

EXPERTS IN HANDS-ON STEM EDUCATION

Tips, Tricks & Best Practices for Distance Learning

Strategies To Help You Stay Connected with Students

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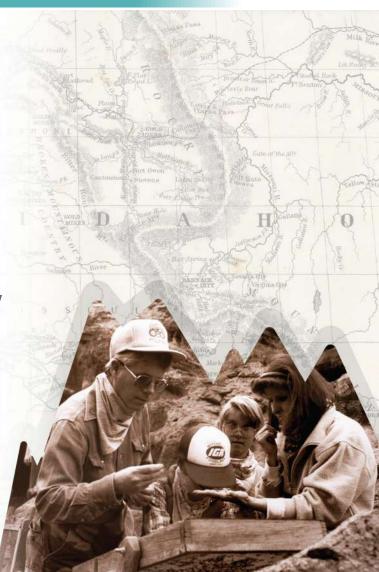
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Tips, Tricks & Best Practices for Distance Learning



About PCS Edventures

- Started as Pat's Computer School in 1988
- Grew to network of experiential learning centers in Idaho, Washington and California
- PCS Edventures learning solutions are now in more than 7000 sites in all 50 states and over 17 other countries
- Philosophy of hands-on projects that fuel a passion for learning and a lifelong love of STEM



Tips, Tricks & Best Practices for Distance Learning



Our Products







DRINES

- Turn-key kits
- Makerspace materials
- Drones for STEM education and career exploration
- Curriculum to spark interest in STEAM
- Training and support for educators

Tips, Tricks & Best Practices for Distance Learning



Our Customers



K-12 classrooms

Summer schools

After-school programs

Libraries and makerspaces











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Tips, Tricks & Best Practices for Distance Learning Agenda

- Establishing and maintaining strong connections with students and parents to gain momentum for distance learning
- 2. Strategies for synchronous and asynchronous communication
- 3. Student choice as a means of motivation
- 4. Student choice and assessment
- 6. Wrap up

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Establishing and Maintaining Strong Connections



Human connection is more critical than instructional time right now

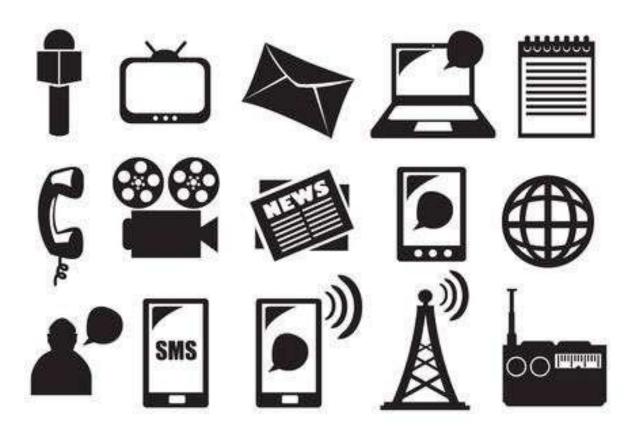
Emphasize the importance of your relationship with your students and acknowledge the importance of their well-being to set the stage for better learning outcomes down the road



Reaching out via phone, text, email, online apps, etc.



Assess the tech available to your students as soon as possible so you can determine which communication tools will be most effective in reaching them



Try to establish contact

- Identify which students are not responding or seem to be missing
- Identify your mandated policies for such situations
- Reach out via conventional means (phone, letters, visit, etc)
- Make a plan for students who respond but have no access to digital/online resources
- Be mindful of your limitations in such situations and don't take on too much

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Set clear routines and realistic expectations

- When will you meet?
- What are the behavior expectations for students when meeting?
- Behavior when on camera
- Behavior when interacting with other students
- What should students do if they can't attend?
- How should they notify you?
- Will you require make-up time?



