Food Truck PBL | Strand: Creative Design | Skill: Beginner

FOOD TRUCKS
@STEAM NIGHT
Stewart Elementary School
Trucks Open 5pm | STEAM Night 6pm

STRAND:
Creative Design

FUTURE READY SKILLS:
This project and its activities can be used for meeting PA Career Readiness standards

CREATED: 1/2020 | REVIEWED: 5/2020
AUTHOR(S): Melinda Kulick, Ed.D. Burrell School District
Implementation shown: **Grade 5**

RESOURCE LIBRARY TOOL(S): N/A
ADDITIONAL: All activities are designed to leverage Gmail, Scratch, Canva and Google: Docs, Sheets, Forms, Slides, and Classroom.

OVERVIEW: This project has been designed to connect upper elementary students to industry-related concepts through a food truck initiative to introduce entrepreneurship, computer science, and design thinking.

CONCEPTS ADDRESSED:
- Entrepreneurship + Business planning
- Logo design + Brand recognition
- Electronic communication
- Advertising + Persuasive writing
- Scratch block programming
- Algorithms

RATIONALE:
Students will immerse themselves into a project-based learning experience surrounding industry-related business and information technology experiences focused around entrepreneurship and a food truck business.

ADAPTATIONS:
Activities in this project are written to be stand alone lessons that can be adapted for any grade level. This project targets 5th grade.

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1) INTRO TO ENTREPRENEURSHIP, 90 mins

Exposing students to the possibilities of entrepreneurship through a discussion and reflection activity identifying entrepreneurial tendencies and characteristics.

2) ENTREPRENEURSHIP CHARACTERISTICS, 40 mins

Describing and understanding successful characteristics of an entrepreneur allows students to understand the work involved and where they may need to focus if wanting to become an entrepreneur.

3) BIZ BRAINSTORMING, 90 mins

Introducing students to the planning process opens the thought process to the details necessary to develop and sustain a business. At this level, students are only asked to think from their depth of knowledge and experiences.

4) DIGITAL LOGO DESIGN, 120 mins

Identity of a business is important for brand recognition. Students will develop a business identity through one of three types of logos: iconic, text, or combination using a free online service called Canva.

5) ELECTRONIC COMMUNICATION, 90 mins

Communication is an essential aspect of running a business. Knowing how to successfully communicate with customers and other business associates is the foundation for establishing relationships. With the nomadic nature of a food truck, electronic communication plays a key role.

EXTENSION ACTIVITY, PERSUASIVE WRITING, 90 mins

Knowing how to respectfully persuade someone to do what you are asking of them is a practiced skill. Students will draft an invitation to a researched local food truck, inviting them to a hosted school Food Truck Rally at the school's designated date, time, and place.

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6) PRODUCT ALGORITHMS, 120 mins

Successful verbal and written communication is positively supported by detail and description. Details foster clarity for full understanding of a message's meaning and enable repeatable processes. Algorithms connect computer science with food trucks in the sense that process is critical to producing a consistent product, especially when franchising.

7) BLOCK PROGRAMMING, 80 mins

Tying computer science into entrepreneurship can be done many ways. For this activity, students will make an interactive menu for three of their menu items using SCRATCH. When the user clicks on the picture of the menu item, the price will appear on the screen.

8) PAPER CIRCUITS, 160 mins

Paper circuits are a great way to understand electricity and provide students with a hands-on activity. While paper circuits require consumable materials, students can build a cardboard model of their truck and light headlights or power motors to make wheels turn.

9) DIGITAL LAYOUT + DESIGN, 120 mins

Advertising is one way a business can communicate with the public about their products/services. Since students in the 5th grade are not old enough to have social media accounts, this lesson will focus on print advertising through digital design using Canva.

