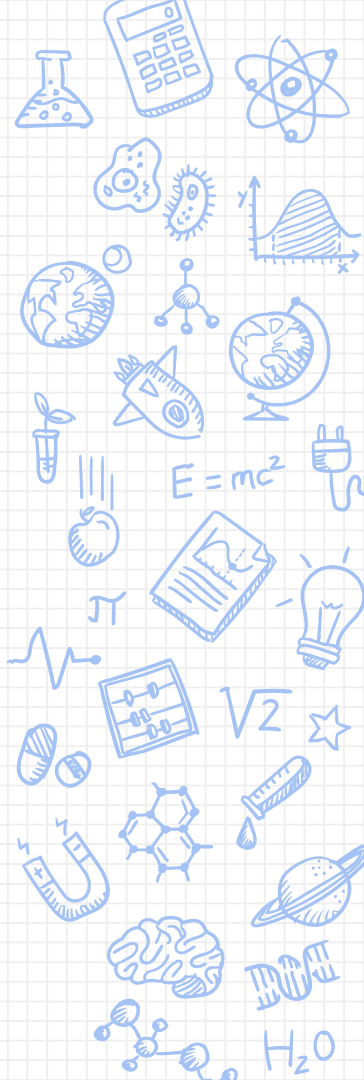


Are you ready for some science trivia?

Kahoot!

Please visit [Kahoot.it](https://kahoot.it) to play!



Teaching Science Through Case Studies





HELLO!

I am Lori Ridgdell

Science Teacher, Woodlawn HS

You can find me at lridgdell@ebschools.org



HELLO!

I am Karla Kiper

Instructional Technology Facilitator

You can find me at kkiper11@ebrschools.org



HELLO!

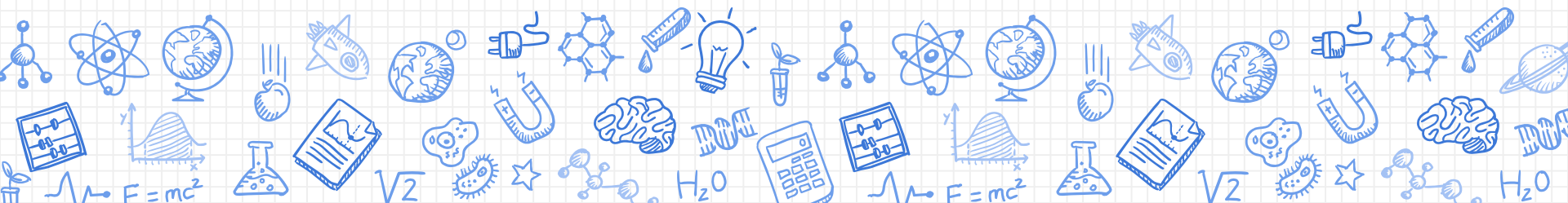
I am Kiesha Arceneaux

Instructional Specialist

You can find me at karceneaux@ebrschools.org

Introduction

Overview, Purpose, Objectives,
Alignment



We've Got Purpose!

To model an **interactive, digital lesson** that **engages students** in the **application of science content** as opposed to passive acquisition of knowledge thereby **incorporating rigor and relevance** to teaching content in science.



We Have Goals!

- X Improve the everyday practice of science educators by **modeling how to incorporate case studies** to support NGSS, Common Core Literacy, Digital Readiness, and GLEs
- X Provide opportunities for educators **to collaborate and share best practices** for 6-12 science content
- X **Introduce, share, and develop high-quality resources** for professional development that can be adopted and scaled appropriately
- X **Instruction that engages, empowers, and inspires** 6-12 science educators and students
- X Provide instructional strategies as well as technology skills to **help create digital-age instructional activities**





We Are Meeting Standards!

- X Standards K-12 Science
- X K-12 Louisiana Student Science Standards (2017)
- X Connections to ELA & Math K-12 Appendix
- X Reading Standards for Literacy in Science and Technical Subjects
- X LDOE Technology Readiness Skills
- X ISTE Student Standards

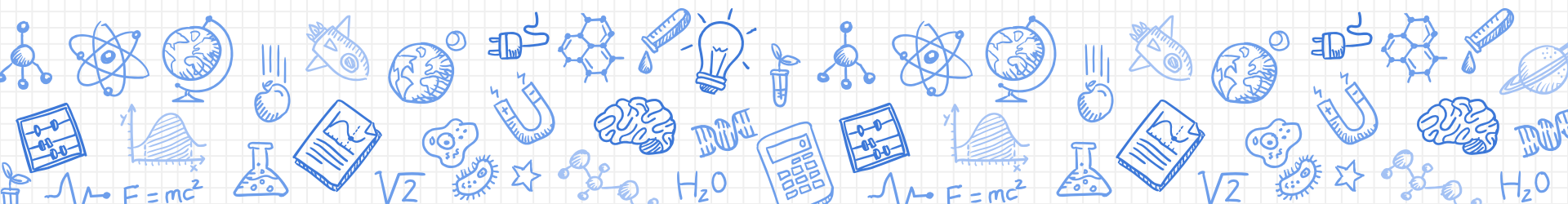
What strategies do you use to deepen your students' understanding of your content
and expand their critical thinking skills?

