

Solon Board of Education

Flight

Lift, Drag, Thrust, Propulsion,

By: Mrs. Aughinbaugh



Industrial
Technology
8th Grade

Flight

Day one:

Learning Target

Read for understanding

Gain historical and background knowledge

Materials:

KWL

Pencil

Folder

Module Outline

- Fill out the pre knowledge worksheet (K-W-L) to determine prior knowledge. Consider the following points as you fill in the worksheet.
Pre knowledge
 - What do you already know about this subject?
 - What have you heard about this subject?
 - What do you want to know about this subject?

- Get pamphlet from file entitled:
Principles of flight
- Read packet and answer worksheet. When complete leave in folder for grading.

- If time allows you may go on to the next day or clean up your area.

Day closure:

In your technology journal write down one thing that you discovered today (Note: I will check journals randomly to make sure they are being completed daily for the 10 pts awarded.)

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Day Two:

Learning Target

Define for understanding key flight terminology

- Get pamphlet from file entitled:
Principles of flight
- Review readings again to define the terms on the term sheet.

- If time allows you may go on to the next day or clean up your area.
Make sure you rewind the video and return all materials to their proper place.

Day closure:

In your technology journal write down one thing that you discovered today
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Day Three:

Learning Target

Build a hoop glider

Test gliding variables

- In your packet are directions for a hoop glider
- Read the direction page to assemble the glider

BEFORE you fly the glider fill out the analysis page

I am looking for complete sentences explaining your thought processes

- Make a prediction before the flight of how it will work based on previous knowledge
- Fly glider
- Write down observed results
- Make a hypothesis of why it flew this way

MAKE A CHANGE

- pick one of the variables from the glider direction page
- Change the glider for the variable
- Make a prediction before the flight of how it will work based on previous knowledge
- Fly again. Write down observed results
- Make a hypothesis of why it flew this way
- If time allows you may go on to the next day or clean up your area. Make sure you return all materials to their proper place.

Day closure:

In your technology journal write down one thing that you discovered today (Note: I will check journals randomly to make sure they are being completed daily for the 10 pts awarded.)

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Day Four:

Learning Target

Read for understanding the Delta Dart airplane directions.

Begin airplane construction

- Once the glider experiment is done have instructor score the glider itself
- Next secure the materials from the instructor to complete a
Delta Dart Airplane
- First read all directions
- Make sure you have all necessary supplies
You will **NOT** be given new materials if a mistake is made
Make sure you understand the directions before you proceed
- Follow book directions given with kit and begin assembly
- Clean up your area.

Day closure:

In your technology journal write down one thing that you discovered today (Note: I will check journals randomly to make sure they are being completed daily for the 10 pts awarded.)

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Day Five and Day Six:

Learning Target

Finish plane construction

Use initial test flight to analyze and adjust to complete challenge.

- Build plane to completion
- It must be totally dry before flying
- Once plane is dry get a rubber band strap from instructor
- Review preparing for flight in instruction booklet
- Make a test flight in the hall
- Note distance gone and path of flight
- Refer to reading and direction pamphlet for suggestions on correcting flight path and distance.

- Clean up your area.

Day closure:

In your technology journal write down one thing that you discovered today

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Day Seven, Day Eight and Day Nine:

Learning Target

Fly and adjust plane to make a 35ft. straight flight

Create a chart that represents flight distances per number of windings

- Your goal for this plane is to get it to fly straight down the hall way a minimum of 35 feet.
 - As you make each test flight note how many times you wind the propeller.
 - After each flight count the number of blocks on the floor the plane passed in air
 - Write down the direction the plane fly on each flight
 - Ex: banked (hard) left, veered (slight turn) Left
 - Write down adjustment you will make for next flight

 - You must fly plane at least five times to create chart.
 - If you are successful before 5 flights you still need to make the chart.

- Clean up your area.

Day closure:

In your technology journal write down one thing that you discovered today

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Day Ten:

Learning Target

Complete a Flight analysis report

- Today you will design a chart
 - Number of windings versus distance
- Once the graph is made write a paragraph based on what you have learned that might be the reason for the results you recorded.
 - Include support material from what was noted in flight patterns as well.

- Clean up your area when done
- Make sure all papers are complete
- Review for you assessment if there is time.

Day closure:

In your technology journal write down one thing that you discovered today (Note: I will check journals randomly to make sure they are being completed daily for the 10 pts awarded.)