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Pro Tip- Daily group contact



Morning Meetings

Regularly scheduled group meetings help maintain momentum and buy-in



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Stressed

[tries very hard

Нарру

Supporting Student Social-Emotional Health

Recreate what you'd do at the

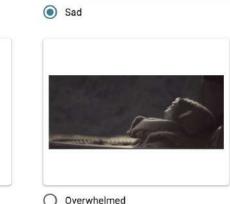
Strategy: Virtual Check-ins

door or when starting class

- If using Remind, Talking Points or another communication service, ask students to respond with an emoji
- On Zoom or Google Hangouts, use a quick thumbs up, sideways or down
- Use a Google Form survey on your LMS to track how students are feeling and what supports they need

How are you feeling today? *







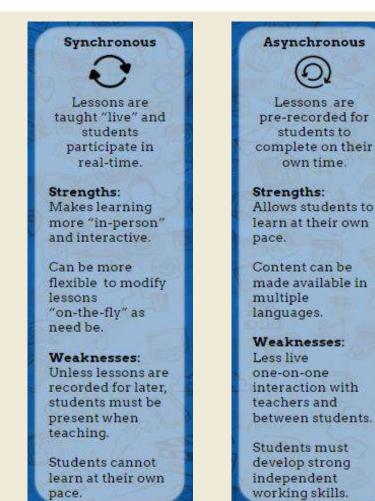
Dr. Torrey Trust, PhD www.torrevtrust.com

Strategies For Synchronous and Asynchronous Lesson Delivery



Implement both synchronous and asynchronous teaching strategies

Having a diversity of communication tools and procedures impacts both differentiation and equity



From Asynchronous, Remote, & Flipped Classroom Resources | 2nd Edition



Synchronous options:

One-on-one Communication

- Establish acceptable method(s) of communication
- Set expectations (office hours scheduled one-on-one check-ins, etc)

Group/class Instruction

- Establish shared platform
- Set schedule (daily? Weekly? Time of day, etc)
- Set expectations (schedule, attendance, behavior, etc)

Individual communication tools





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Group communication tools









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Strategies For Synchronous and Asynchronous Communication



Asynchronous options:

One-on-one Communication

- Establish acceptable method(s) of communication
- Procedures and expectations

 (How and when to ask for help, turn-around time, expectations for student while waiting for response, etc)

Group/class Instruction

- Identify tools and make sure students know how to use them (Classroom blogs, web pages, LMS, etc)
- Make use of the abundant resources available for teachers right now

Strategies For Synchronous and Asynchronous Communication



Distance education via public television across the US

Classroom IDAHO: LEARN @ HOME WATCH ON DAHO WATCH ON DAHO WATCH ON DAHO

 Grade 3:
 8 AM MT | 7 AM PT
 Grade 5:
 10 AM MT | 9 AM PT

 Grade 4:
 9 AM MT | 8 AM PT
 Grade 6:
 11 AM MT | 10 AM PT

Watch via over-the-air antenna and some cable providers

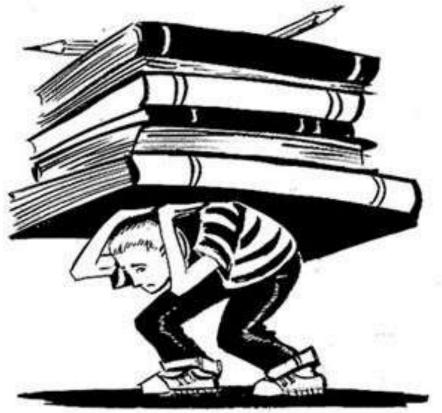




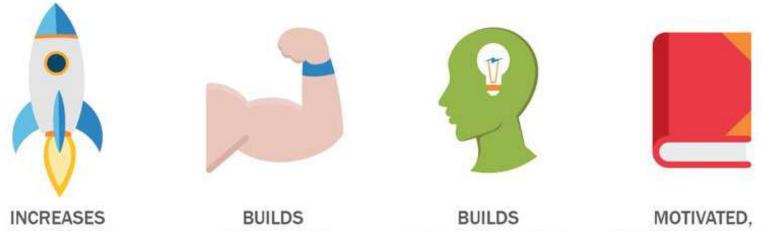
Pro Tip: Limit worksheets and packets for non-digital students



*For students with no digital presence, limiting the amount of "packets" will increase buy-in



