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
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 and reflection
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 and 9744 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