Start the presentation to activate live content

If you see this message in presentation mode, install the add-in or get help at PollEv.com/app

Case Studies

A Teaching Tool



Case Studies

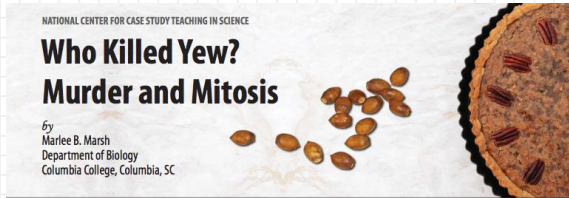
Have been used to train professionals via problem-based learning in many fields:

- Business
- Law
- Medicine



Case Study Examples

Who Killed Yew Google Form?



Part I – The Intruder

The intruder entered the kitchen of the upscale restaurant at 2:43am. All was quiet. All was dark.

The intruder moved quickly, but he was not in a rush. He knew that the baker would not arrive until 4:00am, as she did most mornings. Most of the meal for the private lunch to be catered later that day had already been prepped. He peered over the stainless steel countertops and into bowls of chopped vegetables, rising dough, and homemade marinades until he found what he was looking for—the dessert prep. Pecan pie was the dessert of choice for the lunch party. He smiled. He could not have chosen a better dessert to carry out his plan!

The intruder reached into his pocket with a gloved hand and produced a small bag with what appeared to be chopped pecans. These were not pecans, however. The bag contained the chopped seeds of a *Taxus baccata* tree.

The intruder swiftly dumped the contents of the bag into the bowl of chopped pecans. He stirred the mixture with his hand. Satisfied that no one would notice his addition of the extra ingredient, the intruder made his way out of the kitchen and into the night.

Questions

1. What type of plan could be carried out by adding the seeds of *Taxus baccata* to a pecan pie?

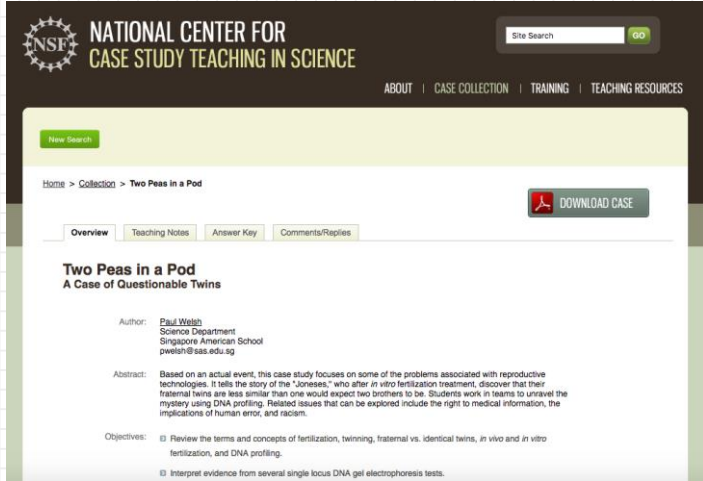
Murder and Mitosis

- X Basic process of mitosis - to solve a murder
- X Naturally-occurring poisons
- X Students make connections between poisons and chemotherapy



Case Study Examples

Two Peas in a Pod Google Form



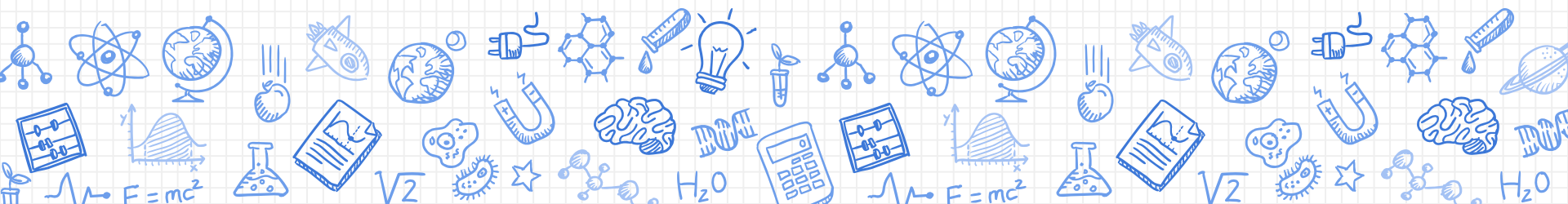
The screenshot shows the website for the National Center for Case Study Teaching in Science. The page title is "Two Peas in a Pod" and the subtitle is "A Case of Questionable Twins". The author is Paul Welsh, Science Department at Singapore American School. The abstract describes a case study based on an actual event involving reproductive technologies and DNA profiling. The objectives listed are to review terms and concepts of fertilization, twinning, fraternal vs. identical twins, in vivo and in vitro fertilization, and DNA profiling, and to interpret evidence from several single locus DNA gel electrophoresis tests.

