

Watch Out for Sharks!

Draft a Business Plan Using Shark Tank

Lydia Baker, Keiana Cross, Kelsey Willems
Published by *K20 Center*

This work is licensed under a Creative Commons CC BY-SA 4.0 License

Grade Level	11th – 12th Grade	**Time Frame**	340-370 minutes
Subject	Mathematics	**Duration**	7-9 class periods
Course	Math of Finance		

Essential Question

What is necessary to develop a business plan?

Summary

In this lesson, students will explore Shark Tank pitches and business plans. They will learn how to create mathematical models for common formulas used in planning a business. Finally, groups will apply their knowledge to create their own business pitch and present it to the class and hopefully a panel of guest "sharks." This lesson also contains an optional ICAP video.

Snapshot

Engage 1

Students learn about *Shark Tank*-style product pitches by watching clips from the show and evaluating them through a reflection handout.

Explore 1

Students brainstorm a product or service by doing a Collective Brain Dump and business brainstorming in groups.

Engage 2

Groups vet product and business ideas and decide how they will move forward with the idea or instead brainstorm some more.

Explore 2

Students explore successful and failed company products and begin their own business plan outline.

Explain

Students learn more about the common elements of a business plan and what routine formulas are used in the development of a business plan.

Extend

Groups revise their business plan outline, then use the outline to develop a business pitch.

Evaluate

Students give their own *Shark Tank*-style product pitch and share their calculations. Students also have the opportunity to watch an ICAP video about an entrepreneur.

Attachments

- Barbara King Note Catcher—Watch Out for Sharks! - Spanish.docx
- Barbara King Note Catcher—Watch Out for Sharks! - Spanish.pdf
- Barbara King Note Catcher—Watch Out for Sharks!.docx
- Barbara King Note Catcher—Watch Out for Sharks!.pdf
- Business Plan Outline—Watch Out for Sharks! - Spanish.docx
- Business Plan Outline—Watch Out for Sharks! - Spanish.pdf
- Business Plan Outline—Watch Out for Sharks!.docx
- Business Plan Outline—Watch Out for Sharks!.pdf
- Business Plan Vocabulary—Watch Out for Sharks! - Spanish.pptx
- Business Plan Vocabulary—Watch Out for Sharks!.pptx
- Company Brainstorming (Teacher Resource)—Watch Out for Sharks!.docx
- Company Brainstorming (Teacher Resource)—Watch Out for Sharks!.pdf
- Company Brainstorming—Watch Out for Sharks! - Spanish.docx
- Company Brainstorming—Watch Out for Sharks! - Spanish.pdf
- Company Brainstorming—Watch Out for Sharks!.docx
- Company Brainstorming—Watch Out for Sharks!.pdf
- Industry Deck—Watch Out for Sharks! - Spanish.pdf
- Industry Deck—Watch Out for Sharks!.pdf
- Lesson Slides—Watch Out for Sharks!.pptx
- Pitch Reflection—Watch Out for Sharks! - Spanish.docx
- Pitch Reflection—Watch Out for Sharks! - Spanish.pdf
- Pitch Reflection—Watch Out for Sharks!.docx
- Pitch Reflection—Watch Out for Sharks!.pdf
- Pitch Rubric (for Sharks)—Watch Out for Sharks!.docx
- Pitch Rubric (for Sharks)—Watch Out for Sharks!.pdf
- Pitch Rubric—Watch Out for Sharks! - Spanish.docx
- Pitch Rubric—Watch Out for Sharks! - Spanish.pdf
- Pitch Rubric—Watch Out for Sharks!.docx
- Pitch Rubric—Watch Out for Sharks!.pdf
- Student Pitch (Sample Responses)—Watch Out for Sharks!.pptx
- Student Pitch—Watch Out for Sharks! - Spanish.pptx
- Student Pitch—Watch Out for Sharks!.pptx

