



# Put On a Show

## Educator's Guide

### Overview 🙌

CS Hands-On is a 501(c)(3) nonprofit teaching computational thinking skills through technology-free lessons and activities. This curriculum is built to teach fundamental computer science concepts in an engaging, hands-on way. In this mission, students use functions to create a 1 minute stage performance.

### Prerequisite Knowledge

There are no prerequisites to this lesson.

### Lesson Details

At Abstractopia, students will learn to remove unnecessary details using abstraction with Alon. Students will learn about functions and use functions to create a 1 minute stage performance.

This lesson was developed for students ages 6 to 13, and can be modified for students of all skills and ages. This lesson takes around 30 minutes.

### Learning Objectives

#### Key Question

How can we use functions to create a 1 minute stage performance?

#### Key Terms

**Function:** A set of actions that accomplish a specific task

### Curriculum Standards

Students should be able to...

- Title and create a function (Abstraction)
- Read, write, and interpret functions (Literacy)
- Act out the process of a function (Creative Arts)

[View standards addressed here](#)



## Lesson Plan

### Materials

- Put on a Show worksheet (per student)

### Setup

- Hand out a Put on a Show worksheet to each student
- Set up your classroom to have space for students to perform their functions

## ANSWER KEY & LESSON ANNOTATIONS



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Put on a Show

### Entering Abstractopia!

It's a nice, sunny day in Abstractopia—perfect for some performances outdoors! Are you ready to get started? Before planning your show, Alon will teach you all about functions!

### What are Functions?

A **function** is a **set of actions** that accomplish a specific task. Let's make a quick stop at Alon's Deli in Abstractopia to learn more!



One PB&J coming right up!

### Alon's Deli

At Alon's Deli in Abstractopia, Alon uses **functions** to make all kinds of sandwiches, from pesto-filled paninis to a classic club sandwich. But his most famous specialty is a scrumptious PB&J! Step into Alon's kitchen to learn how he makes his PB&J sandwich.



### In the Kitchen

Alon uses functions to remember how to make all of the sandwiches he sells. Below is Alon's function to make his famous PB&J sandwich!

**Tip:** Functions are actions, so your first word in the title should be a **verb**!

Write the **steps** necessary to accomplish our function

### Make Alon's Famous PB&J Sandwich

Include a descriptive **title**

1. Take out two slices of fluffy bread
2. Spread crunchy peanut butter on one slice
3. Spread grape jelly on the other slice
4. Smash the two slices together—BAM!



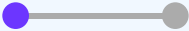
nom-nom!

### Ta-Da!

After making his famous PB&J sandwich, Alon decides to eat one for lunch. It's the perfect mix of salty and sweet, no wonder why they're so popular around Abstractopia!

### Educator Note

At Alon's Deli, Alon has a function for creating his famous PB&J sandwich. When else can we use functions in our everyday life? Examples can include instructions for baking cookies, doing a cartwheel, or washing the dishes.



Lights, Camera, Action!

Join Alon and his friends to create a performance for comedy, drama, anything you'd like!

Create your function with all of the steps you would take to put on a one-minute production (You will be performing this later!) Here are some of Alon's fan-favorite ideas to help you get started:



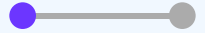
Tell a Knock Knock Joke

- 1. Say 'Knock Knock'
- 2. Wait for person to say 'Who's there?'
- 3. Say 'Tank'
- 4. Wait for person to say 'Tank who?'
- 5. Say 'You're welcome!'
- 6.
- 7.
- 8.
- 9.
- 10.

Educator Note

When creating functions, make sure that every step is descriptive. By doing this, we can avoid confusion and misinterpretation in our instruction.

And the curtain opens ... Perform your 1-minute production!



## Wrap up & reflect

Group students into pairs and have them discuss the following reflection questions. Afterwards, have students share their ideas as a class.

- What is the importance of functions?
  - Functions help us organize steps or instructions to be in one place
  - Functions come in handy when we need to reuse or reference those instructions, as they are already written and defined