WHY STUDENT CHOICE MATTERS



MOTIVATION

CONFIDENCE

SELF-AWARENESS

MOTIVATED, CONFIDENT STUDENTS ARE BETTER READERS

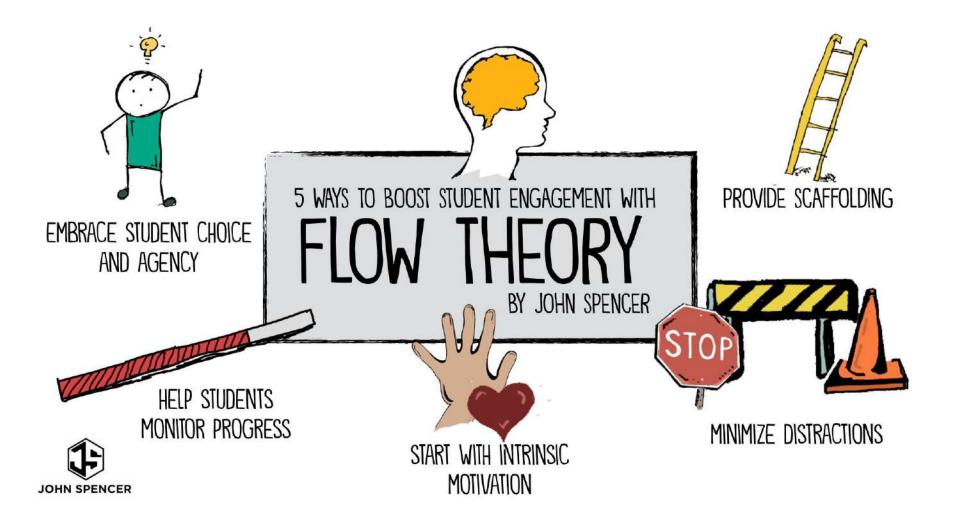
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Student Choice as a Means of Motivation



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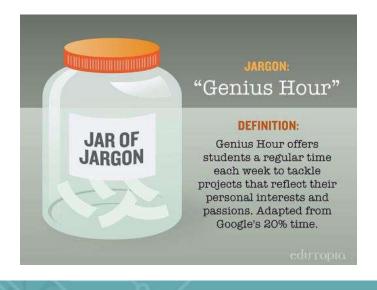
Student choice can be broken down into two categories:

- Choice of Response
- "Choice Boards" or learning menus

CREATE A MEMINE Structure to reasone about 5 of your extends using training from the source to find a companying from imaged phone in companying from imaged phone in companying from imaged	Use Purcle Maker to create a crossword puzzle using all of your	Wet a carbon Use <u>Tacey Tasi</u> to create a carbon using 2 of your words.	
great places to kink w MARE A COMBC Use Indeks Society Composition creative o comic using 3 of your vocabulary words.	Use the vocabulary words.	Access III One increase to recent yourself using 2 if your excellation yeards in partworks, Dalling Code and recent ange using 200 your works.	
MILETE IT! Set for the Internet Annual Annu	Vice Vice Vice Vice Vice Vice Vice Vice	Use George Drinking to Baltrate 2 leach word will be a separate file of your vocabulary words.	×
soldulary winds	directly to your Drivel	e in Mild Late	
se a DIGIT	AL choice	board for	ANY top

Choice of Content

• "Genius Hour" or passion projects



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Student Choice as a Means of Motivation Pcs CD



- Adaptable for any content area(s), standard or grade level
 - Exploration of new content for information gathering (formative practice)
 - Student creation to demonstrate new learning (preparation for summative assessment)

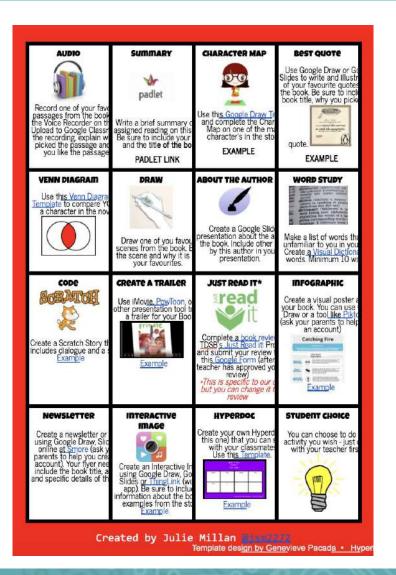
eLearning Choice Board

Choose two activities from each row <mark>#1-4</mark>. Choose one activity from column A or B and one activity from column C or D.