Materials

- Lesson Slides (attached)
- Pitch Reflection handout (attached; one per student)
- Company Brainstorming handout (attached; one per group)
- Company Brainstorming (Teacher Resource) document (attached; for teacher use)
- Industry Deck (optional; attached; one set per class)
- Business Plan Outline handout (attached; one per group)
- Business Plan Vocabulary slide deck (attached; share digital copies with students)
- Pitch Rubric handout (attached; one per student)
- Student Pitch slide deck (attached; share digital copies with students)
- Student Pitch (Sample Responses) slide deck (attached; for teacher use)
- Pitch Rubric (for Sharks) document (optional; for guest “Sharks”)
- Barbara King Note Catcher (attached; one half per student)
- Writing utensils
- Poster board or chart paper (three total)
- Sticky notes (three per student)

- Student devices capable of creating presentations
- Classroom device capable of projecting presentations

40 minutes

Engage 1

Teacher's Note: Lesson Sequencing and Pacing

This lesson involves a lot of group work across multiple days as well as creating many artifacts from scratch.

As written, the lesson is intended for

- Day 1: Engage 1
- Day 2: Explore 1
- Day 3: Engage 2
- Day 4: Explore 2
- Day 5: Explain
- Day 6+: Extend and Evaluate

There are options for the Evaluate portion of this lesson, which will determine how many days in total this lesson will take to complete. Keep in mind that even though work-time is built in, you should adjust the times provided here to accommodate the needs of students.

Teacher's Note: Engage 1 Purpose and Pacing

The purpose of this first Engage activity is to encourage students to begin thinking about products that could become businesses, how a product serves a purpose to customers, and what a proficient business pitch could look like. Depending on the duration of your class, determine how many of the three videos you will show to the class. Only one video is necessary to establish the purpose of the lesson. However, the additional videos can serve as varied examples. If there is only enough time to watch one video, it is recommended to show the video on **slide 5** about the Scrub Daddy product.

- Video 1 (Scrub Daddy) is approximately 12 minutes long.
- Video 2 (Haven) is approximately 9 minutes long.
- Video 3 (Fort) is approximately 10 minutes long.

Use the attached **Lesson Slides** to facilitate the lesson.

Start by showing **slide 2**. Introduce the lesson before transitioning through **slides 3-4** to discuss the essential question and learning objectives.

Pass out a copy of the attached **Pitch Reflection** handout to each student and introduce the activity. Explain to the students that they will watch real business pitches from a popular show called *Shark Tank* to better understand what kinds of products and businesses entrepreneurs develop to make money. Have students answer the reflection questions listed on their handout while watching the example pitches.

Move through **slides 5-7** and play each video while students answer the reflection questions on their handout. Between videos, consider asking for volunteers to share their responses from their handouts and facilitating a whole-class discussion.

- Slide 5 shows the video pitch for Scrub Daddy: "A Bidding War Breaks Out During Scrub Daddy's Pitch."
- Slide 6 shows the video pitch for Haven: "The "Best Pitch Ever!" On Shark Tank With Haven."
- Slide 7 shows the video pitch for Fort: "Sharks Struggle to Get Behind Fort's Business Model."

Sample Student Responses:

Use the hidden **slide 8** for sample student responses.

If time allows, consider facilitating a class discussion about what each pitch contains. Use the questions on the handout to help students see a pattern in the *Shark Tank* pitches.

45 minutes

Explore 1

Teacher's Note: Activity Preparation

Before the activity, hang three posters on the walls of your classroom with the following headings:

- Community Problem
- Tough Situation
- Money Maker

To help guide the activity, add the following sticky notes as examples to each poster before class begins:

- Community Problem: *Dog owners not picking up waste*
- Tough Situation: *Taking care of family members*
- Money Maker: *Food truck that serves cold food and drinks*

Move to **slide 9** and introduce the Collective Brain Dump strategy. Give each student three sticky notes. Show students the prompts on the slide and ask them to write an idea for each prompt, with one idea per sticky note:

- Community Problem
- Tough Situation
- Money Maker

Allow students time to brainstorm and write their responses on the sticky note before placing their responses on the corresponding poster hanging on the wall. Display **slide 10** for students to see examples.

