

Lemonade Stand



SIMULATION

Representation or model of a process. Simulation also involves running experiments using models.

In 14 days, make as much money as you can from a virtual lemonade stand. [Create a presentation for Bank Q](#) that will support either closing or expanding your lemonade stand.

PROBLEM DECOMPOSITION

Breaking down tasks into smaller manageable parts.

Take a look at the game Lemonade Stand (coolmath-games.com/0-lemonade-stand). Create a list of questions that need to be considered to adequately prepare for your presentation to Bank Q. Lead students through 'Guided Inquiry', and brainstorm (as a class, or in groups) a list of questions they will need to consider for this simulation. Sample questions:

- Why am I running this lemonade stand?
- How will I encourage customers to buy from my lemonade stand?
- What will I need to run a lemonade stand?
- Why should the Bank Q invest in my lemonade stand OR close my lemonade stand?
- How will I know if my lemonade stand should remain open or closed?
- What data will I need to collect to support the expansion or closing of my lemonade stand?

ALGORITHMS AND PROCEDURES

Series of ordered steps taken to solve a problem or achieve some end.

What will I need to run a lemonade stand? See the following document for directions: [Algorithms & Procedures](#)

DATA COLLECTION

The process of gathering appropriate information

The following document is a [Google Sheet](#) that includes a template for students who need the supports, as well as a sample filled out with data from playing the game. Ideally students would be creating their own Google Sheet!

AUTOMATION

Having computers or machines do repetitive or tedious tasks

Play Cool Math Lemonade Stand game (coolmath-games.com/0-lemonade-stand).

DATA ANALYSIS

Making sense of data, finding patterns, and drawing conclusions.

Analyze data on spreadsheet (Google Sheet) to draw conclusions in support of closing or expanding the business. Asking students the following questions will help them to analyze patterns.

- What did you notice about your profit/loss each day as compared to the temperature and/or weather forecast each day?
- What did you notice about your profit/loss each day as compared to the temperature and/or weather forecast compared to how much you charged per cup of lemonade?
- What did you notice about the Customer Satisfaction and the number of lemons and amount of sugar in each pitcher?
- What did you notice about the Popularity? What factors do you think contributed to this data?
- Do you see any patterns on the days you sold the most / sold the least?

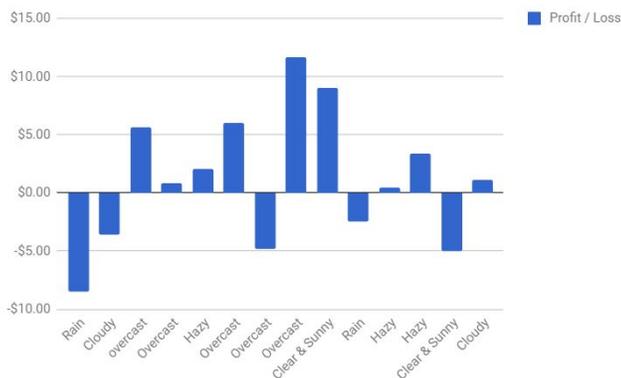
ABSTRACTION

Reducing complexity to define main idea

The main idea of running a Lemonade Stand is to make a profit. There are many pieces of data that can be analyzed for the Bank Q presentation. The main idea students should take away is that if they are making a significant profit, an expansion of the business may be in order. On the other hand, if marginal or no profit is being made, it may be time to close the business down.

DATA REPRESENTATION

Depicting and organizing data in appropriate graphs, charts, words or images



Create graphs and charts to support your presentation to Bank Q.

The chart to the left was quickly created by simply selecting the forecast column and holding down the ctrl key to also select the profit loss column. Once both columns are highlighted, then click "insert" and "chart."

PARALLELIZATION

Organize resources to simultaneously carry out tasks to reach a common goal.

Put together a presentation for the executive board of Bank Q in support of closing or expanding your lemonade stand business based on gathered data. As students are collaborating on this project, they should have roles that work simultaneously in order to meet the deadline given by the board. Making students aware of this and helping them to determine time efficiency strategies are needed. For example, one student might have the game up and be playing, while the other student is recording data on the spreadsheet, while yet another student is setting up the Bank Q presentation.