Summary

How We Express Ourselves

Subject	Year	Start date	Duration
Science Lab, Music, Visual Arts	Fourth Grade	Week 1, November	7 weeks

Inquiry

Transdisciplinary Theme

How we express ourselves

An inquiry into the ways in which we discover and express ideas, feelings, nature, culture, beliefs and values

The Central Idea

Interactions Express Ideas

Lines of Inquiry

- Characteristics of new discoveries
- Light and sound interactions.
- Communications across distances.
-

Teacher questions

- 1. What materials are transparent, translucent, and opaque?
- 2. How is sound produced?
- 3. Can you compare convex and concave lenses and their uses?
- 4. What advances have occurred using light and sound?
- 5. How are cultures reflected through light and sound?
- 6. How are light and sound represented in the world?
- 7. How did the First Amendment change the culture of America?
- 8. What aspects of Native American Culture can be seen today?

Learning Goals

Connections: Transdisciplinary and Past

Successful Peer Feedback must be: kind, specific, and helpful!

- **Peer/Self Feedback: "Glows and Grows"**
  - **Glows and Grows forms**
  - **Glows/Grows Sentence Starters Guidance**

Key_Concepts_Converstaion_Bingo_Board.pdfJun 1, 2022

Scope & Sequence

Visual Arts

[IB] Responding

Overall Expectations

show an understanding that issues, beliefs and values can be explored in arts. They demonstrate an understanding that there are similarities and differences between different cultures, places and times. They analyse their own work and identify areas to revise to improve its quality. They use strategies, based on what they know, to interpret arts and understand the role of arts in our world.

Conceptual Understandings

People explore issues, beliefs and values through arts.

When experiencing arts, we make connections between different cultures, places and times.

We use what we know to interpret arts and deepen our understanding of ourselves and the world around us.

Learning Outcomes

compare, contrast and categorize artworks from a range of cultures, places and times

identify and consider the contexts in which artworks were made

reflect on their own and others' creative processes to inform their thinking

Standards and benchmarks

Georgia State Standards: GSE: English Language Arts (2015)
LANGUAGE (L) (Grade 4)

Conventions of Standard English

ELAGSE4L1: Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking.

ELAGSE4L2: Demonstrate command of the conventions of Standard English capitalization, punctuation, and spelling when writing.

ELAGSE4L2a. Use correct capitalization.

ELAGSE4L2b. Use commas and quotation marks to mark direct speech and quotations from a text.

ELAGSE4L2c. Use a comma before a coordinating conjunction in a compound sentence.

ELAGSE4L2d. Spell grade-appropriate words correctly, consulting references as needed.

Knowledge of Language

ELAGSE4L3b. Choose punctuation for effect.*

READING INFORMATIONAL (RI) (Grade 4)

Key Ideas and Details

ELAGSE4RI1: Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

ELAGSE4RI2: Determine the main idea of a text and explain how it is supported by key details; summarize the text.

ELAGSE4RI3: Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

Craft and Structure

ELAGSE4RI4: Determine the meaning of general academic language and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.

ELAGSE4RI5: Describe the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text.

ELAGSE4RI6: Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided.

Integration of Knowledge and Ideas

ELAGSE4RI7: Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.

ELAGSE4RI8: Explain how an author uses reasons and evidence to support particular points in a text.

ELAGSE4RI9: Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.

SPEAKING AND LISTENING (SL) (Grade 4)

Comprehension and Collaboration

ELAGSE4SL1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.

ELAGSE4SL3: Identify the reasons and evidence a speaker provides to support particular points.

WRITING (W) (Grade 4)

Text Types and Purposes

ELAGSE4W2: Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

ELAGSE4W2b. Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.

ELAGSE4W2c. Link ideas within categories of information using words and phrases. (e.g., another, for example, also, because).

ELAGSE4W2d. Use precise language and domain-specific vocabulary to inform about or explain the topic.

ELAGSE4W2e. Provide a concluding statement or section related to the information or explanation presented.

Production and Distribution of Writing

ELAGSE4W4: Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in Standards 1–3 above.)

ELAGSE4W5: With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing. (Editing for conventions should demonstrate command of Language Standards 1–3 up to and including grade 4.)

Research to Build and Present Knowledge

ELAGSE4W7: Conduct short research projects that build knowledge through investigation of different aspects of a topic.

ELAGSE4W8: Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.