ABC CREATE Learning Pathways | abccreate.org/pathways

ACTIVITY 1: INTRO TO ENTREPRENEURSHIP

	MATERIALS or RESOURCES:	LEARNING GOALS:
90 mins **ONLINE**	● 10min. Video	**Students will be able to...** ● Define entrepreneur ● Identify entrepreneurial characters ● Entrepreneurial character assessment and reflection

ACTIVITIES:

1. Write/display the word, "entrepreneur" on the board and ask a student to read the word aloud to the class. Have a discussion surrounding pronunciation and the definition. ***Entrepreneur: a person who identifies a concept of a product or service and sells it for a profit.***

2. Based on your students' experience and knowledge of entrepreneurship, have students identify characteristics of an entrepreneur and discuss why these characteristics are important. *What characteristics would a successful businessperson possess?*

3. Ask students to reflect on the characteristics they possess by taking an Entrepreneur Inventory

   ○ NOTE: Because Google Forms does not currently permit point values to question answers, the Form has been setup so there are not any wrong answers. Each question is worth one point. After students have completed the assessment, open the Responses through Google Sheets to tally scores. Setup the following:

      ■ In cell AP1 add a column header to read, "YES"
      ■ In cell AQ1 add a column header to read, "NO"
      ■ In cell AP2 use the formula, `=COUNTIF(B2:AO2,"yes")`
      ■ In cell AQ2 use the formula, `=COUNTIF(B2:AP2,"no")`
      ■ Select cell AP2 (blue box around cell). Click and drag down the small square in the bottom right corner. Drag through the column to dynamically insert the formula to count the yes and no responses for each student. Repeat this process for column AQ

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ACTIVITIES:

4. After calculating each student score, share the results using the best method of communication with your class. Some ideas include reading them aloud, posting to the Google Classroom for lookup, and sending independent emails.

5. Discuss results. Higher YES numbers indicate entrepreneurial characteristics.
    - Did the student believe their results were higher or lower than expected?
    - Based on the assessment, how do students feel about their results?
    - If students express disappointment in a lower than expected score, discuss the growth mindset mentality where anything can be learned and the ability to become smarter through application and wanting to improve in any area they choose.

EXTENSION ACTIVITIES:

1. Have students make a vision board with their entrepreneurial characteristics using a method of your choice.
2. Through a Google Form, allow students 2 minutes to spell the word entrepreneur for X bonus points.

ACTIVITY 2: ENTREPRENEURSHIP CHARACTERISTICS

	MATERIALS or RESOURCES:	LEARNING GOALS:
40 mins **OFFLINE**	• Small piece of paper large enough to write 3 words on it and crumble it into a ball • Writing utensils • Way to share the collection of characteristics with class (e.g. written on a board or projected from the computer)	**Students will be able to...** • Understand successful characteristics entrepreneurs possess • Understand growth-mindset for self-development

ACTIVITIES:

1. Display the definition of "characteristic" for the class.
   - *Characteristic: Describing the quality of a person*
2. Open the discussion by asking the class what characteristics they feel they individually possess.
3. After identifying individual characteristics of the class, ask which of those characteristics do students feel are positive characteristics of an entrepreneur. Some may overlap and others may not.
4. Distribute one piece of paper and writing implement per student.
5. Explain the rules of the activity:
   - Write one characteristic on your piece of paper.
   - After writing one characteristic, crumble the paper into a ball.
   - Repeat to ensure students understand: "We are having a snowball fight! Do not, do not, do not throw your ball with the intention of hurting another student. We are tossing the snowballs to collect, open, and write another characteristic. When I count down 3, 2, 1, you will toss the ball."
6. Countdown to the first toss, and repeat twice more so that each piece of paper contains 3 entrepreneur characteristics.
7. After 3 words appear on the paper, ask for student volunteers to read the three words on the paper. Document those characteristics on display for the class to review.
8. Use the list as points of discussion as to why each are important to entrepreneurial success.
9. Exit Ticket: Task students to share one characteristic about which they learned that they feel they could personally work to improve in themselves. If time permits, students can also add how they plan to work toward development or improvement of that particular characteristic.