- X A Case Study of DNA
- X Fraternal vs. Identical twins
- X Students consider evidence from DNA tests
- X Benefits and limitations of reproductive technology



Case Studies

Instruction, Pedagogy, & Technology



Case Studies: Instructional Benefits

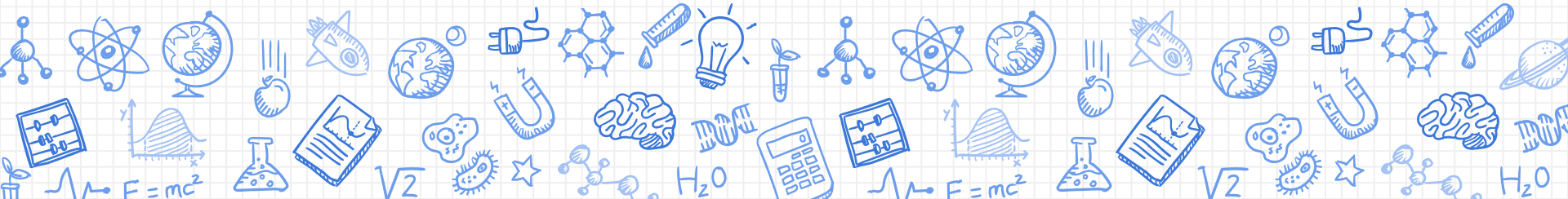
- X Inductive teaching
- X Evidence gathering
- X Inferences
- X Move from specific details to big ideas
- X “Working hypotheses”
- X Research-based strategies



Silver, H. F., Dewing, R. T., & Perini, M. J. (2012). The core six: Essential Strategies for achieving excellence with the Common Core. ASCD.

Google Forms

The Basics



How familiar are you with Google Forms?

What are Google Forms?

Beginner

Intermediate

Advanced

Not familiar with Google Forms!

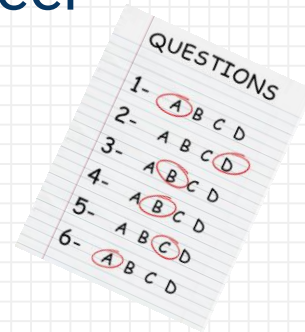
Start the presentation to activate live content

If you see this message in presentation mode, install the add-in or get help at PollEv.com/app

0%

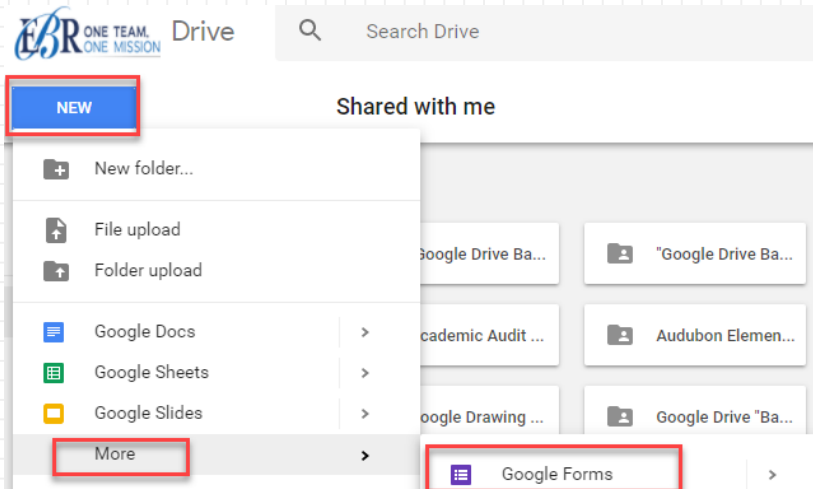
What Can I Do with Google Forms?

- ✗ Create an Event Registration Form - Open House, Parent Night
- Create an Opinion Poll
- Collect Parent, Student, or Volunteer Email Addresses
- Create Quizzes and Classroom Assessments



Let's Create a Form!

- Use the “New” button in Google Drive
- Type forms.google.com in the omnibox



Access Google Form Templates

The screenshot displays the Google Forms web interface. At the top, there is a purple header with the 'Google Forms' logo and a search bar. Below this, a dark grey navigation bar contains the 'Start a new form' button and a 'TEMPLATE GALLERY' dropdown menu, which is highlighted with a red box. The gallery shows six template options: 'Blank' (a plus sign), 'Exit Ticket', 'Canvas Self-Paced Course Evaluation', 'End of Course Survey', 'Blank Quiz', and 'Assessment'. Below the gallery, the 'Recent forms' section is visible, showing five previously created forms with their titles and creation dates. The forms include 'Webinar Wednesday Spring 2017', 'Technology Walk-Through', '2017 EBR Google Webinar Series', 'Flipped Direct Instruction - ELA Example', and 'Untitled form'. On the right side of the image, there are blue hand-drawn icons representing various scientific fields like chemistry, biology, physics, and earth science, along with mathematical symbols like $E=mc^2$, $\sqrt{2}$, and H_2O .

forms.google.com

Getting Started



← **Untitled form** ☆

add-ons [gear icon] colors [color palette icon] preview [eye icon] settings [gear icon] **SEND** more options [vertical ellipsis icon]

Typing your title here adds it to the top left.