Teacher's Note: Facilitating the Discussion

Remind students that their responses and ideas moving forward must be legal enterprises in their state and country.

Once all students have responded and placed their responses on the posters, split the class into groups of four and transition to **slide 11**. Introduce students to the Gallery Walk strategy. Explain to the class that they will visit each poster, reading all of the ideas (sticky notes). Then, after visiting all three posters, physically take a sticky note that is their favorite idea and use the total of three ideas (sticky notes) to create their own product or service and company name to later use in their own pitch to the “sharks.”

Consider numbering groups from 1-3 to correspond to the number of posters and then have students begin the Gallery Walk. Give students approximately 5 minutes at each poster. Consider using the K20 5-Minute Timer. Depending on the number of groups, there may be more than one group at a poster, so individuals will need to be aware of the people around them to allow everyone a chance to see the responses.

Once students have visited all three posters, direct groups to pick their favorite idea from each poster to take back and help them brainstorm.

Once each group has had the opportunity to pick three sticky notes (one from each poster), send them back to sit with their groups and pass out one copy of the attached **Company Brainstorming** handout per group. Move to **slide 12** and instruct groups to place their collected sticky notes in the corresponding box on each page and work together to answer the prompts provided. After the groups have considered the potential of each idea, they should choose a product or service from the brainstorming handout or combine two ideas to create the idea they plan to use moving forward.

Allow groups the remainder of the class time to vet their ideas and come to a consensus on the product or service they will use moving forward. If a group comes to an impasse, they may choose to go back to the posters to choose a different sticky note before completing the same reflection questions that are on the handout.

As students work in groups, float around the room to answer questions and keep groups on task. Use the attached **Company Brainstorming (Teacher Resource)** document as an exemplar to guide groups.

Optional Support: Industry Deck

If groups have a difficult time coming to a consensus on the company or product, print and prepare the attached **Industry Deck** cards. Offer to let each group draw one card. Whatever industry they draw from the deck will be the decided direction of the company. This should allow groups to move forward.

Ask groups to keep their project materials, including the Company Brainstorming handout and future handouts, in a safe place for use in the next couple of days or establish a classroom procedure to turn in their work.

30 minutes

Engage 2

Teacher's Note: Purpose

Here students are sharing their ideas with the whole class with the goal being to help improve the groups' ideas/plans.

Use this time as an formative assessment to check to see that students have a business idea that is thought through with enough detail that a business plan and presentation could be created later in the lesson.

Have students continue sitting with their same group members moving forward. Show **slide 13** and instruct groups to share their company product or service idea that was brainstormed the day before with the entire class. Consider giving students a couple of minutes to prepare: determine who from each group is going to speak, etc. Let students know that they are expected to share their ideas with some details, but are expected to share for approximately 5 minutes before the class asks questions.

Introduce the TAG Me! strategy to the class and show **slide 14**. Use this strategy to support a collaborative environment. Remind students that this is not a formal presentation; this is time for the class to help each other progress their ideas. After each group has shared their idea, provide time for the class to tell what they like about the idea, ask any clarifying questions, or give a suggestion.

Teacher's Note: Guiding the Lesson

If you feel that groups would benefit from additional reflection to narrow the scope of their product/idea, consider the following questions:

- How will you help your idea come to life? Will you build on something existing or create something totally new?
- What resources will be needed to get started?

If groups cannot successfully answer the posted questions, encourage that group to go back to the brainstorming phase to create a different company idea. After this point in the lesson, it is not advised for groups to change their company or product ideas.

Display **slide 15** and allow students the remaining class time to work with their group and make any necessary changes.

40 minutes

Explore 2

Show **slide 16** and give students the definition of a *business plan* from the slide: *a document setting out a business's future objectives and strategies for achieving them*.

Tell the class that they are going to look at different businesses today, some successful and some failed. Direct them to think about the importance of a business plan as you transition to **slide 17**: *The Coolest Cooler*. Use the slide to share some of the features of this cooler and ask for volunteers to share what they would imagine paying for this multi-tasking cooler. Move to **slide 18** and share that the selling price of the cooler was $200.