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ACTIVITY 3: BIZ BRAINSTORMING

	MATERIALS or RESOURCES:	LEARNING GOALS:
90 mins **ONLINE**	● [Business Planning Template](#)	**Students will be able to...** ● Plan their Business Development ● Develop their Business Identity ● Communicate their Business Details

ACTIVITIES:

1. Ask students to name things that are necessary for a successful business. As they name things, display them for the class. After making an exhaustive list, categorize the items into the 5 P's of business: *Place, People, Product, Price, Pitch*.
   - Discuss each of the categories and why they are important to business, especially through the lens of a food truck owner.
     - *Place* would be important due to the time of day. For example, parking near a business district during lunchtime potentially would optimize profits.
     - *People* would be the customer. What would the customer look like? Discuss characteristics.
     - *Product* is what the food truck is selling. If you were a pizza truck, would you sell drinks or only pizza? Any other sides to go with pizza like salad or breadsticks?
     - *Price* is important to ensure that customers are getting a quality product while allowing the business to still make a profit.
     - *Pitch* is the marketing and advertising that goes into what the public sees. What makes a customer want to buy from you?
2. With the 5 P's in mind, ask students to focus on the details of their food truck by thinking about potential names, identity/logo, and other details needed for beginning planning. Sharing with students a template [like this one](#) provides guidance into things to think about.
3. Once students complete their business planning template, they can turn into the Google Classroom or paper artifacts for grading.
   - Grading: There are, of course, no right or wrong answers. This activity is assessed on effort, creativity, and logic to think through the details.

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ACTIVITY 4: DIGITAL LOGO DESIGN

120 mins **ONLINE**	**MATERIALS or RESOURCES:** ● Linked within lesson	**LEARNING GOALS:** **Students will be able to...** ● Define product branding ● Define 3 types of logos ● Draw connections between company identity and meaning ● Design a digital logo using Canva

ACTIVITIES:

1. Ask students, "What is your interpretation of a logo?"
2. Show students the 3 different types of logos:
   - Iconic - pictures only, i.e. Nike swoosh
   - Text - text only, i.e. Coca-Cola
   - Combination - Image and Text, i.e. Gatorade
3. Ask student volunteers to identify familiar logos. Look around the room at t-shirt designs and ask students to remember things they might see on TV or Internet ads.
4. *Logos check for understanding*
5. Discuss hidden meanings within logos, like Baskin-Robbins having 31 flavors, Amazon arrow points from A to Z, and an arrow inside FedEx.
6. Connect students to their business to begin thinking about their own branding.
7. If time permits, have students sketch out and brainstorm their business logo designs.
8. Introduce students to Canva for digitizing their logo design.
   - Canva Tutorials
   - Using a logo template, color, text, and images (stock and uploaded) should be utilized to represent the business
   - Demonstrate downloading from Canva in preparation for submission to Google Classroom
9. Create *Assignment* within Google Classroom for submission
   - 15 point Rubric
   - 3 point Rubric
10. Students can download their file from Canva and submit via Google Classroom digitally or have students make prints.

EXTENSIONS:
- Make Circuit Design Space account to upload logo design. Vinyl cut logo on heat-transfer vinyl to have students make a t-shirt representing their business.

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ACTIVITY 5: ELECTRONIC COMMUNICATION (Part 1)

	MATERIALS or RESOURCES:	LEARNING GOALS:
90 mins **ONLINE**	● Best Practices ● Parts Assessment	**Students will be able to...** ● Define digital footprint ● Infer the impact of communication on reputation ● Demonstrate features of Gmail ● Create and send an email ● Create an email signature

ACTIVITIES:

1. Open the conversation about communication and why it is important, leading to the most popular form of 21st century communication: email.

2. Demonstrate how to open Gmail by typing in the address gmail.com or by using the Waffle icon to open all Google Apps. Link could also be posted to Google Classroom for quick access.

3. Review your school's login procedures. Explain the difference from school login (internal) versus email access from home (external).

4. Explain the constructs making up an email address (Username@DomainName:
    ● Username
    ● Domain Name
    ● All addresses contain an @ symbol (Shift + 2)
    ● Email addresses never contain spaces
    ● Passwords are case sensitive

5. Have all students write down their own email address and know what their password is as they will be expected to know.