QUESTIONS **RESPONSES**

Untitled form

Form description

Untitled Question [Paragraph]

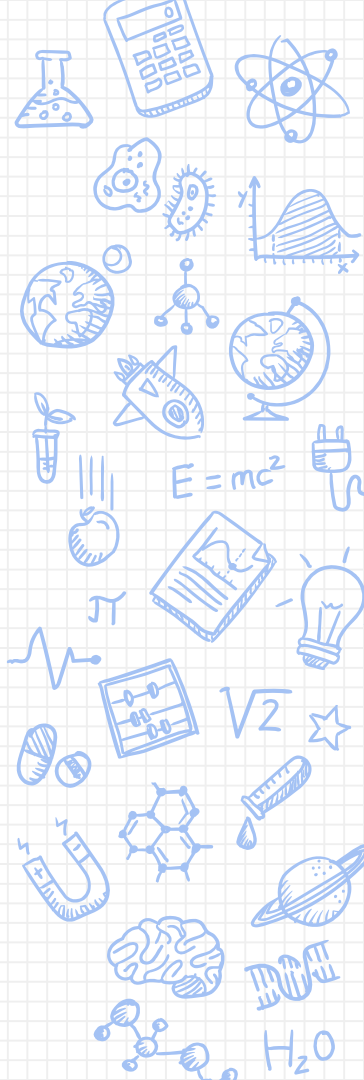
Long answer text

Length Minimum character count Number Custom error text

Required [toggle]

- + add a question
- Tt add a title and description
- add an image
- add a video
- add a section

more options [vertical ellipsis icon]



Question Types

- Short Answer
- Paragraph
- Multiple Choice
- Checkboxes
- Grid
- Choose from a List
- Scale
- Date
- Time

<input type="checkbox"/>	Short answer
<input type="checkbox"/>	Paragraph
<input type="checkbox"/>	Multiple choice
<input checked="" type="checkbox"/>	Checkboxes
<input type="checkbox"/>	Dropdown
<input type="checkbox"/>	File upload
<input type="checkbox"/>	Linear scale
<input type="checkbox"/>	Multiple choice grid
<input type="checkbox"/>	Date
<input type="checkbox"/>	Time

Adding Questions

The screenshot shows a form editor interface. At the top, there are two tabs: 'QUESTIONS' and 'RESPONSES'. The 'QUESTIONS' tab is selected. Below the tabs, the text 'Untitled form' is displayed. Underneath, there is a 'Form description' field. The main area contains a question titled 'Question' with two options: 'Option 1' and 'Add option or ADD *OTHER*'. To the right of the question, there is a dropdown menu for question types, currently set to 'Multiple choice'. At the bottom right, there is a 'Required' toggle switch. A vertical toolbar on the right side of the editor contains icons for adding, deleting, and other actions.

Displays the questions → QUESTIONS

View the responses from the live form. ← RESPONSES

Form description

Question

Option 1

Add option or **ADD *OTHER***

Allows you to choose the question type → Multiple choice

Do students have to answer the question or not? → Required



Create a Question



What is 2 + 2?

Multiple choice

4

5

6

7

Add option or [ADD "OTHER"](#)

Required

Modify the order of answers choices by clicking on the dots and dragging.

Add an image

Duplicates a question

Deletes the question

- Show
- Description
- Go to section based on answer
- Shuffle option order

Go To Section Options

Show

Description

Go to section based on answer

Shuffle option order

Questions can be set to go to a form section based on the student's response...Choose your own adventure!



