WELCOME

8th Grade PLC

2023-24

Dr. L. Benjamin-8th grade Science-CHMS

Mrs. Pollina-8th grade Science-SMS

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Introductions Cont.

State your name, your school, one thing you are looking forward to this year, one challenge you foresee this year

Ice Breaker!!!

Would you Rather... ?

What's New for 2023-24

RHSD Cell Phone Policy
Link

RHSD Grading Guidelines
Middle School

Science Standards: This year, students in ALL grade-levels K-12, will be taught the 2021 SC College and Career Ready Science Standards.
-SC has applied for a waiver to forego SCREADY-Science in 4th and 6th grade. We do not know yet if the test will be waived. Mrs. Massey will let us know.
-There is no waiver for the Biology EOC. Students will be tested on overlapping content and new content will be field tested.

Who Are We!

Mission:
Rock Hill Schools will provide all students with challenging work that authentically engages them in the learning process and prepares them for successful futures.

Vision:
Rock Hill Schools – a community inspiring students to learn, grow, connect, and thrive.

Motto

We are Rock Solid

Professional Code

- **Put Students First**
- **Nurture Relationships**
- **Work Together for a Shared Vision**
- **Grow Professionally**
- **Continuously Find Ways to Improve**

PLANNING FOR Q1

01

Classroom Rules/Procedures

8th grade Syllabus

Returning teachers share with new teachers what rules/procedures should be in place.

02

Notebook Setup

Discuss plans for notebooks/journals. Interactive, virtual, etc.

03

Teaching the SEPs

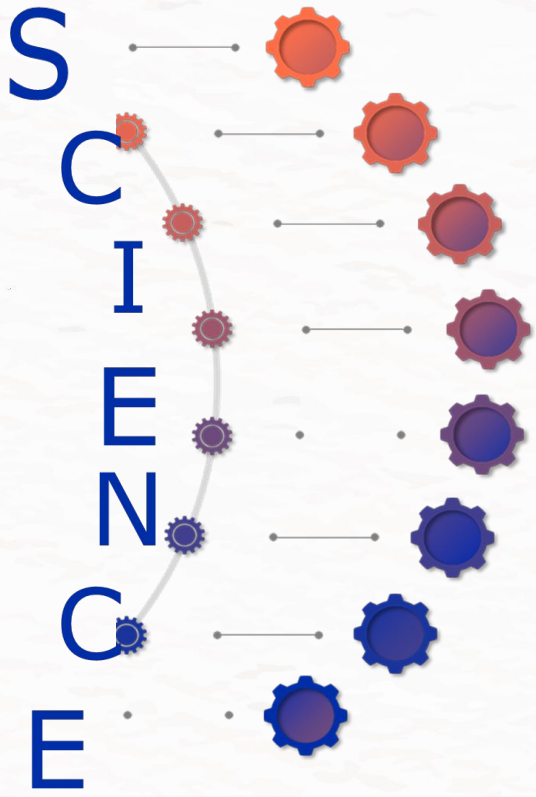
While the SEPs and CCCs will be integrated with the content, how can we jumpstart student thinking with some opening activities?

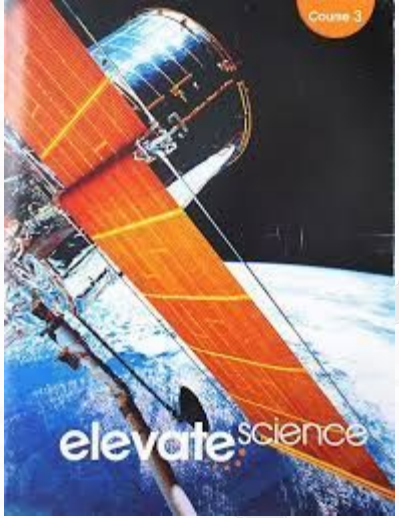
04

Teaching the Content

How will we organize and teach Q1 content? How will we assess student knowledge?

[Click here for 8th grade Science Rock Hill Page]





Topic 1- Genetics

Topic 2- Reproduction

Topic 3- Evolution

Topic 4- Force and Motion

Topic 5- Electricity and Magnetism

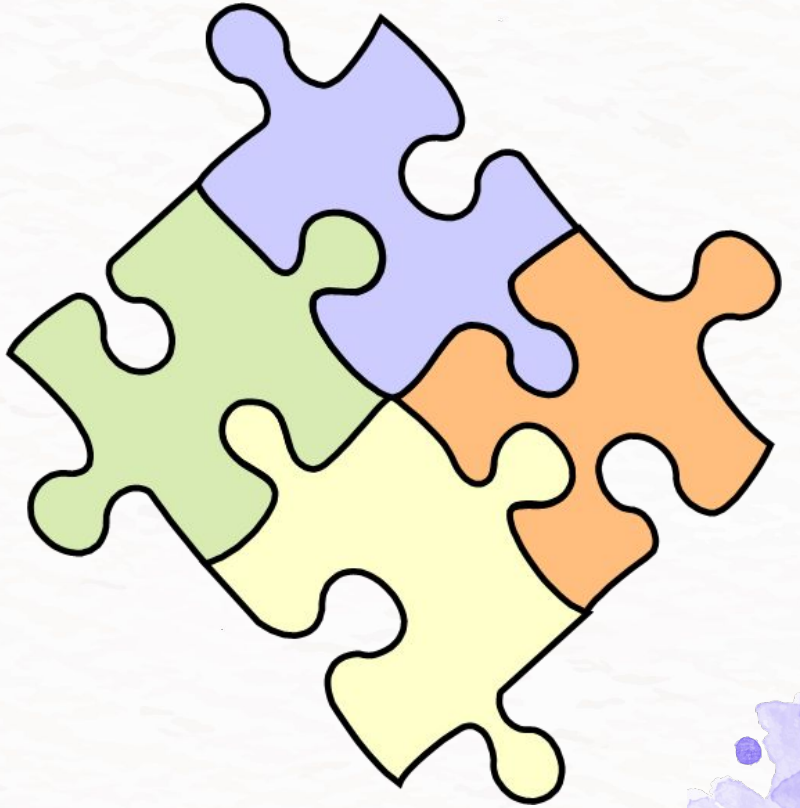
Topic 6- Waves and Information Technology