Repeat this for *MoviePass* using **slides 19-20**, for the *Squatty Potty* on **slides 21-22**, and the *Sleep Styler* on **slides 23-24**. Again the purpose of this activity is to help students see the importance of having a business plan, not how close they were to guessing the selling price of each product. Emphasize the steps taken that contributed to the success or failure of the business.

- **Interesting Idea, Poor Execution:** *The Coolest Cooler* was a really unique idea, but because the production cost far exceeded the selling price, the product could not make a profit.
- **Money-Saving Idea, Poor Execution:** The *MoviePass* was appealing to frequent moviegoers because they were able to save money at the theater, but this money-saving idea cost the company too much money. The idea was compelling enough for movie theaters to later create their own version of the *MoviePass*.
- **Universal Idea, Solid Execution:** The *Squatty Potty* is a simple, inexpensive design that appeals to a large audience because it helps a daily bodily function easier.
- **Modified Idea, Solid Execution:** The *Sleep Styler* is a twist on the traditional foam roller but creates a popular wavy hair styler that usually takes people 30 minutes or more to do.

After the discussion, show **slide 25** and give each student a copy of the attached **Business Plan Outline** handout to begin the next step in the planning process. Have students use a device with internet access to find information on similar products or services (competitors) and other information to complete the handout. As students make decisions about how they want to market their product/service, have them circle their selections on the handout. They can choose as many as they can afford, but need to at least circle one. Similarly, students need to select a property for their business: online only, brick-and-mortar (store front), mobile (ex. food truck), or other. If students select "Other," then they are expected to find the actual costs of renting or buying their space for a year including utility expenses, the costs of equipment to run their business, and the costs of any licenses or permits needed to run their business. Groups will also need to determine how many employees they plan to hire, including themselves, at the given rate of $50,000 per year plus a $500 health insurance plan per year.

During this exploration phase, students will likely be unsure of what they can afford. Encourage them to make notes of what questions they have after doing some online searching. They will finalize this outline during the Extend portion of the lesson.

Teacher's Note: Business Plan Outline

On this handout, the row containing information for "Our Business," has the space under "Target Audience" and "Advertising Approach" with a shaded background to discourage students from writing in that space, as they will be answering that information in detail in the "Marketing Strategy" section of the handout.

35 minutes

Explain

Teacher's Note: Activity Preparation

During the Explain portion of this lesson, students are introduced to a long list of vocabulary words. Consider using the attached **Business Plan Vocabulary** slide deck to support students' needs. You could upload it to your school's Learning Management System (LMS) for students to easily access later; you could print one for each group to use as a reference document, or you could edit the document (removing some of the text) and print one per student for them to use as an outline. Students could also use the back side of the Business Plan Outline handout to write down some needed formulas. Regardless of your choice, let students know where they can find this vocabulary for later reference.

Please also keep in mind that this lesson uses a simplified version of a business plan to help shift emphasis to the mathematics behind a business.

Show **slide 26** and introduce students to the basic elements of a *business plan*: *business description*, *product or service description*, *market analysis*, *marketing strategy*, *operations plan*, and *financial plan*.

Transition through **slides 27-28** to help describe what should be included in business and product/service descriptions. Move to **slide 29** to elaborate on the vocabulary: *selling price* and *markup*. Help students understand the difference between the price the item sells for compared to the cost of making the product and how this difference is known as the product's *markup*.

Show **slide 30** and remind students of verbal and algebraic models. The concept of writing verbal models is likely something students have not seen since middle school, so this may need to be introduced like a new topic. Let students know that they will be expected to write verbal and algebraic models as they work through this project.

After showing the relationship between the selling price, product cost, and markup using verbal and algebraic models, transition to **slide 31** to introduce *market analysis*. Direct students' attention to the top of the Business Plan Outline handout, where they found information about their competitors—this was them analyzing the market.

Show **slide 32** and help students see what should be part of their marketing strategy. Help students understand what a *target audience* is. If time allows, ask for volunteers to share their target audience (from their Business Plan Outline) to help with having examples.