Create Form Sections

What is 2 x 2? *

4

5

6

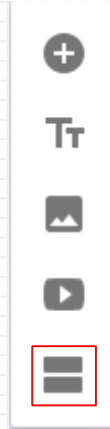
7

After section 1 **Continue to next section** ▾

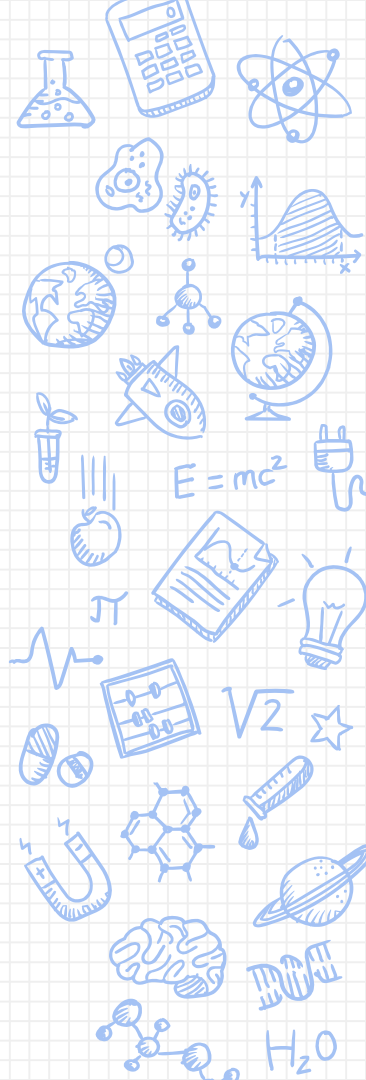
Section 2 of 2

Untitled Section

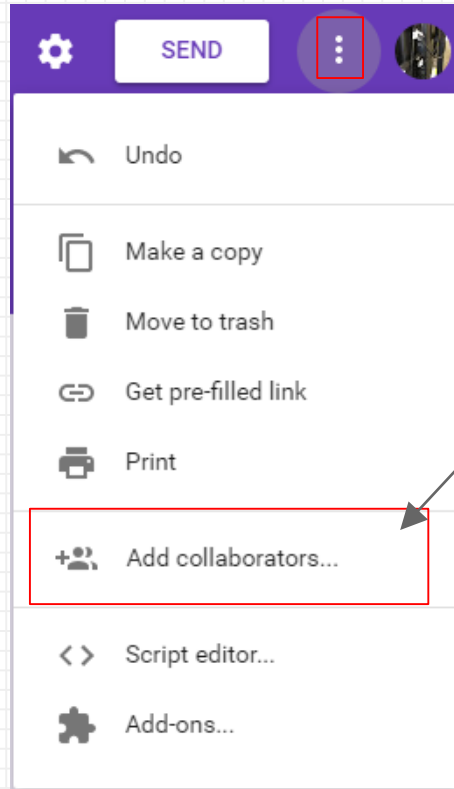
Description (optional)



- Duplicate section
- Delete section
- Merge with above



Sharing Google Forms



Allows others to help you edit the form.



Form Responses

QUESTIONS **RESPONSES**

Collects the responses into a spreadsheet

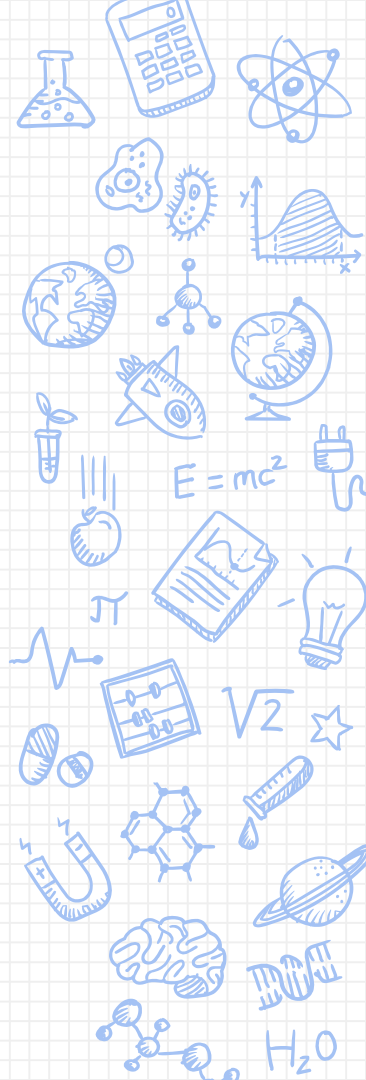
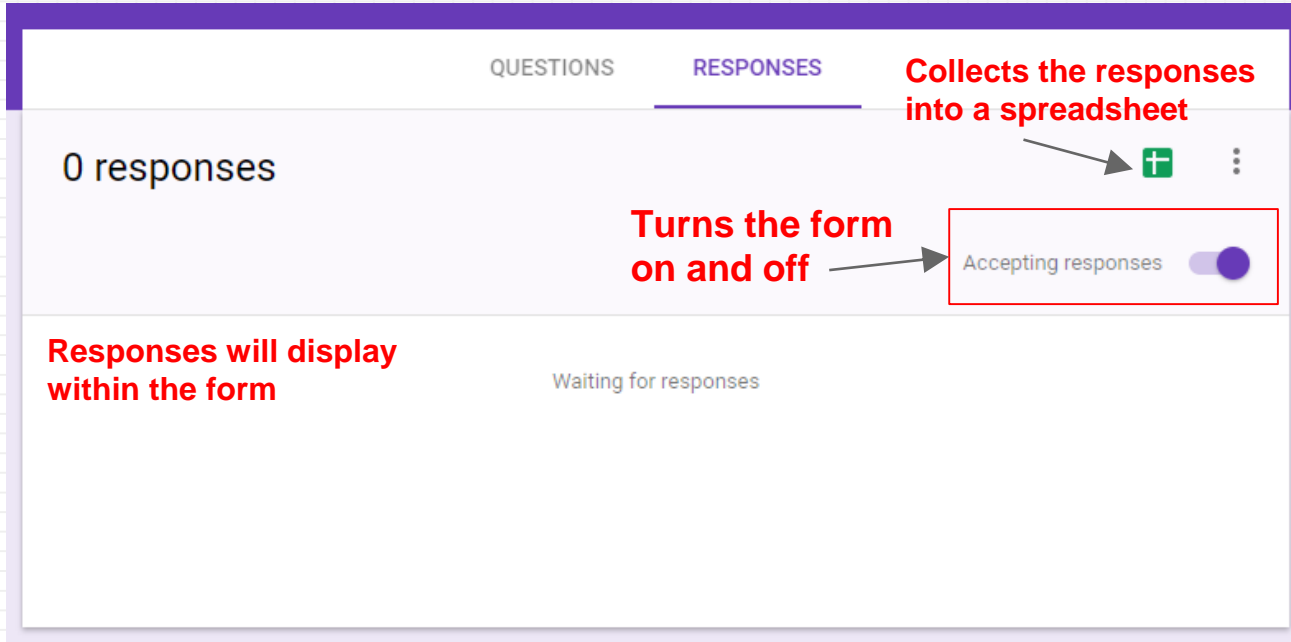
0 responses