Topic 7- Sun, Earth, Moon

Topic 8- Solar System and the Universe.

Breaking Down the Standards

Breaking a standard, goal, or benchmark into smaller, more explicit learning targets.



Heredity: Inheritance and Variation of Traits (LS3)

8

8-LS3-1. **Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.**

Clarification Statement: *Emphasis is on conceptual understanding that changes in genetic material may result in making different proteins.*
State Assessment Boundary: *Assessment does not include specific changes at the molecular level, mechanisms for protein synthesis, or specific types of mutations.*

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
Developing and Using Models Modeling in 6-8 builds on K-5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems. Develop and use a model to describe phenomena. NRC Framework Link	**LS3.A: Inheritance of Traits** Genes are located in the chromosomes of cells, with each chromosome pair containing two variants of each of many distinct genes. Each distinct gene chiefly controls the production of specific proteins, which in turn affects the traits of the individual. Changes (mutations) to genes can result in changes to proteins, which can affect the structures and functions of the organism and thereby change traits. NRC Framework Link **LS3.B: Variation of Traits** In addition to variations that arise from sexual reproduction, genetic information can be altered because of mutations. Though rare, mutations may result in changes to the structure and function of proteins. Some changes are beneficial, others harmful, and some neutral to the organism. NRC Framework Link	**Structure and Function** Complex and microscopic structures and systems can be visualized, modeled, and used to describe how their function depends on the shapes, composition, and relationships among its parts, therefore complex natural structures/systems can be analyzed to determine how they function. NRC Framework Link

Brainstorm: Prior Knowledge Needed, Activities, Key Vocabulary

8-LS3 - 1 Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.

8-LS3 - 2 Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.

8-LS4 - 4 Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individual's probability of surviving and reproducing in a specific environment.

8-LS4 - 5 Gather and synthesize information about technologies that have changed the way humans influence the inheritance of desired traits in organisms.

Research suggests that laboratory experiences will be more likely to achieve these goals if labs are: (1) designed with clear learning outcomes in mind, (2) thoughtfully sequenced into the flow of classroom science instruction, (3) integrate learning of science content and process, and (4) incorporate ongoing student reflection and discussion.

SEP Focus - 1st Quarter

Q1 Focus Thinking Skills

 Asking Questions and Defining Problems	Science begins with a question about a phenomenon, such as "Why is the sky blue?" or "What causes cancer?" and seeks to develop theories that can provide explanatory answers to such questions.
 Planning and Carrying Out Investigations	Science often involves the construction and use of a wide variety of models and simulations to help develop explanations about natural phenomena. Models make it possible to go beyond observables and imagine a world not yet seen. Models enable predictions of the form "if . . . then . . . therefore" to be made in order to test hypothetical explanations.
 Analyzing and Interpreting Data	Scientific investigation may be conducted in the field or the laboratory. A major practice of scientists is planning and carrying out a systematic investigation, which requires the identification of what is to be recorded and, if applicable, what are to be treated as the dependent and independent variables (control of variables).
 Developing and Using Models	Scientific investigations produce data that must be analyzed in order to derive meaning. Because data usually do not speak for themselves, scientists use a range of tools—including tabulation, graphical interpretation, visualization, and statistical analysis— to identify the significant features and patterns in the data.

Required Labs for 8th Grade

A ***minimum*** of 4 lab experiences a nine week.

Opening Labs Examples - Scientific Method SEP focus

Here are some examples of introductory labs...

Plan on doing a lab that focuses on SEPs...

Would anyone like to share one they have done before?

Skittle Lab

Focus on data collection and analysis

Let's Glow Lab

Experiment design; practice using variables

Drops on a Penny

Data Collection and Analysis, Measurement

Save Fred

STEM focus

Got other resources?
Drop in our shared drive!

Take a 10 minute break!

Common Labs - Materials in Kits; Directions in SAVVAS or linked below

Extraction in Action (Strawberry Lab)

- Can be used for intro at beginning or end of Unit
- ** Let's do this together**

All in the Numbers

- Review of punnett squares and practice with percentages
- Could be good review and introduction to reproduction.

Make the Right Call

- Different marbles in the kit simulate probability of traits being passed
- Includes Punnett Square practice

Student Trait Inventory

- Used to introduce traits and recognize how students are unique

Please take a moment to complete the needs assessment from the district.

Click here for the survey

Common Assessments

Quarterly Benchmark

Benchmarks will be utilized for pre and post tests

Feedback? Questions?

Share one take away that you are excited to implement this year.

For more shared ideas...

Follow PLC leads on mastery connect

- Brittany Pollina (Sullivan Middle)
- Dr. Latoya Benjamin (Castle Heights)
- Christy Funderburk (Dutchman Creek)

Thank you!!!

Have a great year!!!