

Introduction to Physics

Course Syllabus

Black River High School

This course is designed for students to gather a general knowledge of physics and to experience scientific techniques. It will cover the Next Generation Science Standards of:

- Forces, Interactions, and Motion
- Conservation and Transfer of Energy
- Wave Properties and Electromagnetic Radiation.

This course will stress the interconnectedness between these areas and their application to every-day life.

I. Textbook

Physical Science, Dobson, Homan, and Roberts, copyright 2006. Holt, Rinehart and Winston

II. Proficiencies

A. Graduation Requirements/Enduring Proficiencies

- Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration. (HS-PS2-1)
- Use mathematical representations to support the claim that the total momentum of a system is conserved when there is no net force on the system. (HS-PS2-2)
- Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known. (HS-PS3-1)
- Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system. (HS-PS3-4)
- Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media. (HS-PS4-1)

B. Course Content Proficiencies

- Completion of RIIP (See below for details)

C. Prerequisite Proficiencies for Other Classes

- There are no Prerequisite Proficiencies for Other Classes

III. Assignment Grading (Grades are posted to PowerSchool)

Formative Assignments: These are used for students to learn and practice the knowledge needed to meet a proficiency. Parents, teachers and students use these formative assignments to track student progress and their knowledge of the content/skills being covered in class.

Summative Assignments: These are used to determine whether or not a student has met a proficiency. Each summative is linked to one or more of the proficiencies listed above. Summatives will be evaluated using a scoring rubric that pertains to each proficiency, and the student will be assigned one of the following scores:

- **Proficient With Distinction-** The student has gone above and beyond the target
- **Proficient-** The student is competent in the skill and has met the proficiency
- **Approaching Proficiency-** The student has demonstrated limited ability to employ strategies needed to understand the skill
- **Emerging-** The student is attempting the skill
- **Not Attempted-** The student has not attempted the skill

Scoring Rubric Example:

Standard	Proficient With Distinction	Proficient	Approaching Proficiency	Emerging
Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known. (HS-PS3-1)	I can... Create and solve an equation from a variety of complex systems that demonstrates the conservation of energy.	I can... Create and solve an equation from known quantities within a system to demonstrate the conservation of energy.	I can... Decide which equations can be used within a system to create and solve an equation that demonstrates the conservation of energy.	I can... Recall the Law of Conservation of Energy.

IV. Receiving Course Credit and Meeting Graduation Requirements

- To **GRADUATE from Black River**, students must receive a score of Proficient or Proficient With Distinction for every Graduation Requirement/Enduring Proficiency.

- To **PASS A COURSE**, students must meet the Graduation Requirements/Enduring Proficiencies along with any additional Course Content Proficiencies.

V. Course Information

A. Summative Assessments

1. Students are allowed to re-take any summative assessment, given that they meet with the teacher and complete remedial work.
2. The most recent score will be recorded in PowerSchool with a comment being made as to the original score and the newest score. Each attempt a student makes towards becoming Proficient will be recorded in the comments for that Summative.

B. Late Work

1. While not encouraged, late work will be accepted.
2. A grade of zero will be entered into the grade book for a Formative Assignment and a “Not Attempted” score will be recorded for Summative Assignments until the work is submitted.
3. If a student is absent, they must schedule a time outside of class to acquire any missing work. It is suggested that the student e-mail Ms. Harrington asking for missed work.

C. Research Independent Investigative Project (RIIP)

1. An Independent Investigation (RIIP) of the students’ choice will be completed by each student for the Fall or Spring Showcase. Students will be required to complete a RIIP to receive credit for this course.

D. Cheating/Plagiarism:

1. The school policy on cheating/plagiarism in the student handbook will be strictly followed.

2. If a student is found cheating/plagiarizing a conference will be held between the teacher and the student, then the student's name and a brief description will be sent to the office.

VI. Teacher Contact Information

- A. Ms. Harrington's E-Mail: Mellany.Harrington@trsu.org
- B. BRHS Phone (ask for Ms. Harrington): (802) 875-4721

VII. Parent Page

Parent/Guardian:

Please sign below to signify that you have read the syllabus:

Student's Name [Print]: _____

Parent's/Guardian's Name [Print] : _____

Parent/Guardian Signature _____

If you (the parent/guardian) prefer to be contacted via e-mail please fill out the information below:

Parent's E-Mail: _____