Display **slide 33** and ask students how they would imagine promoting or advertising the products on the slide: PC-based survival game, children's clothing store, and athletic shoe company. Then transition to **slide 34** to display and ask the question: *How are you going to make sure that your product or service sells?* Ask for a few volunteers to share their ideas.

Move to **slide 35** and introduce students to the concept: *operations plan*. This is the part of the business plan that focuses on what it will cost for a business to operate. Part of a plan is knowing what expenses are expected.

Display **slide 36** and remind students that there are a lot of calculations involved in planning a business. And to have a successful business, one needs to have and understand the *financial plan*. Transition through **slides 37-39** and introduce students to the vocabulary of *profit*, *revenue*, and *expenses*, which they likely already know. Emphasize to students the verbal models on the slides:

- (Profit) = (Revenue) – (Expenses)
- (Revenue) = (Selling Price)·(Number of Items)
- (Expenses) = (Fixed Costs) + (Variable Costs)
- (Expenses) = (Fixed Costs) + (Product Costs)·(Number of Items)

Use **slide 39** to show students some of the benefits of mathematical modeling: they can combine their verbal models and even take their verbal models and represent them algebraically. Ask for a few volunteers to share what they think is beneficial from these mathematical models.

Show **slide 40** and introduce students to the vocabulary: *break-even point*. Then ask the class what this means for their (Profit) = (Revenue) – (Expenses) equation. Help students understand that the break-even point is the number of items they would need to sell for the profit to equal zero.

Have students use the remainder of the class period to work on their Business Plan Outline. Let students know that they'll be given approximately 15 minutes during the following class period to finish.

90 minutes

Extend

Teacher's Note: Activity Preparation

During this portion of the lesson, students are creating a business pitch. Whether or not you choose for students to stand up and present their pitch to the class, it is strongly recommended to have students complete the attached **Student Pitch** slide deck, as it is designed to ensure students do not miss key elements of their pitch. This slide deck is designed to help communicate to students the expectations for this activity. Be sure to share the slide deck with your students, whether that be through an LMS, email, and/or giving students a forced copy link through Google Slides. Alternatively, you could print the slides with three slides to a page with a second column for notes if students need a non-digital version.

However you share the slide deck, be sure to clearly communicate with students not only where to access the slide deck, but also how you would prefer them to submit their completed slide deck to you. You could create an assignment on your school's LMS for groups to turn in their slide deck and potentially also turn in their Business Plan Outline. There are multiple ways to have students submit their work. The key detail is that you clearly communicate your expectations of how you would like work submitted.

Show **slide 41** and give students approximately 15-20 minutes to complete their Business Plan Outline handout.

Display **slide 42** and give each student a copy of the **Pitch Rubric** handout. Tell students that they are about to use the rubric to evaluate a *Shark Tank* pitch, so they need to read through the rubric before watching the pitch. Inform students that they can write on the rubric and take notes on what they see in the video. After a couple of minutes, play the "'It Only Holds Three Cans?' The Sharks Question Chill Systems" video on the slide. Move to **slide 43** and facilitate a brief discussion on what score the class would give this pitch, then explain to students that this rubric is what will be used for their business pitches. Remind them that they can only evaluate what they witnessed from the video. Use the following guiding questions:

- What score should the *Shark Tank* pitch receive?
- What went well?
- What could be improved?

Move to **slide 44** and have students access the attached **Student Pitch** slide deck. Explain to students that they are supposed to replace the current text (guiding questions) on each slide with their own information. Give students time to review the slides and ask clarifying questions regarding the expectations of the task. Remind students that this slide deck will be turned in when completed and how you would like them to submit this file to you. Use the **Student Pitch (Sample Responses)** slide deck as needed. Show it as an example for students or use it for reference to help answer students' questions.

At this point in the lesson, pause instruction and allow the class to work in groups during class time to complete their business pitches. Provide as many workdays in class as necessary for groups to complete their tasks. Continue to display slide 44 during these workdays. Remind students to refer to their Business Plan Vocabulary slide deck as needed.