	A	B	C	D
1	Log in to Khan Academy with your Google account, Choose math and continue with lessons for 20-30 minutes.	CK-12 Log in to ck-12 with your Google account. Choose math and continue with lessons for 20-30 minutes.	Log in to Prodigy with your Google account. Continue playing for 20-30 minutes.	Grab a deck of oards and some friends or family and choose a game to play from this choice board*
2	Log in to Khan Academy with your Google account. Choose ELA and continue with lessons for 20-30 minutes.	Visit <u>Story Jumper</u> and log in with your Google account and create a new story or continue the one you are working on for 20-30 minutes.	Visit Scholastic Learn from home and choose your grade level and begin with day 1 or continue where you left off for 20-30 minutes.	Choose your grade level and use the story storter to write your own story. Instead of writing anline write your story on paper.
3	Visit <u>Mystery Science</u> and choose one lesson at your grade level to explore for 20-30 minutes.	ck-12 Log in to k-12 with your Google account. Choose either Science or Social Studies and continue with lessons for 20-30 minutes.	Visit National Geographic for Kids or Wonderopalis Find something that interests you. Find a friend or family member and tell them what you learned.	DESIGN squad Global Visit PBS Design squad and choose a design to build OR get inspired and create something new with the materials you have at home.
4	CO DE Log in to code.org with your Google account and continue with lossons for 20-30 minutes.	HOUR OF CODE Visit Hour of Code and choose any activity to complete. Log in with your Google account to save your progress .	Visit <u>CoNcodes</u> and choose 5 (or morel) of your favorite videos to get moving.	Choose one, or two non-screen activities from this <u>choice board</u> .

Tech and Tech-Free Choice Boards





Show what you know b like in tic-tac-toe, you Just be sure to do you	and mi can complete three in a r best work! When you a ted activities behind the	a activities below. Just row, column, or diagonal me finished, staple your
Anchor Chart Use a large piece of chart paper to create an anchor chart that will teach your classmates about rocks and minerals. Be sure to include all key points.	Diagram of Rock Cycle Create a diagram of the rock cycle on a large piece of construction paper. Be sure to explain and show each portion of the rock cycle.	Flash Cards Use ten index cards to create flash cards that will help you remember key terms. Write the word on one side and the definition and picture on the back of the flash card
Write a Fiction Story Let's see how creative you can be. Write a one, or more, page flotional narrative from the perspective of a rock moving through the rock cycle.	Write a Picture Book Create an Informational picture book about rocks and minerals. Your book should be at least five pages long with ilustrations and text on every page.	Write an Opinion Essay Tells us what you think. In a one, or more, page opinion essay, explain which mineral you think is the most important and explain why.
Double Bubble Map Complete a Double Bubble Map that compares two different rocks or two different minerals.	Minerals Tree Map Complete the Minerals Tree Map. Be sure to think about the uses and characteristics of minerals.	Rocks Circle Map Complete the Rock Circle Map. Inside the circle, give examples of things made from rocks. Outside of the circle, give examples of things not made from rocks.

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Choice Boards Organized by Standard

Reading Response Choice Board

Learning Objective		
Create a <u>Vocaroe</u> with your book recommendation. Include at least 3 reasons why you do or do not recommend the book using evidence from the text. Post the link here:	Greate a <u>Powtoon</u> retelling the story from another character's point of view. Tutorial Post the link here:	Timeline Timeline of at least 6 major events from your story using Google Drawings
Read and Write for Google Extension to highlight 3 unfamiliar or interesting words. Use the extension to create a vocabulary Google Doc and write each word in a new sentence.	Start Here • Read the book in your Storia account. • Complete 3 more activities. (Fill in with green paint) • Turn in your work to Google Classroom when finished.	Create a 2 minute Book Trailer to get other students interested in your book using iMovie. Upload video into your Google Drive.
Create a <u>Google Form</u> with 3 important questions you wonder about from the story. Your classmates will respond later.	Complete a <u>Google Sheet</u> listing the main character's internal and external character traits. Provide 2 pieces of evidence for each trait.	Create a <u>Google Slideshow</u> with 4 connections from the story. Text-Text Text-Self Text-Movie Text-World
Post the link here:	Post the link here:	Post the link here:

Created by @joliboucher www.flippedtechcoaching.com

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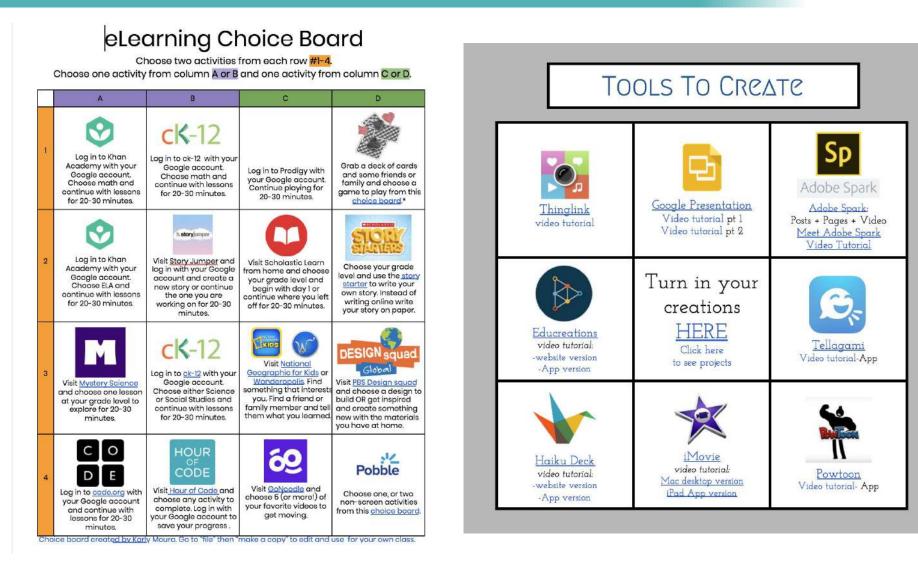
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Free Exploration Choice Boards





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Cross-Curricular Choice Boards





STEAM Learning Choice Board: Choose <u>one</u> activity from <u>each column</u> to explore interests and gain new skills in the areas of STEAM! *Example Objective: Compare the diversity of life in different habitats.* (LS-2)

Science	Technology	Engineering	Art	Mathematics
Watch the linked episode of NOVA to learn more about animal habitats throughout North America. Create a diorama, collage or drawing of your favorite highlighted habitat with a tech	Food Fight: Build a food web that supports your animal while in competition with another. Grab a parent or sibling to compete against. Take a screenshot of	Build a bug vacuum to check diversity of insect populations in your backyard.	Choose an article and sound recording that describes a particular habitat. Create a sound map of an area that demonstrates	Complete the linked experiment to identify which environmental factors can cause deer populations to fluctuate. Run the experiment to determine the average herd numbers for different parts of the year.
habitat with a tech platform (PicCollage, Canva, Google Drawings)	your score and explain why one animal was better equipped to survive.		that demonstrates the diversity of wildlife	

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Choice Boards For Family Engagement



STEAM Activities to Do as a Family!

Use a lever to lift something heavy.	Make a birdhouse using household items.	Make a blueprint of your house or design your dream house.	Plant a garden with your family. You can even use seeds, pits, and other left over parts of produce in your fridge as "starts" for your garden.	Create your own board game. Did you know that a teacher created Candyland during a period of quarantine when children were at risk for polio?
Make a mini-raft to test from materials found at home: Water bottles, milk jugs, popsicle sticks, string, etc.	Create a scavenger hunt with clues or a treasure map for your family to follow in your home or backyard. (Bonus: Learn to use a compass to help you write your clues.)	Follow a recipe to bake a cake or cookies. Present a special tasting of the dessert for your family.	Build a Rube Goldberg Machine	Design an invention to solve a problem. Start an invention journal to gather your ideas.
Make something new from a cardboard box: a fort, a rocketship, a model of a city, etc.	Ask a family member to show you how to fix your bike (pump up the tires, put on the chain, etc.)	Build a fort in your backyard. Plan a special picnic in the fort with your family or read a favorite book with them.	Make a family time capsule to represent what this time together at home has meant. Include any drawings, photos or items you think are significant.	Watch an episode of Mythbusters and then make your own episode with an experiment