Turns the form on and off

Accepting responses

Responses will display within the form

Waiting for responses



Form Settings: General

Settings

GENERAL PRESENTATION QUIZZES

Collect email address

Response receipts ?

Requires sign in:

Restrict to East Baton Rouge Parish Schools users

Limit to 1 response

Respondents will be required to sign in to Google.

Respondents can:

Edit after submit

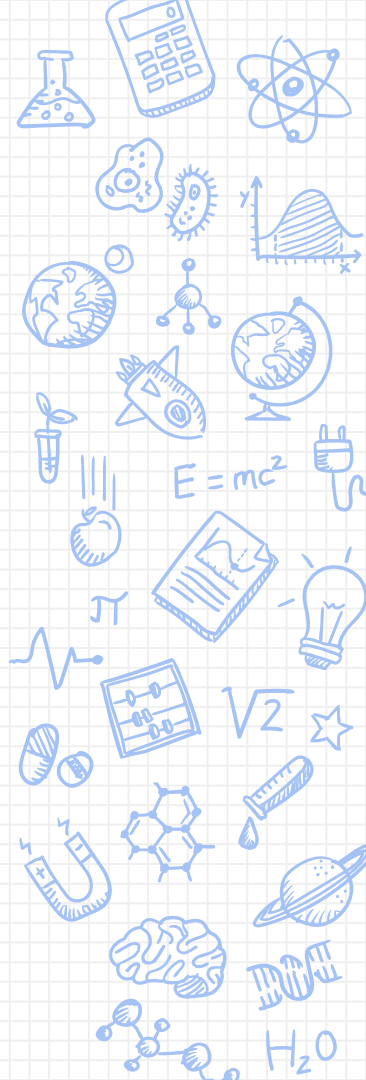
See summary charts and text responses

CANCEL SAVE



Good settings for quizzes!

Use carefully!



Form Settings: Presentation

Settings

GENERAL

PRESENTATION

QUIZZES

- Show progress bar
- Shuffle question order
- Show link to submit another response

Confirmation message:

Your response has been recorded.

CANCEL

SAVE



Form Settings: Quizzes

Settings

GENERAL PRESENTATION QUIZZES

Make this a quiz
Assign point values to questions and allow auto-grading.

Quiz options

Release Grade:

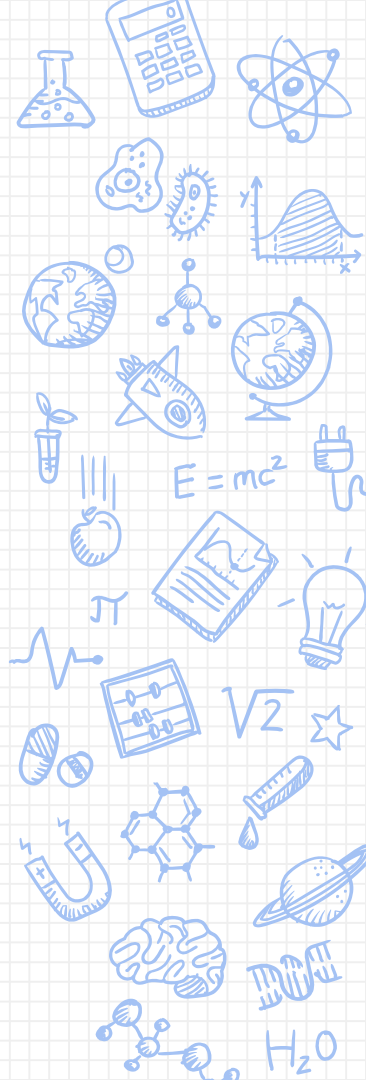
Immediately after each submission
 Later, after manual review
Turns on email collection

Respondent can see:

Missed questions ?
 Correct answers ?
 Point values ?