Teacher's Note: Guiding the Activity

Emphasize to students that you need them to demonstrate their mathematical understanding so they must include the algebraic models and the specific calculations for both their break-even point and investment requests on their slides.

60 minutes

Evaluate

Teacher's Note: Activity Preparation: Shark Invitations

Before the group presentations, invite a panel of adults to the classroom. This might mean inviting faculty and staff in the district or community leaders. Instruct the classroom guests to play the role of a "Shark." Consider having this panel of sharks use the **Pitch Rubric (for Sharks)** document to rank the group presentations. Alternatively, ask the panel to pick two groups for the categories: *best presentation* and *best idea*. Determine whether prizes will be awarded to the highest performing groups.

Give each shark enough **Pitch Rubric (for Sharks)** documents so they each have one per group. Once class has started, let students know that they will be presenting their business pitches to the class and the sharks (visitors). Introduce your visitors to the class and let the students know that the visitors will be ranking their pitches.

Give students extra copies of the **Pitch Rubric** handout—the same handout that they used earlier—so they each have one per group. Consider printing two rubrics per page to save paper. Help students facilitate their pitches by displaying their presentations for everyone in the class to see. Have both visitors and non-presenting students evaluate each presentation with the rubric during each group's business pitch.

Continue this process until every group has presented.

Once presentations are complete, congratulate your students for all of their hard work! Have students submit their Student Pitch slide decks and their Business Plan Outline handouts. Again, be clear with students about how you would like these materials to be submitted.

Alternative or Additional Activity

Option 1: Instead of having students present in front of the class, have students submit their work and watch an ICAP video. Display **slide 45** to preview the activity, by passing out one half the attached **Barbara King Note Catcher** handout to each student and reviewing the directions with the class. Then show **slide 46** and play the Entrepreneurship and Math of Finance video on the slide. Move to **slide 47** and review students' notes from the video.

Embedded video

https://youtube.com/watch?v=t828clBTVAg

Option 2: If there is an extra 15 minutes of class after presentations are done, use this time to show the ICAP video. Display slide 45 to preview the activity, by passing out one half the attached Barbara King Note Catcher handout to each student and reviewing the directions with the class. Then show slide 46 and play the Entrepreneurship and Math of Finance video on the slide. Move to slide 47 and review students' notes from the video.

Resources

- K20 Center. (n.d.). Collective Brain Dump. Strategies. https://learn.k20center.ou.edu/strategy/111
- K20 Center. (n.d.). Gallery Walk / Carousel. Strategies. https://learn.k20center.ou.edu/strategy/118
- K20 Center. (2021, September 21). K20 Center 5 minute timer. [Video]. YouTube. https://youtu.be/EVS_yYQoLJg?si=fJvuvFWH3vJ3B0z9
- K20 Center. (2024, July 19). K20 ICAP - Entrepreneurship and Math of Finance. YouTube. https://youtu.be/t828clBTVAg
- K20 Center. (n.d.). TAG Me!. Strategies. https://learn.k20center.ou.edu/strategy/2873
- Shark Tank Global. (2022, January 25). *"It Only Holds Three Cans?" The Sharks Question Chill Systems | Shark Tank US | Shark Tank Global* [Video]. YouTube. https://youtu.be/ULws5gyPTHY?si=bJsxHwnCeCS4RYP1
- Shark Tank Global. (2022, February 25). *A Bidding War Breaks Out During Scrub Daddy's Pitch | Shark Tank US | Shark Tank Global* [Video]. YouTube. https://www.youtube.com/watch?v=ae5MssJ8en4
- Shark Tank Global. (2022, May 27). *The "Best Pitch Ever!" on Shark Tank With Haven | Shark Tank US | Shark Tank Global* [Video]. YouTube. https://www.youtube.com/watch?v=D83MdEeYe6g
- Sony Pictures Television. (2022, September 3). *Shark Take US | Sharks Struggle to Get Behind Fort's Business Model* [Video]. YouTube. https://youtu.be/LxuegyltzTw?si=bCApf6lQutPijdRh