6. Assess email best practices

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ACTIVITY 5: ELECTRONIC COMMUNICATION (Part 2)

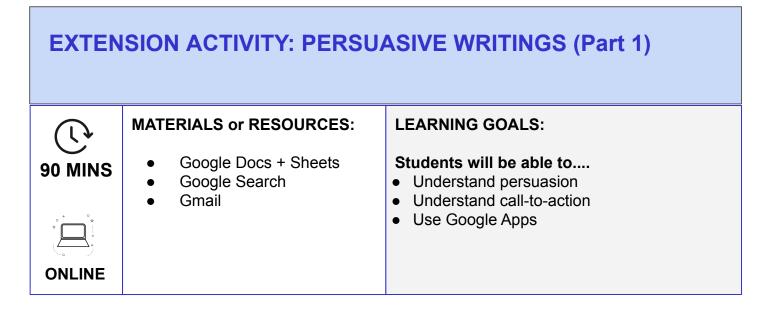**ACTIVITIES:**

Part 2

1. Open the conversation about communication and why it is important, leading to the most popular form of 21st century communication, email.

2. Demonstrate how to open Gmail by typing in the address gmail.com or by using the Waffle icon to open all Google Apps. Link could also be posted to Google Classroom for quick access.

3. Review your school's login procedures. Explain the difference from school login (internal) versus email access from home (external).

4. Explain the constructs making up an email address: Username@DomainName
   - All addresses contain an @ symbol (Shift + 2)
   - Email addresses never contain spaces
   - Passwords are case sensitive

5. Have all students write down their own email address and know what their password is as they will be expected to know.

6. Assess email best practices

EXTENSION ACTIVITY

- Email Signature
- Local Food Truck Invitation

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EXTENSION ACTIVITY: PERSUASIVE WRITINGS (Part 1)

90 MINS ONLINE	MATERIALS or RESOURCES: ● Google Docs + Sheets ● Google Search ● Gmail	LEARNING GOALS: **Students will be able to....** ● Understand persuasion ● Understand call-to-action ● Use Google Apps

ACTIVITIES: Part 1

A fun way to celebrate the food truck project is to host a Food Truck Rally one evening at the school for students to see the trucks in action. With this, students are tasked with researching a local food truck to invite to the event.

1. Provide students with the detailed information of the event, including date, time, and location.

2. Google Sheets can be used to organize the student's findings. Each tab should be named per class by double clicking the tab.
    ● It is important for students to understand that they should be very careful not to accidentally erase any peer work.
    ● A way to manage which row each student should use could correspond to their assigned computer number.

3. Students are asked to use Google for finding a local food truck they would like to invite to the event. Students are asked to review the information from other classes to ensure that the same truck is not invited twice. Once student research and documentation is complete, lock the sheet from editing so changes cannot accidentally be made and information lost.

4. Ask students to open a Google Doc to draft their email invitation.
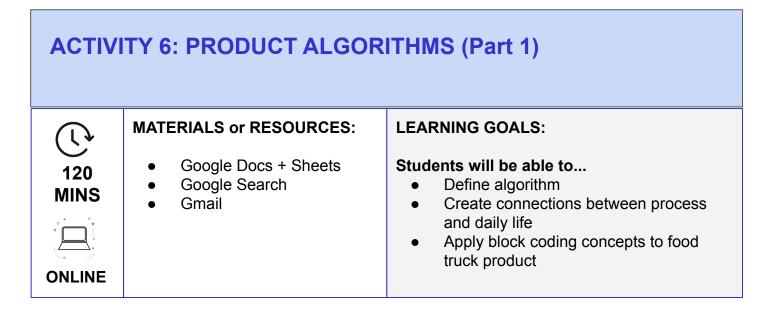
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ACTIVITIES: Part 2

1. Ask students to open a Google Doc to draft their email invitation.
    - Name the document, "Food Truck Invitation"
    - Parts of a letter: Opening, Body (introduction, details, call to action), Closing.
        - Remind that electronic communication should not be indented and all parts left aligned and punctuation is attached to the word with a space to follow.

2. At your preference, students can share the document for review or submit to the Google Classroom. Change to Suggesting Mode by clicking on the pencil (Edit Mode) in the top right corner under the Share button. Suggestions can then be made for student review.

3. Students can then accept the suggestions by clicking the checkmark or rejecting the suggestion by clicking the X. All suggestions can be found in the right margin.

4. Once all messages are finalized, students can then:
    - (1) Open Gmail
    - (2) Compose a new message
    - (3) open Google Sheets
    - (4) copy and paste the email address into the To field
    - (5) copy you as the teacher
    - (6) copy and paste the message from the Google Doc to the body of the message
    - (7) add an appropriate subject like, "Food Truck Invitation"
    - (8) Send email

Extension Activity:
- Replying to a received email.