CANCEL SAVE

**Review these settings
before sending out a quiz
or assessment!**



Quizzes: Setup

What is 2 x 2?

Multiple choice

4

5

6

7

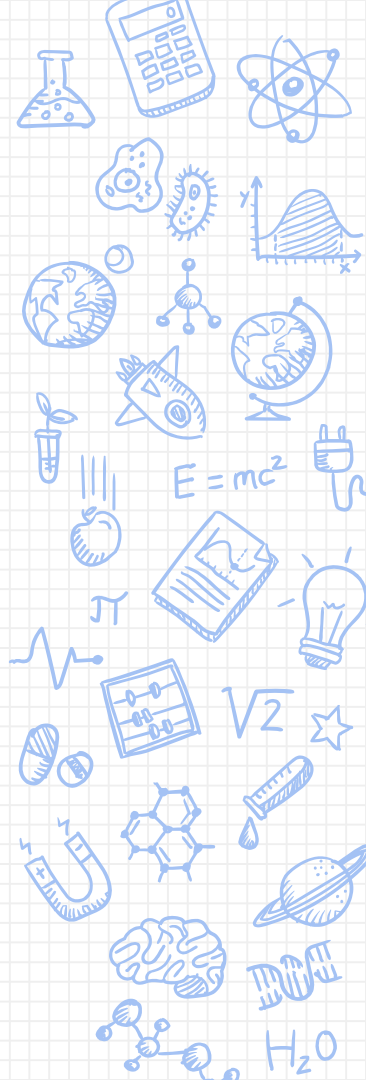
Add option or [ADD "OTHER"](#)



ANSWER KEY (0 points)



Required



Quizzes: The Answer Key

Choose correct answers:

What is 2 x 2? 0 points

4 ✓

5

6

7

ADD ANSWER FEEDBACK

Add feedback

INCORRECT ANSWERS CORRECT ANSWERS

Enter feedback

EDIT QUESTION

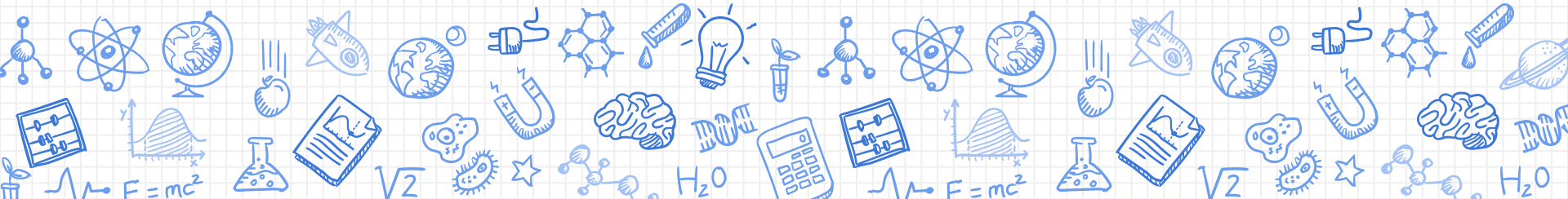
CANCEL SAVE

Don't forget the feedback!



Google Forms

Technology Meets Instructional Strategies





What teacher task takes up the most of your time?



Start the presentation to activate live content



If you see this message in presentation mode, install the add-in or get help at PollEv.com/app



Work Smart

The demands of being a teacher are real



Put Google Forms To Work – Strategies

Flip Your Classroom

Create independent, self-paced learning opportunities

Automate Response to Intervention

Infuse automated and individualized learning experiences that meet the need of every student

Choose Your Own Learning Path

Incorporate optional pathways and extended learning opportunities to personalize the learning experience

Online Testing Prep

Simulate online testing conditions regularly to create familiarity and inspire confidence



Put Google Forms To Work – How To

Flip Your Classroom

Insert content infused media students can explore and learn from independently

Automate Response to Intervention

Use “Answer Feedback” feature in Quiz mode to provide immediate feedback, intervention, and remediation

Choose Your Own Learning Path

Use the “Go To Section” feature to create pathways in response to answers and choices

Online Testing Prep

Use the “Response Validation” feature of text-based answers to create realistic testing conditions

The Ultimate Lesson



What are you familiar with Google Forms, what tasks and assignments
see yourself using a Google Form for?