I'M BORED! BINGO

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kind note	course	American sign language	game watch a	experiment make
magic trick	learning a new skill	listen to a podcast	historical movie	constellation maps
follow a recipe	make your own board game	FREE SPACE	draw something	build a fort
read a book set in anothe country	make up a song about your day	make a food common in another country	learn 10 words in a foreign language	make a scavenger hunt
make a time capsule or scrapbook	learn Morse code	make a video/movie	read in the bathtub (no water!)	build something

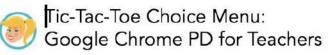
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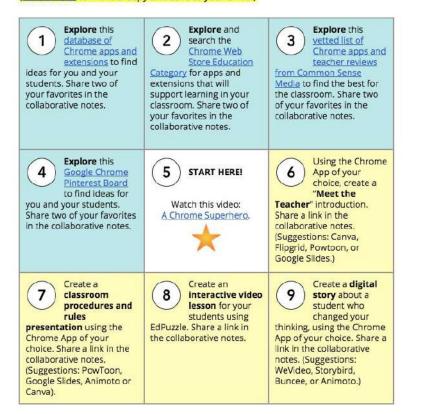
Self-Led Professional Development





Directions:

Start with number 5 and then make two other choices to make your tic-tac-toe. Remember to add notes to the Collaborative Notes as you go! Feel free to download apps and extensions you are interested in, and play! (CLICK HERE to Make a Copy and save to your Drive.)



GooseChase in the Classroom

Introduce a new unit as a virtual KwlL activity	Team Building exercises for students and/or staff all through school year	Convey Classroom Rules & Expectations	Incorporate new tech tools as part of the challenges	Demonstrate understanding of a new concept
Search for and share Healthy Habit Resources in our school or community	EXPLORE A NEARBY OR FAR-OFF GEOGRAPHIC LOCATION	Invite parents for an interactive exploration of student-created classroom projects	Preview a Field Trip to prime students for optimal learning	Explore the time, place and conditions of the setting in a novel
Personify Geometry – acting out shapes, concepts, models	Act act out scenes in a novel or story to answer comprehension questions	Firee Choice ?	Collect all the pieces to a larger puzzle in any content area	Career exploration - learn about and act out community jobs
Hunt for Genres in Literature or for evidence of theme in a story by photographing text	Use as a homework alternative to collect responses over several days	create an înteractive hunt vîsîtors to your school can enjoy	Introduce and explore a course syllabus and assessment rubrics	Find Helpers in your Building and what they can do for students
Enhance a school Math Night or STEM Night with an interactive hunt	Submit a game to the GooseChase library	Vocabulary Review Challenge, Give the word, students demonstrate understanding	Use in a station- rotation model to collect evidence of understanding	Use GooseChase as an assessment tool where individuals collect points for demonstrating understanding

Created by @SimplySuzy & @CTerrillTeach

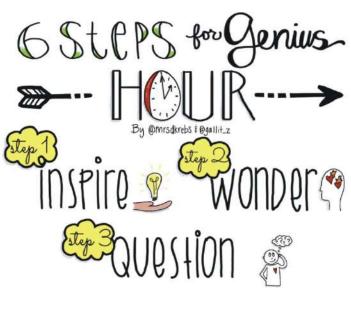
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Strategy: Genius Hour or Passion Projects





Exploration of student interests with scaffolded framework from guiding teacher

Benefits:

- Intrinsic motivation
- Critical-thinking and problem-solving
- Project management and research skills
- Innovative way to meet standards

Setting Up Genius Hour Projects



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Scaffolding is key

Provide strong supports to set up the project's SMART goal

Name:

How can I become a STEM genius? Through a Genius Hour project, you have the opportunity to design your own pathway to explore new skills or topics you are interested in. Choose a topic or skill that you would like to develop and create a SMART goal to pursue for the remainder of the year.

