

IPC (Integrated Physics and Chemistry)
COURSE INFORMATION AND EXPECTATIONS

Mr. Orlando Montalvo
Room # 405
Conference: 1st block (8:00am-9:30am)
E-mail: see my [webpage](#)
Phone # 956-580-5300 ext. 1435



Tutoring: Tuesdays and Thursdays (7:30am -8:00am)

Welcome to IPC! You can take full advantage of what this course has to offer if you come to class with a positive attitude, pay close attention to every lesson in class, keep very good notes, complete your assignments on time, and study for your exams. Please do not miss class because you could really fall behind.

Materials Needed:

1. 3 or 5 Subject Notebook or something similar
2. Pencils and Pens (pens are either black or blue)
3. Remind App
4. CamScan App or Adobe Scan
5. Google Classroom

Google Classroom Rules:

1. ***BE LOGGED IN*** and ready to work within 3 minutes of the start of class. The attendance sign in form will be posted in the chat window.
2. ***RAISE YOUR HAND*** and ***WAIT*** for me to respond before you unmute your microphone.
3. ***BE RESPECTFUL*** of the other students in the Google classroom and in the chat window. Use the chat only for classroom purposes.
4. ***RESTROOM BREAKS*** are allowed when I have finished with the lesson or instructions. You are encouraged to take your restroom break before you log on to class or wait until teaching time is over.
5. ***BE ON CAMERA!*** I need to see you!
6. ***TURN IN ASSIGNMENTS ON TIME!***

Grade Distribution

1. **Minor Assignments:** The average of these grades will be worth **40%** of the average. Minor Assignments include PLTW Activities, homework assignments, and quizzes.
2. **Major Assignments:** The average of these grades will be worth **60%** of the average. Major assignments include tests, PLTW Project assignments, presentations, and other projects.
3. *At the end of each semester, the average of minor assignments and major assignments will be 80%. The semester exam is worth 20% of the semester average. Your final exam will be comprehensive. Semester and Final Exams are difficult exams.*

Statement for Academic Dishonesty: Academic integrity is fundamental to the activities and principles of our school. *No student shall cheat or copy the work of another. Plagiarism, the use of another person's original ideas or writings as one's own without giving credit to the true author, will be considered cheating, and the student will be subject to academic discipline that may include loss of credit for the work in question.*

I hereby agree that I have read the course information and am aware of the conditions set forth by the Sharyland High School and Sharyland ISD. I am also aware of the classroom rules and will follow them.

Student Name (print)

Student Signature

Parent Signature

Scientific Process Standards

- I.1 Scientific processes.** The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices.
- I.2 Scientific processes.** The student uses scientific practices during laboratory and field investigations.

Tools to Know

- I.1(A)** demonstrate safe practices during laboratory and field investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles or chemical splash goggles, as appropriate, and fire extinguishers
- I.1(B)** know specific hazards of chemical substances such as flammability, corrosiveness, and radioactivity as summarized on the Safety Data Sheets (SDS)
- I.1(C)** demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials
- I.2(A)** know the definition of science and understand that it has limitations, as specified in subsection (b)(2) of this section
- I.2(B)** plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology
- I.2(C)** collect data and make measurements with accuracy and precision

Force and Motion

- I.4 Science concepts.** The student knows concepts of force and motion evident in everyday life.

Readiness Standards	Supporting Standards
<p>I.4(A) describe and calculate an object's motion in terms of position, displacement, speed, and acceleration</p> <p>I.4(C) investigate how an object's motion changes only when a net force is applied, including activities and equipment such as toy cars, vehicle restraints, sports activities, and classroom objects</p> <p>I.4(D) describe and calculate the relationship between force, mass, and acceleration using equipment such as dynamic carts, moving toys, vehicles, and falling objects</p>	<p>I.4(B) measure and graph distance and speed as a function of time</p> <p>I.4(E) explain the concept of conservation of momentum using action and reaction forces</p> <p>I.4(F) describe the gravitational attraction between objects of different masses at different distances</p> <p>I.4(G) examine electrical force as a universal force between any two charged objects</p>

Energy Forms and Transfer

- I.5 Science concepts.** The student recognizes multiple forms of energy and knows the impact of energy transfer and energy conservation in everyday life.