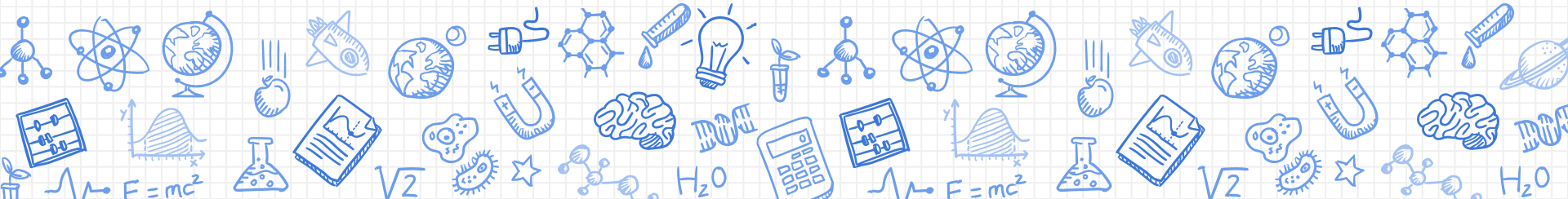


Start the presentation to activate live content

If you see this message in presentation mode, install the add-in or get help at PollEv.com/app

Creating Instructional Materials

Hands-on Experience



Create Your Own Case Study: Directions

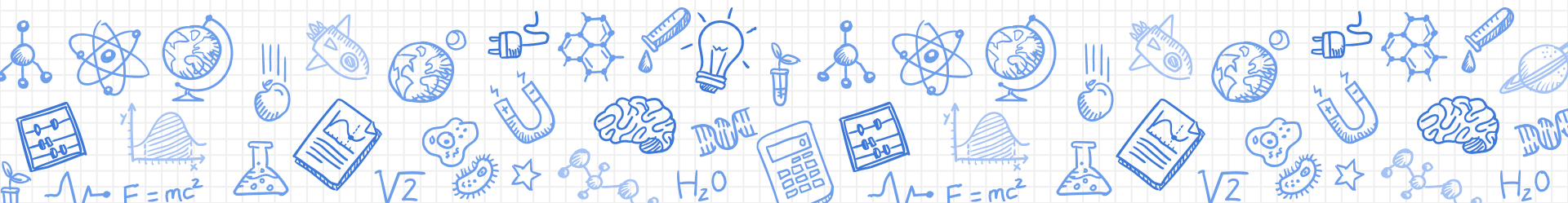
You will have time during this segment to select a case study. Your goal is to create a Google Form containing a case study which will be shared in a Google Doc with everyone.

[Shared Google Doc](#)



Additional Resources

Case Studies, Design, Templates, Extended Learning





Additional Resources for Case Studies

Science Case Study Websites

- X [National Center for Case Study Teaching in Science](#)
- X [Science Case Network](#)

Case Study Design Online Resources

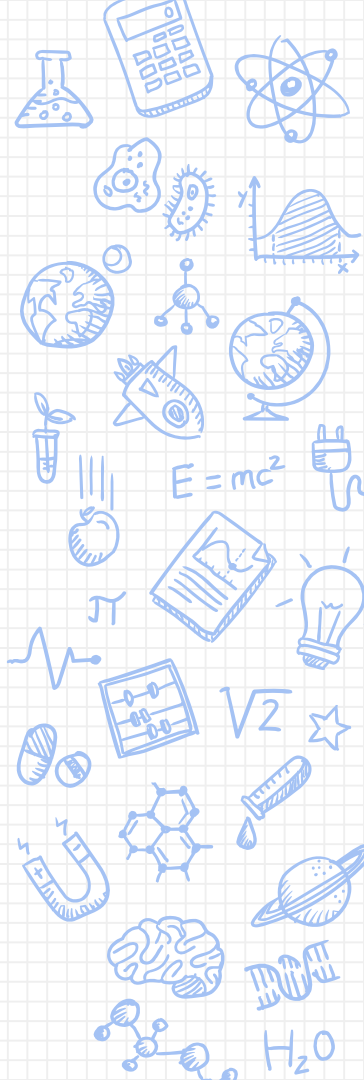
- X [Case Study Excellence in Innovation](#)

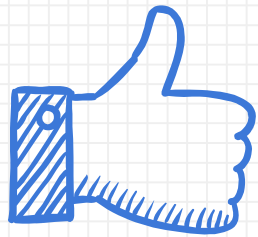
Instructional Case Study Examples

- X [Two Peas in a Pod](#)
- X [Who Killed Yew?](#)
- X [Hands-on, In-session Creations](#)

Extended Learning Resources for Google Forms

- X [Google for Education Training Center - Forms Course](#)
- X [G Suite Learning Center - Forms Course](#)
- X [G Suite Learning Center - Tips Library](#)
- X [Google Support - How to Use Forms](#)
- X [Time Saving Tips - Forms](#)





THANKS!

Any questions?

You can find us at

- ✗ lridgdell@ebrschools.org
- ✗ kkipper11@ebrschools.org
- ✗ karceneaux@ebrschools.org