ACTIVITY 6: PRODUCT ALGORITHMS (Part 1)

⏱ 120 MINS 💻 ONLINE	**MATERIALS or RESOURCES:** ● Google Docs + Sheets ● Google Search ● Gmail	**LEARNING GOALS:** **Students will be able to...** ● Define algorithm ● Create connections between process and daily life ● Apply block coding concepts to food truck product

ACTIVITIES: PART 1

1. Before introducing algorithms, ask students to open a new Google Doc entitled, "Best Seller." Ask students to develop one item that they envision to be their best selling food truck menu item. Within that document, ask students to: (1) name the item, (2) write a description of the item for customers to make an informed buying decision, (3) detail the process to make the item for serving to a customer (4) It is your discretion if you would like to have students draw or include an image of what the creation/serving process would look like.
   - Two objectives of this task are to get students to not only think about detail and process, but also understand that processes should be repeatable. Identifying process would allow someone else to repeat their process without trouble. For example, employee training.

   - Have students submit their completed Doc to the Google Classroom for review. HERE is an example.

   - Once all tasks have been submitted, review for detail changing to Suggesting mode. Allow students time to review feedback.

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ACTIVITY 6: PRODUCT ALGORITHMS (Part 2)

ACTIVITIES: PART 2

1. Present the word "algorithm" to the class, asking students to read what the word is. Ask if anyone has heard of this word before and if anyone can explain what it is.
    ○   An algorithm is a series of steps followed to complete a process.

2. Poll the class for activities that are done daily during their morning routine, such as brushing teeth, making breakfast, tying shoes,or walking. Remind students that all daily tasks are really algorithms because almost all tasks require multiple steps to complete.

3. Circle students back to their best selling menu item task. The process for making their food item to be sold requires a series of steps. These steps are critical for delivering a consistent product with every experience.

4. Through class discussion or a method of your choice, ask students to identify other algorithms that would be used in their food truck business.

Extension Activity:

●   Choose something for students to make that require a process to complete, such as Building a snowman, drawing a star, or building a paper airplane. This could be a paired activity where each team writes out their steps. Switch instructions and have another team see if they can follow.

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ACTIVITY 7: BLOCK PROGRAMMING

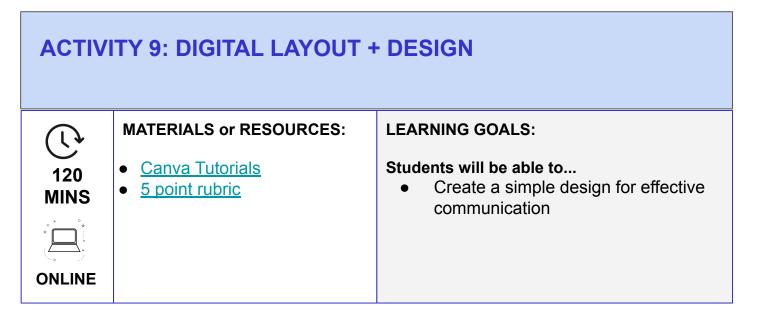| 80 MINS ONLINE	MATERIALS or RESOURCES: ● SCRATCH	LEARNING GOALS: **Students will be able to...** ● Understand block coding ● Apply sequencing ● Create a simple click SCRATCH game

ACTIVITIES:

1. Navigate students to SCRATCH and have them create an account, if needed. Once logged into the platform, click Create in the top left navigation bar.

2. Students should name their menu, "FoodTruckName Menu"

3. If this is the first time students have used SCRATCH or need a refresher, direct them to click "Tutorial" by their file name and look for "Make a Clicker Game."

4. The objective of the game is for the student to select 3 different sprites that, when clicked on, will allow the menu item's price to appear. An example of this has been created and published HERE.

5. To program the project, the student should first add three Sprites to the Stage. The necessary blocks needed for each Sprite are: EVENTS - (1) When "green flag" clicked, (2) When this Sprite clicked, LOOKS (3) Say "price" for "5" seconds.
   ● Encourage students to be as creative as they would like for designing and executing their interactive food truck menu. Other customized options would be to make a truck drive, set a background, change costumes, change colors, etc.
   ● Remind students to refer back to the tutorials as much as needed.

