

Grade 6 Flight- Culminating Assignment

Dear Pilots-in-training,

You have been learning a lot about flight- the four forces of flight, the parts of a plane, roll/pitch/yaw...etc.

We here at Mahmood Flight Academy are always looking for new airplane designs, for planes that can go faster, carry heavier loads, or reach higher altitudes (just to name a few).

After your intensive training, we believe you are ready to engineer a new PLANE DESIGN. This will count as part of your final mark for the flight unit.

Your designs are due by Thursday, April 2, 2015. Our pilot ceremony will be held on Tuesday, April 7th, 2015. If you do not submit a design, you will unfortunately be denied completion of the course.

Respectfully,
Sir Sow Ring Skyz
Administrator, Mahmood Flight Academy

DIRECTIONS

1. You need to draw a diagram of a NEW plane design that includes all the important parts of a plane (see the diagram we went over in our flight unit). It should be unique and neatly done!
2. Your plane must be designed to do something **BETTER** than your average plane (e.g. you could design it with special lightweight material to make it weigh less, therefore the plane will be easier to get off the ground).
3. Your plane must include at least **THREE** unique features that help it achieve its goal (e.g. to fly faster, you designed a more streamlined nose).
4. Your plane should look NICE and look UNIQUE. Make it interesting and creative! Please include at least **TWO creative features** (e.g. it could have a mural of The Hobbit painted on the fuselage). Think of a creative name and write it in large letters at the top of your design.
5. You are handing in two things:
 - a. One-page, full-colour design that has LABELLED parts and the name of your plane
 - b. A ONE-PAGE write-up (stapled to the design) that includes
 - i. What is special about your plane (your goal)
 - ii. How your plane design will help you achieve that goal (e.g. materials used). You **MUST** talk about the four forces of flight here.
 - iii. How much the plane will cost.
 - iv. How your plane will be **ENVIRONMENTALLY FRIENDLY**.

Rubric

| | 4 | 3 | 2 | 1 |
|--|---|---|---|---|
| Design | | | | |
| Plane appearance | My plane is very neat and very colourful | My plane is neat and colourful | My plane is somewhat neat and colourful | My plane is messy and is black-and-white |
| Plane Name | My plane's name is highly creative | My plane's name is creative | My plane's name is somewhat creative | My plane's name is quite boring |
| Labels | My plane's parts are labelled in FULL sentences | My plane's parts are labelled with short phrases | My plane's parts are labelled with one word each | My plane is not labelled |
| Three special features to make it a superior plane | I have over three special features in my plane | I have three special features in my plane | I have two special features in my plane | I have one special feature in my plane |
| Creative features | I have over two creative features in my plane | I have two creative features in my plane | I have one creative feature in my plane | I have no creative features in my plane |
| Write-up | | | | |
| Goal and explanation | My goal is very realistic and supported well by the special features I have included in my plane design. The features show a high level of thought. | My goal is realistic and supported by the special features I have included in my plane design. The features show a good level of thought. | My goal is somewhat realistic and somewhat supported by the special features I have included in my plane design. The features show some level of thought. | My goal is unrealistic and barely supported by the special features I have included in my plane design. The features show little to no thought. |
| Cost | I have broken down the cost of producing the plane with a <i>chart</i> (e.g. materials, labour, test runs) | I have broken down the cost of producing the plane in a paragraph <i>without a chart</i> (e.g. materials, labour, test runs) | I have broken down the cost of producing the plane with only 1-2 lines of explanation | I have only included a price with no explanation. |
| Environmentally friendly | I have given excellent detail about how my plane will be good for the environment (6+ sentences) | I have given good detail about how my plane will be good for the environment (4-5 sentences) | I have given some detail about how my plane will be good for the environment (2-3 sentences) | I have given little detail about how my plane will be good for the environment (1 sentence) |
| Grammar/spelling | My write-up has no or 1 grammar or spelling mistakes. | My write-up has 2-4 grammar or spelling mistakes. | My writing has 5-9 grammar or spelling mistakes. | My writing has 10+ grammar or spelling mistakes. |