ELAGSE4W9: Draw evidence from literary or informational texts to support analysis, reflection, and research.

ELAGSE4W9b. Apply grade 4 Reading Standards to informational texts (e.g., “Explain how an author uses reasons and evidence to support particular points in a text”).

Georgia State Standards: GSE: English Language Arts (2015)
WRITING (W) (Grade 4)

Text Types and Purposes

ELAGSE4W1: Write opinion pieces on topics or texts, supporting a point of view with reasons.

ELAGSE4W1a. Introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer’s purpose.

ELAGSE4W1b. Provide reasons that are supported by facts and details.

ELAGSE4W1c. Link opinion and reasons using words and phrases (e.g., for instance, in order to, in addition).

ELAGSE4W1d. Provide a concluding statement or section related to the opinion presented.

Georgia State Standards: GSE: Fine Arts: Music (2018)
General Music (Grade 4)

Performing
ESGM4.PR.1 Sing a varied repertoire of music, alone and with others.

a. Sing accompanied and unaccompanied melodies within an appropriate range using head voice.

b. Sing with others (e.g. rounds, canons, game songs, partner songs, and ostinato).

c. Sing multiple songs representing various genres, tonalities, meters, and cultures, including at least one song in a foreign language.

d. Sing expressively, following the cues of a conductor.

ESGM4.PR.2 Perform a varied repertoire of music on instruments, alone and with others.

a. Perform rhythmic patterns with body percussion and a variety of instruments using appropriate technique.

b. Perform body percussion and instrumental parts, including ostinatos, while other students play or sing contrasting parts.

c. Perform simple major/minor melodic patterns with appropriate technique.

d. Perform multiple songs representing various genres, tonalities, meters, and cultures.

e. Perform instrumental parts expressively, following the cues of a conductor.

Responding
ESGM4.RE.1 Listen to, analyze, and describe music.

a. Distinguish between repeating and contrasting sections, phrases, and formal structures (e.g. AB, ABA, verse/refrain, rondo, introduction, coda).

b. Describe music using appropriate vocabulary (e.g. fortissimo/pianissimo, presto/largo/moderato/allegro/adagio, legato/staccato, major/minor), intervals (e.g. step, skip, repeat, leap), timbre adjectives (e.g. dark/bright), and texture adjectives (e.g. thick/thin).

ESGM4.RE.2 Evaluate music and music performances.

a. Use teacher-provided and collaboratively developed criteria for evaluation of music and music performances (e.g. learned, student-composed, improvised).

b. Use formal and/or informal criteria to evaluate music and musical performances by themselves and others.

c. Refine music performances by applying personal, peer, and teacher feedback.

d. Explain personal preferences for specific musical works using appropriate vocabulary.

ESGM4.RE.3 Move to a varied repertoire of music, alone and with others.

a. Respond to contrasts and events in music with locomotor and non-locomotor movement.

b. Perform choreographed and non-choreographed movements.

Connecting
ESGM4.CN.1 Connect music to the other fine arts and disciplines outside the arts.

a. Discuss connections between music and the other fine arts.

ESGM4.CN.2 Connect music to history and culture.

a. Perform and respond to music from various historical periods and cultures.

b. Discuss how sounds and music are used in daily lives.

c. Describe and demonstrate performance etiquette and appropriate audience behavior.

Georgia State Standards: GSE: Fine Arts: Visual Arts (2017)
Connecting (Grade 4)

VA4.CN.1 Investigate and discover the personal relationships of artists to community, culture, and the world through making and studying art.

a. Recognize the unique contributions of contemporary and/or historical art forms, including Georgia artists.

b. Compare and contrast ideas and universal themes from diverse cultures of the past and present.

c. Discuss how social, political, and/or cultural events inspire art.

d. Investigate ways in which professional artists contribute to the development of their communities (e.g. architects, painters, photographers, interior and fashion designers, educators, museum educators).

Georgia State Standards: GSE: Mathematics (2016)
Operations & Algebraic Thinking (Grade 4)

4.OA Use the four operations with whole numbers to solve problems.

MGSE4.OA.2. Multiply or divide to solve word problems involving multiplicative comparison. Use drawings and equations with a symbol or letter for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

Number & Operations in Base Ten (Grade 4)

4.NBT Use place value understanding and properties of operations to perform multi-digit arithmetic.