A SMART goal is:

- 1. Specific- A SMART goal is not vague, but outlines a clear plan.
- 2. Measurable A SMART goal can be measured with specific details.
- 3. Achievable- A SMART goal is something you can realistically accomplish.
- Reasonable- A SMART goal is something that will be good for you and makes sense.
- 5. Timed- A SMART goal specifies a time limit. How long do you plan on pursuing this goal? When will you be finished?

What are some options/ideas?



My SMART goal is:

Subject	Project/ Presentation	What is your plan for measuring your goal? How will you know you are on track?

Why is this goal a SMART goal? Explain here.

Specific-

Measurable -

Achievable-

Reasonable-

Timed-

Setting Up Genius Hour Projects



Scaffolding is key

Ensure that students reflect on their learning

Name:

Genius Hour Project Log

You can fill this out online, or keep a paper copy, whatever works for you. This paper will be due with your Genius Hour Project _______, If you tend to lose things, it might be a good idea to keep notes on a paper copy AND online!



My Genius Hour Project is

My SMART Goal

This describes exactly what you want to achieve with your Genius Hour Project Using a SMART goal to define your project helps you understand what you are working toward. Fill this in to describe the specifics of your project.

Specific:

Measurable: Achievable:

Reasonable:

Timed:

Use this to keep track of the work invested in your project. Fill one table out every time you work on your project.

Date:

Time worked:

What did I do today?

What did | learn today?

Questions to explore/Items I need to improve:

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Scaffolding is key

Use a preferred platform as a means to support student choice, learning exploration and the production of an artifact

Genius Hour Projects

Genius Hour projects based on content from:	Flex Learning Pathways:	Digital Storytelling	Game Design	Creative Design	Computer Science	Robotics
STEPA LEARNING	Careers explored:	Producer, director, filmmaker, photographer, animator, illustrator, comic book author, graphic designer, video game designer, marketing (advertising, publicity, media relations, brand manager)	Animator, Video Game Designer, Graphic Designer, Programmer, Game Developer, Game Designer, App Developer, Filmmaker	Graphic Designer, Web Designer, Architectural Designer, Interior Designer, Industrial Designer, Costume and Fashion Designer, Game and App Designer, Urban Designer	Developer, Web Developer, Engineer, App Developer, Game Designer/Developer, Inventor, Digital Forensic Scientist (computers, images, video, sound), Investigator	Robotics Engineer, Robotics Technician, Software Engineer, Programmer, Al Engineer/Programmer

Digital Media Academy's STEAM Learning Lab: FLEX Learning by Pathway. Grades 3-5

Genius Hour Projects

Digital Media Academy's STEAM Learning Lab: FLEX Learning by Pathway. Grades 3-5

Flex	Digital Storytelling	Game Design	Creative Design	Computer Science	Robotics
Learning Pathways:					
Careers explored:	Producer, director, filmmaker, photographer, animator, illustrator, comic book author, graphic designer, video game designer, marketing (advertising, publicity, media relations, brand manager)	Animator, Video Game Designer, Graphic Designer, Programmer, Game Developer, Game Designer, App Developer, Filmmaker	Graphic Designer, Web Designer, Architectural Designer, Interior Designer, Industrial Designer, Costume and Fashion Designer, Game and App Designer, Urban Designer	Developer, Web Developer, Engineer, App Developer, Game Designer/Developer, Inventor, Digital Forensic Scientist (computers, images, video, sound), Investigator	Robotics Engineer, Robotics Technician, Software Engineer, Programmer, Al Engineer/Programmer
Courses to choose from under each category:	The Power of Pictures: Photography Unarrhive brojects for fun and for an audence.	Crazy About Games Hyou love playing games then you will love this course! You'll learn how all kinds of games work and then use what you've learned to design and build you'r own games from scratch. Games can be: card games, board garnes, sports games, paper games and/or cigital garnes.	Daring Designs Say have shanged over inne? How about what heese cojects would look like in the heising we use and design your own versions in the latare.	Encryption, Ciphens and Digital Detectives Report the symbols, codes and ciphens. Then learn a bit about frow the internet; and deta encryption works before you tablik your own digital security challenge.	Fun With Robots Fun With Robots Learn alcoul robots, play with some visual robots online than use your creativity and selles to cesign a robot of the future.

