

CHESSIE Schedule
Group 2B Motion/Flight Unit



Resources Used for Motion/Flight Unit:

All About Aircraft and Flight by Peter Mellett & John Rostron

***Parents---Mellot & Rostron's book will be available on a lending basis from Mrs. Pierson's science library.*

Week #1
9/5

Forces and Motion (assignment is from the handouts labeled week #1)

Prior to class,

Read: p1 'Newton's Laws of Motion' (front & back of page) & page 2 'Pushing and Pulling'

Complete: Homework sheet week #1

Recommended Website Activity:

<http://teachertech.rice.edu/Participants/louviere/Newton/law1.html>

The above website is an animation of examples of Newton's laws. This is an excellent follow up to the handouts on Newton's laws.

http://www.walter-fendt.de/html5/phen/newtoncradle_en.htm

A Newton's cradle shows the laws of motion very well

Classtime: Experiments will focus on Newton's laws of motion using balloons, matchbox cars and water bottle rockets

Week #2
9/12

What is Flight? Curve and Lift, history of Flight, Bernoulli's principle

Reading for the remainder of the unit is from All About Aircraft and Flight

Prior to class,

Read: p4-7 on flight, curve and lift & p58-59 on the history of flight

Complete: Homework sheet week #2

Website suggestion:

<https://www.youtube.com/watch?v=QggNdV9TmvA>

How do planes fly? National Geographic kids

<https://www.youtube.com/watch?v=bv3m57u6ViE>

Good explanation of Bernoulli's principle

Classtime: Motion & flight projects, Bernoulli's principle

Week #3
9/19

Air Resistance, Gliding and Soaring, Kites and Sails

Prior to class, Read: p10-11, 14-17

Optional: Make a kite p18,19 as an extra at-home project.

Website suggestion: <https://www.youtube.com/watch?v=AiTk5r-4coc>

Youtube video of the inner workings of an airplane

Complete: Homework sheet week #3

Classtime: we will complete 'streamlining and shape' p12,13 & students will be launching parachute men to demonstrate the concept of 'drag'. Students will be flying model airplanes such as those made on p 28,29.

- 9/26 Week #1 of Ecology
Determining the health of a stream by the types and number of macroinvertebrates that are found. Class meeting at Azalea Park
Prior to class, Read: Handout labeled "Macroinvertebrate groups"
Complete: Homework sheet for today
 Website suggestion: <https://www.youtube.com/watch?v=xocR6RbW3wY>
 Understanding water quality through the creatures found in a stream
<https://www.youtube.com/watch?v=1HysvsXcmVI>
 Macroinvertebrates and water quality
- Week #4
 10/3 Lighter than Air, What's in a Wing, Taking Flight, propellers, jet engines, rockets
Prior to class, Read: p20,21,24-27, 30, 31, 34-37, 46,47
Complete: Homework sheet week #4
 Website suggestion: <https://www.youtube.com/watch?v=pQ24NtnaLi8>
 Animation of flight terms and how they turn an airplane
 In preparation for next week's reading, we will be launching rockets
Optional: Read p48,49, 52-55 Make a propeller model p32,33 & a turbine on p 36,37
Optional: Complete 'how birds fly' activity p50,51
Parental Caution: 'Prehistoric Flyers' p56,57 contains evolutionary material.
Classtime: hot air balloon model demonstration p22,23
Airplane propellers
- Week #5
 10/10 Propellers, jet engines, rockets and flying through space
Prior to class, Read: p30,31,34,35,46,47
Complete: homework sheet week #5
Optional: Make a propeller model p32,33 & make a turbine on p36, 37
 Read p38-43 and complete activity on p44,45 'speeding through water'
 Read p 60,61 'Fly into the Future'
Parental caution: note the evolutionary reference to the age of birds in the first sentence p60.
Classtime: Guest pilot instructor, Dr. David Hudson.

*Our guest instructor today is pilot **Dr. David Hudson**, who has a very diverse background. He is now the Associate Vice President for Research at UVA but has a degree in neuroscience. He did research on circadian rhythms for years. (circadian rhythms are physical, mental and behavioral changes that follow a roughly 24-hour cycle, responding primarily to light and darkness in an organism's environment) He has been a private pilot for almost 20 years, flying "small" single engine aircraft. He has also instructed in the private pilot ground school class at PVCC and for local flight schools. Four years ago, he joined Civil Air Patrol and since then, most of his flying has been in Civil Air Patrol aircraft. Dr. Hudson has been married for 40 years and has 2 daughters. One is an emergency room doctor and the other is a Major in the Air Force who flies in the back of fighter aircraft. He played the bass for years in a Charlottesville based group called "Big Ray and the Kool Kats".*



