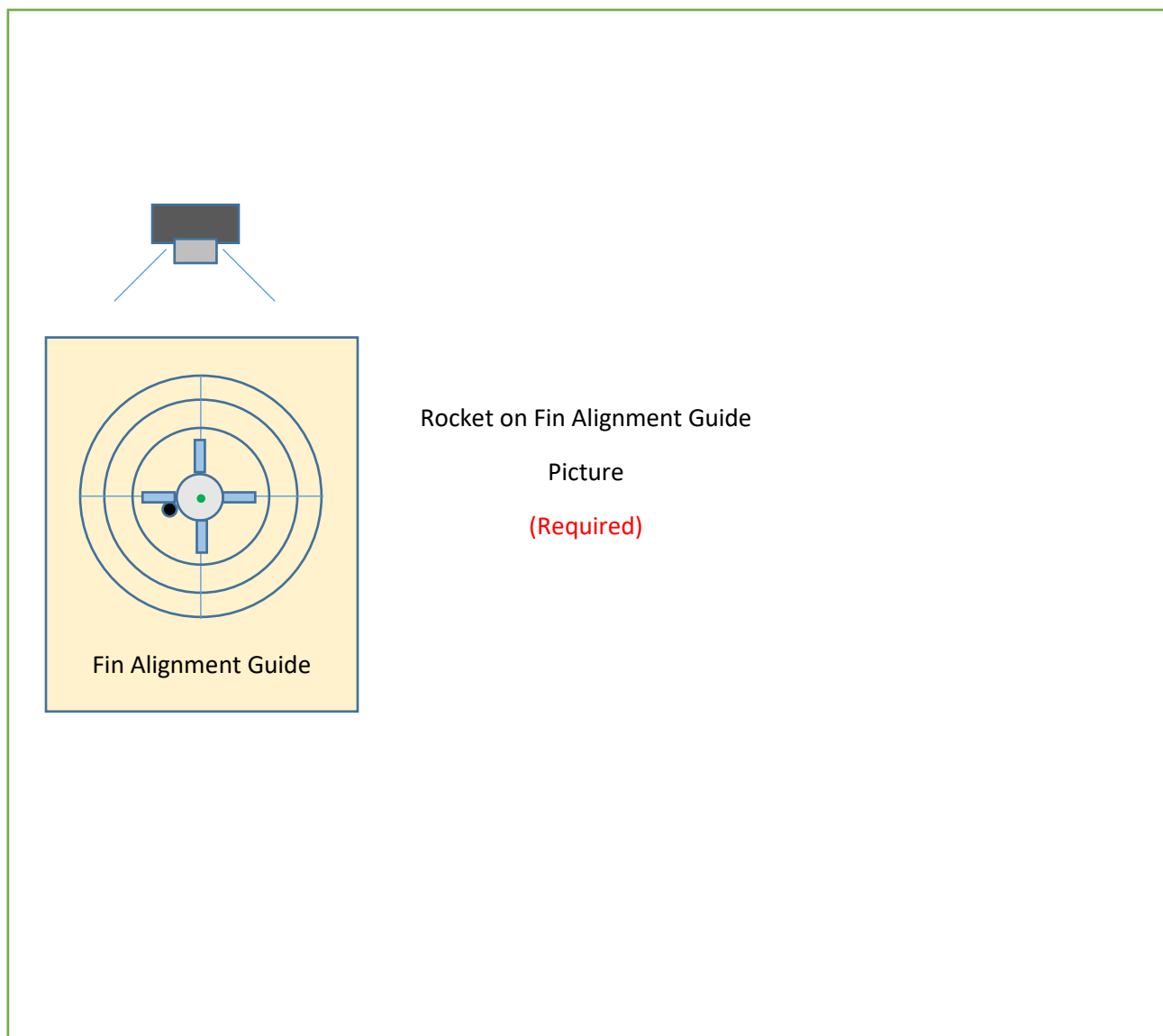
If your rocket uses a method other than tumble recovery (a parachute or streamer for example) include a picture of the recovery system

## Required Judging Pictures (4 of 5)

(For judging the construction quality of your rocket the following pictures of your finished rocket ***are required***.) Pictures can be horizontal or vertical.

Print out from [www.stem4ks.com/rocketry/](http://www.stem4ks.com/rocketry/) or obtain from the local extension office a “fin alignment guide” that matches the number of fins on your rocket. If your model uses a special fin configuration like the Estes “Interceptor” you will need to use the fin alignment guide in the instructions. For rockets with no “fins” like the Estes QUINSTAR provide a picture straight down from the top of the rocket.

Placing the fin alignment guide on a flat surface place your rocket on top of the fin alignment guide lining up your body tube and fins accordingly. (Someone can help hold your rocket.) Take a picture from the very top of your rocket looking down on the fin alignment guide showing ALL your fins are within  $\pm 2^\circ$ .



## Required Judging Pictures (5 of 5)

(For judging the construction quality of your rocket the following pictures of your finished rocket **are required**.) Pictures can be horizontal or vertical.

Provide close up pictures of at least three of your fins and/or body tube transitions.