MGSE4.NBT.4. Fluently add and subtract multi-digit whole numbers using the standard algorithm.

MGSE4.NBT.5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

MGSE4.NBT.6. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Number & Operations—Fractions (Grade 4)

4.NF Extend understanding of fraction equivalence and ordering.

MGSE4.NF.1. Explain why two or more fractions are equivalent a/b=(n x a) / (n x b) ex: = 1/4 = (3 x 1) / (3 x 4) by using visual fraction models. Focus attention on how the number and size of the parts differ even though the fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

4.NF Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

MGSE4.NF.4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.

MGSE4.NF.4a. Understand a fraction a/b as a multiple of 1/b.

MGSE4.NF.4b. Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number.

Georgia State Standards: GSE: Science (2016)
Physical Science (Grade 4)

S4P1. Obtain, evaluate, and communicate information about the nature of light and how light interacts with objects.

a. Plan and carry out investigations to observe and record how light interacts with various materials to classify them as opaque, transparent, or translucent.

b. Plan and carry out investigations to describe the path light travels from a light source to a mirror and how it is reflected by the mirror using different angles.

c. Plan and carry out an investigation utilizing everyday materials to explore examples of when light is refracted.

S4P2. Obtain, evaluate, and communicate information about how sound is produced and changed and how sound and/or light can be used to communicate.

a. Plan and carry out an investigation utilizing everyday objects to produce sound and predict the effects of changing the strength or speed of vibrations.

b. Design and construct a device to communicate across a distance using light and/or sound.

Georgia State Standards: GSE: Social Studies (2016)
Historical Understandings (Grade 4)

SS4H2 Analyze the challenges faced by the framers of the Constitution.

b. Evaluate the major issues debated at the Constitutional Convention: the weaknesses of the Articles of Confederation, the rights of states to govern themselves (federal system), the Great Compromise, and slavery (Three-Fifths Compromise).

Government/Civic Understandings (Grade 4)

SS4CG1 Describe the meaning of:

c. The federal system of government in the U.S. (federal powers, state powers, and shared powers)

d. Representative democracy/republic

SS4CG2 Explain the importance of freedoms guaranteed by the First Amendment to the U.S. Constitution.

Explain the importance of freedoms guaranteed by the First Amendment to the U.S. Constitution.

SS4CG3 Describe the structure of government and the Bill of Rights.

a. Describe how the three branches of government interact with each other (checks and balances and separation of powers), and how they relate to local, state, and federal government.

b. Identify and explain the rights in the Bill of Rights, describe how the Bill of Rights places limits on the powers of government, and explain the reasons for its inclusion in the Constitution in 1791.

Economic Understandings (Grade 4)

SS4E1 Use the basic economic concepts of trade, opportunity cost, specialization, voluntary exchange, productivity, and price incentives to illustrate historical events.

a. Describe opportunity cost and its relationship to decision-making across time (e.g., decisions to settle in the west).

Georgia State Standards: GSE: Physical Education (2018)
Fitness (Grade 4)

PE4.3 The physically educated student demonstrates knowledge and skills to help achieve and maintain a health-enhancing level of physical activity and fitness.

a. Identifies physical activities which contribute to fitness.

b. Demonstrates warm-up and cool-down activities as they relate to cardiorespiratory fitness assessment.

c. Identifies the components of health-related fitness.

d. Demonstrates the proper protocol and identifies form breaks for the Georgia fitness assessment components.

e. Identifies what the Health Fitness Zones are and connects their significance as a piece of the Georgia Fitness Assessment.

f. Participates in the Georgia Fitness Assessment Program with teacher supervision and determines if he/she is within the healthy fitness zone.

g. Identifies areas to improve based on Georgia Fitness Assessment results.

h. Compares opportunities for participating in physical activity outside of physical education class.

i. Independently engages in physical education class.

j. Discusses the importance of hydration related to physical activity.

Key and Related Concepts

Key Concepts

Key Concepts	Key questions and definition
Form	**What is it like?** The understanding that everything has a form with recognizable features that can be observed, identified, described and categorized.
Causation	**Why is it as it is?** The understanding that things do not just happen; there are causal relationships at work, and that actions have consequences.
Change	**How is it transforming?** The understanding that change is the process of movement from one state to another. It is universal and inevitable.

Developing IB Learners

Learner Profile

Knowledgeable

Thinkers

Reflective

Description

Reflective -The students will demonstrate an appreciation for various cultures through music and art.