<p>I.5(B) recognize and demonstrate common forms of potential energy, including gravitational, elastic, and chemical, such as a ball on an inclined plane, springs, and batteries</p> <p>I.5(D) investigate the law of conservation of energy</p> <p>I.5(E) investigate and demonstrate the movement of thermal energy through solids, liquids, and gases by convection, conduction, and radiation such as in weather, living, and mechanical systems</p> <p>I.5(G) explore the characteristics and behaviors of energy transferred by waves, including acoustic, seismic, light, and waves on water as they reflect, refract, diffract, interfere with one another, and are absorbed by materials</p>	<p>I.5(A) recognize and demonstrate that objects and substances in motion have kinetic energy such as vibration of atoms, water flowing down a stream moving pebbles, and bowling balls knocking down pins</p> <p>I.5(C) demonstrate that moving electric charges produce magnetic forces and moving magnets produce electric forces</p> <p>I.5(F) evaluate the transfer of electrical energy in series and parallel circuits and conductive materials</p> <p>I.5(H) analyze energy transformations of renewable and nonrenewable resources</p> <p>I.5(I) critique the advantages and disadvantages of various energy sources and their impact on society and the environment</p>
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Structure and Properties of Matter

- I.6 Science concepts.** The student knows that relationships exist between the structure and properties of matter.

<p>I.6(A) examine differences in physical properties of solids, liquids, and gases as explained by the arrangement and motion of atoms or molecules</p> <p>I.6(C) analyze physical and chemical properties of elements and compounds such as color, density, viscosity, buoyancy, boiling point, freezing point, conductivity, and reactivity</p>	<p>I.6(B) relate chemical properties of substances to the arrangement of their atoms</p> <p>I.6(D) relate the placement of an element on the Periodic Table to its physical and chemical behavior, including bonding and classification</p> <p>I.6(E) relate the structure of water to its function as a solvent</p> <p>I.6(F) investigate the properties of water solutions and factors affecting solid solubility, including nature of solute, temperature, and concentration</p>
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Matter in Everyday Life

- I.7 Science concepts.** The student knows that changes in matter affect everyday life.

Readiness Standards	Supporting Standards
<p>I.7(A) investigate changes of state as it relates to the arrangement of particles of matter and energy transfer</p> <p>I.7(C) demonstrate that mass is conserved when substances undergo chemical change and that the number and kind of atoms are the same in the reactants and products</p>	<p>I.7(B) recognize that chemical changes can occur when substances react to form different substances and that these interactions are largely determined by the valence electrons</p> <p>I.7(D) classify energy changes that accompany chemical reactions such as those occurring in heat packs, cold packs, and glow sticks as exothermic or endothermic reactions</p> <p>I.7(E) describe types of nuclear reactions such as fission and fusion and their roles in applications such as medicine and energy production</p> <p>I.7(F) research and describe the environmental and economic impact of the end-products of chemical reactions such as those that may result in acid rain, degradation of water and air quality, and ozone depletion</p>

Scientific Process Standards

- I.2 Scientific processes.** The student uses scientific practices during laboratory and field investigations.
- I.3 Scientific processes.** The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions.

Ways to Show

- I.2(D)** organize, analyze, evaluate, make inferences, and predict trends from data
- I.2(E)** communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphs, journals, summaries, oral reports, and technology-based reports
- I.3(A)** analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student
- I.3(B)** communicate and apply scientific information extracted from various sources such as current events, published journal articles, and marketing materials
- I.3(C)** draw inferences based on data related to promotional materials for products and services
- I.3(D)** evaluate the impact of research on scientific thought, society, and the environment
- I.3(E)** describe the connection between physics and chemistry and future careers
- I.3(F)** research and describe the history of physics and chemistry and contributions of scientists