Warren County School District

PLANNED INSTRUCTION

COURSE DESCRIPTION

Course Title: Science 8 Elective (May The FORCE Be With You)

Course Number: 00302

Course Prerequisites: None

Course Description:

May the FORCE be with you is a one semester elective designed for eighth grade students. Students will explore wave, light, and electrical energies along with a look at magnets. Exploration of each of these will include careers, everyday life applications and include both activities and laboratories that focus on scientific inquiry

Suggested Grade Level: Eighth Grade

Length of Course: ☒ One Semester ☐ Two Semesters ☐ Other (Describe)

Units of Credit: .5 Middle Level Credit (Insert ***None*** if appropriate)

PDE *Certification and Staffing Policies and Guidelines* (CSPG) Required Teacher Certifications:
CSPG Middle Level Science, Chemistry, Physics, General Science

Certification verified by WCSD Human Resources Department: ☒ Yes ☐ No

TEXTBOOK AND SUPPLEMENTAL MATERIALS

Continue using Board approved textbook? ☒ Yes ☐ No (*If yes, then complete the information below.*)

Board Approved Textbooks, Software, Supplemental Materials:
Title: Physical Science
Publisher: McGrawHill
ISBN #: 978-0-07-677305-3
Copyright Date: 2017

Date of WCSD Board Approval: 3/12/2018

BOARD APPROVAL:

Date Written: 2/14/18

Date Approved: 3/12/2018; *March 11, 2019 Revised Credit*

Implementation Date: 2018-2019

SPECIAL EDUCATION AND GIFTED REQUIREMENTS

The teacher shall make appropriate modification to instruction and assessment based on a student's Individual Education Plan (IEP) or Gifted Individual Education Plan (GIEP).

COURSE OVERVIEW

(*List the content to be taught*)

1- Waves

A. What are Waves?
B. Properties of waves
C. Wave Interactions

Activities
How to make a wave.
Finding the natural frequency of a rope on the ground.
Measuring wave speed.
Transverse waves on slinky- frequency and wavelength and wave speed
Tuning fork in a bowl of water
Demonstration students replicating transverse and longitudinal waves
Demonstration- compression and rarefaction on a slinky

2-Sound

A. Producing and detecting sounds
B. Properties of Sound Waves
C. Using Sound waves

Activities
What causes sound?
How do you know a sounds direction?
Demonstration- How can sound blow out a candle.
Loudness, decibel scale demonstration with Phone apps, computer apps
Make A Musical Instrument.
Sound Waves in a string cup
Speaker and ooblak
Microphones, oscilloscope & sound generators-
Tuning forks and resonance tubes

3- Electromagnetic Waves

A. Electromagnetic Radiation
B. The Electromagnetic Spectrum
C. Using the Electromagnetic Spectrum

Activities
Electrical and magnetic fields relationships.
How do electromagnetic waves differ.
Marshmallows in a microwave.
Spectroscope and gas tubes.

4- Light

A. Light, Matter and Color
B. Reflection and Mirrors
C. Refraction and Lenses
D. Optical Technology

ACTIVITIES
How to make a rainbow-
How 3 d glasses work-
How Modern 3 D glasses work
Mirror writing .
How can you demonstrate the law of refraction.
How does a lens affect light.
Filters absorption andreflection
Build a periscope
Color mixing in light

5- Electricity
A. Electric Charge and Electric Forces
B. Electric Current
C. Electric Circuits
ACTIVITIES
How can you bend water? – balloon, funnel, large bowl, beaker
How to light a light bulb- D battery, coated wire and small round bulb
Basic circuits-conduction, series parallel

6- Magnetism

A. Magnets and Magnetic Fields
B. Making Magnets Using Electric Current
C. Making Current With Magnets

Activities
Magnetic North.
When is a wire a magnet?
Making a motor.
What is an electromagnet?
Magnetic Field demonstration.

ANCHORS AND STANDARDS

Standard - 3.1.8.A9

- Compare and contrast scientific theories.
- Know that both direct and indirect observations are used by scientists to study the natural world and universe.
- Identify questions and concepts that guide scientific investigations.
- Formulate and revise explanations and models using logic and evidence.
- Recognize and analyze alternative explanations and models.
- Explain the importance of accuracy and precision in making valid measurements**.**

ASSESSMENT

Portfolio Assessment: ___ Yes __X__ No

District-Wide Common Final Examination Required: ____ Yes __X__ No

Course Challenge Assessment (Describe)**:**

WRITING TEAM: Warren County School District Teachers

WCSD STUDENT DATA SYSTEM INFORMATION

1. Is there a required final examination? _____ Yes __X__ No
   Warren County School District Policy 9741 and9744 state, "All classes in grades 9-12 shall have a final exam."
2. Does this course issue a mark/grade for the report card? __X__ Yes _____ No
3. Does this course issue a Pass/Fail mark? _____ Yes __X__ No
4. Is the course mark/grade part of the GPA calculation? __X__ Yes ____ No
5. Is the course eligible for Honor Roll calculation? __X__ Yes ____ No
6. What is the academic weight of the course?

   ____ No weight/Non credit __X__ Standard weight ____ Enhanced weight