ATL Skills

Approaches to Learning

Description

Communicating-The students will demonstrate an appreciation for various cultures through music and art.

Communication Skills

- Exchanging information - Listening, interpreting and speaking
  - Listening
    - Listen actively to other perspectives and ideas.
    - Listen actively and respectfully while others speak.
  - Interpreting
    - Be aware of cultural differences when providing and interpreting communication.
  - Speaking
    - Speak and express ideas clearly and logically in small and large groups.
    - State opinions clearly, logically and respectfully.
- Literacy - Reading, writing and using language to gather and communicate information
  - Reading
    - Read a variety of sources for information and for pleasure.
    - Read critically and for comprehension.
  - Writing
    - Use appropriate forms of writing for different purposes and audiences.
    - Communicate using a range of technologies and media.
    - Understand and use mathematical notation and other symbols.

Thinking Skills

- Critical thinking - Analysing and evaluating issues and ideas, and forming decisions
  - Analysing
    - Consider meaning of materials.
    - Use models and simulations to explore complex systems and issues.

Evaluating

Synthesize new understandings by finding unique characteristics; seeing relationships and connections.

Identify obstacles and challenges.

Forming Decisions

Revise understandings based on new information and evidence.

- Creative Thinking - Generating novel ideas and considering new perspectives

Generating novel ideas

Use discussions and diagrams to generate new ideas and inquiries.

Make unexpected or unusual connections between objects and/or ideas.

Design improvements to existing products, processes, media and technologies.

Considering new perspectives

Apply existing knowledge to design new products processes, media and technologies.

- Information Transfer - Using skills and knowledge in multiple contexts

Transfer conceptual understandings across transdisciplinary themes and subjects.

Combine knowledge, conceptual understandings and skills to create products or solutions.

- Reflection and Metacognition - Using thinking skills to reflect on the process of learning

Consider new skills, techniques and strategies for effective learning.

Record thinking and reflection processes.

Action

Student-initiated Action

Students brought in a light saber and looked at how it worked.

Student brought in an instrument

Assessment & Resources

Ongoing Assessment

What are the possible ways of assessing students' understanding of the central idea? What evidence, including student-initiated actions, will we look for?

Social Studies: Create a personal constitution (classroom, school, or home) Incorporation of opinion writing.

Science: Create a light box or communication through light and sound.

Students will use their newly acquired knowledge and experiences to complete and present their choice product to peers while connecting their product to central idea and/or Key concepts. Student will engage in a feed back session to explore these connections: Peer/Self Feedback: "Glows and Grows"

What are the possible ways of assessing students' prior knowledge and skills? What evidence will we look for?

- Prior knowledge recorded on a KWL through a class discussion where students view various images relating to the unit standards where people, matter, and energy are interacting and displaying changes and new ideas.
- Provocations:
  - Carousel of Light and Sound Images -
  - Chalk Talk- How do the ideas, thoughts, and _____ relate to light and sound

Student Self-assessment and Peer Feedback

Students will learn about how to give and receive effective feedback. Students will be presenting their choice-board activity (knowledge-product) in a class gallery walk. Students will learn to write "glow and grow" feedback for themselves and peers. They can write it on a sticky note or digitally. Students will be given time to reflect on the "glows and grows" by taking a picture of their project AND the glows and grows and uploading to their unit reflection in their ManageBac portfolio.

- **Peer/Self Feedback: "Glows and Grows"**

  Learner Profile Goal and Action Plan

📖 Learning Experiences

Designing engaging Learning Experiences

Provocations

- **Teachers will utilize the Provocation/Print for Classroom Inquiry Boards to start the unit, print for inquiry board, and for provocation activities. https://docs.google.com/presen...**
- **Making Thinking Visible: Jamboard and Google Slide Templates #1**
- **Making Thinking Visible: Jamboard and Google Slide Templates #2**

Choose a template from above and question or two from Teacher Questions and Lines of Inquiry

Science

Stemscopes Order Of Units:

1) Materials And Light (2 Weeks)

2) Reflection And Refractions (2 Weeks)

3) Sound And Vibration (2 Weeks)

4) Communication (2 Weeks)

Instruction Materials:

- **Light and Materials Pear Deck**
- **(2022) G4- Lesson 1: Materials and Light**
- **Refraction/Reflection Pear Deck**
- **(2022) G4- Lesson 2: Reflection Refraction**
- **Sound and Vibration Pear Deck**
- **(2022) G4- Lesson 3: Sound and Vibration**

Assessment Materials:

- **Sound Google Slides**
- **Light Google Slides**
- **Assessment Communicate Through Waves Challenge**

Social Studies

Order Of Units:

1) Federalism (1 Week)

2) First Amendment (1 Week)

3) Bill Of Rights (1 Week)

Extension and Enrichment Activities:

G4_How_We_Express_Ourselves.docxJan 11, 2022

Music:

Central Idea: Voice/Instruments/Dance/Drama express ideas.