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choo from eacl	n under	The Power of Pictures: Photography Learn how to take and edit photos to use in creative projects for fun and for an audience.	Crazy About Games If you love playing games then you will love this course! You'll learn how all kinds of games work and then use what you ve learned to design and build your own games from soratch Games can be card games, board games, sports games, paper games and/or digital games.	Daring Designs Ever wonder how the counts we use every what here objects would look like in the kurve? Learn about the changes in the kurve? Learn about the changes in the designs we use and design your own versions in the future.	Encryption, Ciphers and Digital Detectives Learn to decode syntaxis, oxates and obhers. Then learn a bit about how the internet and data ancorypion works balare you tackle your own digital security challenge.	Fun With Robots Learn about robots, play with some virtual robots entine there use your creativity and skills to design a robot of the future.
		Watch Cartoons? Why Not Create Your Own? Watched an animation on TV or in the movies? Learn about how professionate like the ones from Pixau create storyboards to plan our their ideas. Create your own animation starting from a simple sticky note storyboard to an online storyboard-building tool before animate your story using an essy-to-use app on a mobile devicel	Game Play and Coding Learn how to design your own games that you and your friends can play. You'll start creating your own board or card games and then move on to creating your own digital games that you can play on your phone or compute.	Design Challenges Design Challenges This course will give you the opportunity to kear about and practice all different kinds of design. Whether you're interested in histhior, secritoriogy, product-design, stohikecture, or play spaces, you can build your design ekills and knowledge by histohing a series of design challenges. You can even have the opportunity to share your design solutions with others.	Code, Computers and Carrots Learn about computers and coding by solving some pozzies, playing some games and reading some stories about RAREITSI And read of the solate you will put your new programming skills to work and challenge yourself with some ordine. block-based coding dhallenges.	Example 2 in the second
proo from	facts duced n ning:	Photography project or animation	Physical or digitally created games	Designed objects of choice	Coded projects or own coding language	Designs for robots

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Use your existing LMS or try a new app!





Google Classroom





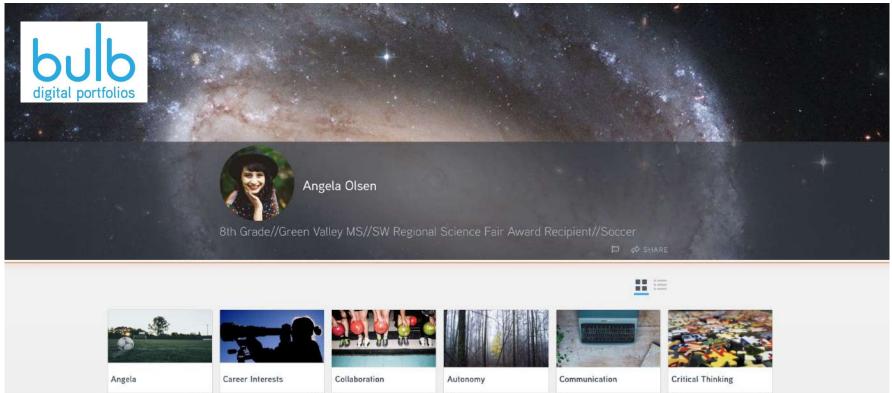
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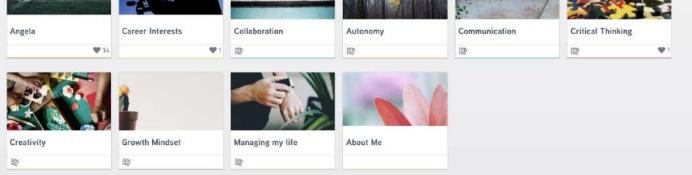
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Sample Student Portfolio on Bulb







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Tips, Tricks & Best Practices for Distance Learning

Wrap Up

- 1. Establishing and maintaining strong relationships
- 2. Strategies for synchronous and asynchronous communication
- 3. Student choice as a means of motivation
- 4. Student choice and assessment

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Contact a

PCS STEMbassador

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