6. When students are finished with their interactive food truck menu, have them click the orange "Share" button at the top of the screen.
   ● Write directions for how their game works. Remind them that details are necessary for helping someone else play their game.
   ● Have students add your name as the teacher, their grade, school, and class name in the Notes and Credits.
   ● Click "Copy Link" and navigate to Google Classroom to submit the link for credit. Have students open the assignment "Interactive Menu" and paste the link into the Class Comments. This way, a peer review can be conducted for Q&A.

7. If time permits, allow students time for accessing each other's interactive menu.

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ACTIVITY 8: PAPER CIRCUITS

160 MINS **OFFLINE**	**MATERIALS or RESOURCES:** ● Cardstock, Printed or hand-drawn image, Coin cell battery, Copper tape, Markers, Scissors, Binder clip, Surface-mount LED, Circuit template, and Practice "tape". This activity can also be completed using LEDs with pins.	**LEARNING GOALS:** **Students will be able to...** ● Understand a simple electrical circuit ● Follow design algorithm ● Create a paper circuit using copper tape, surface-mount LED, and a coin cell battery

ACTIVITIES:

1. Open discussion asking students to describe an electrical circuit in their own words. Answers should include terms like electrons, light, power, etc.

2. Continue discussion surrounding what electrical circuits are used for. If coordinating this lesson with the food truck, discuss thoughts surrounding the need or not for electricity in their food truck.

3. It is recommended to place all materials into individual baskets for easy distribution to each student or team.

4. Review terminology
   - Algorithm - a set of instructions to accomplish a goal.
   - Circuit - movement that starts and ends at the same place.
   - LED (light-emitting diode) - emits light when an electrical current passes through it.
   - Electrons - found in all atoms and is the primary carrier of electricity in solids.

5 Lesson plan

6 Copper tape video

7 Once the lesson is complete, connect students back to the fact that they followed and completed an algorithm for this activity.

8 The paper circuit could be completed to light the headlights on a sketch of their truck concept, business logo, or other aspect surrounding the student designed food truck.

Extension Activity:
● Build cardboard model of developed food truck concept

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ACTIVITY 9: DIGITAL LAYOUT + DESIGN

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120 MINS

ONLINE

MATERIALS or RESOURCES:

- Canva Tutorials
- 5 point rubric

LEARNING GOALS:

Students will be able to...
- Create a simple design for effective communication

ACTIVITIES:

1. Open the discussion by asking students about the last restaurant they visited. Ask students to recall how that restaurant lets the public know they exist. Look for responses like commercials, radio ads, coupons, or billboards.

2. Turn the conversation to smaller scale businesses like a food truck. Discuss how a food truck business is different from a brick and mortar restaurant, identifying that a food truck business is mobile and never in the same location. Due to the mobile nature of a food truck business, advertising is critical so customers know where you are located on the proper dates and times.

3. Ask students to envision the scenario that they are walking into their local grocery store and see a poster for a food truck event. You plan to attend the event with your food truck business and would like to create a poster advertising your truck's attendance.
   - Identify what type of information should be included in the design. Who, what, where, when, and why would suffice.
     - Who: Food truck name
     - What: Name of food truck event
     - Where & When: date, time, and location
     - Why: Is there a purpose of the event?

4. Consider the design of the poster. It should reflect something simple, clean, and legible. Students should include their business logo if they have already completed the logo lesson.

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ACTIVITY 9: DIGITAL LAYOUT + DESIGN (Part 2)

ACTIVITIES:

- Introduce students to <u>Canva</u> for creation of their poster advertisement. A poster template, color, text, and images (stock and uploaded) should be utilized to represent the business.
    - Demonstrate downloading from Canva in preparation for submission to Google Classroom. Download > Download > PDF Print.

- A good design would entail: legible text (size, font and color), appropriate images, and the correct information the public would need to know to attend.

EXTENSION ACTIVITY:

- Take students through the printing process. Should the event be fictitious, encourage students to reach out to teachers or community members for a poster-worthy event that could be created for them. Have students display their posters around the school and community for the event.

This Pathway was created by:

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Feel free to contact us with any questions or suggestions, or to share your students' creations! We would love to see them.