Learner Profile: Student will develop their knowledgeable, communicator, and risk-taker profiles.

Key Concepts: Form, Function, Causation

-Students will use light/flashlights to create a performance piece to music

-Students will study sound characteristics as related to particular instruments using quavermusic.com

-Students will play and sing music expressively to prepare for Black History Month and other seasonal celebrations.

Science Lab:

Key Concepts: Form, Function Causation Activities:

- Students will investigate, observe and record how light interacts with various objects and classify as opaque, transparent, or translucent using materials in the "How Does Light Travel" Stations:
- Students will complete the Stemscopes Engage reflection and refraction activities. Students must "catch" a monster using flashlights and mirrors to reflect light at the right angle onto the monsters hanging in the dark lab. Students investigate prisms, glass, lenses, marbles, refraction lenses to complete a CSI about refraction.
- Students will investigate how sound vibrations are produces and changed using sound stations: (laser-light tuning fork, water-tuner, plucking rulers, rubber-band box guitars, ball-string tuner, and telephone cups)
- Students will design and construct a device (that fits in a gallon baggy) that communicates light and sound across 10 meters. Students will plan, build, and improve using Engineer Design practices, the present to class.

Physical Education:

Key Concepts: Form, Causation, Change

Learner Profile: Knowledgeable, Communicator, and Risk-taker

Activities:

Students will practice throwing a backhand frisbee into targets (rings, buckets and mats) using the skill cues given in each lesson.

Students will increase the distance between the student and the target after 15 successful throws.

Students will compete against other classmates during three different stations.

Supporting Student Agency

- Students will be choosing their own choice board activity for their knowledge product.
- Through their presentation in the gallery walk, they will be making and reflecting upon own learning goals
- students will decide their own action ideas
- students will implement their own action ideas
- students will be uploading knowledge products and evidence they feel was important to their understanding of the the Central Idea into the MangageBac Portfolios.

Reflections

General Reflections

Looking Back

Wendy Sanders Apr 19, 2022 at 4:07 PM

https://share.icloud.com/photo...

Wendy Sanders Jun 2, 2022 at 9:51 PM

We need to develop this into a "mini-exhibition" We need to meet with Paul to set up documents. We planned for this to occur the week before Christmas break 12/12-12/16

Whitney Niles Jan 5, 2024 at 2:12 PM

Students were able to choose a knowledge product to reflect upon constitutions and how we communicate light and sound.

Students recreated constitutions for various areas like school, classroom, home, etc. in which they were able to showcase their knowledge of guaranteed freedoms that they should have. Through interactions with peers and the ability to express their ideas through modalities, students were able to reflect on their product and give peer feedback (grows and glows).

Rubrics and checklists were used along with design challenge criteria.

Looking Forward

Whitney Niles Jan 5, 2024 at 2:18 PM

Many teachers were able to incorporate apply hands-on learning experiences while students learned about the Bill of Rights!

We strengthened their approaches to learning through communication and information-transfer skills.

For future learning, students will incorporate more written description to analyze their central idea.

Stream & Resources

Resources

Note posted on Aug 15, 2019 at 9:49 AM

Brainpop.com Science / Light and Sound

Light

1) Light

2) Color

3) Electromagnetic Spectrum

4) Forms of Energy

5) Rainbows

6) Sun

7) Isaac Newton

8) Color Vision (Games)

Sound

1) Sound

2) Hearing

3) Waves

4) String Instruments

5) Ludwig Beethoven

6) Wave on a String (Games)

StudyJams

1) What are Sound Waves?

2)

Readworks.org / Science

1) Sound Waves 3rd grade

2) Light and Objects 3rd grade

3) Musical Instruments 3rd grade

4) Music Making with Electronics 2nd grade